The Ancient Maya Ceramics of El Pilar – Characteristics and Comparison

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aus

Ansbach

An Eides statt versichere ich, dass die Arbeit

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von mir selbst und ohne jede unerlaubte Hilfe angefertigt wurde, dass sie noch keiner anderen Stelle zur Prüfung vorgelegen hat und dass sie weder ganz, noch im Auszug veröffentlicht worden ist. Die Stellen der Arbeit – einschließlich Tabellen, Karten, Abbildungen usw. -, die anderen Werken dem Wortlaut oder dem Sinn nach entnommen sind, habe ich jedem einzelnen Fall als Entlehnung kenntlich gemacht.

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1. Introduction

Ceramics have been a key element of the archaeology of most settled prehistoric groups. Next to architecture and tools, pot sherds are among the most enduring archaeological artifacts known. The advantage ceramics have over other archaeological remains are their great susceptibility to change. For example, a stone structure will most likely remain unchanged for a long period of time. At a later date someone with the necessary means might undertake greater remodeling of the structure by adding, changing or removing parts, but overall the process of change will be slow. Ceramics, on the other hand, can be changed with much less labor investment and time.

Ceramic objects are the expression of the aesthetics of a given culture or society and they can be modified on short notice following changes in aesthetics. Therefore, ceramics can reflect small, incremental, and gradual change. For this reason it has been used to document in detail the temporal changes of the taste and aesthetics of a culture or society. This enhanced detail makes ceramics important archaeological indicators for identifying change as well as the status of a culture or society at a given point in time.

The importance of ceramics to Maya archaeology is evident from the earliest field reports in the first part of the 20th century. On Maya sites, where stone architecture and ceramics can be found in abundance, we see that architectural constructions are enduring where ceramics transform rapidly. Therefore, in the case of the Maya, architecture can only provide the framework of cultural development. This framework is undoubtedly important for setting the scene, but it does not reach the desired level of detail. This level of detail can be provided by ceramics. Maya ceramics have many variants, featuring many subtle and sophisticated aspects by which slow and gradual change can be documented.

Due to the potential of Maya ceramics to provide this detail, they have quickly become a prime focus of Mayanists in their studies of Maya culture. Still today, whenever a report is made from a Maya research project, ceramics are always involved. However, approaches to studying Maya ceramics have been the subject of debate. What are the right approaches and what the most rewarding processes to examine? During the past century, these discussions have resulted in different methods of ceramics record keeping and analysis. Although the ceramic analytic methods compete in some way with each other for recognition, they all are aimed at the same objectives: extract data and, eventually, meaning from Maya ceramics. This is the comparative background of this Magister thesis.

1.1. Background of the Thesis

Great headway has been made since the start of scientific investigations of Maya ceramics. Much information has been revealed and assembled, concerning both the data of the ceramic pieces as well as the methods by which this data has been extracted. There is one major problem, however, that ails the field of ceramic studies: despite the importance of ceramic studies in unraveling the mystery of the culture of the ancient Maya, the studies are nevertheless very Balkanized, to use a political term here Over the past decades ceramicists have had the tendency to develop many custom approaches instead of forming a uniting front to tackle the many questions still unresolved concerning Maya ceramics. Such varied approaches are not compatible with each other, being pitted against each other instead of being aimed at identifying common ground. This results in the impression that many ceramicists sit each in their own little kingdom, using their own devised terms and methods. When they eventually meet and try to compare findings, this seclusion has the tendency to cause confusion because the mutual understanding is missing. In other words, ceramic studies are missing a consolidated systematic approach.

Lacking generally accepted systematic guidelines is only aspect of the problems ceramic studies have. Another aspect is that methods and classifications and the theoretical framework methods are often based on antiquated approaches. In her book "*Pottery Analysis – A Sourcebook*" Prudence M. Rice (1987) points out the approaches used in ceramic studies are 20 years old and older, thus being outdated and in need of being replaced by more modern ones. This was in 1987, exactly 20 years ago. This is not to call for the complete revision of methods, but to call for the incorporation of innovations that can facilitate time honored strategies. This thesis seeks to review the traditional methods and present the objective methods of the El Pilar project in an effort to introduce quantification methods to the analyses of Maya ceramics.

Forty years is more than a generation and the scientists working now on ceramics are different from those who developed those old methods - as are the questions asked and aims set for ceramics analyses. For the novice entering the field of ceramic analyses, there is certainly no better way to learn than to work with the ceramic sherds themselves. No text book descriptions can live up to working with actual collections. But once into the collections, ceramics studies should be illuminated by comparison. This is not always strictly the case.

While many new methods and techniques have been incorporated into research, petrography and neutron activation for example, there has not been substantive change and modernization in the basic methodology of Maya ceramic studies in the past 40 years. I know it may be a beaten phrase, but in order to enable ceramic studies to answer the new archaeological questions of the 21st century, the tools need a renewal. This by no means implies that the old approaches and ideas be completely discarded. The traditional methods have their foundation, have proved useful, have served their purposes and have provided a foundation for Maya ceramic studies to further evolve. But Maya archaeology has changed, the questions posed have changed, and therefore those methods need to be re-examined so they can keep pace with the changes. After adhering for decades to the same procedures, there really seems to be a time of change coming now, when even veteran scholars like T. Patrick Culbert are calling for a replacement of the so far predominant type-variety approach. Very recently he suggested a multiple pronged approach where three to four different methods run parallel with each other, each focusing on their specific part within the investigation (Culbert 2007). This thesis will endeavor to contribute in its own way to the discussion of methodological change in Maya ceramic studies.

To assess the value of the traditional ceramic methods employed in the Maya area, I will use the method of El Pilar. This El Pilar method was developed within the Belize River Archaeological Settlement Survey (BRASS) / El Pilar project. The system, embracing the ceramic chronology of the traditional methods, introduces objective attributes that can be measured across the collections. For the past four years I have been part of this project, learning and applying this objective method first hand. I will use this as a counterpoint to provide a basis that may assist in the modernization of ceramic analytic methods for the Maya area.

1.2 Aims of the Thesis

This thesis has four aims: 1) to present an overview of El Pilar, 2) to describe the El Pilar ceramic cataloging method, 3) to provide an overview of the ceramic collections from El

Pilar, and 4) to compare the traditional methods used in Maya studies to the El Pilar method. These will be elaborated in detail below.

The first aim is to present the site of El Pilar and the attached BRASS / El Pilar Project. This includes, of course, a description of the El Pilar site itself. But more than that, the goal here is to put the site of El Pilar and the complete ceramic facet of the El Pilar project into the regional context. This includes an investigation of earlier ceramic methods, their influence on the development of the El Pilar method, and the discussion of sources of the used chronology. Furthermore, selected sites of the Belize River area supply the necessary geographical context.

The second aim is to present and describe the El Pilar method I learned and adopted during my time within the El Pilar project. I will show the classification method El Pilar utilizes and the nature of its specific characteristics. Furthermore, I will explain the manner in which ceramic data are gathered and recorded. At this point the different relational catalogs used at El Pilar will also be introduced. Additionally, the processes involved in recording and cataloging a ceramic sherd will be presented. Lastly, the use of digital media within the method will be described and an outlook on future developments will be given.

The third aim is to give a basic overview of the El Pilar ceramic collection as it is currently recorded. This involves material from 1993 to 2003 and is made possible by my completion of the ceramic analysis in the 2005 season. Three aspects will be considered: 1) the provenience aspect to show where the sherds in the collection were excavated within the site, 2) the time period aspect to show to which era of the Maya timeline the sherds have been assigned and what the framework of the El Pilar chronology looks like and 3) the ceramic category aspect to show what kind of ceramics have been found at El Pilar, including ceramic vessels as well as non-vessel categories.

The fourth aim is to compare the presented El Pilar Method with the most widely used method for ceramic classification, James C. Gifford's type-variety. This intended comparison will judge on the two presented methods and build a critique about both methods's characteristics and approaches. Further, I will formulate a proposal on how these two methods can be used together to improve ceramic studies in the future.

These four aims will be approached in the order they have been listed above, since the aims build upon each other and probe deeper into the matter at hand. The first aim introduces the site and its surroundings, thus making it a useful opener. The second aim introduces the method applied to the ceramics found at the site. The third aim looks at the results of the introduced method and the fourth aim compares those results with the results of another method. With the structure of the thesis set the first aim will now be presented.

2. The geographic Surroundings of El Pilar

2.1. Introduction

The first step for the treatment of any subject matter is to set the stage. In case of El Pilar this means an introduction to the geography of the Central Maya Lowlands. The El Pilar site is located in the transitional area where the Petén basin meets the Belize River Area. Both regions represent two important spheres of the Mayan culture and civilization. As a result both regions are important concerning El Pilar as well. This chapter will provide first, an overview and introduction of both the Petén basin as well as the Belize River Area will be given and second, a detailed presentation of the El Pilar site.

2.2. The Petén Basin

The Petén basis covers essentially the same geograohic area as today's department of El Petén in Guatemala and is home to some of the most magnificent Mayan cities known. Among these are the famous Tikal and well-known sites of Uaxactun and Naranjo as well as less publicly known sites such as Holmul. Their geographic proximity to El Pilar and their high profile within Maya archaeology make them important for this thesis. Three of the sites mentioned, due to their importance for ceramic studies, will be used in this paper and, therefore, be given a formal introduction. Those sites are Uaxactun, Tikal and Holmul.

2.2.1. Tikal

The site of Tikal is considered to be one of the largest, if not the largest, Maya city in existence. It is located approximately 30 km northeast of Flores in the Lake Petén-Itza region of Guatemala. It is also about 50 km west of El Pilar as the crow flies. The University of Pennsylvania unearthed about 10 square miles of structures there. This includes the central complexes of the city and some outlying areas. The heart of Tikal is the Great Plaza with the famous Temple I and Temple II facing each other across the space. South of the Great Plaza lies the extensive compound of the Central Acropolis. North of the Great Plaza lies the North Acropolis. Southwest of the Central Acropolis another famous complex is located: The Plaza of the Seven Temples and the adjunct Plaza of the Lost World, also known in Spanish as Mundo Perdito. Directly south of the Central Acropolis Temple V can be found. Following the Tozzer Causeway east From the Great Plaza, one arrives at Temple IV, the most conspicuous structure of Tikal since it is perched on a steep rock outcropping and therefore is the most visible temple above the jungle canopy. Other noteworthy structures at Tikal are the Temple of the Inscriptions, Group F and complexes O, R and Q (http://www.tikalpark.com/map_pensilvanya.htm). Due to its dominant status both in size and importance, much archaeological work has been done there. This also includes as well extensive ceramic studies. This work and its results and, therefore, Tikal are vital for this thesis.

2.2.2. Uaxactun

Situated approximately 40 km north of Tikal, Uaxactun was one of the first sites to be excavated by modern Maya archaeologists. According to Renaldo Acevero, Uaxactun is comprised out of four major groups named Group A, B, D and E and three minor groups named C, F and G. Additionally Acevero identified about 131 house mounds in the area surrounding the site core (Acevero 2000:279). Most notable of the structures are the one in Group A called Structure A-V and those in Group E. Group E at Uaxactun was long considered to be an astronomically-oriented complex with which measurements for the Mayan calendar could be conducted. Since it was the first building of this kind, the term "Group E structure" became synonymous for similar complexes found at other sites. In recent years the functionality and thus the purpose of Group E buildings have been subject to debate. For this thesis Group E is important because important ceramic material was excavated there in the 1920's. For the same reason Structure A-V is vital.

2.2.3 Holmul

The site of Holmul lies east of Uaxactun, north-east of Tikal and north-west of El Pilar. Excavated between 1910 and 1920, it was the first site to apply the concepts of modern archaeology. Holmul is a rather small site with only two Groups of structures and some adjacent buildings (Merwin/Vaillant 1932). Despite its small size, it is very important to ceramic studies. The Holmul ceramic collection is very distinctive and with it, researchers were able to determine a first dating of Mayan ceramics, both absolute as well as relative, in the1930.

2.3. The Belize River Area.

The Belize River Area is a fertile region in Central Western Belize comprised of valleys and uplands surrounding the Mopan and the Macal rivers which merge to form the Belize River. This region was a focus of occupation during the time of the ancient Maya. As remnants of this settlement, one finds many archaeological sites distributed over the agricultural landscape today. El Pilar is just one of them, located at the western edge of the Belize River Area. Other sites include but are not limited to Cahal Pech, Xunantunich, Barton Ramie and Baking Pot. Some of those sites lie directly in the Belize River Valley such as Cahal Pech, others lie more in the uplands in the north and south of the Valley, such as Caracol, Xunantunich and El Pilar. The fertile soil of the uplands provided the matrix for the Mayas to plant their crops. Larger centers naturally evolved where both food and water was plentiful, hence in those uplands rather than in the often swamped and flooded Belize River Valley. A comparable predictive model was presented for the Rio Bravo Conservation Area (Ford 1988) and more recently for the Belize River Area itself (Ford 2003).

While the ceramic research at el Pilar is central to this paper, the site of Barton Ramie is also very important because it was there that James C. Gifford developed a new version of the type-variety method, tailored towards Maya ceramic. The Barton Ramie site is located approximately 4 km south of the Belize town of Spanish Lookout (based on Google Earth). Survey work was commenced in 1953, followed by extensive excavations by Gordon R. Willey from 1954 to 1956 (Willey et al. 1965). Of the 262 house mounds initially mapped, 65 of them were subject to excavations. 60 test pits were dug of which 5 were thoroughly or completely excavated (Gifford 1976: 22).

Gifford places the amount of sherds collected in the order of magnitude of 250,000 sherds with 254 restorable vessels. Further, he states that 194,836 of the sherds were sorted and catalogued. These cataloged sherds were the basis of Gifford's type-variety method.

2.4. The Site of El Pilar

The archaeological site of El Pilar straddles the border of Belize and Guatemala. Physically it is located on a ridge over the northern rim, 10 km from the Belize River. The exact coordinates are 17°15′24″N, 89°09′19″W. The closest modern settlement is Bullet Tree Falls from which a 7 mile gravel road leads to the site itself. The site was reported to the Belize Department of Archaeology in the 1970s, but the size and extent of the site were still unknown at that point. In 1983-84 Prof. Dr. Anabel Ford created a preliminary map of the area during the Belize River and Settlement Survey (BRASS) project she was conducting in the area at this time. Archaeological work on the site itself was not started prior to 1993, at which point the project was renamed into the BRASS/El Pilar Project (Ford 1993).

The name El Pilar is attributed to the numerous presence of numerous watering basins or pilas, which would be pluralized in Spanish as "pilar" (see El Pilar Website www.marc.ucsb.edu/elpilar/). The roughly 25ha initially mapped in 1984 were expanded to over 42ha in the surveys done after 1993. Given its size, El Pilar ranks equal or greater to other centers within the region. The El Pilar core features in its current known extension 70 major structures clustered around 25 major plazas (Ford 1993), including the monuments of the core. In the following, a detailed review of the complete site will be provided below. I will first consider the major components of the monumental core of El Pilar, indicating each time where excavations have been undertaken. I will then consider the residential areas and quarries surrounding the core.. This will provide a basis for understanding the archaeological collections that are the focus of my analysis.

2.4.1. The El Pilar Monumental Core

The core can be divided into two major sections, connected with a 500m east – west causeway (see trail guide on the El Pilar website). The western section, called El Pilar Poniente ("where the sun sets" or just "the west" in Spanish), lies in present day country of Guatemala. It consists of one major plaza, several large pyramids and a ball court (Ford 1993). The eastern section, sometimes referred to as El Pilar Saliente, lies in the present day country of Belize. is by far the larger section of El Pilar. El Pilar Saliente has received the majority of archaeological attention. This unique setting has resulted in a 20 km² archaeological park and it is governed by parallel management plans in both countries.

El Pilar Saliente can be subdivided into to two further sections, referred to as *Nohol Pilar* and *Xaman Pilar*. *Nohol Pilar*, the south part, is very open with huge plazas, while *Xaman Pilar*, the north part, is very restricted. *Xaman Pilar*. The well investigated El Pilar Saliente is made up of major plazas laid out in a linear north - south pattern framed by pyramids 17 to 21m high as well as lower platforms and buildings. This part of the site also features large-range structures and a ball court, and most notably a large acropolis/palace compound in the north called *H'mena* (Ford 1993).

The south part of El Pilar Saliente is the oldest section and construction there was well under way already in the Middle Preclassic (Ford 1995). At the other end of the timeline construction at El Pilar was still ongoing in the period of Terminal Classic at a time when Tikal already had collapsed (Ford 1993).

In order to give a better picture of the site itself, I will review the major components of El Pilar Saliente by plaza, starting in the south with Nohol Pilar and Plaza *Axcanan* ending with *Xaman Pilar* and Plaza *Lec* in the north. For each plaza an overview of the buildings and other notable structures present will be given. In addition, I will mention the focus of excavations that will be tied into the discussion of the El Pilar Ceramics in Chapter 5. The accompanying map is available in Appendix II Figure 4, as are the El Pilar master plaza list in Appendix III Table 1 and the El Pilar master structure list in Appendix III Table 2.

2.4.1.1. *Nohol Pilar*

Nohol Pilar embraces the major public plazas of El Pilar. Three large plazas, Plaza *Copal*, Plaza *Duende*, and Plaza *Faisan* define the major spaces. Additional plazas are adjoined to the principal ones and form the large footprint of approximately 25 ha in size. Even with the smaller and sometimes restricted areas such as Plaza *Axcanan*, the impression of this sector of the site is of space, assembly, and integration.

Plaza A, labeled *Axcanan,* is the southernmost plaza of the monumental core. Measuring 35x20m in the interior, it is a restricted plaza. Plaza *Axcanan* communicates via a passage on its north side to Plaza *Copal* (Ford 1995). Surrounding Plaza *Axcanan* are two pyramid temples, EP 1 and 2 on the south and east, and EP3, 4, and 30, which are range buildings (Wernecke1994:34). Excavations were done in structures 1, 3, 4, 5 and the plaza area itself Plaza *Axcanan* has 2 terraces on either side of the southern temple structure EP1.These terraces are called the morning and evening terraces that today provide comfortable views of the rising (SE) and setting (SW) sun..

Plaza B, the Ball Court, lies northeast of Plaza *Axcanan* and southeast of Plaza Copal, almost directly south of the major winged temple of EP7 in Plaza Copal. It is one of two ball courts at El Pilar and measures 23x40m. The north – south oriented EP 5 and EP 6 flank Plaza B on the east and west, respectively, defining the ball court space. The northwest section provides the access point to the south end of Plaza *Copal*. The Ball Court appears to have been subject to excavations, however, the records do not indicate if either the court space itself or the structures flanking it were investigated.

Plaza C, *Copal*, lies directly north of Plaza *Axcanan*, and, with an inside plaza dimension of 55x150m it is the largest plaza recorded at El Pilar. Plaza *Copal* is very open with major expansive access points from Plaza *Duende* and features the 30 meter wide causeway in the northwest that connects El Pilar Saliente to El Pilar Poniente. Plaza *Copal* features some of the largest structures on the site, EP 7 and EP 10. Both are pyramidal styles and face each other, located on the long east-west sides of the plaza. Although they flank the plaza and are set opposite each other they are not twin structures, thus evoking a complex symmetry. The eastern structure, EP 7, in its final construction form presents a winged structure with a central pyramid rising 17m from the plaza floor flanked by 7m high platforms on the north and south. On the west is the massive five-terrace pyramid structure, EP 10, on top of which sits a long range structure. The smaller structures of Plaza *Copal* are the pyramids EP 8 and EP 9 which are located on the northeast and northwest corner of the plaza respectively. The south side of Plaza *Copal* is dominated by structure EP3 with doorways facing both to plaza *Copal* and *Axcanan* forming the restricted entrance to Plaza *Axcanan*. Next to EP 3, the back of EP 5 of the Ball Court bounds the southeast corner of Plaza *Copal*. One of the two El Pilar aguadas, the *Nohol Aguada*, is located to the east of EP 7.. The location of the *Nohol Aguada* suggests it was the water storage for *Nohol Pilar* (Wernecke 1994:35-37). Plaza *Copal* has been extensively excavated. All structures affiliated with the plaza, and the plaza floor itself, have been thoroughly investigated and the excavation of EP7 was the most extensive of El Pilar and had the largest yield of ceramics.

Pilar Poniente, situated more than 500 meters west of *Nohol Pilar* in Guatemalan territory is connected from the west side of Plaza *Copal* in *Nohol Pilar* in Belize by a broad 30m wide causeway. This causeway, today known as the Brian-Murphy Causeway, is still visible in the forest. Initial survey and test excavations have been done along the causeway. Mapping at Pilar Poniente indicates a single major plaza supporting several structures. Included among the structures is a ball court, the second at El Pilar. This ball court is larger and presents a sunken alley in the shape of an “I”. No excavations have been conducted and collections at the complex are restricted to looters’s trench exposures and surface materials. The complexities of the cross border situation and the lack of continually maintained caretakers has made research at the Pilar Poniente complex minimal.

Plaza D, *Duende*, lies north of Plaza *Copal* and serves as an entry for Plaza *Copal* via wide ramp-landings, thus forming a grand entrance for the large Plaza *Copal*. Plaza *Duende* measures 50x70m. Together Plaza *Copal* and Plaza *Duende* form the main public areas of El Pilar. There is one pyramid at Plaza *Duende*, EP 11. This structure is the northernmost building in *Nohol Pilar*, the south section of the monumental core. The plaza floor as well as EP 11 have been investigated and ceramics have been recovered. Furthermore, the ramp-landings between Plaza *Copal* and Plaza *Duende* were excavated in 1995 and 1996 (Ford 1995 and 1996)

Plaza E, called *Escoba*, is located east of Plaza *Duende*. Between Plaza *Duende* and Plaza *Escoba* there is a noticeable drop in elevation of between 5 – 10m. Plaza *Duende* and the rest of *Nohol Pilar* are situated higher advantaged by local topographic relief and subsequent fill, undoubtedly based originally on a small hill. Plaza *Escoba* was partly destroyed when bulldozers built the El Pilar Road in the 1960s. The plaza is a square approximately 40x75m in size and EP 44, a square pyramid, is located on the east side of the plaza. A platform and ranged structure, EP 47, forms the southern boundary, which was breached and mostly destroyed when the road built (Wernecke 1994:39). There is also a stairway leading up to Plaza *Duende*, establishing the connection between them. The north side of Plaza *Escoba* leads to a connecting plaza, Plaza Tsin. Due to the overall destroyed state of Plaza *Escoba* and its structures no excavations have been conducted there.

Plaza T, or *Tsin*, is a plaza established based on the present day need to define the space that is presently occupied by the modern road between Plaza *Faisan* and Plaza *Rosa*. Originally considered an extension of Plaza *Escoba*, this would make Plaza *Escoba* an oddly shaped complex of two rectangular spaces joined together by a narrow area, the shape of a twisted hourglass. The modern road distorts the ancient spaces and Plaza *Tsin* appears as a plaza in its own right. Plaza *Tsin* measurements are approximately 33x55m. Due to the El Pilar road that runs basically right through it, it is in the same condition as Plaza *Escoba* and has suffered a high amount of damage. Its purpose was most likely to function as a hub between Plaza *Escoba*, Plaza *Faisan* and Plaza *Rosa*. Thus Plaza *Escoba* and Plaza *Tzin* function as transfer ways from *Nohol Pilar* to *Xaman Pilar*. This is supported in an ironic way by the El Pilar road, since it pretty precisely follows the course of the plazas, making use of the line of commute the ancient Maya had already built there hundreds of years earlier.

Plaza R, or *Rosa*, is the easternmost plaza of El Pilar and measures 50x75m. It is located north of Plaza *Escoba* and east of Plaza *Tzin* and is the only plaza east of the modern El Pilar road contained in the monumental core. Two structures are present, EP 45 and EP 46. Both are on the west side of the plaza next to the road, the road actually curving around them. EP 46 lies north of structure EP 47 of Plaza *Escoba*. No significant excavations seem to have been conducted on either the plaza space or the structures.

2.4.1.2. *Xaman Pilar*

Xaman Pilar marks the shift from the public to the private sector of the site of El Pilar. The sector is accessed from Plaza *Faisan*, the last open and public plaza of the eastern portion of El Pilar. The rest of the plazas represent challenges to access either by virtue of restricted and narrow entrances or by complex obstacles to movement. The dominant feature of the area is the acropolis compound that is called the *H'mena*, Maya for "place of priests".

Plaza F, *Faisan* measures 70x57m and marks the southern and main entrance to the very restricted *Xaman Pilar*. Plaza *Faisan's* two main entrance points are from the south and the east (Plaza *Tsin*). There is access to the restricted part of *Xaman Pilar* through a sentinel breezeway on the north side of the plaza linking Plaza *Faisan* to Plaza *Gumbo Limbo*. Flanked by platforms EP 32, EP 33 and EP 51, EP 12 is a pyramid located on the south side of the plaza and this cordon marks the southern limit of *Xaman Pilar*. EP 13, a platform connected to a range building, and EP 14 mark the west side of the plaza. EP 17 is considered a platform and is located at the northeast corner (Wernecke 1994:39) and the pyramidal structure EP 49 with its flanking platform EP 18 marks the east side. Behind EP 13 and EP 14 is El Pilar's second aguada, the *Xaman Aguada*. Its proximity to *Xaman Pilar* suggests that it was the water storage for the northern part of the monumental core. It appears that only EP 12 and EP 32 were excavated to some degree.

Plaza G, or *Gumbo Limbo*, is located directly north of Plaza F. It measures 30x15m. Plaza *Gumbo Limbo* and Plaza *Imix* (directly to the north of Plaza *Gumbo Limbo*) can be considered entrance plazas to *H'mena*, the El Pilar acropolis. The main access points to Plaza *Gumbo Limbo* are located centrally on the south side, where it is connected to Plaza *Faisan*, and in the north, where it connects to Plaza *Imix*. When entering from the large open public plazas of the south, Plaza *Gumbo Limbo* is the first of the restricted Xaman plazas and it is completely surrounded by structures. The platform pyramids EP 15 and EP 16 form the western an eastern sides of the plaza respectively. On the south side, two range buildings, EP 27 and EP 28, separate Plaza *Gumbo Limbo* from Plaza *Faisan* (Wernecke 1994:41). They meet in the middle of the south side, providing passage between Plaza *Faisan* and *Gumbo Limbo*. Standing on Plaza *Faisan* these appear as symmetrical structures likely providing the first gateway to the acropolis complex. This construction may have been the Maya equivalent to palace walls. A staired platform with a range structure labeled EP26 guards the north side of the plaza, separating *Gumbo Limbo* from the Plaza *Imix*. The records tell that structures EP 15 and EP 27 have been excavated. Records indicate that excavation has been focused on the western part of the plaza, EP 15 and EP 27.

Plaza I, or *Imix*, is the next plaza that leads up to the *H'mena*. Like Plaza *Gumbo Limbo*, Plaza *Imix* is completely surrounded by major architecture. The large pyramid, EP19, occupies the eastern side of the plaza. The western side of Plaza I is occupied by a single story range structure, called EP 29. On the north, the plaza is enclosed by the complex of the *H'mena* acropolis and dominated by structure EP 21, dividing it from the acropolis area (Wernecke 1994:42). According to Wernecke (1994:42), the north side features a large multi-stage stairway leading up into *H'mena* itself. All structures surrounding the plaza have been thoroughly excavated making it another focal point of investigations due to its proximity to *H'mena*.

The *H'mena* is a complex comprised of four small plazas and is composed of a complex set of ranged buildings creating the most restricted zone of El Pilar. It is also the most thoroughly investigated part of *Xaman Pilar*. All plazas and virtually all structures considered to be part of this acropolis structure have been investigated and excavated. From this area the bulk of *Xaman Pilar* ceramics stems.

Plaza *Subin*, forms the eastern edge of the *H'mena* complex, forms the east of the boundaries of the *H'mena*. It measures 17x40m and is flanked on the west by a range building with doorways opening to the east. This building likely forms the foundation for buildings that are on Plaza *Kibix* above. The eastern side may have been bounded in the past, but now presents a precipitous drop of more than 15 meters. The notable room area, called *Zotz Na*, the "bat house," is located on the north side of Plaza *Subin*. Based on the excavations, *Zotz Na* appears to have begun as an open corridor likely connecting Plaza *Imix* with Plaza *Subin*. In a later construction phase it was vaulted as a hallway with a long corbel arch, but still open at both ends allowing communication between *Imix* and *Subin*. In its final transformation, the *Zotz Na* was sealed on the *Imix* side when the temple EP 19 was enlarged and expanded to the west, transforming the corridor into a long room open only towards Plaza *Subin*, becoming a dead-end tunnel. Its name stems from the fact that bats lived in this enclosed space before excavation at which time a door was installed for visitor access. The *Zotz Na* was cleaned out during the excavation with little material collection except at the opening entrance, as if in dedication. The material found in the *Zotz Na* is grouped with the findings from the EP 19 temple above it.

Plaza J, *Jobo*, is the southwest plaza of the *H'mena*, measuring 30x18m. This small plaza is completely surrounded by ranges of roomed structures that face into the open area. On the south, EP 21 divides Plaza *Jobo* from Plaza *Imix*. On the east side there is another range building, EP 22, marking the division between Plaza *Jobo* and Plaza *Kibix*. While the north side of Plaza *Jobo*, another range building, EP 23, divides *Jobo* from Plaza *Manax*. The west side of Plaza *Jobo* is dominated by the pyramid EP 20. It is 19m high and its top platform marks the highest spot on the El Pilar site. Plaza *Jobo* and all of its surrounding structures were yet another focal point of excavation activity and yielded the largest amount of ceramics recovered in *Xaman Pilar*.

Plaza K, *Kibix*, is the southeast plaza of the *H'mena* and measures 4x24m. Like Plaza *Jobo*, this plaza is also completely surrounded by structures. The range building EP22 on the west side of the plaza and a similar range building EP24 on the east side define the interior space of the plaza. These two long ranged buildings with doors and rooms give the impression of a broad corridor more than a real plaza. This is emphasized by its notable two access points located to the north and south. EP 22 was thoroughly excavated as part of the *Jobo* investigations. EP24 received some attention as well but not as much as its twin structure on the west side.

Plaza M, *Manax*, forms the northern edge of *H'mena* at the end of the concentrated string of south-north plazas commencing with Plaza *Faisan*. *Plaza Manax* is surrounded by structures on three sides. The fourth side, the north side, is open, granting a view over the northernmost parts of *Xaman Pilar*, including Plaza *Lec*, and the jungle beyond. The only structure found on this site is EP 48, a balustrade, securing anyone on the plaza against falling down over the edge. EP 34, an undefined structure, is on the east side of *Manax*. To the south EP 23 closes the plaza from Plaza *Jobo*. On the west side is imposing pyramid EP20, which I first noted in the description of Plaza *Jobo*. It appears there is no connection between Plaza *Jobo* and Plaza *Manax* existed during the time of the Maya, so whoever wanted to enter Plaza *Manax* from Plaza *Jobo* had to go through Plaza *Kibix*. The access point to the platform of the EP20 pyramid remains a mystery. There are definitely structures recorded on the platform but excavations could not yet confirm any stairs leading up to them, neither from Plaza *Jobo* nor from Plaza *Manax*. Just like the other *H'mena* plazas, all structures of Plaza *Manax* have also been investigated.

Plaza L, called *Lec*, located to the north and of and stratigraphically below *H'mena*, is the northernmost plaza of *Xaman Pilar* and thus the whole site. Its level is well below of that of *H'mena*. Furthermore, there is no direct connection between Plaza *Lec* and the acropolis. Rather it seems it can be accessed from the west via the Tri-Plaza-area, located west of the acropolis. There is only one structure present, EP 25, a pyramid on the eastern extreme of the plaza, which was the subject of excavations. The other north, west and south sides have no structures. The north side (and the northern limit of the El Pilar site) was delineated by a sheer wall and a deep drop into the depths below in ancient times. There are no signs that El Pilar had a northern entrance of any sort.

The western section of *Xaman Pilar* is called the Tri-Plaza area and is comprised of the interconnected plazas of Plaza Naba-cuc, Plaza Ok-pich and Plaza Pom which all form a triangle. This area is the least explored and investigated area of *Xaman Pilar*. Only minimal excavations have been conducted in the plazas and the structures associated with them. The purpose of the whole Tri Plaza area has not yet been fully established.

Plaza N, or *Naba-cuc*, forms the southeast corner of the Tri-Plaza area and measures 35x15m. On the east side of Plaza *Naba-cuc* is a ranged structure, EP 37. On the west side is EP 40.

Plaza O, called *Ok-pich*, forms the southwest corner of the Tri-Plaza area, making it the westernmost plaza of El Pilar Saliente. It measures 22x22m. The east, north, and west sides are occupied by three range buildings EP 39, EP 42 and EP 41, respectively.

Plaza P, *Pom*, is the northern tip of the triangle. Covering 25x35m, it is the largest plaza of the Tri-Plaza area. There is only one structure recorded, EP 38 on the east side of the plaza.

Plaza Q, *Quelite*, is located to the east of the Tri-Plaza area and to the west of and, directly at the base of H'mena. It measures 50x13m., making it a very long, north – south stretched space. To the north, Plaza *Quelite* communicates with Plaza *Lec*. There is no clear connection known between Plaza *Quelite* and the *H'mena* complex.

Plaza *Hatz* forms a continuation of Plaza *Quelite* leading south towards *Faisan* and sloping into the northern *Xaman Aguada*. This plaza is defined on the west side by the continuation of a structure from Plaza *Quelite* linking these 2 plazas structurally. The east is delineated by the bases of structures related to Plaza *Gumbo Limbo* and *Imix*. This space is accessible only form Plaza *Faisan* and could be the only entrance to the northernmost areas of El Pilar including Plaza *Lec*. .

2.4.2. Surroundings of the Monumental Core - Residential Units and Workshops

El Pilar was a vital city in the Preclassic and Classic periods. Surrounding the imposing monumental core were the residential units and activity areas of the populace that supported the working of the city. Among the residential units were two that received the focus of excavation. One was a representative of an elite compound and the other a common residence.

2.4.2.1 Tzunu'un - The elite residential Area

East of *Nohol Pilar* is a residetial compound consisting of five structures surrounding a small central plaza, often referred to as a plazuela. This compound has been named Tzunu'un and is considered to have been an elite residential area occupied by members from the higher strata of El Pilar society. The size of the compound is approximately 30 meters square and housed diverse residential activities. All structures in the compound have been completely excavated, two excavation trenches have been laid across the central plaza and the outskirts also have been investigated. This extensive work resulted in a massive amount of ceramics from this unit.

The 5 structures of Tzunu'un are situated around a quadrangle. Structure 1 is the largest structure and is located on the south side of the plazuela. It features a series of three room blocks that were once covered with three corbelled arches. Within the roofed area, 5 rooms been identified in the first 2 blocks that are accessible through the entrance on the north side. The rear block, which is connected to the middle section, had completely collapsed in antiquity and was disassembled while the front rooms were occupied. It is considered to have been a reception building, where the occupant of the compound formally received guests and visitors (Ford 1998:6).

On the east side, Structure 2 is the residential temple of the compound. This type of architecture follows a common pattern in large residential units and is considered to be the eastern shrine, a pattern first identified at Tikal (Becker 1999). This structure is pyramidal with at least two tiers supporting a small stone walled building with interior benches and a perishable roof. Two caches, secondary burials, and a crypt with two individuals, support the view that is was a temple or shrine (Ford 1998:7).

The remaining three structures, Structures 3, 4 and 5, have foundation platforms to sustain perishable pole and thatch buildings. Each one is constructed in a different manner but all have openings into the plaza. Structure 3 is a large building space that could have served as a dormitory for the family with a nicely plastered floor and neatly cut foundation braces. Structure 4 is less formal with a cobble floor and is considered to have been a utility building preserving both storage and kitchen purposes. Both Structures 3 and 4 are positioned in the north. Structure 5 flanks the west and, while small, has formal features: several courses of stone foundation and wall, a back bench with an interment, and a cut stone entrance way. This could have been a personal space for the head of household separate from the larger dormitory represented by Structure 3 (Prof. Dr. Anabel Ford, personal communication 2003).

2.4.2.2. Chiik Nah – The common residential Area

Another domestic platform called Chiik Nah is representative of the more common residential unit. Covering a small number of square meters, this plaza includes the foundations of two platforms that supported small structures. Excavations have been conducted there in collaboration with Grinnell College under the sub-direction of John Whitacre and Kathy Kamp. The excavations have indicated a sequence of constructions that bear the hallmarks of domestic architecture with utilitarian ceramics and lithics (Ford 2002).

2.4.3. El Pilar satellite Activities

Apart from the monumental core and the elite residential unit of Tzunu'un and Chiik Na, there are several other locations of construction and activity that have been found in the course of the mapping. Some have been investigated others still await investigation. Principal among these activity areas are those of quarrying and manufacture. Stone tools and limestone quarries are both evident , many quarries being found on the steep hills of El Pilar. Available at almost any location, these quarries served the needs of the populace in the personal and public building projects. An El Pilar limestone quarry near Tzunu'un was reactivated for the purposes of the consolidation at the Tzunu'un. Rehabilitating the quarry necessitated excavations to mitigate damages and those excavations indicated that it was used frequently as limestone quarry for El Pilar.

An important discovery at El Pilar is the Larry DeForest Chert Side or LDF located directly west of the *Xaman Aguada*. It was a chert production site with a chert flake disposal area and an adjacent working platform. Probes of that chert debitage deposit showed a density of about a million chert flakes per cubic meter.

2.5. Summary

This chapter provided an introduction to the topic of the thesis by presenting the geographical surroundings of the El Pilar site. All regions to which the El Pilar site has ties to have been described, creating a good backdrop for the upcoming presentations. Furthermore, vital sites have been identified and their relationships to the thesis stated so they be easily referred to when needed.

Finally, the introduction of the site itself and the presentation of its characteristics will help to understand the process of the development of the El Pilar method better. The development of any method is always based to an important degree on the characteristics of the site itself. Therefore it was important to thoroughly introduce and present the El Pilar site.

3. Scientific Influences on the El Pilar Project.

3.1. Introduction

Nothing in this world just comes into existence out of nothing. Everything that is created is based on and influenced by things that came prior, just as children are descendant from their parents and influenced by them. The same applies to other creations such as novels, paintings, musical scores, and movies. The artists who create those pieces of art are always influenced to various degrees by other previously existing creations. The artist knows and draws, consciously or unconsciously, upon such creations. As E.B. White explained for the case of the writer: “The infant imitates the sounds made by its parents; the child imitates first the spoken language then the stuff of books. The imitative life continues long after the writer is secure in the language, for it is almost impossible to avoid imitating what one admires” (Strunk 2000:70).

This behavior does not apply only to works of art, but also to the realm of science. Every scientist while learning the ropes of his or her field will naturally come across earlier scientific works and research done in this field. While reading those materials, one will decide whether to keep or discard the ideas presented in them. Irrelevant of the decision, one will always be influenced one way or another by that material.

The same applies to the El Pilar project and the work done there. As an archaeological research project it is, of course, based on research and work done by others in the same field during the past decades. To present all sources of influence from all aspects of the El Pilar project would go beyond the scope of this investigation. This thesis focuses on the El Pilar ceramics and their characteristics; therefore, it will deal only with the sources of influence for the facet of ceramic recording and analysis within the El Pilar project.

The scientific background of El Pilar is comprised of works and research done in the Maya Lowlands in the past decades of archaeological investigations. This includes but is not limited to how earlier excavations were carried out, how ceramics were recorded and sorted, and how ceramic chronologies were set up. If an archaeologist approves of the way things were handled in a specific excavation, he or she will likely adopt similar strategies, just like E.B. White's writers imitate styles they like.

3.2. Traditional ceramic Classification Systems

One of the first concepts developed by modern archaeology was a means of classifying ceramics to put them in order. Many different classification systems have been created, each tailored to the specific needs of the ceramicists. For this paper, three people who had great influence on Maya ceramic studies have been selected as examples since their works have had a significant influence on the El Pilar method.

3.2.1. Colton and the Type-variety system from the American Southwest

The type-variety system is one of the oldest methods of classifying ceramics in the archaeology of the Americas. According to the sources available, Harold S. Colton was the pioneer of this method and coined the terms and definitions in his work with Lyndon Lane Hargrave titled "Handbook of Northern Arizona Pottery Wares" and published in 1937 (Wheat et al 1958:34).[1]

The type-variety method is a taxonomic classification. A taxonomic classification means ordering the items one is looking at into several levels of importance. Depending on the level of detail such a taxonomy is employing, there can be two, three, four or even more levels of distinction. For example, at the top level there can be the distinction between jars and bowls. Then on the second sub level, on the jar side, a distinction can be made between narrow orifice and wide orifice jars, while on the bowl side, there can be, on the same level, a distinction made between incurving and everted bowls. On the third sub level, there could be a distinction between slipped and unslipped jars and bowls. These levels can go on as far and get as detailed as the creator of a given taxonomy deems it necessary.

The order and level of the different characteristics employed in taxonomy is vital, and changing their place within the structure means changing their meaning and importance. A good example is the biological taxonomy of life. This taxonomy encompasses nine primary levels: Life, Domain, Kingdom, Phylum, Class, Order, Family, Genus and Species. Dogs, for

[1] A copy of this work was unavailable; therefore these claims could not be verified.

example, classify as Chordata in Phylum, as Mammalia in Class and as Carnivora in Order. This sequence must be kept and can not be changed. For example, Class can not be swapped with Order. Neither can distinctions on the same level be switched. On the same level as the class Mammalia (mammals) there are, for example, also the classes of Aves (birds) and of Amphibia (amphibians). On the Order level there are not only Carnivora (meat eater) but also Herbivora (plant eater). Both mammals and birds classes feature meat eaters and plant eaters. But one can not swap a meat eating bird with a meat eating mammal. Otherwise one would turn a bald eagle into a house cat.

The type-variety is in its most basic form a two tiered taxonomy. Tier one has the types listed and tier two contains the varieties attached to the types. More tiers can be added above type such as ware, ceramic sequence and others. Tiers can also be added below the variety. The so-called motes, predefined vessel parts, could be considered a tier below variety. For a detailed look at motes see the description of Gifford’s type-variety for Maya ceramics.

Colton is said to have defined the term “type” in his 1937 work on which the whole type-variety method is build. In his later work *“Potsherds – An Introduction to the Study of Prehistoric Southwestern Ceramics and their Use in Historic Reconstruction”* published in 1953, Colton restates his definition of type. According to him, “a pottery type can be defined as a group of pottery vessels which are alike in every important characteristic except form, for the vessels may have a variety of shapes and still belong to the same type” (Colton 1953:51). The mentioned important characteristics include but are not limited to paste, slip, size, decoration and color. The set of characteristics that forms a certain type depends on the choices of the scientist creating those sets. The exact amount of characteristics needed to form a type is not set out, but given the type descriptions, it can be assumed that there must be at least two, most likely three or more.

The concept of “variety” refers to deviations within established type concepts. This deviation can affect either one or more of the characteristics or attributes that define a type. Furthermore, it can affect only attributes that are vital for the type (Wheat et al 1958:35). To give an example, if a type is defined by a certain kind of paste, red slip and rectangular decoration, a variety is formed if a vessel with the same kind of paste, brown slip and rectangular decoration is identified. But a variety can not be established when two vessels with exactly the same type features are found in different areas, since the area distribution of the vessel is in this case not part of the defining set of attributes for that type. In short the variety is always dependent on the definitions of the type.

Varieties can affect only a certain amount of the attributes that form the type. If the affected attributes become too many or, in the end encompass all attributes of a type, one should consider creating a completely new type instead of calling it a variety of another type. To clarify this, the prior example is reused. Cylindrical form, red slip and rectangular decoration shall be called Type A. Cylindrical form, brown slip and rectangular decoration is a variety of Type A. If there is, however, a vessel that features spherical form, white slip and wavy decoration, this vessel can hardly be called a variety of Type A and better should be called Type B. The threshold as to when a set of attributes still can be considered a variety of a type or a type of its own is not defined and lies within the preference of the researcher who defines the types and varieties for a given ceramic assemblage. Reviewing the article of Wheat et al (1958:34), there appears to be a tendency to create new types instead of creating varieties of existing types. Type-variety varieties do not have to be based solely on stylistic attributes. They also can be based on geographic and temporal attributes (Wheat 1958:35).

Apart from the basic definitions of "type" and "variety," Colton also created and defined several other secondary terms by which in turn the types can be further sorted and grouped. These terms are quoted by Wheat, Gifford and Wasley (1958:34-35) in their article and shall be reiterated here:

Ware: "In scope, the most inclusive of these categories is the ware. A 'ware' is a large grouping of pottery types which has little temporal or spatial implication but consists of stylistically varied types that are similar technologically and in method of manufacture (Wheat 1958:34f.)".

Sequence: "A 'sequence' is more restricted in scope than a ware, and carries a connotation among its constituent types of evolutionary development. A ceramic sequence is composed of pottery types similar to each other in decorative style and other manifestations, which have evolved, one from another, from early to late times" (Wheat 1958:35).

Series: "A 'series' consists of technologically related pottery types which are similar in decorative technique or, in the case of corrugated and plain types, surface manipulation or technique of manufacture alone. It is of importance in distinguishing a series from a sequence that the constituent types of a series occur within a definable geographical unit without exact limitation in time and that these types must be with in a single ware" (Wheat 1958:35).

The type-variety method of identifying, sorting and recording ceramics soon became widely popular and acknowledged. Many archaeologists in America adopted the type-variety method and used its taxonomy to describe their own ceramic collections. Over the years it spread across the borders of U.S.-American archaeology and was employed in other areas of archaeology in the Americas. Especially noteworthy was James C. Gifford, who created and propagated a version of the type variety method, based on the original from the American Southwest, for the Maya ceramics of the Maya Lowlands. Gifford's type-variety version became very important and influential for ceramic research in the Maya area and thus also affected the work at El Pilar.

3.2.1 Methods by Anna O. Shepard

Although the type-variety method created by Colton was a huge success and spread very quickly, there were scientists who were not convinced of the flawlessness of this system. One of those doubters from early on was Anna O. Shepard. In her book *Ceramics for the archaeologist*, which became, over the decades, a classic in archaeological literature, she campaigned for other approaches to ceramic classification and took a critical stance towards the type-variety method.

Unlike many of her contemporary ceramicist colleagues, Shepard did not focus on style and decoration in order to classify ceramics. Rather she approached the whole matter of pottery analysis and investigation from the angle of natural sciences. The techniques she applied made less use of art history and more use of the realms of geology, physics, and chemistry. This was surely a unique approach at that time. But it proved to be groundbreaking work, propagating methods that are completely accepted and applied in present archaeology. This is clearly shown by the circumstance that Shepard's book is still considered a "must read" for every ceramicist today and that a similar book by Prudence Rice *Pottery analysis – A Source Book*, based on the work of Shepard, is in equally high esteem.
"Ceramics for the archaeologist" provides a virtually complete overview of all aspects of ceramics. It starts with the materials for ceramics, moves on to pottery techniques, devotes

special extensive space to ceramic analysis and description, and comes to a close with the interpretation of the gathered data. While all chapters of the book would deserve to be treated in detail, because of the scope of this thesis is about ceramic analysis methods only sections discussing ceramic analysis and description will be further detailed here.

Shepard covers basically every characteristic of a ceramic piece that can be looked at and analyzed. Shepard starts out with the physical properties of pottery, listing color, hardness, texture, luster, porosity, and strength. At the end of that section she presents various methods of the natural sciences on how to measure those properties. Included are spectrographic analysis and x-ray diffraction studies which at that time were probably foreign to most archaeologists but are considered common in archaeology today.

Shepard deals with the identification of ceramic materials like clay, temper, paints and glazes and includes a study of the evidences of pottery making techniques. This study covers how the materials are prepared and surfaces finished. She also considers decorative techniques, firing, vessel shape, and in the end design.

Vessel shape deserves a closer look, because shape also plays an important role in the El Pilar methodology.

Shepard considers references to functionality of a vessel problematic and surface finish analysis irrelevant (Shepard 1956:225). She suggests relying on shape analysis, the strict use of a geometric approach and offers two avenues to achieve this: 1) the analysis of general contour and 2) the comparison of specific shapes with geometric figures.

When viewed from the side, each vessel silhouette forms either a straight line or a curve of some sort. There are different “characteristic points” along this line or curve which give each vessel contour its character. The vessel contour analysis features four different types of such “characteristic points” which define the flow of a vessel form (Shepard 1956:226):

1) Points where the curve or the line of a vessel ends at the base or the lip, the so-called endpoints,
2) Points where the tangent is vertical as, for example, points of maximum diameter on a spheroidal form and of minimum diameter on a hyperbolic form, the so-called vertical points,

3) Points where the curvature changes from concave to convex or vice versa, the so-called inversion points,
4) Points where the direction of the tangent changes abruptly and forms a corner, the so-called corner points.

The presence and frequency of these points determine the dimensions of a vessel and put it in a certain vessel contour type. These contour types are named simple, inflected, composite, and complex. Simple vessels have only end points. Inflected vessels possess, as the name implies, an inflection point. Composite vessels feature one corner point. Complex vessels have the most points. They have at least two corner points or two inflection points or a combination thereof (Rice, 1987:218). End points are not specifically mentioned since all vessels, no matter which kind, have them. Concerning vertical points, there is a discrepancy between Rice and Shepard. Although Rice uses Shepard as source for her elaborations about the vessel contour system, she does not mention vertical points. A reason might be that vertical points do not represent any change in direction like inflection points or sharp turns like corner points. Vertical points can be part of any contour whether they are simple, inflected, composite or complex, but at the same time do not explicitly define any of them.

According to Shepard the geometric approach is simple and convenient (Shepard 1956:233). In her book, Shepard summarizes this system in such a concise manner that it is best to let her speak in her own words:

> "In this system there are three solids – sphere, ellipsoid and ovaloid – and three surfaces (forms with open ends and undefined limits) – cylinder, cone and hyperboloid – that serve for reference. All of these forms are mathematically defined except the ovaloid (egg-shape). The ellipsoid can be used with the long axis horizontal or vertical; the ovaloid, in upright or inverted position. I would emphasize that vessel shapes approximate these forms or are most easily defined by reference to them; the terms do not imply identity" (Shepard 1956:233).

She continues: "Simple shapes with restricted orifices are formed by cutting the solids above their equators; corresponding unrestricted shapes terminate at or below the equators of the solids" (Shepard 1956:233).

The geometrical approach is also useable for composite and complex vessels, not only simple ones. As opposed to simple ones, complex and composite vessels do not fit into one geometric form. They need to be viewed as composed from more than one geometric form. One has to break down the forms of complex and composite vessels into the basic geometric forms and identify those. For example, a jar can be defined as a vessel with a spherical body and a frustum for a neck. Depending on the jar form the body can also be called ovaloid instead of spherical and the neck hyperboloid instead of a frustum. Samples from the same kind of vessel can have quite different descriptions in the geometric approach, because this approach looks at different sections of vessel form not only the overall form.

From the descriptions in *Ceramics for an Archaeologist*, it can clearly be seen that Shepard deemed shape analysis important and most useful for ceramic classification. This becomes very obvious when looking at Volume II of Smith's Uaxactun report (Smith 1955b) for which Anna O. Shepard did the ceramics and drawings thereof. The figures showing the ceramic sherds are arranged first by time period and then by vessel shape so that all similar looking vessel sherds are grouped together. By doing so, she followed a different path than Colton, who focused more on color and decoration with his type-variety method. This difference will later become even greater. While Colton still deemed shape and form important enough to exclude it from the type definitions, his successors, who picked up type-variety and reused it for the Maya area, eliminated shape and form and solely used color and decoration.

3.2.3. Gifford’s Type-variety

Gifford came in contact with the original type-variety method developed by Colton very early in his academic career. From this exposure, Gifford became one of type-variety’s followers, as can be seen from an article by Wheat, Gifford and Wasley in 1958 (Wheat 1958) about the type-variety of the Southwest, where he was listed as one of the authors. Already during his Ph.D. program he thought about ways and means to adapt the Southwest type-variety in order to serve the needs and specialties of Maya ceramics (Gifford 1976: ix).

Gifford had the opportunity to put his ideas into practice with the Barton Ramie collection in his dissertation. His method along with the theories, ideas and proposals he had developed in his research with Barton Ramie were eventually incorporated into the type description volume of the Barton Ramie project, better known as *Prehistoric pottery analysis and the ceramics of*

Barton Ramie in the Belize valley, published posthumously in 1976. His proposed method was, at that time, already published, accepted, and known to the archaeological community, but this volume constitutes the most complete collection of his approach (Gifford 1976: ix).

For Gifford, chronology was the first step in archaeology and thus the most important. According to him ceramics are a very fine tool for dating and chronology since they are most sensitive to changes (Gifford 1976:3). To prove his point, he claims that the characteristics and aesthetics of people are reflected in the pottery they created. He also states that human nature needs social acceptance and that artistic expression in form of ceramics can only happen within this acceptance of a society, not outside it. Arguing on these two premises he claims that the styles of ceramics at a given time always reflect what was accepted by a society at that point. As a last step, he then claims that cultural change is required by human nature. The need for change and the framework of social acceptance together create a slow flow of continual change within ceramics (Gifford 1976:3/4). The idea seems to be that this change can then be picked up by archaeologists and used for chronology. However, it does not account for radical interruptions within the lattice structure of society like war or revolution. But those are, of course, exceptions and should be treated as such.

As a consequence of this "slow flow" model, it seems, although he never openly states so, that Gifford considers the "Local Phase Sequence" framework by Willey and Philips the most rewarding with which to work. But, in my opinion, his usage of this model is already enough covert endorsement by him. According to Gifford, a phase in this sequence has three dimensions. First, there is the cultural dimension, where items share similar features. Second, there is the temporal dimension, where items share a similar point of creation. Third, there is the geographical dimension, where items share the same area. A phase is expressed by a "distinct and definable inventory of specific cultural items linked through common archaeological associations" (Gifford 1976:4). The point where these inventories are most dominant is the high point of a phase. Using the slow flow model, an inventory of one such phase usually slowly transforms into the inventory of the next phase until this new inventory peaks in a high point and the process starts anew. This mechanic is also known as "battleship curve attribute distribution". It can be viewed as a long sinus wave going continuously from a high point to a transition point and back to high point. The transition points are where the majority of prior inventory in an assemblage tilts over to an assemblage with the succeeding inventory as majority. These points, according to Gifford (1976:4-5), should be marked by archaeologists as the end of one phase and the start of the next phase - as closely as possible if the change is so slow that no clear threshold can be determined.

This phase sequence framework seems to be considered by Gifford to be the environment in which his proposed type-variety method thrives best, due to the fluid transitions. And, in a sort of symbiosis, in turn the type-variety augments the framework at the same time with more depth and detail. Again, Gifford never establishes a clear link between his preference of the phase sequence framework and his type-variety method.

To explain his method Gifford states that if an analyst creates by intent theoretical ceramic units and imposes them on the data, these can only by chance fit the ancient cultural system (Gifford 1976:5). If the same person, however, recognizes latent patterns and structures within the ceramics by personally handling them, and divides those hints into basic units, those units stand a chance to actually reflect the ancient cultural system the ceramic hails from. The units Gifford is referring to are type, variety and mode.

Despite the fact that Gifford’s type-variety is based on the original method of Colton and both are considered the same kind of approach, there are fundamental differences between them. Colton considers shape and form an important part of type-variety, whereas Gifford complete disregards this aspect. Furthermore, Gifford adds the level of modes below the level of variety, thus adding a third level. In order to distinguish between the original type-variety of the Southwest and Gifford's version, Gifford's approach will be henceforth in this thesis be called type-variety:mode approach in cases where it is not directly connected to Gifford’s name.

According to Gifford, a type is a ceramic unit that is recognizably distinct as to certain visual or tactile characteristics. A type represents an aggregate of distinct ceramic attributes that is indicative of a particular category of pottery produced during a specific time interval within a specific region (Gifford 1976:9). Attributes that define a type can be of the same range as in the original type-variety: for example, temper, slip, paste, form, size, color or decoration. Gifford, however, did not draw from the full plethora of available attributes but focused particularly on the attributes of color and decoration in order to establish his types.

Varieties for Gifford are the same as in the original type-variety method. Just as in the type-variety from the Southwest, the features of a variety are always depended on the original features of the type it belonged to. Varieties can not stand alone; they are always connected to a certain type. In Gifford's type-variety:mode approach variety also manifests itself in three aspects: 1) the technological and stylistic variation, 2) the variety of spatial distribution and 3) the temporal variety. All of them are to be considered equal in importance. A deviation in one or more attributes from an established type creates a variety (Gifford 1976:10).

The aspect of ceramic “modes” is the new level that Gifford adds to his approach and is what sets his method essentially apart from the original type-variety. Modes come from a completely different school of ceramic analysis. While types and varieties are based on and even require complete or at least mostly reconstructed vessels, the mode approach works also with vessel sherds. By Gifford's definition a mode “...is a selected attribute or cluster of attributes that display significance on its own” (Gifford 1976:11). In other words modes are special segments of pottery vessels. To use an example from Gifford: “A mode is based on a suite of whole segments i.e. a foot mode is ascribed its complete descriptive body from the range encompassed by an entire line up of similar whole feet” (Gifford 1976:8). This means that the mode approach looks at each attribute of a vessel in form of modes on a singular basis, while the type-variety method looks at the combined result of the same attributes.

Gifford writes that successful pottery analysis should always feature a separate mode analysis, which afterwards should be integrated into a type-variety analysis of the same pottery collection (Gifford 1976:11). Gifford claims that he successfully amended the type variety with the mode approach and merged them: therefore he calls his approach the “type-variety:mode” approach (Gifford 1976:8).

While the type-variety:mode approach applies to sherds it is, notable , however, that this new merged method is still essentially based on whole vessels, not single sherds. Gifford justifies this with the intention of producing whole vessels. He claims that reconstruction should always be the primary goals, since only complete vessels or special segments can contain any meaning (Gifford 1976:6).

With complete vessels he first refers to the type-variety part of his method, whereas the special segments are the mode part. He explains their relationship to each other as follows:

“Each type refers to an entire artifact, whereas the modes refer to its parts. One type and a large number of modes can occur in a single artifact” (Gifford 1976:8). He concludes:

> “Together these two facets constitute the cultural whole of pottery typology. They come together on the level of integration in the ceramic complex which is the sum total of modes and varieties (within types) that comprises the full ceramic content of an archaeological phase” (ibid.)

As already hinted in the previous Gifford quotes there is another level to the type-variety: mode approach exceeding the mere description of analytical units. Indeed, as a chart depicting the method shows (Gifford 1976:7), after the initial data level and the following analysis level (which features the type, variety and mode units), a third one follows, named the integration level. On this level, the established modes and types, along with their varieties, are sorted and resorted into different groups. Each group represents a different aspect under which ceramics can be viewed. Together, these groups form a web of correlations from which on the level of synthesis a scientific theory can be extracted.

Gifford defined seven different groups on the integration level. These are as follows:

Design Style: “[...] is the highly specialized study of irreducible motifs, combination of motifs and whole design patters. The concern is with elements (modes) of design as they appear in pottery and a documentation of their intrinsic development and spread or flow through time and space” (Gifford 1976:14).

Pottery Tradition: “[...] is the existence of one special peculiar mode throughout time i.e. the flange and ridge tradition or the monochrome-red tradition” (Gifford 1976:14).

Horizon Style: “[...] is characteristically brief in duration but its elements have spread beyond its source over a wide geographical range” (Gifford 1976:14).

Ceramic Complex: “The sum of total modes and varieties (within types) that comprises the full ceramic content of an archaeological phase.” “All pottery utilized by a culture in a certain area and certain time” (Gifford 1976:11).

Ceramic System: “[...] is best defined as an essentially horizontal or very shallow diagonal arrangement of roughly contemporaneous pottery types that range over a wide area and are related to one another in particular from the stand point of decorative treatment, design style and surface manipulation. [… It is] the geographical projection of a single pottery type” (Gifford 1976:12).

Ceramic Sequence: “[...] is composed of pottery types similar to each other in decorative style or manner of surface treatment which can be shown to have developed one to another early to late times” (Gifford 1976:12).

Ware: “[…] consists of types that are demonstrably similar on technological grounds (with particular reference to paste and surface finish) and as to method of manufacture” (Gifford 1976:14).

As one can see, the predominance for color, decoration and other surface treatments which was already visible within the type establishment continues in the groups on the integrated level. One could say Gifford's type-variety:mode method focuses almost solely on the aspect of how a vessel is painted and decorated and almost not at all on other characteristics a vessel.

3.3. Chronological Standards

Classification itself was one of the first things archaeologists addressed for ceramics, but the chronological frameworks of the ceramics was equally important. The question “what is it?” is always accompanied by “how old is it?” in archaeology.

Building an all-encompassing chronological framework for all Maya ceramics is a task that has gone on for decades and still is evolving at present day. Several sites (Uaxactun, Tikal, Holmul and Barton Ramie) have been central to the construction of the framework as we know it today and archaeologists today still rely on the knowledge of chronology deduced at those sites. These key works also influenced the creation of the El Pilar methodology.

3.3.1. The Preclassic

The excavations at the Maya site of Uaxactun in the Petén region of Guatemala was one of the earliest archaeological projects conducted in the Maya area. It commenced in 1926 (Smith

1955a:2). An extensive ceramic collection was unearthed and cataloged, mostly from the famous Group E and a structure named A-V.

Under an unbroken floor of Group E numerous ceramics were found. Based on the stratigraphy they were deemed to be very early. Stylistic analysis showed that these ceramics possessed the same archaic traits as other ceramics from other very early sites in Mexico and Guatemala. This was taken as proof that the Petén was already settled in Preclassic times and not only in the Classic era. Thus, the ceramics found in Group E became one of the most important collections of Preclassic ceramics of the Maya Lowlands at that time. Eighty years later, they are still highly valued amongst archaeologists today as Preclassic reference material.

The building, called A-V by Smith, was according to him a gigantic structure that virtually existed throughout the whole occupation of Uaxactun. During its long existence it was extended and built over several times. This was very fortunate for the archaeologists at Uaxactun, because it enabled them to establish a very detailed stratigraphy associated with corresponding ceramics. This stratigraphy enabled Smith and others to make strong connections between ceramic and architectural styles. The structure also contained several burials, which could be safely cross-dated.

All these positive circumstances contributed to a very solid initial chronology of the site and, of course, of the ceramics. This chronology has stood the test of time and is today considered one of the (most?) important foundations of Maya chronology.

The ceramics of Uaxactun were initially divided into three sets: Uaxactun I, II and III. Later on Uaxactun I was split up into Uaxactun I-A and I-B. Eventually the Uaxatun chronology was divided into four phases: Uaxactun I-A was associated with Mamom, I-B with Chicanel, II with Tzakol and III with Tepeu. These phases again can be tied to the general Maya periods: Mamom and Chicanel to the Middle and Late Preclassic, Tzakol to the Early Classic and Tepeu to the Late Classic. Tepeu 3 appears to equate to the Terminal Classic, at least visually, in time period charts. Even so, Terminal Classic is at Uaxactun still only a subset of the Tepeu period, which covers the whole Late Classic and is not a separately recognized time period. There are no Postclassic ceramic assemblages known at Uaxactun (Gifford: 1976:46).

According to Smith in his Uaxactun report, the ceramics of each phase and subsequent subphase at Uaxactun possess unique diagnostic features by which they can be recognized (Smith 1955a:21). These features are grouped into ware, form, decorative techniques, and design. The ware category deals with the characteristics of the ceramic body itself, such as paste. The form looks at the form and shape of the ceramic vessels. The category decorative techniques focuses on the methods by which those vessels were decorated, while the design centers on the aspect of what artistic forms were used while decorating.

When looking at ware concerning the early Middle Preclassic Mamom, Smith, with the guidance of Shepard, notes the most important diagnostic feature is the waxy slip most ceramics and the mars orange color some ceramics possess in this period.

For the Late Preclassic Chicanel the rule about waxy slip continues to hold true. The mars orange, however, is a feature found only in Mamom ceramics.

3.3.2. The Early Classic

The ceramic chronology of Uaxactun covers the entire development and flowering of the Classic Maya civilization. During the excavations, Early Classic ceramics were identified and were found in even greater abundance than those of the Preclassic (Smith, 1955a: 20). Therefore, the Uaxactun sequence was able to define fundamental diagnostic characteristics of Preclassic ceramics, as well as Early Classic ceramics.

In the Early Classic Tzakol period, the form holds more diagnostics than the ware. Clear signs of Tzakol ceramics are considered to be, among others, to be the basal flange bowls, small or medium wide mouth jars and rounded Z-angle bowls. A great assortment of such basal flange bowls found at Uaxactun can be found in the second volume of Smith's report (Smith 1955b, Fig 26).

Compared to Uaxactun, research at Tikal is a later project, started in the late 1950s. Due to its size and the extent of the archaeological research, large amounts of ceramics have been recovered and classified. The main sources for information about these ceramics are the Tikal reports. There is one that is especially noteworthy: Tikal report 25A by T. Patrick Culbert called “The ceramics of Tikal: Vessels from the burials, caches and problematical deposits” and dated 1993. This book contains ample drawings and profiles of ceramics found at Tikal. Unfortunately, however, the accompanying book, Tikal report 25B, which is expected to contain the in-depth descriptions and analysis of those ceramics, is as yet unpublished and therefore unavailable. This complicates matters of comparison. While it would be useful to fully present the Tikal collection, this is not possible due to the scarcity of sources. Tikal ceramics will nevertheless be incorporated, although only in an auxiliary manner.

The matching Tikal periods for the Early Classic are Manik and to an extent Cauac and Cimi. The Manik complex is undisputedly Early Classic. Bowls excavated in this complex have the telltale basal flange (Culbert 1993: Fig. 22). Z-angle bowls, another primary diagnostic for Early Classic, are not abundantly present. The bowls shown in Fig. 22 are labeled by type-variety as Dos Arroyos Orange Polychrome. This type is part of the Hermitage ceramic complex which is dated Early Classic. This shows that not only at Uaxactun but also at Tikal basal flange bowls are a diagnostic for Early Classic with reinforcement from type-variety.

Along with the ceramic studies of Uaxactun and Tikal, there is a third site which deserves to be mentioned when discussing Maya ceramic chronology. It is Holmul, also located in the same Petén region of Guatemala.

Investigated decades before Uaxactun, Holmul was the first thorough excavation in the Maya Lowlands that lived up to the standards of a scientific archeology. R. E. Merwin visited Holmul for the first time in 1909. During the following two years he conducted a “careful excavation” of the ruins, as A.M. Tozzer, who accompanied him, noted in the preface of the publication *Ruins of Holmul* (Merwin/Vaillant 1932:V).

There are three great deeds ascribed to Merwin, which he accomplished while doing his research there. First, he is said to have set up the first architectural and ceramics stratigraphy of a Maya site. By doing so he set the foundation for the field archeology in the Petén region. Second, “he showed the necessity for a material culture sequence in the Maya area since no dated monuments survived at Holmul” (Merwin and Vaillant 1932:4). Third, “he collected one of the most historically and artistically significant bodies of material ever found in the Maya area” (ibid.).

Just as a responsible archaeologist should do, Merwin not only collected the significant ceramics at Holmul, but also described them. It was, however, Vaillant who split the Holmul ceramics into five Phases which he named Holmul I – V (Willey/Gifford 1961:152). He described Holmul I – IV as a solid order of ceramic styles. In contrast to this order he placed Holmul V, which to him looked like a break in continuity and a complete new era of ceramic style at Holmul (Merwin/Vaillant 1932:85).

Merwin called some of the vessels presented “basal bevel bowls”. From the detailed descriptions and drawings done of those vessels, those “basal bevels” can easily be identified as the Uaxactun style basal flanges, being the namesakes of the Early Classic basal flange bowls. Merwin considered them as appearing early in the chronology and indeed bevel bowls appear from Holmul I through Holmul IV. Based on the chronology described in the Holmul report, which is based on a stela from Uaxactun, Holmul I was dated approximately A.D. 328. This date is rather near the date of A.D. 278 considered to be the start of Tzakol by Smith. Tzakol is Early Classic and the basal bevel bowls fit nicely into that.

When talking about the Early Classic, there is one special, important topic that needs to be adressed: its beginning. In the general timelines the Early Classic follows the Preclassic with a nice, clean cut, which makes it look like a smooth transition. There are, however, several scholars who believe this transition was not as straight as it looks. They think a transitional period should be recognized, something they generally call the Protoclassic.

One of the first persons who explored with this idea was R.E. Smith at Uaxactun. He recognized several ceramic vessels with unusual characteristics, dated around the verge of the Early Classic. He put all those pieces into an unofficial phase and called it Matzanel. This phase would chronologically fall between Chicanel and Tzakol, but it was never officially put there into the Uaxatun chronology (Gifford 1976:46). It appears Smith was looking for similar ceramics while pondering about this matter. He found them in Holmul. In his report, he notes that ceramics from the Holmul I phase have characteristics similar to the ceramics at Uaxactun found in stratigraphies and assigned to Chicanel and Tzakol periods. This is interesting because Chicanel is Preclassic and Tzakol is Early Classic and they are as such, considered to be two separated periods.

From Holmul itself, Vaillant made a counter inquiry around the same time about ceramics similar to Holmul I outside Holmul. He noted already in his 1932 report that ceramics similar to Holmul I were found in Uaxactun under the subplaza floors at Group E. This is the Preclassic ceramic collection found, dated as Mamon and Chicanel, which contains the ceramics used by Smith for his proposed Matzanel period. Vaillant notes that most similarities are found within Chicanel ceramics (Merwin/Vaillant 1932:62).

In 1961 Willey and Gifford published an article that correlated ceramics found at Barton Ramie, a site in the Belize River Valley, with ceramics of the Holmul I phase. Gifford claimed he had been able to identify an intrusive ceramic strain within the chronology of Barton Ramie. He called this strain Floral Park, which, and identified the many ways it differed from what he called the indigenous ceramics at Barton Ramie or the Mount Hope ceramic complex.. In this article he compared vessels from this Floral Park group, found in certain burials at Barton Ramie, with the vessels from Holmul I and found they match (Willey and Gifford 1961:159 -165). He, therefore, divided the Holmul I phase into Homul I-A and Holmul I-B. He equates Holmul I-A with late Chicanel and his Mount Hope phase (or Late Preclassic) and Holmul I-B with early Tzakol 1 and his Hermitage phase (or Early Classic). Together Holmul I-A and I-B make up the Holmul I phase which equates, according to Gifford, to the Matzanel phase described by Smith, which again makes up the postulated Protoclassic phase. The Floral Park incursion happens through out the whole Protoclassic and continues into the Early Classic, where it is then assimilated over time into the existing indigenous ceramic assemblages. A graphic representation of these ideas can be found in the cited essay (Willey/Gifford 1961:166).

In an article from 1998 by James E. Brady, he and his co writers claim that Protoclassic is neither a seperate time period nor an intrusion. Brady states in his article that modes that were considered key diagnostics for the Protoclassic period, such as mammiform feet, did not suddenly appear overnight but actually evolved in the Preclassic over a long period of time. In his opinion the Protoclassic can only be considered a certain kind of ceramic, not a time period in its own right. At the end of his article, he proposed that the Protoclassic should be eliminated as a transitional period from the Maya timeline (Brady 1998).

The complexity of the Preclassic-Early Classic transition is an important one. Every site investigated in the greater Petén - Belize area has discovered and alluded to a continuum of change at this time. Since the Early Classic is marked by dated monuments, it is likely that the problem of the ceramic chronology reflects the social and political changes that occurring at this time. Uaxactun, Tikal, and Holmul are major centers; Barton Ramie is a minor center and a residential community. The variances might relate to these facts or they might be reflecting something more, as Willey and Gifford (1961) suggest. Examining the case of El Pilar, lying at the transition between the Petén and the Belize River Valley area, will help to illuminate this, since Floral Park ceramics have been identified there as well.

3.3.3. The Late Classic

While the ceramics of Holmul phases I – IV are undoubtedly important for chronology, the centerpiece of the Holmul collection are the Holmul V ceramics from the Late Classic. Not only are they different from the earlier phases but they were also the first ceramics in the Maya Lowlands to be dated. Vaillant recounts the steps of this process in his report and, as a result, he arrives at a date of A.D. 1201, a date which he considers safe to be used and which is already Postclassic concerning Maya chronology (1932:82).

Working with this date of A.D. 1201 as the basis for his dating attempts, Vaillant concludes that the Holmul V style must be earlier than A.D. 1200. He cites a stela with the Maya date 10-3-0-0-0 (A.D. 899) with no correlative evidence. Earlier in the report, he mentions that the dating range for architecture ends at Uaxactun at the same date; however the reader is not informed whether that determination comes from the stela cited above. Valliant then, providing extensive reasoning, associates the Holmul V type with the stela date of A.D. 889, using the Thompson correlation and thus placing it firmly within the Late Classic period (1932:82).

Except for the lack of provided evidence concerning the stela date, one has to concur that his dating work was a significant achievement. He placed Maya ceramics for the first time on a defined spot of the Maya timeline. As a result he dated Holmul I – IV correctly as being earlier, giving a 561 year window, basically setting a very close first estimation about the start of the Early Classic as well by providing the date of A.D. 328. One could claim that thus he laid the first foundation for both relative and absolute dating of Maya ceramics.

Furthermore, one can assume that all other ceramics that could be considered to be contemporaneous with that ubiquitous Holmul V style are also, by association, Late Classic by association. By noting the characteristics of those other ceramics, first diagnostics for Late Classic ceramics might have been established. These initial diagnostics then might have assisted others to identify contemporary but previously unidentified ceramics as Late Classic pieces. One such instance might have been the identification of volcanic ash ceramics as a diagnostic of Late Classic. Anna O. Shepard called this kind of ceramic “vinacious tawny” when she identified it in the Uaxactun collection. Smith illustrates several volcanic ash vessels in his report (Smith 1955b: Fig 37). A confirmation of Tikal ceramics having volcanic ash samples could not have been made. Culbert does not mention the presence of specifically volcanic ash in the descriptions of the ceramics in his report (Culbert 1993). A further comparison between types mentioned in Culbert's report and types from Barton Ramie with known presence of volcanic ash remained inconclusive.

Another diagnostic for the Late Classic is the vase vessel category. The highly decorated, often polychrome drinking vessels, called vases, for the most part only exist in the Late Classic. Although Early Classic vases appear to exist, they are highly restricted there. Only in the Late Classic do they start to become more frequent in ceramic collections. Such vases already have been illustrated in the Holmul collection. They also have been depicted at Uaxactun for the Tepeu 2 period, which is Late Classic (Smith 1955b: Fig. 39) and Culbert’s Tikal report also shows samples of them (Culbert 1993: Fig 85 ff).

Yet another diagnostic for the Late Classic are pods and pod supported vessels such as the tripod plates. They are part of the assemblage of Holmul V ceramics (Merwin/Vaillant 1932: Plate 27). They are also found at Uaxactun in the Tepeu period, which is dated Late Classic, and several of them are illustrated (Smith 1955b: Fig. 55). Such plates are also common in the inventory of the Ik complex at Tikal, which is dated Late Classic (Culbert 1993: Fig. 43).

3.3.4. Terminal and Postclassic.

Not all chronologies list the Terminal Classic as separate time period. I do, since I closely follow the chronology used at El Pilar and researchers there separate the Terminal Classic from the Late Classic. The most significant diagnostic for Terminal Classic is the pie crust rim, so-called that because of the wavy, slightly thickened rim that lips of the jars form in this period, resembling the edges of pies. By whom and when this diagnostic was established could not be determined.

The final period is the Postclassic. This is a very ephemeral time period. Many Maya sites were abandoned during the Terminal Classic. Only some survived and continued to be inhabited and even less survived in a state that allowed significant amounts of ceramics to be produced. That is why only a few sites feature any Postclassic collections at all, resulting in a drastic drop in ceramic frequency for Postclassic compared to Late Classic. Famous sites such as Uaxactun or Holmul, where much of the groundbreaking work in ceramic studies has been conducted, do not have any Postclassic ceramics and therefore information about Postclassic diagnostics can not be obtained from those sites. From the examples given by Gifford in his work with the Barton Ramie ceramics (Gifford 1976), Postclassic ceramic seems to have wide flared, pod supported vessels. But those are found in Late Classic as well, so that this is not an exclusive Postclassic diagnostic. The existence of Postclassic ceramic is known, however, just as the Maya culture is fading into darkness during this period, so is the knowledge about the characteristics and diagnostics of this period.

3.4. Summary

This chapter dealt with the many projects and developments in ceramic studies since the beginning of Maya archaeology. To a degree, all of them played a role when the El Pilar Method was developed.

Comparing the features Shepard lists in her book as possible parts of analysis with the ceramic recording sheets of the El Pilar project, one notices many shared features. Thus, it becomes clear that the ceramics research at El Pilar was influenced by, and probably even intentionally modeled after, ideas proposed by Anna O. Shepard.

Not only those shared features can be recognized in the El Pilar Method. Other key diagnostics developed by other ceramicists discussed earlier in this paper are also incorporated in the El Pilar method.

At Uaxactun the mars-orange color for Middle Preclassic ceramics and the waxy slip for Preclassic ceramics in general have been thoroughly established. The same diagnostics are used at El Pilar and reused as the basic chart for ceramic identification shows (Appendix I, Fig. 3).

This congruence between the Uaxaxtun methodology and the El Pilar methodology underscores the importance of the early Uaxactun research and analysis. Not only has the Uaxactun work stood the test of time as the basis of all subsequent research in the Maya area; it has also been adapted to and used in the El Pilar method.

Both, at Uaxactun and at Holmul, the Early Classic diagnostics of basal flange and Z-angle bowls have been determined. As can be seen in the El Pilar ceramic primer (Appendix I, Fig. 3), it is precisely these basal flanges and Z-angles that are considered prime indicators for Early Classic ceramics at El Pilar, too. Again it can be seen that the forms identified for the Early Classic at Uaxactun have been identified in the El Pilar collection, thus reinforcing my claim that the work at El Pilar was influenced by Uaxactun research.

The same applies to the Late Classic diagnostics, Tripod plates and the volcanic ash have been identified as diagnostic features in Uaxactun and Tikal. The El Pilar method utilizes these diagnostic features as well as can be seen in the ceramic identification chart (Appendix I, Fig. 3). The vase as a Late Classic feature is also recognized at El Pilar, although not depicted in the chart, thus following the footsteps of Uaxactun and Tikal in this case as well.

This chart firmly shows the foundation of the El Pilar method in prior works. With the background of the El Pilar method firmly established, I can now turn to the description of the method itself.

4. El Pilar Ceramics Methodology

4.1 Introduction

The aim of every archaeological ceramicist is to bring meaning to the collection of pottery fragments or the sherds. But meaning can only be inferred if there is sufficient information available. In the case of ceramics, this occurs during the data recording procedure, where the individual characteristics of each sherd are determined and recorded. This procedure has three stages: 1) the starting stage, where the unidentified ceramics lay ready to be examined, 2) the diagnostic recording stage where the ceramic is subjected to the scrutiny of the ceramicist, and 3) the end stage where the ceramic has divulged the inherent information, able to be ascertained by current methods and that information has been recorded.

The distinction between the inherent information and what is actually recorded is an important one. The information provided by the sherds during the recording stage is vast, but the recoded information is not an all-encompassing, unchanging entity, rather it is the varying result of an individual selection process by the ceramicist. From all the possible information that is contained within a pottery fragment or sherd, the information actually recorded is only a fraction of the potential. During the recording stage, the bulk of information passes through a series of filters. Depending on the setting of those filters, certain information is allowed through while other information is discarded. These filters are set by the ceramicist him- or herself. The ceramicist usually makes a conscious decision as to what kind of information is to be considered important to the current project and what is not in order to keep the amount of data at a manageable level. These standards can change; however, the decision itself is always made. Any changing of standards generally occurs only at the beginning of a project, when the researchers involved have not yet determined the optimal setting for their needs. Once a ceramicist has decided on certain filters to provide the desired information, the system is adapted and applied to multiple sets of sherds. Once such a fixed information gathering system is used repeatedly to record sherd collections, this “modus operandi” is called a method.

Each project decides whether it will develop its own method or it will adapt an existing method from another project. One such methods is the type-variety:mode method previously discussed in this paper. It is one of the most adapted ceramics methods in the Maya area.

This chapter intends to introduce and present the El Pilar Ceramics method, which was developed in order to address the special characteristics of the El Pilar ceramics.

Three different matters will be addressed. 1) the description of the method's style and its method of quantification of the attributes selected for analysis will be presented. 2) a description, including different scenarios, of the recording and identification process of a given sherd using the El Pilar Method will be given and. 3) ways of compiling and archiving the data provided by this method will be shown.

4.2. The El Pilar Method – General Characteristics

There are different ways to classify and analyze pottery, and there are studies that classify the various pottery classifications. One of these works to categorize pottery classification systems was executed by Dunnell in 1971, quoted by Prudence Rice in her 1987 book *Pottery Analysis – A sourcebook*.

According to Rice (1987:274-277) in reference to Dunnell, there are different types, or methods, of pottery analysis. These methods are variable, however, the two main methods are "devised classifications" and "folk classifications."

"Devised classifications" are artificial classification systems devised by the analysts working on the pottery sherds. They sort the sherds in question into groups that have high within-group homogeneity but are very dissimilar compared to each other (Rice 1987:274). The analyst uses attributes of the pottery, such as shape and color, The attributes the analyst decides to utilize are detached from the cultural or ideological meaning the ceramics may have had for the people who created and used it.

"Folk classifications", on the other hand, are presented as natural classification systems provided to the analyst by the people who created the pottery. Researchers who wish to establish "folk classifications" of ceramics interview the people who create and use the pottery in question, recording the names and terms of any given vessel, and learning how the vessels are grouped in the minds of their owners and users.

Clearly, the second approach is somewhat problematic when it comes to ceramics from archaeological contexts such as the ancient Maya, since there is no one to.interview. One could argue that there are contemporary Maya who could be asked, however, the distortion throughout time and cultural influences over the past five centuries and more probably have created a divergence between the classification system of ancient Maya and those of contemporary Maya. Although there is the existence of another source for folk classification, the epigraphy, and epigraphers indeed have found mentions of vessel categories in inscriptions on vessels (personal conversation with Prof. Dr. Nikolai Grube 2007), their findings are not complete enough to create fully grown classifications on their own. These factors inhibit the application of “folk classification” systems to a great degree.

Essentially, all classifications dealing with ancient Maya ceramics are by necessity “devised classifications”. The El Pilar method is no exception. Dunnell even goes one step further and states that classification itself is always arbitrary in nature and that there are no “natural” classifications, since this would require a certain predetermined order among things, which Dunnell believes does not exist (Dunnell 1971:60). If there is really a preset order of things in existence, he argues, , then man-made classifications are rendered nil and void and it is a sole act of faith, and not science, to either accept or reject the given, perhaps incomprehensible, classifications. Only if all things are equal without any preset order, can artificial classification be applied and later be evaluated and judged, thus enabling a scientific approach.

In his book about classification systems, Dunnell wrote extensively about the methods by which things can be ordered and how those methods themselves can be ordered He refers to this as “arrangement”. There are three aspects to arrangement: 1)group, 2) classification, and 3) identification.

According to Dunnel, one always arranges things all the time every day. This might be either physically in the real world by rearranging one’s desk or bookshelf or mentally by ordering tasks on mental “to do” lists or filing people one meets into different categories of relationships. This division between the physical world and the mental world is also the fundamental division made by Dunnell regarding arrangement. Arrangements which are applied to physical things he calls “phenomenological”. Arrangements which are applied to more ethereal, mental things he calls “ideational” – pertaining to the realm of ideas He then renames phenomenological arrangements to “grouping” and ideational arrangements to “classification”. Therefore grouping and groups are by his definition always phenomenological and classification and classes always ideational (Dunnell 1971:44).

There has to be however, a connection between groups and classes. Groups without classes are meaningless, while classes without groups are useless (Dunnell 1971:44). For example, it only makes sense to group strawberries, raspberries and cherries together since the class of “fruit” exists. On the other hand, a group containing the objects apple, cat and drill probably does not have any meaning to the reader since for that group no class exists. The same applies to classes. The class “book” is only useful because there are novels, comics, dictionaries and more that all classify as books. On the other hand, if, theoretically, one of the ancient Maya had come up with the class “plane” during the Late Classic, this class would have been totally useless since no objects that would classify as planes existed at that time. The connection between groups and classes are called “identification” by Dunnell. If one sees a group of poodles, shepherds and terriers one identifies them as pertaining to the class dog and vice versa. In daily life the actions of grouping, identification and classification run parallel to each other, thoughts flow constantly between them and there is no need to conscientiously make a separation between them (Dunnell 1971:44).

Of the three aspects of arrangement, I will now discuss classification and its importance to the El Pilar method.

Within the field of classification a multitude of different possible classifications exist, all having a different level of detail. One extreme on that scale is a classification that creates for every existing object a separate unique class. According to Dunnell, however, uniqueness is chaos which is indefinable and thus not classifiable (Dunnell 1971:48). At the other extreme there is a classification that unifies all objects into one single large class. In single unity, there are no differences which could be defined and classified anymore and thus, strictly speaking, it is not classification either. Everything in between those extremes, however, can be considered a viable classification.

The question that now arises is to which one of all the possible classifications the El Pilar methodology belongs to. Dunnell divides classification into two subcategories. One of them is what he calls “paradigmatic” classification. Such a classification treats all the attributes it is using equally. Each kind of used attributes is considered to be a separate dimension. The attributes in each dimension are exclusive and can not have multiple states within the same dimension. For example, in the dimension of color, a vessel that is red can not be green at the same time. A vessel that is now red, however, can be green at another point in time, but then it can only green. The number of dimensions depends on the amount of types of attributes being used. If there are three different kinds of attributes there are three dimensions. A paradigmatic classification forms its classes out of the total permutations of all dimensions. For example, if there are three dimensions with three attribute states in each there are three by three by three or twenty seven possible classes. Each class of those twenty seven is considered peer and equal to the other twenty six. To quote Dunnell, a “Paradigmatic Classification is to be understood as dimensional classification in which the classes are produced by intersection” (Dunnell 1971:73).

In order to create a true paradigmatic classification one needs at least two dimensions with at least two opposing attribute states, which results in four classes. There is however a special kind of paradigmatic classification in existence – the “Index”. An index can be considered a one dimensional paradigmatic classification. Dunnell states that “the necessary and sufficient conditions for membership in such a class will be one in number; the numbers of features in a given definition is a reflection of the number of dimensions used in the classification” (Dunnell 1971:75).

Now, if one compares the El Pilar method to the description of paradigmatic classification, one will find several similarities. As the paradigmatic classification does the El Pilar method uses several dimensions of attributes (for example, shape and rim diameter). Since these attributes are recorded alphanumerically, it can be argued that the requirement of exclusive states of those attributes within the dimension is met. Therefore, the El Pilar method can be considered a paradigmatic classification. Furthermore, due to the special focus on the vessel category list, which will be treated in detail later in this chapter, the El Pilar method could even be considered to be the index variant of the paradigmatic classification.

4.3. The El Pilar Method – Style and Quantification

The El Pilar method employs basic stylistic characteristics. It furthermore employs only those characteristics that are each connected to a single attribute. There are no characteristics used that are connected to multiple attributes. For example, the color of the slip (in this example red) is recorded in one entry and the existence or non existence of surface decoration (such as impressions or incision), is recorded in another. The result would be a description of red incised pottery. This is a description of equivalence and a description of the hierarchy of red incised pottery as in the type-variety method.

One specific attribute that has in a way the status of “primus inter pares” – the first among equals – in the El Pilar Method is the characteristic of shape. The shape attribute refers to the form of the vessel. To be more precise, it refers to the curvature and other traits of mainly the rim and lip of a vessel. It has long been known in Maya pottery analysis - and likely in other fields of ceramic analysis, too - that the rim and lip are the sections of a vessel that exhibit the most distinct features of its execution. Only the slips, paintings and glazes on a vessel’s body can be more diverse, but since Maya ceramics are generally unglazed and most often unslipped, the most useful distinction when it comes to Maya ceramics is the appearance of a vessel rim and the interpreted shape.

Rim shapes, , sometimes in conjunction with necks if existent, can easily be distinguished from each other. Vessels, therefore, can be sorted into different categories based simply on their rim shapes. Gifford in his type-variety approach identifies and depicted various rim shapes and mentions as well as depicts them in his work (Gifford et al 1976). While he uses the general terms of vessel categories (such as vase, bowl, jar and others), he does not gives these categories a high priority. In the vessel profiles depicted of the Barton Ramie collection, he always shows mixed vessel categories and never shows the ceramics sorted by a specific vessel category.

The El Pilar method also uses the same general vessel categories as Gifford used in his work. Contrary to Gifford, however, the El Pilar method considers them fundamental and uses them as the primary and in fact only way to distinguish vessels from each other.

Often, when one bases one’s methodology on another’s, there are some modifications to be made. In the case of the El Pilar method, modifications were made to the vessel categories to adapt them to the specific needs and requirements of the El Pilar ceramics. For example, the bowl category was divided into three different categories: The “incurving bowls” category that includes, as the name suggests, bowls that have incurving walls thus having restricted orifices; the “everted bowls” category that includes bowls that have walls curving out, resulting in open and wide orifices; and the “bowls” category that includes of straight sided bowls and bowls of more general character that fit in neither of the other two categories. This sub-division enables the tracking of the different shapes and was necessary since the EP assemblage features a great number of bowl shaped vessels, comparable to other collections from the surrounding Maya area.

Categorizing of the El Pilar ceramics resulted in an extensive profile book in which all the various vessel shapes identified in the El Pilar sherds are recorded. This book currently contains 370 different shapes and is referred to as the "El Pilar Shape Catalog". This was a tremendous undertaking. Sydney Ciener, with Dr. Ford, identified the 370 shapes during her analysis of the sherds. She then drew those shapes and formulated the El Pilar Shape Catalog which has since been digitized. It continues to be a work in progress. During my last field season with the El Pilar project, I was able to identify 18 new, previously unrecorded, shapes. Those have been looked at by Prof. Dr. Anabel Ford and Dr. Lisa LeCount, who did extensive work on the ceramic collection of Xunantunich, deemed valid and will be added to the next version of the shape catalog, bringing the total number then to 388. The shape catalog will never be exhaustively complete. It will continue to be updated as new shapes are identified at El Pilar.

4.3.1. List of Vessel Categories

The 370 plus shape forms in the El Pilar Shape Catalog are grouped into 7 vessel categories, namely vase, jar, bowl, everted bowl, incurving bowl, tecomate and plate. Those 370 shapes break down into 15 vase shapes, 105 jar shapes, 62 general bowl shapes, 40 incurving bowl shapes, 55 everted bowl shapes, 18 tecomate shapes and 75 plate shapes. By using these categories, the El Pilar method closely follows a classificatory scheme that "is rather commonly used by Mesoamerican archaeologists" (Rice 1987:216) and which was promoted by Smith and Sabloff (1975:22–27). This section will provide further detail of the categories used at El Pilar. The mentioned contour and geometric classifications are the same as explained earlier.

4.3.1.1. Vase

The term “vase” signifies a Late Classic drinking vessel in the context of Maya ceramics. It is thought to be used to drink cocoa and other liquids. Usually the walls of vases are highly decorated with glyphs and paintings and they are, therefore, commonly ascribed to elite uses.

According to inferred use classification “a vase is a restricted or unrestricted vessel with a height greater than its maximum diameter. Vases may or may not have restricted orifices, but their heights must be greater than their diameter” (Rice 1987:217). While some classifications have vases as a special subcategory of jars at El Pilar they constitute a seperate vessel category equal to jars.

With the vessel contour classification promoted by Anna O. Sheppard, a vase can be either called a simple silhouette vessel or inflected vessel. Most vases are simple silhouette vessels. There are, however, more complex subcategories of vases auch as flagon and beaker. While a flagon is by definition “a vessel with a neck very narrow in comparison with its height and girth”, a beaker is defined as “a vessel whose height is greater than its rim diameter; and which is of suitable size and shape for drinking” (Rice 1987:217). In Maya ceramics, the existence of a neck is a strong indicator of a vessel being a jar. Therefore it is very likely that flagons have been recorded by Mayanists as small jars rather than vases. However, those flagons should be recorded as inflected vases (Rice 1987:218).

For the geometric or volume classification system, a simple vase is based on a cone (frustum), making it a conical vessel. The flagon, on the other hand, would be a hyperboloid vessel and an example of a more complex vase form (Rice 1987:219).

Lisa Lucero in her dissertation using the BRASS material (BRASS being the project which preceded the El Pilar project), writes about vases: “Vases are defined as tall vessels with restricted mouths” (Lucero 1994:94).

The vase shapes in the El Pilar method fit these common definitions well. There are, however, only simple vase forms recorded. More complex forms, such as the flagon kind of vase, if present at all, seem to have been indeed recorded as small jars and not as vases.
Therefore, concerning the El Pilar collection, all vessels within the vase category are either generic vases or beakers.

4.3.1.2. Jar

Jars are a very facetted vessel category with a broad spectrum of forms and appearances. The inferred use classification says “a jar is a necked (and therefore restricted) vessel with its height greater than its maximum diameter” (Rice 1987:216).

According to the vessel contour classification, necked vessels (which jars are by definition) can only be inflected, complex or composite but never simple. An inflected jar would have an inflection point where the shoulder changes smoothly into the neck. A composite jar would have at least one corner point if the neck is set on the shoulder at an angle and not in a smooth way as in the case of an inflected jar. Complex jars would have at least two corner points or two inflection point or a combination of those.

Judging from the shapes identified as jars in the El Pilar shape catalog, the El Pilar collection contains inflected and composite jars. There are no representations of complex jars, though one might be able to imagine such a profile. One must remember, however, that only the rims and lips are recorded and not the whole vessel as no complete vessels, with the one singular exception of a bowl, were excavated . Therefore, there could be complex jars ,however, they could not be identified because vital vessel parts from the shoulder, body and base region where additional corner and inflection points may be present are missing. Such a design would turn a composite or inflected jar into a complex one (Rice 1987:218).

For the geometric classification jars are composite or complex vessels, identifying them in a similar way as the vessel contour classification does. In geometric terms, a jar is a vessel of either spherical, ellipsoid or ovaloid form on which a cylindrical or hyperboloid form is attached as a neck piece. Complex jars can be comprised of even more than two geometric forms (Rice 1987:219).

In her dissertation, Lisa Lucero (1994) divides jars into two vessel subcategories - wide orifice jars and narrow orifice jars. While this was explicitly defined in the BRASS Project, in the El Pilar Project both subcategories are simply registered under the header “jars”. Certain shapes , however, have been identified as either narrow orifice jars or wide-orifice jars.

For Lisa Lucero “wide orifice jars are defined as globular vessels, with relatively open mouths (>= 20 cm diameter)” (Lucero 1994:89) and “narrow orifice jars are defined as globular vessels (< 20 cm diameter) and relatively restricted mouths” (Lucero 1994:91). The 20 cm rim diameter being identified as verge between narrow and wide orifice jars was determined by Prof. Dr. Anabel Ford, who has used this value since her time on the Yahxa Project and in Tikal, as well as throughout the BRASS and the El Pilar Project (personal conversation with Prof. Dr. Anabel Ford 2003).

Jars are in general restricted in nature, although the degree of restrictiveness can vary depending on whether it is a wide orifice or a narrow orifice jar. Due to this feature, jars are commonly termed as storage and cooking vessels. The wide orifice jars are considered to be dry storage and cooking vessels depending on size, while the narrow orifice jars are seen as liquid storage vessels (Lucero 1994:87-89).

4.3.1.3. Bowls – general, incurving and everted

While bowls are varied and are divided into three different bowl categories in the El Pilar shape catalog, I will consider them together in this section due to generic definitions provided by other classification systems, then, later, consider them idependently.

According to the definition applied by the inferred use classification “a bowl may have a restricted or an unrestricted orifice and is deeper still [than a plate or dish], its height varying from one-third the maximum diameter of the vessel up to equal to the diameter” (Rice 1987:216).

Within the vessel contour classification system, a bowl can be virtually everything from a simple vessel to a complex vessel, with the possibility of being an inflected or a composite vessel as well.

The geometric or volume classification indicates similar range. A bowl can have the form of a sphere, an ellipsoid or an ovaloid, both in their restricted and unrestricted versions. Some more complex bowls may also feature necks, adding to the above mentioned shapes the forms of the hyperboloid and the cone (frustum). Although jars and necked bowls are comprised of the same geometric forms, the difference between them is the different degree of restriction of the necks. This is, of course, hard to describe by simply using geometric forms. Therefore, for the geometric classification, jars and bowls are the same kind of vessel, the difference lies only in their proportions. In general jars are more restricted at the necks than bowls but it could occur in the case of certain vessel forms that a wide orifice jar might display the same restrictiveness as a very restricted bowl. In this situation, there is no clearly drawn line between bowls and jars and each ceramicist must decide whether a piece is a bowl or a jar.

Lisa Lucero (1994), in her dissertation about BRASS ceramics, divides the bowls into three categories: General, incurving and everted. The same system has been adopted by the El Pilar Project.

According to Lucero "general bowls are defined as open, shallow vessels" (Lucero 1994:82), while "incurving bowls are defined as shallow vessels with incurving rim" (Lucero 1994:84) and "everted bowls are defined as open, shallow bowls with everted rim" (Lucero 1994:83).

This diversity in the form and shape of bowls led the BRASS project and later on the El Pilar project to decide to split the bowls into three sections. The El Pilar shape catalog assigns shapes to general bowls that are mostly straight sided or feature rims that are hard to classify either as restricted or open, to incurving bowls that are more restricted and that tend to have characteristics closer to jars, and to everted bowls that are open and unrestricted and tend in their features to be similar to dishes and plates or platters.

4.3.1.4. Tecomate

This vessel category is rather exotic and not part of the original vessel categories used by Gifford, Smith or Sabloff.

There is no definition for it in the inferred use classification system, at least in the parts of it presented by Rice. To present a definition analogous to the definitions provided by that system for the other vessel categories, I would call a tecomate "a neckless jar which possesses a vessel diameter roughly the same as the vessel's height". This is the objective of the tecomate as it is modeled after a gourd that is used to this day in Mesoamerica as a multipurpose vessel, and is one of the earliest forms used in the Maya area and found throughout Mesoamerica.

As well, there is no definition provided by the contour classification system. Using the system's general parameters, I would define a tecomate as a simple vessel; they may have inflection points but never corner points.

The same applies to the geometric classification. In geometric terms I would call a tecomate a spherical or globular vessel.

Only Lucero (1994:93) gives a definition of a Tecomate: "Tecomates are defined as globular vessels without necks".

To give Tecomates a separate category is another trait that the El Pilar project adopted from the BRASS project. It is based on the fact that these vessels date to the Middle Preclassic and are a unique feature of the development of ceramic traditions in Mesoamerica.

Although tecomates are commonly called "neckless jars", this is not completely correct. The samples in the El Pilar shape catalog in fact do feature diminutive necks on a frequent basis. They do not have, however, the same pronounced and large necks the normal jars do, but rather may possess only rather small and "atrophied" necks, sometimes no larger than an average lip.

Their use is usually referred to as serving vessels for food but also as urns in burials. Although they are rare and only make up a small amount of the El Pilar collection, they have been considered distinct enough from real jars to justify their own category.

4.3.1.5. Plate

The vessel category of plates or platters is the last category in the El Pilar shape catalog.

"A plate has a height less than one-fifth its maximum diameter" according to the inferred use classification (Rice 1987:216). This makes them very shallow vessels.

For the contour classification, plates or platters are basically simple vessels. Due to appendages (such as notches, flanges or support pods), which are added to Maya plates on a frequent basis particularly in the Late Classic for both artistic as well as utilitarian purposes, they also can be inflected, composed or even complex vessels. This assumes that the appendages and the vessel itself are counted as a whole.

In terms of the geometric classification, plates can be spherical, ellipsoid conical or even cylindrical. In any case they are always the unrestricted version of those forms.

Lucero defines plates as follows: “Plates are defined as open, very shallow vessels” (Lucero 1994:86)

In the original vessel category system introduced and used by Smith, Gifford and Sabloff (Sabloff 1975:22-27), the term dish frequently appears in lieu of plate or platter. According to the inferred use classification, “a dish is slightly deeper [than a plate], having a height more than one-fifth but less than one-third of its maximum diameter”. This places a dish between a plate and an everted bowl.

Plates are commonly perceived as serving vessels for food. There can be small ones used within a family or large ones that are used for feasts with many participants (LeCount 1996:75). Some platters used for feasts are usually ornate and adorned with polychrome paintings since they are considered prestige objects in this context.

The El Pilar project does not recognize the dish category as a separate category Judging from the shapes in the plates section of the El Pilar shape catalog the shapes that could be called dishes are subsumed into the plate category without any special notice.

4.3.2. The gathering of objective data

When recording the characteristics of sherds, not only is the amount of information recorded important but also important, is the manner in which that information is recorded. Simply looking at a sherd and recording what can be seen may lead to difficulties. Perception can alter the information recorded and is key. Everyone perceives one’s surroundings slightly differently from another. This is because the information presented to our mind by our senses is interpreted by us through our experiences and personas, and can be considered unique.

Even if two people are talking about one and the same thing, it is for each of them different from the version their counterpart has.

This holds true for the description of pottery sherds. Two people can look at the same sherd and describe it in different ways. When working with Prof. Dr. Anabel Ford in Belize, I noted the same thing. We both looked at the same sherd and tried to determine how to describe it. We noted that we each put the emphasis on different characteristics of that sherd. This shows that personal impressions of a sherd by an individual can lead to a different record, even if only slightly.

Therefore, in order to create an objective set of data, one has to identify sherd attributes that can be recorded in a non subjective way using objective means that will result in records and results that are replicable for everybody. Sherd attributes that can be expressed in numbers are the best choice for this. A number, in its basic usage of quantification, means the same to everyone. A diameter of 13cm will always mean 13cm to anyone who looks at the value. One person might associate the number "13" with bad luck because that person might be superstitious, but that does not change anything about its basic meaning.

In the following, I will describe the different attributes of sherds that the El Pilar method has identified can be recorded in an objective, scientific manner.

4.3.2.1. Paste

The term "paste" is used for "a clay or mixture of clay and added materials, often used synonymously with *fabric*, *body* or *ware.* Technically, paste differs from *fabric* because it does not include *pores* and differs from *ware* because it excludes surface treatment" (Rice 1987:479). In other words, paste is a term for the clay body of the vessel itself or its remaining sherd fragments. When looking at paste characteristics one tries to determine the attributes of the clay with which the vessel is created with. Two of those attributes shall be presented here as examples: texture and temper.

4.3.2.1.1 Texture

The general, characteristics of a cross section of fired clay are referred to as “texture” (Rice 1987:482). There are several factors that determine the quality of texture.

Concerning the deposition of clay, there are two basic types. “Primary clay” is clay that is still in situ where it was created by the rock and geological processes and inputs that transformed it from stone to clay. “Sedimentary clay” is clay that was transported by nature from its creation place and deposited in another place. Sedimentary clays tend to be much finer in particle size than primary clays, which often still show remnants of their original rock structure (Rice 1987).

Another major factor impacting texture is, of course, the preparation of the clays prior to usage. Some potters use the clays just as they come. Those clays usually show a larger particle size and a have a more heterogeneous character. Other potters, however, go through an elaborate process of preparation that includes, but is not limited to, soaking, sieving, decanting, and crushing. During these procedures, the clay becomes finer, the average particle size shrinks, and the composition grows more homogeneous. The size of clay particles can easily be determined under a microscope and there are also tables available that sort particles of different sizes into groups and categories.

Another factor of texture is the friability of the clay piece. Some clays, when fired, break very easily and are very friable, others are very hard and sturdy. The strength of clay depends on the type of clay used and the firing temperature. Different types of clay have different chemical and physical structures which influence their ability to resist breaking. The ability to fracture is nothing more than the breakdown of the physical cohesion of the clay structure. There are elaborate ways to test the breakage points of clay under different stresses such as compression, tension, shear, torsion, transverse and impact (Rice 1987:359). These tests, however, require an extensive setup, which usually is available only in laboratories for material sciences and not at an excavation in the field. In the field, only rudimentary tests that are susceptible to subjective interpretation are possible, and, therefore, breakage of ceramics or its resistance to fracture is not recorded in the El Pilar project.

The third factor influencing texture is density. Fired clay is known to have pores. The density of fired clay is determined by the amount and size of those pores relative to the solid mass of the clay surrounding them. The size and frequency of pores are determined by the particle size and their arrangement within the clay and the amount of water or organic material burned out during firing (Rice 1987:350). The amount of pores in a clay piece is referred to as porosity. A vessel with high porosity contains a great number of pores, while one with low porosity does not. Porosity is counter proportional to density. A clay that has high porosity has low density and vice versa. The porosity of clay has a direct influence on its characteristics. A porous vessel, for example, has a high resistance to thermal shock on the one hand, but water can easily seep through its walls given enough time, and it is also rather susceptible to breakage since the wall structure is weakened by the many holes in it.

In order to analyze porosity, pores can be categorized, counted or their size measured. These numbers can then used to establish a relative density of the vessel which can be compared with other vessels.

The question that must be asked now is: Why look at texture? What information can be gained from it?

Texture contains ample information about the clay prior to becoming a vessel. Particle size and composition may indicate whether the clay was untreated. Mineralogical research could be done in order to determine its source. If it is a commonly used, readily available type of clay, there might not be much in determining whether the clay was treated or what its source is; however, if it is imported or rare clay a provenience might yield interesting information. If the clay is treated and the original clay source is known, a comparison of those clays may provide new insights into the way the potter of the vessel prepared the clay for production. It could also give insights into trading patterns and for whom the vessel was made, i.e. elite, and therefore be another way of identifying the importance/hierarchy of the site.

Both density and friability can be used to infer the usage of the vessel. Both factors influence the strengths and weaknesses of a vessel and thus their advantages and disadvantages when it comes to their intended usage.

To summarize, texture can provide much information about both the provenience of a vessel and the possible use of that vessel.

4.3.2.1.2 Temper

Commonly, materials that are added to clay by potters in order to alter and if possibly enhance the production properties are referred to as temper. According to Rice, however, "'temper' is perhaps the most used, abused and imprecise term employed in archaeological and technological description of pottery" (Rice 1987:406). This is due to major differences concerning the terminology of temper among archaeologists, namely, there are three major problems:

1) There are many kinds of temper, especially organic ones that, although they had an influence on the vessel properties and clay characteristics during the creation of the vessel and the possibly during the firing stage, do not last through the firing process, and are therefore no longer measurable. This can cause vessels that had been tempered to be considered not tempered. On the other hand, some scientists consider all ceramic vessels to be tempered since even water can be considered a tempering agent (Rice 1987: 408).

2) Some archaeologists focus more on the question of how the temper came into the clay. Some say temper is always an added substance, used consciously by potters to change the clay. Others argue that temper can occur naturally in certain clays. This natural temper can cause potters to choose clay based on the special properties gained by the existing temper (Rice 1987:408). Rice raises the concern that archaeologists might indiscriminately call too many materials in clay temper. After all, clay itself is a heterogenic compound made up from an amalgam of various minerals and rocks. So the question must be asked, what is part of the original clay matrix and what can be considered temper or addition to the actual clay?

3) There is disagreement concerning the quantity of temper. The question relates to the percentage of temper in the clay and at which point it actually begins to start altering and influencing the clay characteristics. Sometimes even small amounts of a tempering agent can cause changes. On the other hand, there can be small amounts of temper present which only accidentally entered the clay during the manufacture and do not have any effect because the percentage is too small (Rice 1987: 408).

Although archaeologists have not reached a consensus yet about the presence, origin, and quantity of temper, there is no doubt among them as to the types of temper in ceramics. This information comes partly from the archaeological record and partly from research of contemporary ceramics around the globe. This data provides the ethnographic and ethnohistorical basis for understanding ceramic production.

There are three different types of temper: Organic, mineral and human-made. Organic temper includes but is not limited to grass, plant fibers, dung, shell and bone. Mineral temper includes among other things limestone, basalt, granite, and schist. Human-made temper includes ground potsherds or fired bricks, also referred to as “grog” by ceramicists. In modern times, human-made temper has even included fiberglass. For a more complete list of tempering agents, see Rice (1987:407).

Looking at temper in ceramics is similar to looking at texture, just from the opposite side. While texture studies focus on the components of the actual clay and what was originally there, temper studies focus on the materials that were added to the original clay in whatever manner during the production process. As in texture studies, temper studies can provide interesting insights into the source of a vessel manufacture as well as the craftsmanship of the potter.

The existence of temper added by the potter to the clay of a vessel shows a factor that usually can not be found within the archaeological record – preference. Tempering clay infers that the quality of the original clay was not completely to the liking of the potter. By tempering the clay he or she reached the composition he or she preferred.

Another interesting aspect of temper studies is the connection between certain types of temper and different categories of vessels. Once a certain temper has been identified in the clay, the temper can be investigated as to what kinds of clay characteristics it propagates as well as subdues. After this has been determined, vessels from the same vessel category can be compared to assess whether they feature similar tempering. If that is the case, one can assume that the characteristics provided by the temper to the vessel are the ones that might be sought after in that specific vessel category.

4.3.2.2. Color

Next to shape, color is the most distinctive feature a vessel may have. Therefore, it is not surprising that color has been important in ceramic classification from the earliest times. Some methods of classification, like the type-variety:mode method, make color one of the lynchpins of sorting and grouping the ceramics.

The sense of vision is one of the more dominant senses a human possesses. Humans can see a broad color spectrum. This predisposition leads to the recognition of subtle changes within a color. One could think that this would greatly help in the determination of the color of a ceramic vessel, however, on the contrary, it makes it a difficult endeavor. At the beginning of this chapter I discussed perception and how perceptions can vary depending on the eye of the beholder. This also applies to the matter of color. Every person perceives color in a different way. The differences might be ever so slight but they are there and sometimes even small variations can mean a completely different result.

For a long time in ceramic studies, color discrepancies in color determination were not scientifically defined. Colors have been referred to in the vernacular style as yellow, orange, red, brown, black, etc. Everyone knows what the concept of, say, red is; but everyone has his or her own idea of red. So what is the color red?

In semiotics, this matter is referred to as the concept of the sign. A sign consists of a “signifier” (Barthes 1983:37) and a “signified” (Barthes 1983:40). A good example of this is “dog”. The signifier of the sign “dog” refers to the sequence of letters or sounds of a word, in this case *d o g.* While someone is talking to someone else in a general way about dogs both individuals know what the concept “dog” means, but while doing so they have different associations with it. One, while thinking about dogs, might imagine a poodle while the other at the same time thinks about a dachshund. These individual dogs are the “signified”

The same principle as seen in the example of “dog” applies to color. We all know what red is. But for each of us there exists a different “red,” for one it might be a bright red while for someone else it might be more of an orange red. Every individual has in his or her mind a collection of colors that classify as red and most of it will be congruent with what other people will consider to be red. Those collections, however, tend to be “frayed at the edges”; a color called red by one person, might be for the next person something else, for example orange. When I discussed this matter with Prof. Dr. Anabel Ford, she remembered such a case at the 1985 ceramic workshop. One person asked about a red jar shown on a slide and the speaker replied that they had no red jars, only orange ones.

Over time, the general colors were determined to be insufficient for an exact description of a vessel's coloring. In order to augment the way colors were described, new terms were added, (such as reddish brown or brownish red). But since the concept of true colors between individuals may differ, the concept of mixed colors may differ as well. Where is the border between reddish brown and brownish red?

As well, ambient lighting plays a role when determining color. There is a difference between natural light and artificial light. Natural light is day- or sunlight, and even then it makes a difference whether one looks at the color of a vessel in bright sunlight, in the shadow of a bright day, during an overcast day, or in the twilight of dawn or dusk. Artificial lighting usually means electrical light bulbs. However, variations exist in artificial light as well. While traditional light bulbs with tungsten wire emit a light that usually tends toward the yellow or red spectrum, halogen lamps can tend towards the blue spectrum. Only the recently developed LED (light emitting diode) lamps can reliably produce true white and thus neutral light. As a result of lighting, a vessel that has been deemed one color while being assessed at the excavation site might look a completely different color the next time it is looked at in the lab. In short, giving the color of vessels in general names and applying individual impressions is flawed.

In order to compensate for these impressionistic general names for color determination color systems have been devised. Shepard used the Ridgeway system. Today, the Munsell color system, named after its inventor, has become an established means of reference for color. The Munsell system splits every color into three different axes: Hue, chroma, and value. Using these in a three-dimensional grid, with each as one axis, every color can be exactly defined by a unique set of values. In a Munsell color chart, these values are displayed umerically and in words together with a sample of the color they define. To use this chart, one holds it next to the sherd or vessel and compares the color to the different color samples on the chart until the perfect, or at least the nearest match, has been found. Afterwards, the appropriate value is recorded. Now, if another individual wants to look up a color of a vessel without having access to the vessel, he or she just goes the reverse way: By taking a Munsell color chart and matching the values recorded to the values set out in the chart, the individual can see the color sample that was assigned to the vessel. This provides a direct means of understanding the color without having to deal with nebulous descriptions like reddish brown.

The assignment of a Munsell color eliminates the subjective or personal influence that color assignments may have in the determination of color. There might still be minimal variances in the assignment within the magnitude of one unit in chroma, hue, or value, but the units are so narrowly spaced such that each step from one unit to the next is sometimes hard to distinguish with the naked eye. For a more detailed description of the Munsell color system see Rice (1987:339).

Due to the effectiveness, exactness and unambiguous quality of the Munsell color system, it is used for all sherd color determinations at the El Pilar project. The color of each of two aspects of sherds were recorded by the El Pilar project: paste and surface.

4.3.2.2.1. Paste Color

Paste color is taken from a cross-section i.e. the inside of a sherd. For assessment of the paste color, a small edge, preferable at a point where it does not damage an important diagnostic part of the sherd is broken off with a pair of pliers. The newly exposed edge is immediately subjected to a comparison with a Munsell chart in order to determine its color. The exact color match is noted and also the possible presence of a carbon core. A carbon core is a signifier of an incomplete firing of the sherd in question. This helps to determine the possible firing temperature later on.

There are several reasons for taking a color sample from a fresh break. The vessel could be slipped even if it is not immediately noticeable and thus the paste color on the inside could be distinct from the outside. Furthermore, if the vessel was slipped or painted at one point although weathered, this could have altered the surface color below it to an extent. Finally, sherds have been lying in archaeological deposits for several hundred years or more; deposits in the ground and the surrounding soil could have changed the color of the sherd on the surface quite extensively both by physical and chemical means.

Paste color is a valuable piece of information as it can signify certain characteristics of the clay or temper used in the vessel as well as the firing environment used for the vessel.

4.3.2.2.2. Surface Color

As the name suggests, the surface color is the color a vessel exhibits on the surface. There are different types of surface color – the clay surface, the slipped surface, and the painted surface. Clay surface is the color of the clay, unadorned by either slip or paint.

A slip is monochrome and provides an unadorned uniform color to a vessel. Following Rice, a slip is “a fluid suspension of fine clay and water, used to coat a body before firing or poured into a mold to cast a piece; a nonvitreous coating on a pottery vessel; see also *engobe*” (Rice 1987: 482). Engobe is “a slip coating applied to a ceramic body before glazing to impart a desired color or smooth texture to the surface; sometimes used synonymously with *slip*” (Rice 1987: 475). A slip can cover the whole surface of the vessel or only parts. When it only partly covers a vessel, it may be for utilitarian purposes or for artistic reasons. The parts with slip might portray figures with unslipped parts and may be applied with resist techniques, such as the Usulatan style. Slip can be used for coating the pores in the body of a vessel, thus making it less permeable to water. It can also serve as “canvas” by smoothing the surface of a vessel in preparation for the application of paint.

A painted surface is at least bichrome, consisting of two colors. The painting can occur before or after the firing process. Elaborate paintings can consist of three or more different colors, at which point they are referred to as polychrome, or multicolored.

Adding a painting to the surface of a vessel is a great investment in time and material, especially given that some colors may require exotic components that are either expensive or hard to get, most of the time both. An example of this is the famous Maya blue. Therefore, a vessel featuring a painting is. a distinctive vessel and may be indicative of the status of the owner of the vessel. The more elaborate the painting, the more outstanding the piece. Such vessels are considered prestige vessels, since a painting exceeds the requirements of simple usefulness. Because of this, documentation of any traces of painting is vital to record.

4.4. The Process of recording the diagnostic Ceramics -"The El Pilar Decision Making Chart"

Selecting good and useful attributes for recording data is vital. Only if one has selected the right attributes for the analysic process can the data yield the desired results and information. Not only is the selection itself crucial but also the recording process of the selected attributes. One can have really useful attributes selected for recording, but if the recording process is flawed somehow, it will not produce the desired data. Having a consistent method and style to record the selected attributes is as important as selecting the attributes.

To assist in maintaining consistency in the recording process, I developed a guideline for recording the data for the sherds of the El Pilar Project. We refer to this guideline as "decision making chart" since it outlines the flow of data collection for each ceramic sherd (Appendix III Table 3). It shows the sequence of steps in the data recording phase, identifies the different eventualities during the recording process, and details the paths that can be taken if certain scenarios arise. This section presents characteristics and usage of this recording tool.

4.4.1. Purpose

Consistency in recording information gleaned from the sherds is very important in working with ancient ceramics. In an optimal case of recording, one well-versed person would do the recording of all sherds. This would ensure the highest consistency, since it would be the style of one person only, and the great experience this person possesses with the recorded sherd material would help minimize mistakes and doubts. This is, however, not always possible. Either the length of an excavation project leads to the situation that one and the same person is not available all the time or the extent of an excavation leads to such a huge pile of sherds that one single person cannot handle it alone. In most excavations, including the El Pilar Project, both factors play a role. Although Sydney Ciener was the sole ceramicist for many years, there were others before her and, as the collection grew, others working with her on the collection in the later years. As a result several people usually work on sherd recording and quite a few of them might be new to the task, just as I myself was when I started in the project.

Depending on the amount of guidance and guidelines a project has, different individuals working on the task of recording might develop a quite different modus operandi. While working with the ceramic recording sheets from the past 10 years of the El Pilar Project I noticed, there were basically 3 distinct styles of recording. During discussions with the Project Director, Prof. Dr. Anabel Ford, about this, she associated each style with a specific individual. My own style was started without my noticing as I recorded sherds at El Pilar (Personal conversation 2005).

The differences in recordings “styles” can range from minor ones, rather cosmetic in nature, to major ones, affecting the information content itself. While minor differences can readily be addressed, major ones can have a big impact in the consistency of the recordings.

In order to help people new to the task of recording sherds, in this case specifically within the El Pilar Project, to adapt and in the future mimic the El Pilar recording style, I designed the decision making chart to provide a visual means of characterizing the analysis process. The chart shows the process of sherd recording, guides the analysts through it and prompts them after enough repetitions through the cycle to independently and subconsciously go through the process on their own while recording sherds. It is a visualized version of the recording process which will be followed by the new analyst, resulting in aconsistency in recording sherds at El Pilar in the same way as previous analysts.

To summarize, the purpose of the decision making chart is twofold. Purpose one is to help new analyst get acquainted with the task of sherd recording. Purpose two is to make sure all analysts use the same style while recording, thus streamlining the recording process.

4.4.2. Mechanics

A decision making chart is a visual representation of, as the name suggests, a decision making process. It shows the various options an analyst encounters during his or her evaluation. The decision making chart gives multiple choices at each step with simple consequences based on previously selected options. In other words, it enables the making of decisions during a complex task. While sharing a similar approach, it is not to be confused with a flow chart. The purposes of each are different.

The decision making chart is comprised of boxes and lines, with the lines connecting the boxes. The boxes represent either decision points or result points. At decision points a choice by the user is required. This may be two or more choices. At result points, an intermediate result or the final result is revealed. If it is an intermediate result, a line starts from that point leading to the next consequences and other results. If it is the final result, the end of the decision making chart is reached and the process is complete.

The decision making chart intends to simplify the reality of a process to its essence. A choice given in the chart can be of a simple yes / no type or something more complex. The display of the full complexity of choices is limited by the space available to the chart's display and the information on the process that it is intended to portray. My objective was to increase accessibility of the ceramic analysis process. Usually such charts are intended to help the user in his or her way through a task. There can be, however, the combined intention of such a chart to show the complex nature of a certain matter. Such a case would call for a chart to intentionally represent the complexity of the process at hand and consequently may result in an extensive chart.

The decision making chart I created for the El Pilar ceramics recording process is clearly meant to be a guide through the recording process. It is, therefore, designed to be as simple as possible. It also does not cover the entire recording process, but the key decisions concerning rim shape and time period. The reason for this simplification is that other areas of recording, such as the determination of Munsell color or the measurement of rim diameter as discussed above, are straightforward with a very small array of possible outcomes circumscribed by the objective. The only parts of the recording process where a greater amount of outcomes and scenarios are possible are the rim shape and time period assessments. Since this is not only the most complex part of the decision-making and recording but also considered the most vital one, the chart was created in order to ensure the correct execution of these assessments or at least alleviate them as much as possible. The decision making chart has served as an effective guide for the ceramic analysts on the El Pilar Project and is a valuable chart in this discussion of method and process.

4.4.3. Usage

The reading order of the decision making chart is downwards, starting at the top and ending at the bottom. The process begins with an initial look at a sherd in question. Once this assessment is complete and all the information is recorded that can be gleaned from observation without any deeper probing is compiled, the chart is consulted. Was it possible to determine both types of information, rim shape and time period? One of the two? None? Depending on how this question can be answered the path on the decision making chart is selected. If rim shape and time period could be determined the outer left path is taken (see Appendix II Table 3). If the time period could be established but not the rim shape, the inner left path is selected. If the rim shape, but not the time period, were found, the inner right path is the correct one. If neither the rim shape nor the time period could be determined the outer right path provides guidance on the next steps.

After selecting the path that best fits the scenario, one follows it, heeding the steps indicated in the chart. In some cases the path is straightforward; in other cases it is a bit more complex, requiring more steps and consequences.

Eventually all four paths will run together in the step determining color and rim diameter.

4.4.4. Scenarios

The decision making chart covers four different recording scenarios: 1) rim shape and time period known, 2) rim shape unknown but time period known, 3) rim shape known but time period unknown, and 4) neither rim shape nor time period known. This section covers all four scenarios and will show what to record in each case.

The first scenario, where both rim shape and time period are known, is the optimal one. The sherd gets assigned to a certain vessel category and is assigned the appropriate shape number from the shape catalog. The time period connected to that specific shape number in the shape catalog is then recorded for that sherd. Following that, the rim diameter and the color is recorded and the process is done.

The second scenario, where the rim shape is unknown but the time period is known, is more difficult. Once it has been confirmed that there is no match for the sherd in the shape catalog, a general rim analysis is to be made. A general rim analysis consists of a closer look at the curvature of the rim sherd and at whether the lip of the sherd is incurving straight or everted. From this the general affiliation of the sherd to the vessel categories can be determined. If the general rim analysis was successful, the sherd gets a general shape number, such as 200 if the sherd is considered to be a jar but an exact match to a jar shape was not possible. In the unlikely event that the general rim analysis failed and no association with a vessel category could be established, the sherd gets a 00 to denote an unidentifiable rim shape. Once the shape of the sherd is determined, the time period is assigned and the usual rim diameter and color investigation performed

The third scenario, where the rim shape is known but the time period is unknown, is more challenging than the first two scenarios. Since the rim shape could be matched, the sherd gets the correct vessel category tag and the right shape number from the shape catalog. In order to find the correct time period some more inquiries are needed. First there is a stylistic comparison with sherds from other known time periods. For example "pie-crust" rim on a wide orifice jar is known to be a Terminal Classic signifier. So, if the sherd does not have a time period label from the sherd catalog but features pie crust it is safe to infer that it is dated from the Terminal Classic. This is of course a very simplified example; usually the clues for a time period on a sherd with unknown time period are not as obvious.

If the stylistic comparison leads to a success and a time period can be established the case is closed and one can move on to the rim and color part. If not, another even closer look at the sherd must be conducted by applying a slip/paste analysis. There are several features of a slip or paste that facilitates the determination of the time period of a sherd. Among others, "waxy slip" and "ash temper" provide clues. If such a distinct feature can be identified in a sherd, then it may be associated with a time period label. If not, the sherd remains unidentified concerning its chronology and is labeled as such, followed by the obligatory rim diameter and color measurement.

The fourth scenario is the most extensive and difficult of the four possible scenarios, the one where neither time period nor rim shape is known. This is basically a merger of scenarios two and three, where either rim shape or time period were known. First a general rim shape analysis has to be conducted in order to find out if an association to a vessel category can be determined. Depending on the outcome the sherd gets a general shape number or none. Following this, a time period study is made consisting of the stylistic comparison and, if necessary, the slip / paste analysis. Depending on the results, the sherd is either assigned a time period label or not. If the rim shape analysis as well as the time period analysis both fail the sherd might be considered non diagnostic after all and may be separated, unless it features anything unusual and worth preserving like some special decoration.

4.4.5. Advantages

The decision making chart as resulted in three improvements to the recording of data from the El Pilar collection:

1) Recordings can be done faster. Being shown exactly what to do, a person recording data can go from one step to the next at a high speed without having to ponder what to do next.

2) Recordings can be done more efficiently. With a person doing all the sherds in the same method of recording, a custom is developed. Certain motor habits and thought patterns are created which leads to an overall decrease of the time needed for a sherd to be recorded. In other words, more sherds can be recorded in the same amount of time.

3) Recordings are more consistent. With the recordings being entered in the same way and the same style, any differences are very minimal. This makes it easy to merge different recording sections from different people into larger files and data batches, without the possible collision of different styles and recording habits.

To summarize, the decision making chart improves the process of sherd recording making it less susceptible for individual deviation. This is of help for collection comparisons within a year and in between years, since they all share the same style and layout.

4.5. Compiling and archiving the Data

After the actual recording of each of the sherds is complete there is one final step to be taken. In order to secure the accumulated data for later interpretation and analysis the data needs to be archived. To archive data entails two essential things: 1) to safely store it so it will be kept safe for posterity and 2) to make it, at the same time, accessible for later use and analyses.

Usually, the initial data is recorded on paper. This data storage method has several disadvantages. For one, field conditions at an excavation are usually less than optimal for paper, meaning paper can easily get dirty, bent, or crumpled among other things. The unstable situation in the field can deteriorate the overall status of the data sheets. As well, if it is an extensive excavation, as is the case for El Pilar, the recording entries accumulate over years and go into the thousands, resulting in records of many hundred and even thousands of sheets. Such a great number of records would produce a large stack of paper and would raise problems with accessibility. A large stack of data sheets is not portable without implications and if it remains stationary, researchers would have to access the data in that one location, such as the materials for Barton Ramie which are located at the Peabody Museum of Harvard.

For many years, paper was the best and only means to store such amounts of data. However, within the past 20 years we have entered the age of digital information. Archaeological data, like ceramic data recordings, does not have to be stored on paper and by other analog means any more. Now data can be stored digitally by electronic means. El Pilar project director Prof. Dr. Anabel Ford embraced the new possibilities of digital media early on. I remember her showing me old punch cards from the beginning of the eighties where she gathered data for the storage of BRASS information. These were read into the computer and the final media storage was on a main frame computer system. Personal Computers have developed since and we now have the means to store digital media while in the field

4.5.1. Excel as the main Software of digital Data Storage

Over the years, while working with digital data storage, the El Pilar Project developed its digital data collections in spreadsheet programs. The latest of these is called Microsoft Office Excel, or in short just Excel. This system is widely recognized and used and can be adapted to various formats that may be required in the future. This program and its file format are currently still used to create, store, and manipulate tables with data from the El Pilar site.

The entire El Pilar sherd data records from 1993 thru 2005 where converted from the traditional “pen and paper” sheets into digital Excel files. My tasks in this procedure were: 1) digitalizing the last years of the sherd data records myself, namely the ones from the 2005 field season, and 2) streamlining all the digital records of the previous years digitized by other team members. Many of these records were digitized by Janice Gower, who participated in the ceramic sherd analyses and did the major part of the final excel data entry. Since record-keeping criteria had changed over the years my task was to unify layout styles among the files to be able to describe the entire collection as a whole. This is called streamlining and it was a critical component of establishing a comparable data set for the El Pilar ceramic sherds, of providing a foundation for archiving the data, and laying the foundation for all future work with these data.

Accumulated, the dozen years of the El Pilar ceramic sherd data records, when printed on paper, would cover 2,595 A4 pages in panorama format. In digital format as an Excel file the same data amounts to the size of approximately 6 MB. This is an almost infinitesimal file size within the movable storage devices available these days. A standard recordable compact disc (CD) offers 700 MB, the more advanced digital versatile disc (DVD) stores up to 4GB, external hard drives the size of a lunch box have up to 300 GB storage capacity and finally so called “USB – Sticks,” no larger in size than a normal cigarette lighter, come in the range of up to 2 GB. All of these devices are very portable and provide instant access through a fitting laptop or a desktop system.

With the rapid growth of the internet in recent years, a new type of accessibility for data has become available. Now, with the right equipment, it is possible to access data “online.” This means that the data accessed and used needs not necessarily to be on-site with the person accessing and using it but can be physically elsewhere in the world. When referring to the “physical” location of digital data, one means the actual location of the hard drive or other storage device where said data is stored. For example, the archives of the El Pilar project could be stored on a server at the University of California at Santa Barbara (UCSB) that is connected to the internet. The project base also possesses internet access. Now, if necessary, members of the project can access data stored on the server at UCSB, look at it and even download a copy of it for further use. It also works in reverse. A data file updated with new information in the field can be uploaded to the server in order to replace and update the old file.

The advantages of online access are clear. For one, it is a secure way to handle data. Even if something should happen to the data in the field, since it is stored on the remote server it can simply be copied from the remote server and restored. One does not even have to take the movable storage devices with the right data when moving from one place to another; data travels from A to B via the internet from the server where the data is available. Of course, there are also disadvantages. The most notable one is of course the question of access to the internet. One needs an internet access point for this method to work. Industrialized countries have an almost complete coverage of internet access with virtually no gaps; other countries may not have the same sophisticated infrastructure yet, but this is rapidly changing. Also, in remote areas like the jungle of the Petén in Guatemala internet access becomes a technical difficulty, but not impossible. The San Bartolo Project is one such example (www.sanbartolo.org).

Apart from the overall access advantages to having data in a digital format, there are other upsides to the digital storage of data. One of them is the ability to integrate smaller pieces of data into larger ones, forming new complete data sets. This is especially useful on big projects which run for a long time and where data from different field seasons and from different aspects of the project come together. If different researchers work on a project they can provide a digital copy of their results to the project director, who can then add it to the project database. With a paper version this can be archived in a physical location but access would be limited by the restricted location.

Closely related to the integration advantage is the manageability of digital data. It can be stored, copied, and distributed more easily than "paper" data. Digital data also offers a better overview over the total extent of the data collection. As well, the possibility of using folder trees in the visual representation of files facilitates searching, sorting, and grouping data into different categories, making it easier to see how the various files relate to each other. Such repetitive tasks would be very difficult in paper data sets. This improved manageability is very important when it comes to the actual processing of the data further down the line.

4.5.2. Access as a main Means for objective Data Description

For the integration of the varied data sets, including the ceramics data base, El Pilar Project has selected Microsoft Office Access, a program that can be used to create and manage relational databases. This system allows the data at different levels to be related so that the ceramic records will connect to the excavated provenience, and the provenience will connect with the descriptions of the site, and so on.

In Access, the Excel files can be brought together and interconnected with each other. For example, the El Pilar provenience catalog can be connected to the El Pilar sherd records, forming a relationship between the location a sherd comes from and its kind, the catalog number providing the key link. This way, data from different sources can be connected into a dense web of correlations, forming data clusters which later can be used for interpretation.

Each defined type of data can be queried. A defined data type concerning the El Pilar project ceramic sherds data includes, but is not limited to catalog number, shape, time period, rim diameter and vessel category. For example, by setting up a shape query, all vessels with a certain shape can be displayed. Due to the interconnection of the different data tables, one can learn where vessels of a certain shape have been excavated, what time period they usually are assigned to or their median rim diameter. This ability to look at such a data collection from different angles virtually instantaneously or even from several angles at the same time makes Access a great tool for data description. Furthermore, since the computer does not make errors the conversion and manipulation of the data for different views (once the data basis was properly cleaned and cross checked) and the queries and connections between the data tables are programmed without a flaw. Moreover, they can display the problem areas for review.

4.5.3 Summary for digital Archives

Once properly set up, a computer is the most reliable way to handle vast amounts of data. A computer lacks any individual preferences. A human being, no matter how hard he or she tries, can never be fully objective. There is always a trace of individualism and subjectivity in any work a human accomplishes When creating transportable and replicable queries of data, the computer data search and recovery is precise and objective. A computer unreflectively hashes the data and twists and manipulates it the way the user requests. Computers just display numbers as they are with no opinions attached to them. This makes computers a great tool for the objective display of data.

Another advantage of using digital means to process data is the fact that additions can be easily made later. In an ongoing archaeological project, new data is constantly created. But to wait until the completion of a project before creating a comprehensive database would be ill advised and could possibly prevent the identification of important results that might influence the project in its course while still running. A digital database can be initiated at the very start of a project and then be constantly expanded upon during the course of the project by simply appending new data tables and making the right connections to the existing core.

The creation of such an all encompassing database is under way at the El Pilar project, albeit at an early stage. The foundation has been laid over the recent years by digitalizing the records and streamlining them across the years for the assembly in Access. We are in the conceptual stage of this integration project.

4.6. Summary

In this chapter the details of the El Pilar method have been covered. This coverage has been threefold:

1) The El Pilar method style and quantification has been addressed. The El Pilar method has been identified as a paradigmatic classification, thus putting it in opposition to the type-variety, a taxonomic classification. Furthermore, the basic classification units have been presented based on shape and form. Again, this establishes a difference to the type-variety, which uses type-classes as a basic classification unit. The inner workings of the El Pilar method have also been laid open by presenting the different catalogs used. The purpose and functionality of these catalogs have been explained. Additionally, the way data is recorded in the El Pilar method has been described. It has been shown what types of attributes are recorded and how they are treated and weighted. Finally, a selection of those attributes has been discussed in detail, showing why they are important and worth recording.

2) The process of recording diagnostic ceramics has been addressed. The process employed by the El Pilar method has been made visible on the decision making chart. With the help of this chart different scenarios and matching reactions have been presented. This enables us (one) to establish the El Pilar method as a clear, unambiguous and easily accessible method, where every step in the process is understandable. This open approach to processing the diagnostic sherds enables multiple persons to perform the recording process independently, duplicate it as often as necessary and come up with results that are on par with each other.

3) The means of storing the gained data have been addressed. It has been shown that the El Pilar method not only employs traditional paper storage devices, but also increasingly more modern digital archives. These new types of archives increase the accessibility of the stored data, resulting in a faster and more flexible way to work with. Digital storage also enables an

archeologist to view, manipulate, enhance and expand the data with more possibilities than paper. Different sets of data can be merged and conjoined forming new sets that can provide new context. Since archaeology is a very contextual science, context is vital and new context is always sought after.

With the El Pilar method thoroughly explained, its workings presented and its treatment of data shown, one can now look at the basic numbers of the ceramic collection, the fundamental figures of distribution and frequency.

5. Description of the El Pilar ceramic Collection

5.1. Introduction

Archaeology today is a comparative science; this is particularly noticeable in the field. Whenever archaeologists meet or visit each other at their sites, they inevitably start comparing their collections and assemblage inventories. When I traveled with Prof. Dr. Anabel Ford to different active archaeological sites or when we received visitors at our laboratory base, I always heard the same questions: What was found? How much? Where was it found? What is its quality? These questions are not asked because archaeologists want to find out who has the bigger or better site, but in order to be able to put the sites in relation to each other. This way they can determine whether sites can be considered similar to each other in nature or if the sites in questions are different in their assemblage characteristics. This is a first and informal way to form inter-site connections on the archaeological level.

A full, official and formal investigation comparing sites is best accomplished through publication. Only then can other archaeologists use the information gathered at one site to draw new conclusions and insights that may apply to their own work. This is how the unearthed knowledge from a site is added to enhance the pool of existing information. Prof. Dr. Ford once told me that as an archaeologist one can not only excavate and analyze, but one has an obligation to publish the findings in order to make them available to the scientific community, adding to the concerted effort that is archaeology. This applies to the El Pilar Project as well.

Now, after a decade of extensive work has generated valuable information, the El Pilar ceramic assemblage can be assessed and published. This chapter initiates a presentation and description of the ceramics of El Pilar, providing a first glance at the significant part of the site's materials and collections. This presentation sets the stage for the more in-depth work that must follow.

This chapter will describe the ceramics data of El Pilar based on three specific aspects: 1) provenience within the site, 2) time period of the ceramics, and 3) ceramic categories within the collection. With the foundation laid out, example attributes of the ceramic assemblage will be evaluated which, in turn, will provide a window into the potential applications of the computer database.

5.2. Total ceramic Collection

The total ceramic collection encompasses, as the name suggests, all ceramics collected in the archaeological endeavors at El Pilar. Every artifact recovered, including every ceramic piece recovered, was recorded in the El Pilar provenience catalog. This catalog provides the basis for the summary of frequencies, distributions, and percentages which will follow in the “provenience” section below. In large excavations such as El Pilar it is common not to count every single sherd recovered, since time and personnel is usually not available to do so. For example, at El Pilar, only those sherds which were caught in the ¼ inch screening process and were larger than a United States of America quarter coin were counted and those numbers entered in the provenience catalog. Therefore the usual technique is to estimate sherd counts. A detailed explanation of this technique can be found in Appendix III. These estimated sherd counts are the basis for all numbers given concerning provenience. The estimated ceramic count of the provenience catalog is 123,563 sherds.

For all other aspects presented the sherd record catalog is used. This catalog is a derivate of the provenience catalog. It contains all sherds that 1) were considered diagnostic and 2) passed the recording process later. The sherd record catalog is, therefore, a condensed version of the ceramic portion of the provenience catalog with only the sherds that contain useful information being recorded. The smaller amount of sherds and the minute recording of attributes allows for exact sherd numbers. This results in the provenience catalog having exact sherd counts for those sherds larger than a certain size, while the sherd record catalog has exact sherd counts for those sherds recorded.

Though both catalogs share the catalog numbers as backbone,. the full gamut of potential links for extrapolating data has not been yet established. This is one of the future aims of the database project. With it, it will be possible to conjoin the provenience gained from one catalog with time period assessment from the other.

In order to provide an indication of the magnitude of the possible inter-relationships, two examples shall be given. First, the ceramics designated with the catalog number 17776 whose provenience is a specific unit opened at EP 7 in the monumental. According to the provenience catalog, 44 ceramic pieces were found. Of those 44 pieces, 15 were recorded in the sherd record catalog. Of those 15 recorded sherds, it was possible to assign a time period tag to 5 of them. Second, the ceramics designated with the catalog number 18500 whose provenience is a specific unit opened at Structure 1 from the Tzunu'un elite residential unit. According to the provenience catalog, 992 sherds were recovered, 63 of which were recorded in the sherd recording catalog. From those 63 sherds, 55 could be tagged with a time period label.

These two examples show that there is not only a significant difference between the amount of sherds in the provenience catalog and the sherd record catalog, but there is also some difference between the amount of sherds usable when discussing ceramic categories and time period.

One should bear that when looking at the numbers presented. Although they may look alike and there may be correlations, the reality is that those two catalogs are worlds apart and are only connected with the cord that is the catalog number.

5.3. Ceramics by Provenience

The provenience tells the researcher where a certain artifact was found at the site. Sorting items by provenience allows the creation of a geographical map indiating where excavations were conducted and how many artifacts were found in each excavation unit Such a map would enable archaeologists to devise a priority list of future excavations to close any existing gaps or to expand certain points of interest. Presenting the El Pilar ceramics by provenience is the foundation of current knowledge of the ceramics of El Pilar.

Excavations at El Pilar focused on defining the relationships of plazas and access ways and to determine the site's construction chronology. To accomplish this goal, certain plazas and lines of communication were targeted and investigated as well as specific structures. In addition to the questions posed by the monumental core, the project attempted to understand aspects of the areas surrounding the site core. This included two residential areas, one large and one small, as well as two quarries, one limestone and one chert.

5.3.1. Site 272-005 - The Monumental Core of El Pilar

The El Pilar monumental core is the centerpiece of the El Pilar site. The collection for the El Pilar core contains entries from 38 different excavation areas. These areas can be grouped by plaza. Each plaza has one or more structures attached to it, with the plaza itself at the center, all forming subsections. These subsections together make up the monumental core. The 26 structures where excavations have been done, can be associated with 10 different plazas. There are 4 plazas where excavations on the plaza itself have been conducted but not in any structures around it. The total amount of estimated sherds recovered from the monumental core is 52,688 sherds.

Of the structures excavated, EP 7 in Plaza *Copal* yielded the most sherds. The reason for this extraordinary amount of sherds is the excavation of a tunnel beneath the structure. Unlike most tunnels at El Pilar, this was not a modern looter's tunnel but a tunnel that was dug during the time of the ancient Maya and then filled by them with heavily fragmented ceramic sherds with mixed time periods, amongst other material. This tunnel was completely investigated and all its contents removed. This is the reason for large amount of sherds being recorded and also for the very low amount of sherds having actually a time period tag.

The plaza with the greatest number of sherds is Plaza *Copal*, primarily due to the presence of EP 7 and its tunnel. It is also the largest plaza at El Pilar with the largest structures surrounding it. Almost 50% of all sherds excavated at the El Pilar monumental corewere excavated there.

Plaza *Imix* also yielded a large number of ceramics. The *Zotz Na* tunnel, previously discussed and located below EP 19, was also thoroughly investigated and yielded large amount of sherds.

The third place where extensive excavations have been done is *H'mena*, the acropolis of El Pilar. As mentioned, this is an area with many small plazas leading from one into the next with restricted access and many structures rimming the open spaces. Plazas *Hatz*, *Jobo*, *Kibix* and *Manax* as well as EP 21 through EP 26 and EP 53 are considered to be part of that acropolis. Excavations there also resulted in a high number of ceramics.

There have been other excavations through out the monumental core, all contributing to the ceramic collection. They, however, are too small and too widespread to be dealt with here in detail. For more in-depth information and more detailed numbers, please refer to Table 4 in Appendix II of this paper.

5.3.2. Site 272-025 – Tzunu'un: Elite Residence

The elite residential complex of Tzunu'un, is located east of the monumental core and is considered a separate site due to its size and importance. Ten different areas in Tzunu'un have been excavated, the 5 structures that make up the compound, the central plazuela, a looter's trench (LT X), and three surrounding activity areas (OPS, TN 5 and CHT (the collapsed chultun)). An excavation plan is provided in Appendix I Figure 5.

The estimated sherd count for Tzunu'un is 62,669 which makes this collection by estimation larger than the monumental core collection. The reason is the extent of excavation. While Tzunu'un was completely excavated, the monumental core was only partially excavated and large areas await investigation.

The largest contributor to the Tzunu'un sherd collection is Structure 1, the largest structure in the compound, where almost 40% of the sherds were recovered. The other four structures and central plazuela are also areas that yielded a relatively high amount of ceramics. The surrounding areas of Tzunu'un that were investigated contained relatively small amounts of sherds.

For more detailed numbers and percentages please refer to the table provided in Appendix II under Table 5.

5.3.3. Site 272-232 - Chiik Nah: Common residence

This single structure residential unit was excavated for insights into simple occupations in the El Pilar area. The largest part of the sherds stems from an area called STR1 TT4. Three other areas (TT1 through TT3) all contributed in various degrees to the collection. There are also some sherds recorded that do not have any further detailed provenience listed. These I called

"General Chiik Nah" in the table listing all entries from this unit. Those sherds might have been collected from the platform or on the outskirts of the excavation area. A table with a full breakdown of the numbers and percentages is provided in Appendix II Table 6.

5.3.4. Larry de Forrest (LDF) Chert site - Cahal Tok

Cahal Tok is another name for a chert flake deposit site and an adjacent working platform, more commonly referred to as the LDF chert site. Collections from this excavation pertain to a platform above the debitage area and relate to the production location. All ceramics found there were labeled with the same general provenience. The only indications of a more detailed provenience are excavation unit tags. An estimated 4200 sherds were recovered at the Chert site, which are included with those from all the smaller, satellite units excavated at El Pilar in the El Pilar surroundings table. It is the same table on which Chiik Nah is recorded, located in Appendix II Table 6.

5.3.5. Site 272-022 - The Limestone Quarry

The Quarry area with the designations Q and QUA was considered for excavation as the project wished to utilize the area for the Tzunu'un consolidation efforts. Excavations were conducted to understand the activities of these important construction stone areas better. Approximately 1000 ceramics have were found. The vast majority comes from the QUA BOT unit with only a minor addition is provided by the Q area. A list with detailed numbers can be found in Appendix II Table 6.

5.4. Ceramics by Time Period

A major goal of the excavations at El Pilar was to understand the construction sequence at El Pilar. The ceramics are considered from a comparative perspective. Comparative collections from the Belize River Area and the wider Maya region were the foundation of the El Pilar chronological assessments.

Considering the ceramics of El Pilar by time period is an essential means of understanding the overall prehistoric chronology. The basis of this inquiry is the detailed sherd record catalog. In case of the data on time periods, the total sherd count of the record catalog can be used.

The sherd count for the complete record catalog is 12,921 sherds. Those assessed by time period were 59.16 % or 7644 sherds and form the basis of the chronological assessment for El Pilar. The percentages given in the following are calculated from the sherds for which a time period identification was possible, not from the ones in the whole sherd record catalog. All numbers and percentages mentioned here can be found in detail in Appendix II Table 7.

Sorting the sherds by time period results in a temporal map of proportions and numbers of collections in each time period. These frequencies can be used to generally establish the occupation and construction at El Pilar. Given the assumption that the relative frequency and the percentages of sherds reflect the intensity of activity, frequency can also provide the first indications of activity at the site. The time periods will be presented from earliest Preclassic period to most recent occupation in the Terminal Classic. Interestingly, there is no excavated data reflecting the Postclassic period.

The Early Preclassic period is known for the Belize River area (Garber 2004); however, there were no sherds for that period recovered at El Pilar. This suggests that, unlike the Belize Valley sites of Cahal Pech (Garber 2004:105) and Blackman Eddy (Garber 2004:25), where Early Preclassic materials have been identified. Ridgeland sites, such as El Pilar, in a location aligned with interior sites such as Tikal, were minimally occupied and experienced no construction at this time. This led to the general assumption that the Belize River Valley with its numerous sites was not settled before Middle Preclassic.

The time period of the Middle Preclassic is well represented in the excavations at El Pilar. This is a strong indication that there were occupation and construction in this period. The Middle Preclassic sherds make up 5.97% of the sherds having a time period assessment. Not voluminous, but clearly representative of a phase of construction in the monumental core.

The Late Preclassic is represented with 672 sherds total, which makes up 8.79% of the sherds to which a time period has been assigned. Where attributes of a sherd could possibly be assigned to either Middle or Late Preclassic, a general assignment to Preclassic was given. Those sherds were attributed to the Preclassic without distinguishing Middle or Late Preclassic. There are 792 sherds recorded in this category and those, combined with the Middle Preclassic and Late Preclassic tags, strengthens the importance of the Preclassic at El Pilar. The general Preclassic sherds make up 10.36% of the collection carrying a time period tag. If these were included in the Late Preclassic components, we have a total of 19.15% of the time period collection representing a large component of construction activity at the site of El Pilar. Adding to that amount the Middle Preclassic sherds we find a total of 25.12% of all sherds with a time period assigned are labeled with a Preclassic tag.

The Early Classic time period in the Maya area represents a time when Tikal and Uaxactun were consolidating their power. El Pilar, within 50 km of Tikal, does not appear to have a strong Early Classic component, with only 332 sherds recorded, representing 4.34% of the time period collection. This reduction in entries is troubling in light of the significant collection from the Preclassic. It is important to note, however, that the strong reliance on only a few diagnostics may skew our appreciation of the Belize River Area collections for the period (LeCount 1996). The forms that are considered the most diagnostic of the Early Classic, such as the “Basal Flange Bowl”, are special decorated vessel forms and co-occur with Preclassic period utility vessels. Consequently, the data at hand may only provide us with an idea of participation in the greater Maya sphere of ceramic traditions rather than indicate the proportional activity at El Pilar.

The Late Classic period is known as the apex of the Maya civilization. All major centers identified in the central Maya lowlands evince considerable activity in this period. At El Pilar, this is the period that dominates the collection of recorded sherds, with 3,975 sherds dating to the Late Classic period representing 52.00% of all recorded ceramic sherds with a time period tag from El Pilar. The Late Classic is by far the largest component of the ceramic catalog and by inference the most active construction period at the site.

The Terminal Classic has been considered a time of flux and abandonment at the major Maya centers. For Barton Ramie, not more than 20 km away, Gifford considered the Terminal Classic as just a small appendix to the Late Classic. For the El Pilar excavations, the presence of Terminal Classic as defined by the Tikal and Uaxactun projects, where it is a significant component of the last construction phases. There are, however, only 217 sherds identified as Terminal Classic, representing of 2.84% of the El Pilar time period collections.

The final time period of the Maya occupation is the Postclassic, a period that encompasses the 500 years before the Spanish conquest. At El Pilar, there are no sherds have been identified as Postclassic in the sherd record catalog. This implies a noticeable change in construction and occupation at El Pilar. Given the drop from Late Classic to Terminal Classic along with the absence of Postclassic evidence at El Pilar, this center too suffered the same fate of abandonment that so many other Maya sites in the area suffered.

Assigning time period to sherds is an ambiguous task, since one never feels 100% certain of the period to which a sherd belongs. As discussed in chapter 4.4, the decision making chart provides a series of points where alternatives may be selected. Those alternatives include assignments of ambiguous, multiple, tentative and no time period assignable. There are 1,227 or 9.49% of the total collections. They may be resolvable once the full context is investigated. There are 1,200 sherds in the catalog where multiple possibilities of time period have been noted. These include sherds that fall into Preclassic and Early Classic as well as those that are, for example, Early Classic and Late Classic. While these sherds make up 15.70% of the time period collection, this does not impact the interpretation of the El Pilar chronology. In addition, a few sherds (34 of 12000) were assigned a tentative period. These sherds with tentative periods , however, have been included in their period records. Finally, in the case of El Pilar, two-fifths of the analyzed sherds have no time period assignment. These issues, as well as the other ambiguous cases, may be dealt with and reduced in future comparisons when research on context and associated materials will be done.

With the time period distribution at El Pilar presented, one can now turn to other sites and compare the percentages to them. One such site is Barton Ramie. While the total amount of sherds recorded at both sites differs, pure percentages can nevertheless be compared since both sites base those percentages on the volume of completely identified sherds. The ratio between the amount of El Pilar sherds and Barton Ramie sherds usable for this comparison is approximately 1:25 in favor of Barton Ramie. Concerning the Preclassic it is notable that El Pilar has a slightly higher percentage of Preclassic ceramic than Barton Ramie does. For Early Classic, this situation is reversed with Barton Ramie having approximately three times as much Early Classic ceramic percentage as El Pilar.

The rather small amount of Early Classic ceramics at El Pilar is noteworthy. There are two possible scenarios for this: Either there is a significant reduction in settlement size and activity, or the Early Classic ceramic diagnostics are set too tightly. The first scenario can be quickly dismissed since investigations of architecture show a continual remodeling of sites and compounds. Therefore, it must rather be attributed to the way Early Classic ceramics have been identified at El Pilar. Basal flange bowls, medial flange bowls and Z-angle bowls are big markers for Early Classic and, as such, are always identified, when encountered, as Early Classic. This, however, does not apply to other vessel categories that are not bowls, and does not apply to rims. Rim styles change and transform in different ways and can be continuous. Other than with pie-crust that is a specifically Terminal Classic rim style, such obvious rim styles do not exist in Early Classic. Studying Gifford's pictures of the Barton Ramie collection, one will see that there are a lot of rim shapes that also exist in similar ways in both Late Preclassic and Late Classic. Therefore, an Early Classic piece can not always be clearly identified by simply looking at a rim sherd. This is clearly shown by the high number of pieces that have Early Classic as part of their multiple time period labels. This elusiveness of Early Classic markers could be the reason why there is a rather small amount of clearly identified Early Classic pieces present at El Pilar.

Both sites show an almost identical percentage of material for the Late Classic. Both have slightly over 50% Late Classic ceramics in their collections. This allows the assumption that both sites were flourishing during the same time.

The first major divergence is presented by the Terminal Classic. While El Pilar has Terminal Classic sherds recorded, Barton Ramie has none as Gifford did not record Terminal Classic as a separate time period, but as part of Late Classic. This means that at Barton Ramie the ceramics labeled as Late Classic include both Late Classic and Terminal Classic sherds. As a result, it is not possible to discern how many Terminal Classic ceramics may have been recovered at Barton Ramie and, therefore, no comparison is possible for that time period.

The Postclassic is the second major divergence between the two collections. While Barton Ramie has Postclassic sherds recorded, there are none recorded for El Pilar. It seems that unlike in Barton Ramie, which still continued to br occupied after the Maya collapse, all lights went out at El Pilar during the Terminal Classic.

5.5. Ceramic Sherds by Vessel Categories.

The El Pilar ceramics recording method includes a number of attributes that can be considered. One of the temporally discrete aspects is vessel form. Deduced from fragmentary potions of vessels (the sherds), the vessel shape and general categories used here include a standard set of vessel categories that make up the ceramic assemblage. Based on rim shape and the relationship of the rim to the vessel wall, distinguishable shapes are identified in the most specific way possible.

First, the shape catalog reflects categories that can be clearly distinguished through certain rim shapes and assigned to a specific type of vessel, hence called vessel categories. For example, a body sherd may be identified as a jar; it, however, may not be assigned to the jar category since it can not be matched with a specific jar rim shape in the catalog. Only sherds that can clearly be matched to a rim shape can be assigned a vessel category. The analyzed sherds that do not fulfill this requirement will lack the vessel category.

Second, as already stated, sometimes sherds can be identified only in a general way. While this is not a specific identification based on the shape catalog, it still is a viable way to identify sherd form. Although a basal flange sherd cannot be matched to a rim shape, it can be identified as a bowl sherd by other means and through other markers. Importantly, in the case of the basal flange, it can provide a chronological marker as well. Therefore there is an indirect way to match sherds to the established categories of the shape catalog. In order to make a differentiation between the direct identification with the shape catalog and the indirect identification based on diagnostic markers, sherds are labeled differently. The rim sherds identified through the shape catalog are labeled according to the vessel categories to which they are assigned. All ceramic pieces identified by any other means are simply labeled generically as, for example, body or base. The primary point of distinction is the presence or absence of a rim on the ceramic piece.

Given the total number of sherds (12,921), only 209 sherds, or 1.66% of the total, have an unspecified ceramic category. This means there is only a small proportion of the collection that was not attributed to general or specific vessel categories.

Another small ceramic category is body sherds. This category is small because not all found body sherds have actually been recorded. Most body sherds are sorted out for not being diagnostic. Only if a body sherd shows some special, notable feature of some sort will it be kept and recorded. The largest part of the recorded body sherds are the general body sherds. Following are body sherds having flanges. These can be either medial flanges or basal flanges. Flanges are among the more important diagnostics and by their presence both time period as well as vessel category can be inferred indirectly. The third kind of body sherds present are those with handles or other appendages. They are rather rare and therefore constitute the smallest group of body sherds at El Pilar.

Another ceramic category is bases. General bases have 1,032 sherds recorded. A special sort of base is the so-called drum base, which is not the base of a standard vessel but rather, as the name implies, of a musical instrument. They have a rather low frequency, at El Pilar only 16 have been recorded. They are a diagnostic of the Late Classic to Terminal Classic. Another specific type of base assigned to a unique category is pods. At El Pilar these include but are not limited to flat pods, round pods and mammiform pods. Pods are also a diagnostic feature primarily for the Late Classic since they form part of the tripod plates and other ceramics from the. Late Classic

There are three other categories of ceramics which are recognized at El Pilar: lid, miniature and incensario. All three categories are only fringe, but due to their unusual characteristics all of them are important.

Lids are special ceramic pieces that are used to cover other vessels. They range from very ornate to very plain. While the ornate ones are usually easily identified and also most often have an accompanying vessel with them that matches them in style and decoration, plain lids are harder to identify. Plain lids can easily be mistaken for bowls because they have similar curvature and some lids just look like bowls turned upside down. Only a thorough investigation of the rim can sometimes give hints as to whether a sherd is a lid or not. Due to this elusiveness and their general low frequency, lids are always noted down when encountered. Only a few of such lids have been identified at El Pilar.

The second of the exotic ceramic categories at El Pilar consists of the incensarios. Incensario is the Spanish word for incense burner commonly used in Maya archeology. Those burners appear in many forms. The largest and most ornate ones are made of stone and are executed as effigies. Alongside the stone ones, burners made out of ceramic exist. Those ceramic burners also show a wide variety of ornamentation and execution. Due to their special use they have a very low frequency and thus only very few sherds identified as parts of incensarios have been found at El Pilar.

The third special category is miniature. Sometimes small figurines or small scale models of other objects are found at a Maya site. They are very rare and always the center of special attention when found. At El Pilar, a singular figurine has been found.

The bulk of the catalog reflects the established vessel categories of the shape catalog. The vase category is one of the smallest with only 189 pieces and 1.46% of the sherd catalog. In contrast, jar category has 3,910 sherds and 30.26%, being with that the largest category in the catalog.

Bowls are threefold in the sherd catalog, like they are in the shape catalog. General bowls number 2,100 sherds or 16.25%. Incurving bowls are the smallest of the bowl category and are represented with 942 sherds or 7.29% of total. In between are everted bowls with 1,166 sherds or 9.02%. Plates are the second largest category of vessels with 2,281 sherds. They form 17.65% of all catalog entries.

The smallest category of the vessels in the shape catalog is the Tecomate. Eighty-four sherds are labeled as such, resulting in 0.65% of the catalog. These have their own category as they are temporally sensitive.

Concerning the frequency distribution of the ceramic categories, there is nothing really unusual to be noted. Vases as prestige drinking vessels from the Late Classic have a low frequency, as would be expected of such special purpose vessels. On the other hand, storage vessels such as jars dominate the collections since storage and cooking of food and other items was always important and necessary every day. That bowls as serving vessels have a high frequency is related to the high frequency of the aforementioned activities and lends support to the daily activities of the Maya in all periods of occupation. The same applies to plates as serving vessel as well. For all numbers and percentages please refer to Appendix II Table 8.

5.6. Additional Aspects provided by the El Pilar Records.

The three aspects treated so far are rather traditional ways to look at a ceramic collection. Almost any collection can and will be subject to such investigations. For the El Pilar records this is just the beginning. Due to the detailed recording of a great variety of attributes, the El

Pilar collection can be viewed under many more aspects, aspects which are probably not commonly available in other collections.

One of those other aspects is the quantification of slipped vs. unslipped sherds. This distinction is quite important. From a slipped sherd which can also feature paint a greater amount of information can be expected than from unslipped sherds where the gathering of attributes has to skip the part of surface color and decoration. One should, however, not consider unslipped sherds less important than slipped sherds, due to the lower amount of possible data. Despite the lack of surface color and decoration, unslipped sherd can still provide vital data and any collection would be diminished not only in size but also in diversity by not making use of them.

One such collection where unslipped sherds were discarded is the Barton Ramie collection. Gifford in his type-variety method only makes use of slipped sherds.

The philosophy of the El Pilar project is different. They recognize the unslipped sherds as having the same status as their slipped counterparts and add their data to the data pool of the El Pilar collection. The importance of unslipped sherds for the El Pilar records will become clear when looking at the numbers. In the El Pilar collection the majority of the sherds are unslipped. This means they would be unusable for approaches focusing on slipped sherds like the type-variety. As a result only a minority of the El Pilar collection could be assessed by such a method. A very narrow and skewed view upon the gathered ceramics would be the result. With the El Pilar method a broader more balanced view on the same ceramics is possible. This makes the El Pilar method valuable for any collection, but especially for those collections that have a high percentage of unslipped, fractured sherds. Utilizing the El Pilar methid, such sherds can be added to and improve, the data pool of a collection.

Another aspect available with the El Pilar data is the frequency of color, using the Munsell system. By doing so one can determine the exact amounts ofsherds with a specific color. The difference between red and black colored vessels is pretty obvious and differences in the ratio between red and black vessels have been noted throughout Maya sites in the Belize River Area (Gifford 1976, LeCount 1996). With the Munsell color recorded, it is easy to determine the amount of red and black colored ceramics and facilitates putting El Pilar into context.

5.7. Summary

This chapter provides an overview of the El Pilar collections as well as their quantification by provenience, shape and other significant attributes. By establishing an initial, general overview of the spatial, temporal and compositional characteristics of the El Pilar collection, we now have an objective and proportional basis for appreciating the ceramic sherd assemblage.

First, it was shown that presenting the ceramic collection with the help of the El Pilar records is very versatile. It not only includes the standard points of view like provenience, time periods and vessel assemblage, but also more unusual ones like slipped versus unslipped, and any other for which data has been recorded.

Not only is its versatility noteworthy, though, but also the ability to keep a high level of data in all steps. In other methods, like the type-variety, much of what is considered "background" data is dropped at one point. One most likely has to dig very deeply if one wants to find out the provenience of some of the ceramic pieces presented and illustrated in Gifford's book. While he presents the types there is no mention where the ceramic pieces making up a type originated, whether they are from the same mount or lot or whether they come from different places throughout the site. This surely would be interesting in certain investigations.

The same applies to the vessel categories. While Gifford sorted his types all by time period, he did not sort the sherds by vessel category within the types. This makes it difficult to appreciate complete ceramic assemblages unlike in the Uaxactun reports where the ceramics are sorted not only by chronology but also assembled by vessel category, making the ceramics accessible to anyone who wants to look at similar vessels from the same time period. This feature can be recreated with the El Pilar records, thus achieving the same degree of accessibility.

This level of detail is kept consistently throughout the presentation of any part of the collection. While it might be considered a minor set of data by some, even an attribute such as diameter is recorded and available for perusal. As well, while some may say that the designations of color such as red, orange and yellow are sufficient, a record with Munsell color allows a finer tuned presentation of color within a collection.

Furthermore, together with the wide variety of available attributes the El Pilar records offer, detailed quantities of the sherds are recorded. These quantities allow for a thorough look at frequencies and percentages, which again allow for easy comparison with other collections that feature the same level of quantification, as was demonstrated through the comparison of percentages of time periods between El Pilar and Barton Ramie.

This high level of detail might, by some people, be considered too tedious and unnecessary. Granted, less detail might suffice and as it has in previous, viable methods such as type-variety. However, methods by which to record and use this high level is currently readily available and the more details that can be considered the sharper the picture gets. To use an example from the information technology realm, a monitor with 1280 x 960 pixels has twice the resolution a monitor has with 640 x 480 pixels. The overall gain of pixels, if the resolution is doubled, is not simply doubled, it is four times the old resolution. It is an exponential gain rather than a linear one. This same idea also applies to archeological ceramic records. By increasing the amount of details available one also increases the amount of mosaic tiles forming the picture of the ancient Maya to the archaeologist.

Second, this chapter has shown that even rather simple methods, such as sorting and resorting data sorted systematically in computer files such as Excel tables, can provide a significant appreciation for the nature of a ceramic sherd collection. The systematic organization makes it possible to organize the data and sum the subsets computationally. The ability to sort by attributes and characteristics allows for an accurate picture of the distributions of materials by the objective variables gathered.

In this chapter, a review of the proportions and general distributions of the ceramic proveniences has been readily accomplished with the computer based data catalog. We can consider aspects of the overall collections and proveniences as well as the types and chronological assignments of the collections simply by using a spread sheet format. There is greater potential regarding this data which could be realized with more sophisticated organization. Future efforts, using Microsoft Office Access, will focus on the development of a relational database building on the essential foundation established here. Such a relational database would powerfully address provenience, ceramic shape categories, and temporal considerations together. This will make it possible to provide even more and deeper insights into the ceramic collection of El Pilar in the future.

6. Comparison of the El Pilar and Gifford’s Type-variety Methods

6.1. Introduction

During the course of this thesis, two different classification systems and methods adhering to those systems have been introduced and presented. The nature of those systems is complex. On the one side there is the taxonomic classification system; on the other side, is the paradigmatic classification system. One could say the two create rather conflicting views, because they start out from different foundations. These systems have been presented alongside each other, each in their own context. Now, after presenting and characterizing both systems, it is time to compare and evaluate their advantages and disadvantages.

The problem is due to their opposed nature in that both methods do not share much common ground. Therefore a direct comparison is difficult to achieve. A comparison can, however, be made indirectly through a mediator. This mediator should be a theoretical, perfect method, and used as a standard for which both methods are striving for. Both methods would be measured against this standard to determine which of the two comes closer to it. By looking at their advancement towards that standard, it would be possible to create a comparison of their sophistication.

The perfect scenario for ceramic studies would be the existence of a totally objective and unambiguous classification method. Every aspect in this method would be perfectly retraceable, every part would be perfectly justifiable and all workings would be perfectly reasonable. For such a perfect system, one needs a perfect environment and the field of ceramic studies can hardly be called that. While with the aid and capabilities of computers, which are in a sense truly objective, archaeology becomes more and more based on mathematics and thus arguably more objective, there are still some factors in every classification that are decidedly human. These are the limits and thresholds within every classification. Potential thresholds are, for example, when is a vessel still a jar and when it is a bowl, or when does a narrow orifice jar become a wide orifice jar? These are borders that can not be determined by numbers and totals alone and that are not clear-cut but gradual in most cases. Decisions regarding these thresholds need to be made by a singular person or a team. As soon as this occurs, the subjective human touch is inevitably in the system, removing it from its theoretical, perfectly objective state. Yet kept to a necessary minimum, and bearing in mind clear descriptions, such a system still can deliver a good performance. Only when such individual decisions are made unchecked, will the cohesion of a system suffer.

I will now compare the two methods presented to the standard of a totally objective and unambiguous classification method. This comparison will focus on how decisions are made, how consistent the realization of each method is and where the bases of each approach are located in the field between subjectivity and objectivity.

6.2. Taxonomy – Gifford's Type-variety

The first aspect to be looked at in Gifford’s type-variety method is the basis on which the method is founded and where it fits into the subjectivity-objectivity field. The basic building block used by Gifford (1976:16) is what he calls the “type-class”. He says it “includes all pottery on which a particular kind of surface treatment appears” and states that it is “based solely and objectively on the attributes of surface treatment” (Gifford 1976:17). This implies that shape, one of the most constant and obvious characteristics of ceramics, is largely ignored. When looking at the illustrations Gifford has in his book (1976:76 and 135 for instance), one will notice that the figures do not display any ordering by shape. Jars, bowls, plates and all the other shapes are mixed together. Gifford presents his ceramics data by the types he created, sorting his collection by color and decoration rather than shape as it is done for example in Uaxactun.

This focus on surface treatment is problematic for several reasons. Decoration is the most fleeting characteristics of pottery. Giving a vessel a complete new form represents a big change.. Using new clay and mixtures is one, too. The creation of a different stroke when painting or decorating a vessel is not on the same level as a change in form and paste. Gifford says that the characteristics of a vessel are governed by the aesthetics and concepts of the society in which the vessel was created (Gifford 1976:3/4). The domain of decoration is, arguably, the one with the most freedom to individualistic expression by the potter. Changing the shape of a vessel might reduce its practicability or might not be condoned by society, but painting or decorating a vessel in a slightly different way or using a different range of colors might still be within the accepted limits. Besides, one should never forget that potters were human individuals like everyone else with different perceptions and also different commands of craftsmanship.

These results of individual execution of each pottery piece and a naturally occurring deviation from the theoretical master concept may or may not represent a major shift. Contemporary archaeologists should not be influenced by today's industry norms and automatic assembly lines, where one type of plate has the exact same look as its thousand clones from the same production. Therefore, what someone in the 21st century might consider different characteristics and, therefore, different types might have been for the creators of the vessel still the same. This means a range of vessels which might be, by the standards of an analyst, divided into two or more types, could have belonged to the same category for the creators. How can we know? Types based on color and decoration seem likely to result in an artificial set of groups unrelated to the original, ancient groups. All this places the basis of the type-variety very far on the subjective side, involving a lot of assumptions and judgments by a human individual.

With the basis of the type-variety:mode being deemed to be quite subjective, the question about another aspect, namely the way decisions are made in type-variety, arises. One of the most important matters in any classification is the way the units of said classification are created. In type-variety:mode the units are the types and they are primarily defined by color and decorations. The question now is how those types are differentiated. Colors are not really clear-cut in most cases so there might be a problem with clear distinctions. Anna O. Sheppard, who already considered the problems with the type class concept in her book (1956:306), gives a good example. She writes that in the American Southwest Jeddito Black-on-orange turns into the type Jeddito Black-on-yellow with an almost continuous blend (Sheppard 1956: 312). If there is really a continuous gradual change between orange and yellow, then the question must be asked what is still yellow and what is orange and vice versa. Where should the line be drawn?

The perception of color is different among individuals and therefore, any decision by a ceramicist to make distinction is also individual. Gifford basically confirms this in his writing when he says: “Type-classes often informally (or subconsciously as far as the analyst is concerned) provide the fine but ever-present lines of demarcation guiding the recognition […] of type units” (1976:16). A subconscious impression is not a conscious effort to make decisions on a reflective basis. One could say Gifford suggests that type-class decisions are often made by being lead by ones hunches and gut feeling. Hunches and gut feelings are very subjective, individualistic and not very reliable. Gifford writes that his type-variety is "objectively" based on color and decoration (1976:17). I believe this claim is questionable taking into consideration what he wrote just a few sentences prior to that, the statement about the subconscious. Apart from that, there cannot be, however, any real objectiveness concerning color and decoration in the first place. Even with the usage of advanced methods to determine color like Munsell does, there remains a noticeable discrepancy between the color perceptions of individuals. This discrepancy is by far greater in the case of the general color references the type-variety:mode is using.

Concerning the decision making process there is another aspect that demands attention: It is the process creating the taxa, or in other words the types and varieties, used. When Gifford made a concordance in 1966 between the Uaxactun and Barton Ramie ceramic collections and gave the Uaxactun ceramics type-variety tags, he described 157 types(Smith 1955c). In his own Barton Ramie collection he identified 158 types (Gifford 1976:55-57). Of the 158 types identified in the Uaxactun collection 94 are exclusive to Uaxactun. Sixty-three types can be both found in the Barton Ramie volume as well as the Uaxactun concordance, while 95 types only exist within the Barton Ramie collection. That means that altogether he described 252 types in those two collections. Gifford, however, does not explain how he established those types. Granted, at least in his Barton Ramie work, Gifford lists identifying attributes for each type and varieties, but he never shows why these attributes are in any way special or different from each other and noteworthy in these constellations. For example he identifies two different types of Orange-polychrome in the Hermitage complex. Those are Actuncan Orange-polychrome: Actuncan Variety (Gifford 1976:170) and Dos Arroyos Orange-Polychrome: Dos Arroyos Variety (Gifford 1976:173). He describes both their characteristics but never refers to the other type in order to explain what the exact difference between the two types is or why they should exist in the first place. He pulls types, like a magician, out of his hat and shows them to the world like the proverbial rabbit.

As a result it can be safely stated that not only the basis of the type-variety is quite subjective, but that its decision making process is also on the same level of subjectivity.

One could see two ambiguities emerging within the type-variety method of Gifford. First, there is the ambiguity of real differences in pottery and perceived differences in decoration and execution of vessels. Second, there is the existing ambiguity of perception of color and decoration on an individual level. Their existence can easily lead to excessive "splitting" or, in other words, the creation of many types based on the minuscule differences perceived in the collection. The same would apply to varieties when this splitting is done on both the type and variety level.

This foray into how units of classification are filled with content in the type-variety shall at the same time serve as a probe into the consistency of the type-variety. As part of the preparations for this thesis, I created the concordance between El Pilar and Barton Ramie ceramic data.[2] As a first step, I compiled a complete quantitative list of all types and varieties established by Gifford since in the original publication of 1976 no such list was provided. This compilation assembles the sherds counted towards each type, towards each variety of each type and also lists sums of sherds for every ceramic group and ceramic complex. With the help of this list, it is easy to determine whether Gifford really was susceptible to excessive splitting.

The well-known ceramic groups appear solid. The Preclassic Sierra Ceramic Group, which contains the Sierra Red type (Gifford 1976:85), has 3,782 sherds and 9 restorable vessels and the Belize Ceramic Group, of which the Belize Red type is a part (Gifford 1976:255), possesses 23,240 sherds and 39 restorable vessels. Gifford not only established those major groups, but also many smaller ceramic groups.

Considering some of Gifford's smaller groups there is, for example, the Sarteneja Ceramic Group (Gifford 1976:116), with 56 sherds and 5 restorable vessels or the Escobal Ceramic Group (Gifford 1976:118), with only 31 sherds and *no* restorable vessels. While the point of establishing a whole ceramic group based on 5 vessels and 56 sherds may be argued if they are really distinct, it seems less comprehensible how the creation of ceramic group based solely on 31 sherds can be justified. The question must be asked, why there are not more sherds of this kind. Why are there not any vessels? Finally, there is the question whether this really represents a separate group or whether the sherds might better be determined to be type or variety of another group. What are the perceived differences that prompted Gifford to create the Escobal group?

The type-variety:mode method claims to be based solely on restorable vessels (Gifford 1976:6), thus establishing a whole ceramic group with no restorable vessel at all appears questionable. This loose stance towards numbers and quantities does not only manifest itself in those micro groups but also in the quantitative record of the whole collection. A recreation of the frequencies and sherd amounts by Gifford was not possible since there are many gaps in the sherd totals. There is inconsistency in that some ceramic groups are listed with exact sherd numbers and other ceramic groups are listed without any sherd totals. Furthermore, it happens that there are summed types and varieties of a group that contain more sherds than the group is listed as having; the Aguila Ceramic Group is one such case (Gifford 1976:182). There are also examples of groups with no sherd totals, such as Hillbank ceramic group (Gifford 1976: 101).

The proportion between some ceramic groups, types and varieties is noteworthy as well. In theory a ceramic group contains several types and a type contains several varieties related to the type. When one looks at the actual distribution and relations between groups, types and varieties a different picture comes into light (Gifford 1976:50-54). Some types live up to the theoretical concept, such as the Aguacate Orange type that contains five different varieties. But many types contain only one variety, such as the major Belize Red type of which only a Belize Variety exists. In a number of one-variety-cases, the listed variety is simply called "variety unspecified". According to Gifford (Gifford 1976:10), this term is used when *only* one variety could be established but no connection to known varieties could be made. This definition is cryptic, but no further elaboration could be found in the book. Another example is the Corozal type, which is only listed as Corozal Incised: Variety unspecified (Gifford 1976: 253). There are also several ceramic groups which only have one type, like the Asote ceramic group with only the type Torres Incised, which again only possesses one variety of unspecified nature (Gifford 1976:253). These groups are given the same hierarchical space as the robust groups of Sierra Red and Belize Red.

The situation of ceramic groups containing only one type and in turn containing one variety named unspecified violates the basic principles of taxonomic classification, where one needs to have at least two different states to make a classificatory distinction. It appears Gifford split his ceramics into smaller and smaller units until only one state was left. This could be interpreted as a sign that the classification was taken too far and too many units were created.

As Dunnell pointed out in his work (Dunnell 1971:48), a classification that only contains a single object in each unit is no classification but chaos. While the utility of type-variety is nowhere near that stage, Gifford's application shows the first signs of it by employing single variety types and single type groups.

These examples show that the type-variety:mode has issues with consistency, at least when it comes to numbers and quantities. Both the very small sherd counts in some of the ceramic groups and the inconsistent treatment of sherd totals make it hard to retrace Gifford's chain of thought when he created his descriptions of the Barton Ramie collection. Especially the sometimes minuscule amounts of sherds in some of the groups lead one to wonder whether Gifford at times has not lost track of the big picture and got entangled a bit too much in microscopic details.

We know that the type-variety:mode has its merits. It has been influential in the understanding of Maya ceramic chronology. The ceramic phases it established really are the foundations for today's application of Maya chronology. The broad diagnostic changes identified with the type-variety:mode system are essential for the work of any Maya ceramicist still today. Gifford's development of the type-variety:mode approach established the basis for subsequent work in the region... Gifford's problem, in my opinion is his style of explanation.

When studying Gifford, a quote taken from a computer game named World of WarCraft, comes to mind. There is a character who says: "We have it all figured out: Step 1: Land the ship. Step 3: Defeat the Legion and go home...there is only one detail missing...". I believe this applies to Gifford. He had a good purpose in step 1 and later presents his results in step 3. These are his extensive amounts of different types and varieties and ceramic groups. He, however, appears to have missed step 2 where he could have explained his procedures and logic clearly. An interpreter of Gifford's work cannot know what the logic really was. Guessing the creator's intentions might be acceptable for arts like painting and poetry, but it is not for a science like archeology. But to give leniency where leniency is due, the circumstances under which at least Gifford's prime publication of 1976 was published have to be considered. It was released posthumously by his wife Carol A. Gifford and several scholars from that time helped in the task by making contributions. Gifford himself might not have been able to put into writing some important parts that might have shed some light on the more murky parts of the type-variety:mode before his early death. Furthermore, while the involvement and help of other scholars to finish his work is commendable, it might have been at this stage that some of the noticeable inconsistencies arose. This is, however, all conjecture on my part and one might never know definitely. In any case, I find it only fair to point out these circumstances

Additionally one must keep in mind that when type-variety:mode was created, the primary aim of ceramic analysis was to develop a chronological sequence of sites and collections. This aim was undoubtedly achieved by Gifford's type-variety, as can be witnessed through its numerous important contributions to the understanding of Maya chronology. However, in the past fifty years, expectations of archaeologists have changed and new questions based on chronology are being asked. These new questions about paste composition, petrographic analyses, neutron activation, and geological sources cannot be sufficiently answered by methods that are created solely for chronology. They require new and different methods. In light of this new development, type-variety:mode needs to be reevaluated. A consideration of the paradigmatic method can help in this reassessment.

6.3. Paradigm – The El Pilar Method

The concept of a paradigmatic classification system can be briefly summarized as "paradigmatic classifications treat all its units equally". As a result no one needs to watch carefully the delicate order of units created in a taxonomic classification, but could arrange the units of a paradigmatic classification in any relation to each other as he or she sees fit.

Just as with taxonomic classification the first aspect covered shall be the one of the basic building blocks of the method. The basis of the El Pilar method is vessel form. Based on the knowledge of whole vessels from the research on the Maya of the past century, the rim shape of a sherd determines its membership in one of the vessel categories, which are the units of the classification. Seven paradigmatic units of vessel form are used in the El Pilar method. This compares to some 200 taxonomic units for the Barton Ramie collection. This is a difference not only in absolute numbers but also in the handling of analysis. A researcher using the El Pilar method faces only seven equal units as opposed to the entry into the type-variety:mode method that has over two hundred unequal units of classification. Time that could be spent in the analysis must be spent in the familiarization of the nomenclature of hundreds of units with the type-variety:mode. It could be argued that the type-variety:mode is more sophisticated than the method of El Pilar if sophistication is equated with complexity. But this is not obviously the case. The basic units of classification need to conform to the objectives. For the taxonomic method of the type-variety:mode, the objective was to separate discrete color and décor used for surface treatments. The aim of the El Pilar method is to classify vessels.

Clearly, the forms of vessels, as well as color and décor, do not have a clear-cut distinction. As with many things it is a continuous flow from one form into the next. Vases "flow" into jars, jars morph into bowls and so on. It is important to determine and define the correct thresholds where, say, a vase becomes a jar and a jar turns into a bowl or vice versa.

Vessel transition points are more important than what is in between. The creation of three units for jars: jar-jars, vase-jars and bowl-jars could be one way to accommodate those transition points. Or a wide definition would put these three forms into one generic "jar" unit with the same result when it comes to general vessel category. The primary question is how many units are required for the research as opposed to how many units one can devise. A classification system should be clear and concise, and this means only the necessary amount of units are to be introduced. In the case of the El Pilar method, seven basic form units do the job adequately. Naturally, the amount of units in any classification should be subject to reevaluation. If deemed necessary, new units should be added or excess units should be removed. While it is understandable that a scientist wants his or her material to be very diverse and faceted, more units do not necessarily make it any more sophisticated.

The seven vessel categories used in the El Pilar method are roughly based on the categories proposed by Smith and Sabloff (Rice 1987:216). The categories there are defined through height and width and the proportions to each other. Despite the fact that a certain degree of mathematics is involved, it must be admitted that the thresholds between the vessels are still somewhat arbitrary from the start. Someone decided that a certain proportion is still a bowl and a slightly different one is a dish. In a way, that makes the creation of the vessel categories as subjective as the types in Gifford's type-variety. There is one important difference between the categories and the types though. The vessel categories are easier to retrace, the number and proportions providing at least some insight into the reasoning, while, in the case of the types, the reasons for the instance of their creation are frequently obscure. This results in a greater transparency of the El Pilar method over the type-variety:mode method and thus the El Pilar method has an advantage in this aspect.

The second aspect is the level of precision with which the El Pilar method is applied. For comparability of ceramic records, the recording of frequencies and measurements are used to arrive at the descriptive terms for the ceramics. While terms like red-incised are a main staple of the type-variety, they are supplementary data collected objectively within the main unit of form in the El Pilar method. As a result, surface treatment plays a minor role in the method. One could say that in terms of description that the El Pilar Method data is gathered objectively for each sherd, the data is precise in terms of the record and more easily replicable when compared to the type-variety:mode method.

As discussed in the previous section, the type-variety:mode seems to employ subjective means to record ceramics. The division into type classes depends on an individual's recognition of color and decoration. The El Pilar method uses codes to record the attributes of the sherds. For the vessel form, the 200s are jar forms and the code 263 is a certain kind of jar shape while the 600s embrace bowls and 648 is a certain kind of bowl shape. If one considers a shape to be a 250, it can be looked up and verified. There is not much room for ambiguity, only the individual's perception of the match.

When considering the color of a sherd, for example, the El Pilar method uses the Munsell Soil Color Chart as the standard. Unlike Gifford describing a color simply as red or orange, in the El Pilar method colors are noted down by Munsell color codes. As an example. a vessel is not simply red but designated as 5Y5/7, which is a very specific kind of red that can be independently observed by others. There is, of course, the challenge of selecting the right comparison color. If different people are tasked with assigning a Munsell color to the same sherd, there could be different results within one step of chroma, hue or value. Even taking into consideration this potential discrepancy the Munsell color code still provides a better basis for a comparison because it is more precise than a description by common color terms. When discussing color if a certain ceramic, one can make precise reference to Munsell colors and can prevent ambiguity in the range of red to orange

As a result one can clearly see that the El Pilar method is more precise than Gifford's type-variety when it comes to its expressions. Someone from the outside can gain better access to the descriptions of the El Pilar method as soon as he or she possesses the right tables and lists in order to translate the information than possible with type-variety:mode data where next to no material exists on how and on what basis different descriptions are created and, therefore, what determinants to apply. The different possible sets of descriptions that can be used to describe a ceramic piece are clearly defined and listed, providing the individual recording a sherd a preset selection of possibilities. This is one of the largest differences between El Pilar method and Gifford's type-variety since the type-variety:mode method relies to a great part on the intuition and perception of the recording individual.

The third aspect is the consistency maintained throughout the El Pilar method. Concerning frequencies of units, it was shown in the previous section that Gifford's type-variety has weaknesses in that there is an unequal reporting of numbers. The type-variety:mode method was instituted when data management was done entirely by hand by sorting data with catalog cards with manual systems of retrieval that are inexact. The El Pilar method was developed in the age of computers, and records are stored in computer databases. Consequently, quantities and frequencies are among the strengths of the El Pilar method. Sherd frequencies are recorded from the point of the excavation catalog to the point of sherd analysis and recording. Easily, percentages and total sherd counts can be created from those recorded frequencies as has been demonstrated. These simple computational functions help to grasp the extent and the nature of a collection in a more comprehensive way than any description alone. Gifford describes at length every single variety of each type in detail, but the big picture remains unclear. To do a comparative study using type-variety:mode groups, one must sit down and tabulate the numbers and the calculations by him or herself to discover the relative weight of each analytic unit, thereby creating a possibility of error.

It is no wonder that the El Pilar method scores above Gifford's type-variety here. The El Pilar method has the advantage of being able to utilize the technological advances in computers over the past thirty years. The new possibilities concerning consistency, precision and also level of detail granted by modern electronic devices make a vast difference compared to the traditional devices Gifford had to use.

The overall result is that the El Pilar method as classification system is a step in the right direction, striving for objectiveness and completeness. By minimizing ambiguities in records and descriptions, the method aims at being parsimonious with its usage of units and framework in order to make it as accessible and concise as possible. Every system can be improved, no doubt, and working with El Pilar ceramics is a work in progress. The El Pilar method was developed on the basis of the strong chronological foundation set by the type-variety:mode method. The objective data collection records would not have been possible without the groundwork of Gifford and others. In many ways, it is an outgrowth of the type-variety:mode system, providing a basis for future ceramic analysis work in the Maya area.

6.4. The future of the El Pilar and type-variety methods.

A comparison of the taxonomic method of type-variety:mode and the paradigmatic method of El Pilar it at first seems to indicate that the two classification systems are adversary to each other with no common ground. This is not true. On the contrary, the future of both lies in a merger of methods into an advanced version, bringing together the best of both worlds. In the following I will give a basic proposal outlining how this could be done and present initial work I have already done concerning an El Pilar – Barton Ramie ceramic concordance[2].

In the discussion above it has become apparent that both methods have strengths but also weaknesses. Dunnell (1971) writes that a taxonomic classification is only useful to order something a posteriori when the relationships between the various objects in question are already known. In his opinion a taxonomic classification is only viable for didactic purposes and not for new, unknown matters (Dunnell 1971:80). He says a paradigmatic classification is the right choice for new matters in which the relationships still need to be discovered. Since every new site and every new ceramic collection presents such new and unknown matters, a paradigmatic approach seems to be preferable in archeology.

But Dunnell does not completely disallow the taxonomic classification. He rather suggests that: "…without paradigmatically defined classes as a base, taxonomy remains an intuitive, unparsimonous device more often suspicious in character than not, and relatively useless without blind faith of the user" (Dunnell 1971:84). This is quite a critique of taxonomy but at the same time it opens new doors. In the statement he basically has the same idea of conjoining a taxonomic classification with a paradigmatic classification, like the type-variety method with the El Pilar method.

[2] For the list see the data CD supplied with this thesis

Joining these two classifications can indeed result in improvements. Dunnell states that a paradigmatic classification is the most parsimonious but at the same time not a very elegant classification (1971:84). In this context, the level of classificatory parsimony refers to the amount of assumptions a classification requires in order to work When confronted with the units of a classification from an unknown matter, like a new archeological site, one has to make assumptions on their possible relationships with each other, test them and thereafter accept or discard them. The more parsimonious a classification, the less assumption it makes. The paradigmatic classification is the most parsimonious, because it only displays attribute dimensions and states, treats all units equally and, therefore, does not make any assumptions about the order and level of its units at all. The drawback is that it is not elegant. Elegant, according to Dunnel (1971:84), in this context refers to the ability of a classification to create only the necessary and useful units. Since the paradigmatic classification is based on the permutations of the attribute states and dimensions it can create units that will have no physical objects in them. Take, for example, a collection in which both red jars and white bowls have been found. A paradigmatic classification splits these up into the attributes red, white, jar and bowl. After permutation one has units named white jar, red jar, white bowl and red bowl. As stated only red jars and white bowls exist, so the units of white jars and red bowls will remain empty and be excess units. That means in this example the paradigmatic classification has identified the potential of four units when only 2 actually exist. .

The taxonomic classification is not parsimonious, but elegant in the sense that each group is composed of observed objects. The problem with a taxonomy lsuch as the type-variety:mode method arises when a lot of assumptions, that are often left undefined, are made in order to create its various levels and relationships. The high level of assumptions, especially when left undisclosed, leads to the impression that the system is highly subjective. This is fundamental to taxonomy: one has to assume a certain relationship between two units and to prove it afterwards, even if those assumptions may be obvious and easily proven. At the same time taxonomy is very elegant because the creator of a given classification will only create a new unit when there is reason. Gifford surely did not create a new type for sherds he did not have. This means that only units with content and relevance can, at least in theory, be found in a taxonomic classification. In reality, however, at least the matter of relevance can be disputed.

Looking at the two classifications from this perspective one surely can see the possibilities. Should the attempt to merge the two classifications be successful there are basically three outcomes:

1) a new kind of classification that is less parsimonious than paradigm and less elegant than taxonomy,
2) a classification that is more parsimonious than taxonomy but less than paradigm and more elegant than paradigm but less than taxonomy,
3) a new classification that is as parsimonious as paradigm and at the same time as elegant as taxonomy.

Outcome one would be very unfortunate and would be useless in application. Outcome two would be an improvement but the extent of its usefulness would need to be determined in testing and application. Outcome three would be the perfect result and the reason why the attempt of merging would be fruitful. This would be the advanced method that would contain the best of both methods. The achievement to promote parsimony and elegance is an import goal and should be promoted in the world of Maya ceramics.

I have made the first step towards a merger of the taxonomic type-variety:mode method and the paradigmatic El Pilar method. To understand the relationship between the type-variety:mode and the El Pilar methods, I have developed a concordance between them. This is in some ways similar to the concordance developed by Gifford (Smith 1955c) with the Uaxactun collection. Where Gifford took a shape classification and created the groups, types and varieties, I followed the reverse (route?), taking the units of vessel forms that are the foundation of the El Pilar method and relating them to the Barton Ramie descriptions.

This concordance between El Pilar shape forms and type-variety:mode types and varieties from Barton Ramie is a means of creating the combination of the two methods. I matched the vessel shape in the EP shape catalog with illustrated types of Gifford's classification. Since the types created by Gifford are broader than the specific shape entries of El Pilar catalog, there was not always a perfect match. Therefore, I decided to introduce a four-tiered rating system to show the degree with which a El Pilar shape matched a Barton Ramie type. The highest tier is “Perfect Match” where the El Pilar shape and the Barton Ramie type match well in their basic characteristics. The next lower tier is “Close Match”, where more than 50% of the characteristics matched. Third in line is “Vague Match”, where less than 50% of the characteristics matched. The lowest tier is “No Match” where an El Pilar shape could not be sufficiently matched with a Barton Ramie counterpart.

The results present a challenge. In the end there were 193 No Matches, 107 Vague Matches, 61 Close Matches, and 9 Prefect Matches. This puts 177 relatively successful matches against 193 failed attempts. In other words, 47.84 % of the entire El Pilar vessel shapes matched those illustrated in the Barton Ramie report, while 52.16% did not match any illustration. While a better success rating would have been desirable, it still proves that a matching of El Pilar and Barton Ramie material is not impossible and therefore the merger of paradigmatic and taxonomic classification is a viable objective.

6.4. Summary

This chapter provided a detailed review of both methods. Both were scrutinized to determine the strengths and the shortcomings in their systems. The result was that although the El Pilar method had an advantage over the type:variety:mode method concerning precision and consistency due to modern technology, both were acknowledged for having each their own merits.

The chapter also showed that it is important for the future of ceramic studies that the two methods are joined together. The taxonomy brings elegance to the table. Elegance is vital for any method in order to prevent an unneeded amount of units and to keep the method on the level of complexity that is actually needed by the task at hand and not artificially created by the method itself.

On the other side parsimony is also needed in any method. The less assumptions one has to make while creating any network of relations between the created units the better that network will be.. Assumptions, as necessary as they might be in some cases, always have the aura of subjectivity. Therefore it is important to restrict assumptions to the absolute minimum and make any method as parsimonious as possible.

A method that can be elegant and parsimonious at the same time would be a huge step for ceramic studies of any kind. Such a method would be effective and objective at the same time, exactly what is needed to address the new expectations archaeologists have in ceramic studies today.

A first step toward such a new method could be the proposed merger of type-variety:mode and El Pilar method since they represent the two halves of elegance and parsimony. At this point it is imaginable to use the shapes identified at El Pilar as a basis and a main attribute for the creations of types and varieties. This would be a first step to remove the type-variety.mode from the disputable sole focus on color and decoration. And with the extensive data pool available from the El Pilar method the type-variety:mode method would regain the aspects of data it has dropped. At the same time such a symbiosis would enable a paradigmatic classification like the El Pilar one to make use of the large connection network a taxonomy like type-variety;mode can create.

It is evident that pitting different methods against each other to determine the better one is not very effective and hurts ceramic studies more than it helps. While the winning method might indeed be superior to the other, no method is completely without merit. If a method considered to be inferior were to completely scrapped, the field of ceramic studies would lose some useful ideas. Therefore it is the logical step to try to merge different methods instead, in order to gain the maximum benefit from all the effort put into the creation of all those different methods.

7. Results of the Thesis

This thesis set out to address four aims in describing the importance of the Maya ceramic collection from El Pilar and putting it into context. First, this thesis presented the El Pilar project and the site of El Pilar itself. Second, this thesis introduced the El Pilar method. Third, this thesis has taken a first look into the basic composition of El Pilar ceramics collection. Fourth, this thesis compared the El Pilar method with the type-variety:mode method by Gifford in order to display differences and similarities. With the accomplishment of these four aims, the thesis was able to present as a result a proposed merger of the described and compared El Pilar and type-variety:mode methods. This result provides a road map for the development of a more comprehensive analytical strategy for Maya ceramics.

7.1 Aim One – The Presentation of the El Pilar Site

The first aim was achieved by the detailed description of the Maya site of El Pilar. The location of the site was exactly pinpointed by coordinates. The extent of the site and its different parts was thoroughly presented. A plaza by plaza description was set out for *Nohol Pilar, Xaman Pilar* as well as Pilar Poniente. This description included a detailed record of the presence and characteristics of structures. Not only were architectural features covered but also projections of purpose and evaluations of accessibility. This resulted in a detailed presentation of the characteristics of the different areas at the monumental core of El Pilar. In addition to the monumental core, its various satellite structures were also described. This representation (at the same time) also provided the background to understand the El Pilar ceramic method.

7.2. Aim Two – The Introduction of the El Pilar Method

The second aim was the introduction of the El Pilar method. Since the introduction of such a method is a large undertaking, six steps were required in order to achieve this aim.

In order introduce the El Pilar method, a solid background on Maya ceramics had to be built in a first step. In this way, the nature and the origin of the El Pilar method itself could be understood. This was achieved by looking at two kinds of backgrounds that influenced the creation of the El Pilar method.

The first kind of background that needed to be established focused on geographical factors. These included a description of the two border regions where El Pilar is located, the greater Petén of Guatemala and the Belize River Area of Belize. This location conditioned the sources of influence on the site in two eras, the ancient as well as modern. Furthermore, sites relevant to the El Pilar site itself were introduced in a short overview.

The second kind of background that needed to be established focused on temporal factors. These included a thorough examination of important work including the early research at the Maya sites of Uaxactun, Holmul, and Tikal. This examination highlights certain patterns in ceramic studies. These patterns were tracked through the decades and to other important works, eventually also making their way into the El Pilar method. The discussion resulted in the ability to connect the El Pilar method to a long-standing and high-quality tradition of ceramic studies in the Maya area.

The presentation of different established methods in the context of El Pilar gave rise to the opportunity to introduce James C. Gifford's type-variety method, which follows a specific perspective of ceramic studies. The thesis shows that it is important to identify what a specific method is like, but it is equally important to point out what it is not like. This was achieved by introducing Gifford's type-variety:mode method as a preceding counter-approach to the El Pilar method. The detailed description of the type-variety:mode showed its inner workings and characteristics, opening it up to a direct comparison to the El Pilar method. This set the stage for the achievement of the fourth aim, the comparison of the two methods, in this thesis.

After both backgrounds were established, the focus of the thesis shifted to the method itself. As a second step towards achieving of the second aim, the general characteristics of the method were presented, again in order to set it apart from the type-variety:mode method.

As a third step towards introducing the El Pilar method, the El Pilar record keeping system and resulting provenience, sherd record, and shape catalogs were introduced. This illustrated the raw data output created through the application of method. With this data, it was possible to show the El Pilar method's workings first hand. A method can be a rather ephemeral subject; it is an extraction and sorting process that can be repetitive and a matter of routine. The changes and results a method prompts during the process exist only as representations of different steps. The final results form the different related data sheets. Through these data sheets, one can look in retrospect on what the method accomplished. This led to a thorough look at the El Pilar catalogs as an important basis of the *status ante quam* through the provenience catalog and the *status post quam* through the sherd record catalog. The shape catalog served a double purpose. It was the guideline around the process evolved from provenience to sherd record catalog and also served as ordering factor for the results. This pivotal moment for any ceramic method, in which physical ceramic sherds are turned into theoretical information, was exactly pinpointed and laid out.

As a fourth step towards introducing the El Pilar method, after the basic procedures of the method were established, other factors were introduced in order to enhance the understanding of the El Pilar model. Effort was made to bring the El Pilar method from the level of core functionalities to the level of sophistication. This was done by adding extra features to the basic shape recording functionality. These features include but are not limited to time period, rim diameter, color and decoration. This was an important step in order to illuminate different facets of the method and show that it handled a wide variety of different data.

A fifth step towards the aim of understanding the El Pilar ceramic method was to subject the method to four theoretical scenarios involving time period and shape. These four scenarios include presence of both time period and shape identification, presence of time period and absence of shape identification, absence of time period and presence of shape identification, and absence of both time period and shape identification. For each scenario a detailed description was given on how the method was applied and what measures were taken to ensure a satisfactory record of attributes. This demonstrated the method’s behavior and viability when applied to actual ceramic sherds. This also showed the El Pilar method’s flexibility and ability to function in the imperfect circumstances of the individual analyst, the bar against which all ceramic methods must be measured.

As a sixth and final step in the description of the El Pilar method, the storage of the data generated by the El Pilar method was discussed. A method can only be as good as its potential if the results it creates are properly stored and saved for posterity. Due to the massive amount of data produced by the application of the El Pilar ceramic method, a transition from traditional paper storage to modern digital media was required. This transition results not only in an adequate storage for the data but also enhances its workability and accessibility. With the improvement of the storage-quality of the collected data, the possibilities for later analysis on the different levels of integration will also be improved, since the data collection is the basis for the analysis. The better the quality of data basis is, the higher the chance to achieve a top notch analysis. The ultimate goal for ceramic studies will be a reexamination and review in order to create detailed and precise as well as high quality data available for others to use. With the completion of this sixth and final step, the introduction to the El Pilar method is complete.

7.3. Aim Three – The Description of the El Pilar ceramic Collection

The third aim was the presentation of a basic composition of the El Pilar ceramic collection. With the method established, it was only logical to look at the results the method created. The initial view covered the three basic angles of Maya ceramics. These are provenience, time period, and ceramic categories. Those angles showed where the ceramic pieces came from in the site, how they fit into Maya chronology, and what kind of vessel pieces they were. This was done to give an overview of the collection and to show that the data created by the El Pilar method can easily be examined. These were the minimum requirements the El Pilar method had to pass in order to prove its viability and it did so with ease.

But after that other available possibilities of examinations were demonstrated, in order to show the method's abilities, which go beyond the merely expectable, These examinations and possible perspectives are by default unavailable to traditional ceramic methods. This demonstration presented the chance to show that the performance of the El Pilar method goes beyond the abilities of traditional methods when it comes to the detail and versatility of data output. By being able to present the ceramic collection in a more than satisfactory way, viability of the El Pilar method as an excellent descriptive strategy was achieved.

7.4. Aim Four – The comparison of the El Pilar and type-variety methods

The fourth aim was to compare the El Pilar method to the type-variety. This was prepared by introducing Gifford's type-variety and giving a detailed view on the classification of the El Pilar method. With the two methods introduced and set apart, it was possible to approach a comparison directly. During the thesis, the El Pilar method and the type-variety method were presented alongside each other, always as two alternate systems. It was the intention of the comparison to emphasize their different characteristics as well as their complements.

The type-variety:mode and El Pilar ceramic methods are like different tools. One needs to know what the objectives of the methods are and what the methods are used for to understand the direct comparison. Since the methods are different, however, a direct comparison would not be the optimal approach because there needs to be common ground. Therefore, an approach where the two methods were compared to a third theoretical method was chosen.

In science, all endeavors are striving for improvement. Any project that does not have that objective is obsolete from the start. Perfection is virtually impossible to achieve, so basically only theoretically prefect scenarios are possible. Such a scenario for a perfect ceramic method was envisioned and the two methods at hand were measured against it. By using the hypothetical scenario as a link and a measure, it was possible to gauge the relative closeness of both methods towards this ideal scenario. With that, it was possible to determine where each of the two methods stood regarding the ideal state. The advancement of both towards this theoretical ideal standard could be assessed and thus the two methods could be compared.

7.5. The overall result of the research

The findings in the comparison of the El Pilar and the type-variety methods prompted the final result of this thesis, which is the proposal to merge the established type-variety with the newly developed El Pilar method. Developing new methods, such as the El Pilar method, is important and each new methodological development opens up new ways to approach ceramic studies. But even new methods can be pushed even further if old established methods are integrated. This proposed integrated method may be able to advance challenges Maya archaeology is posing to ceramic studies in the present day by bringing metric and objective observations of a paradigmatic method together with the networking abilities of a taxonomic method This proposed method draws from the well-established findings embedded in the traditional methods and from the advantages of the standardized data of computer digitization. New innovative approaches meet the experience of the existing ones. The advantages of both, new and old methods, are used to help to bring ceramic studies to the next, much needed for level.

There are not only different ceramic traditions, but also different traditions of ceramic studies. Only if the identified advantages of those varied traditions are joined together, the field of ceramic studies can advance and reach its ultimate goal: The omnibus understanding of Maya ceramics and thus the gaining of a deep insight into the entire Maya civilization.

Appendix I

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Figures

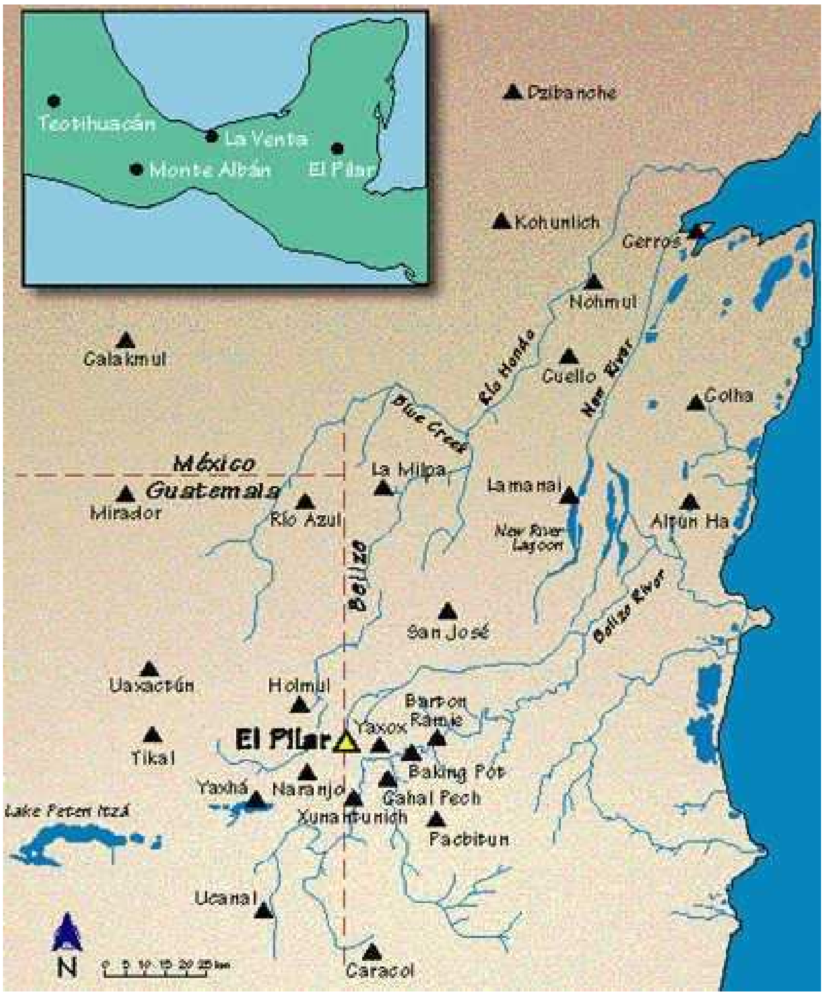


Figure 1: Location of El Pilar (El Pilar Field Report 1993)

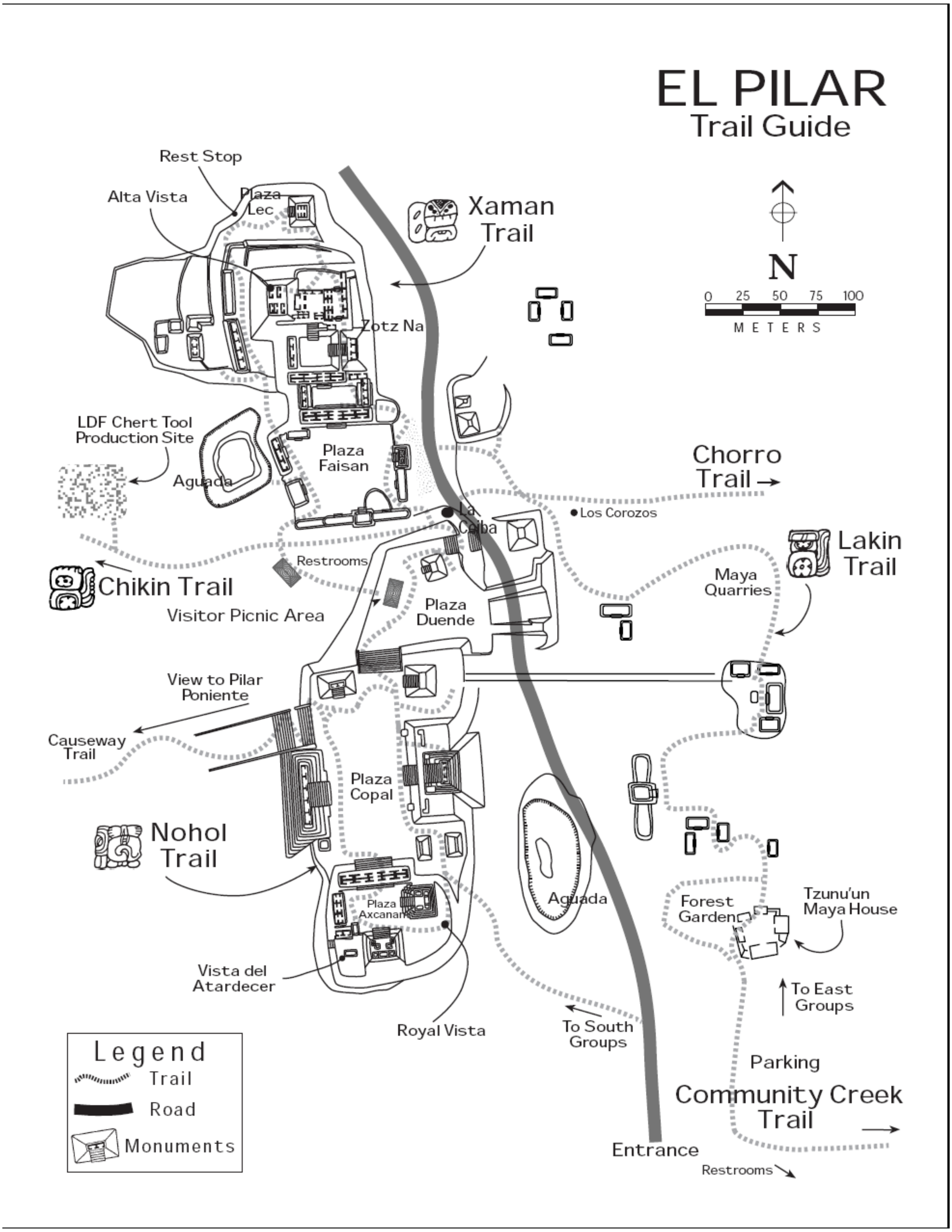
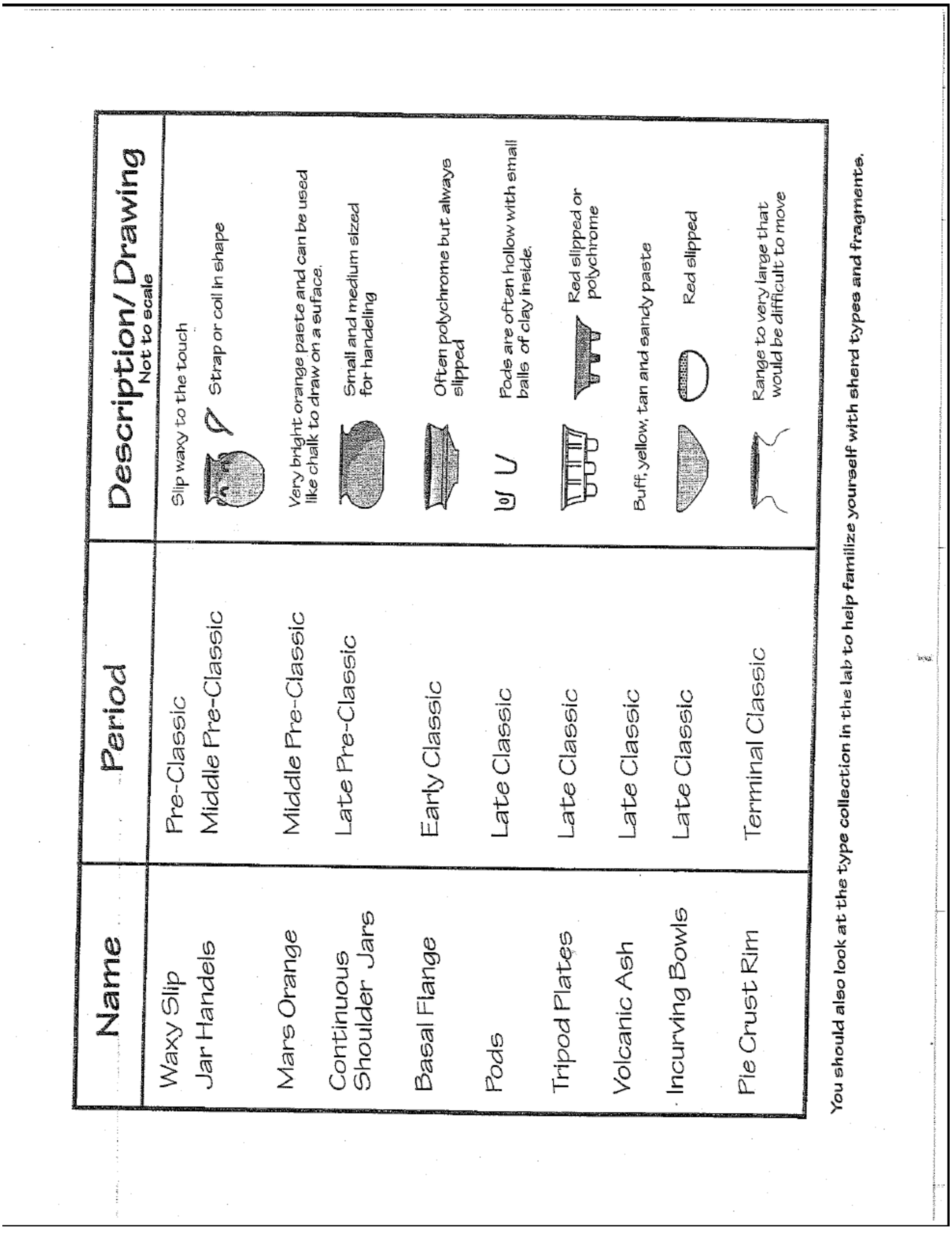


Figure 2: Map of El Pilar (El Pilar Field Report 1998)



Name	Period	Description/ Drawing Not to scale
Waxy Slip	Pre-Classic	Slip waxy to the touch
Jar Handels	Middle Pre-Classic	Strap or coil in shape
Mars Orange	Middle Pre-Classic	Very bright orange paste and can be used like chalk to draw on a suface.
Continuous Shoulder Jars	Late Pre-Classic	Small and medium sized for handeling
Basal Flange	Early Classic	Often polychrome but always slipped
Pods	Late Classic	Pods are often hollow with small balls of clay inside.
Tripod Plates	Late Classic	Red slipped or polychrome
Volcanic Ash	Late Classic	Buff, yellow, tan and sandy paste
Incurving Bowls	Late Classic	Red slipped
Pie Crust Rim	Terminal Classic	Range to very large that would be difficult to move

You should also look at the type collection in the lab to help familiize yourself with sherd types and fragments.

Figure 3: El Pilar Basic Diagnostics Sheet

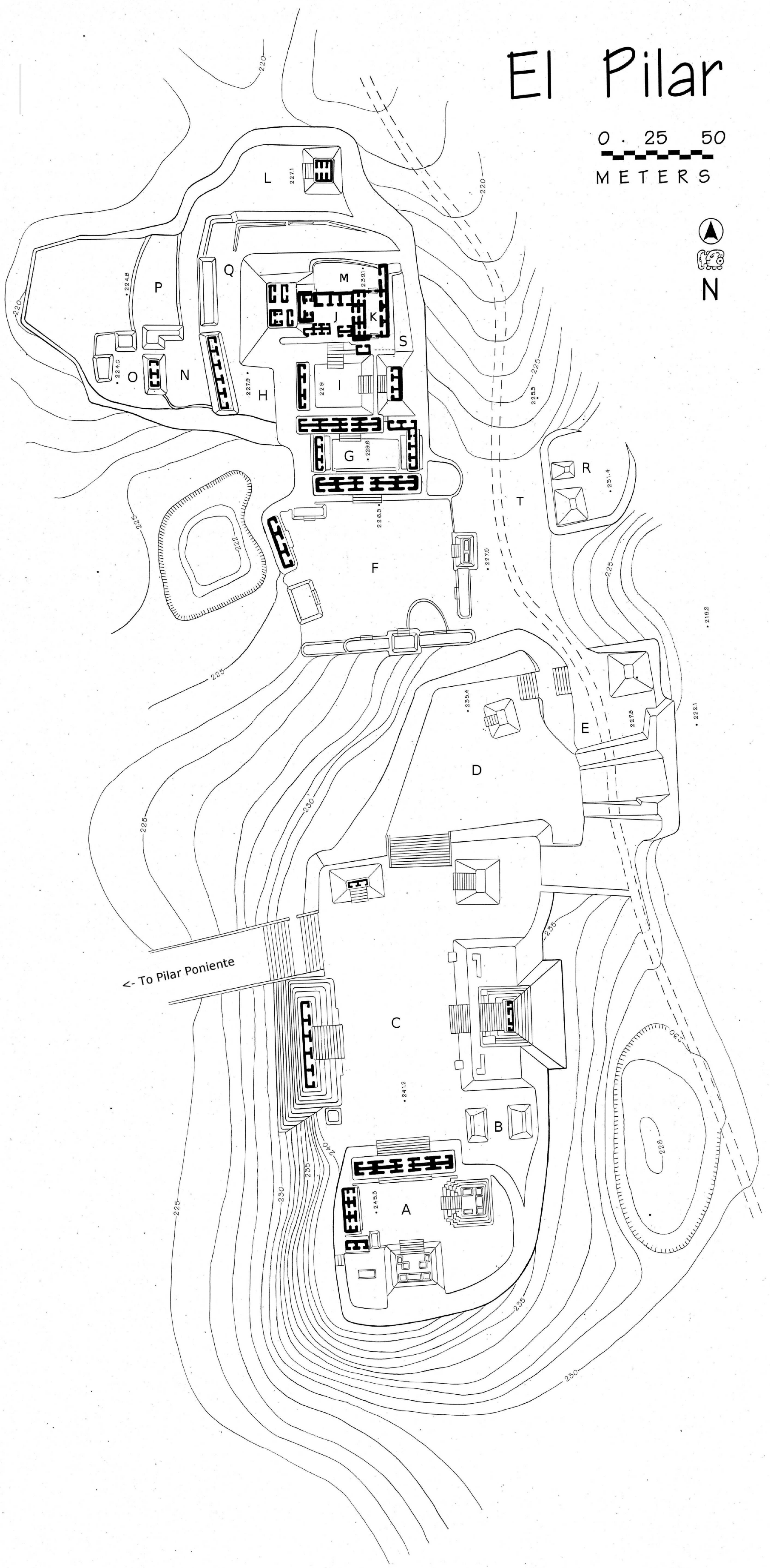


Figure 4: Monumental Core Map with Plaza Locations (By courtesy of Prof. Dr. Anabel Ford)

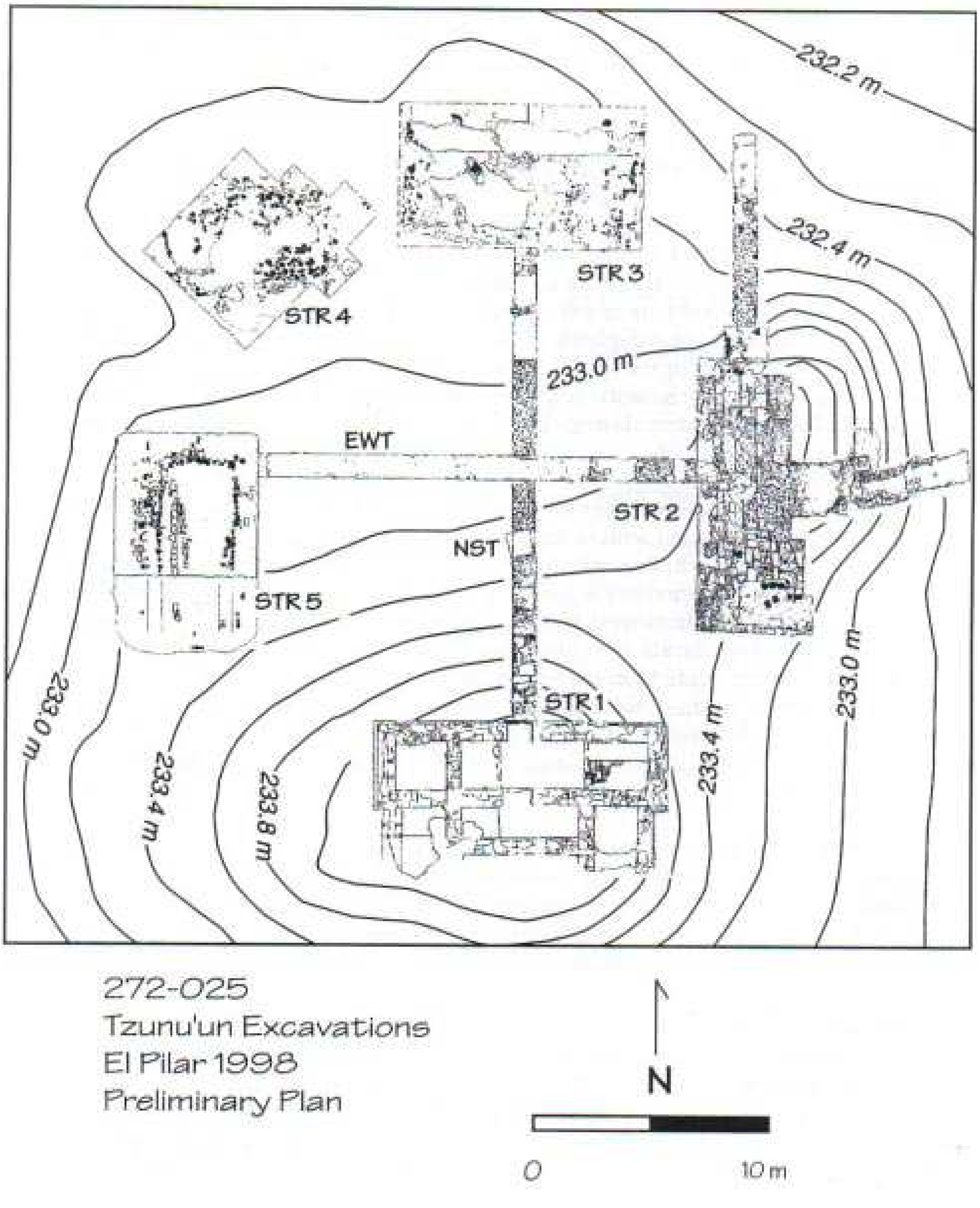


Figure 5: Tzunu'un Excavation Plan (Ford 1998)

Appendix II

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Tables

El Pilar Master Plaza List

ID	Plaza	Location	Size
A	Axcanan	S Plaza at EP	35 x 20m
B	Ballcourt	SE of Plaza C, ballcourts	23 x 40m
C	Copal	Between Plazas A and D	55 x 115m
D	Duende	N of Plaza C	50 x 70m
E	Escoba	E of Plaza D and F	40 x 75m
F	Faisan	S of Plaza G	70 x 57m
G	Gumbo Limbo	Between Plazas F and I	30 x 15m
H	Hatz	Plaza between K and I	25 x 20m
I	Imix	S of the acropolis (H’menNa)	30 x 18m
J	Jobo	SW Plaza on the H’menNa	18 x 7m
K	Kibix	E Plaza on the H’menNa	4 x 24m
L	Lec	Northernmost EP Plaza	32 x 29m
M	Manax	N Plaza on the H’menNa	14 x 55m
N	Naba-cuc	W of EP, between Q and O	35 x 13m
O	Ok-pich	Westernmost Plaza in EP	22 x 22m
P	Pom	N of Plazas N and O	25 x 35m
Q	Quelite	W of H’menNa	50 x 13m
R	Rosa	E of structures EP45 and 46	50 x 75m
S	Subin	Plaza on E edge of H’menNa	17 x 40m
T	Tzin	Plaza between F and R	33 x 55m

From document dated June 13, 1994, page 8, Draft

Table 1: Monumental Core Master Plaza List (By courtesy of Prof. Dr. Anabel Ford)

Table 2.1: El Pilar Master Structure List (Part 1)

Number	Structure Type	Location
1	Pyramid	SE corner of Plaza A
2	Range Building	SW corner of Plaza A
3	Range Building	N side of Plaza A
4	Pyramid	NE corner of Plaza A
5	Ball Court	W structure, SE corner of Plaza C
6	Ball Court	E structure, SE corner of Plaza C
7	Pyramid	E side of Plaza C
8	Pyramid	NE corner of Plaza C
9	Pyramid	NW corner of Plaza C
10	Pyramid	W side of Plaza C
11	Pyramid	NE corner Plaza D
12	Pyramid	S side of Plaza F
13	Platform	W side of Plaza F
14	Range building	W side of Plaza F
15	Platform Pyramid	W side of Plaza G
16	Platform Pyramid	E side of Plaza G
17	Platform	NE corner of Plaza F
18	Platform	E side of Plaza F
19	Pyramid	E side of Plaza I
20	Pyramid	W side of H'menNa
21	Range building	S side of Plaza J
22	Range building	Between Plazas J and M
23	Range building	Between Plazas J and K
24	Range building	E side of Plaza K
25	Pyramid	E side of Plaza L
26	Range building	Between Plazas G and I
27	Range building	SE corner of Plaza G
28	Range building	SW corner of Plaza G
29	Range building	W side of Plaza I
30	Range building	W side of Plaza A
31	Stone pile	S of EP10, SW corner of Plaza C
32	Platform	SW corner of Plaza F
33	Platform	SE corner of Plaza F
34	Range building	NE corner of Plaza M
35	Range building	NE Plaza G
36	Range building	NW corner of Plaza F
37	Range building	E side of Plaza N, between N and Q
38	Platform	E side of Plaza P
39	Range building	E side of Plaza O, between N and O
40	Platform	NW corner of Plaza N
41	Range building	W side of Plaza O
42	Range building	N side of Plaza O
43	Platform	S side of Plaza E
44	Pyramid	E side of Plaza E
45	Pyramid	W side of Plaza R
46	Pyramid	W side of Plaza R, N of EP45
47	Platform	S side of Plaza E, between EP43 and 44
48	Balustrade	N side of Plaza M

49	Pyramid	E side of Plaza F
50	Pyramid	E of EP7, small triadic structure
51	Platform	SW corner of Plaza F
52	Platform	W of EP1, S of EP2
53	Range building	N Plaza J

BRASS/El Pilar on file MARC/UCSB

Table 2.2: Monumental Core Master Structure List (Part 2)
(By courtesy of Prof. Dr. Anabel Ford)

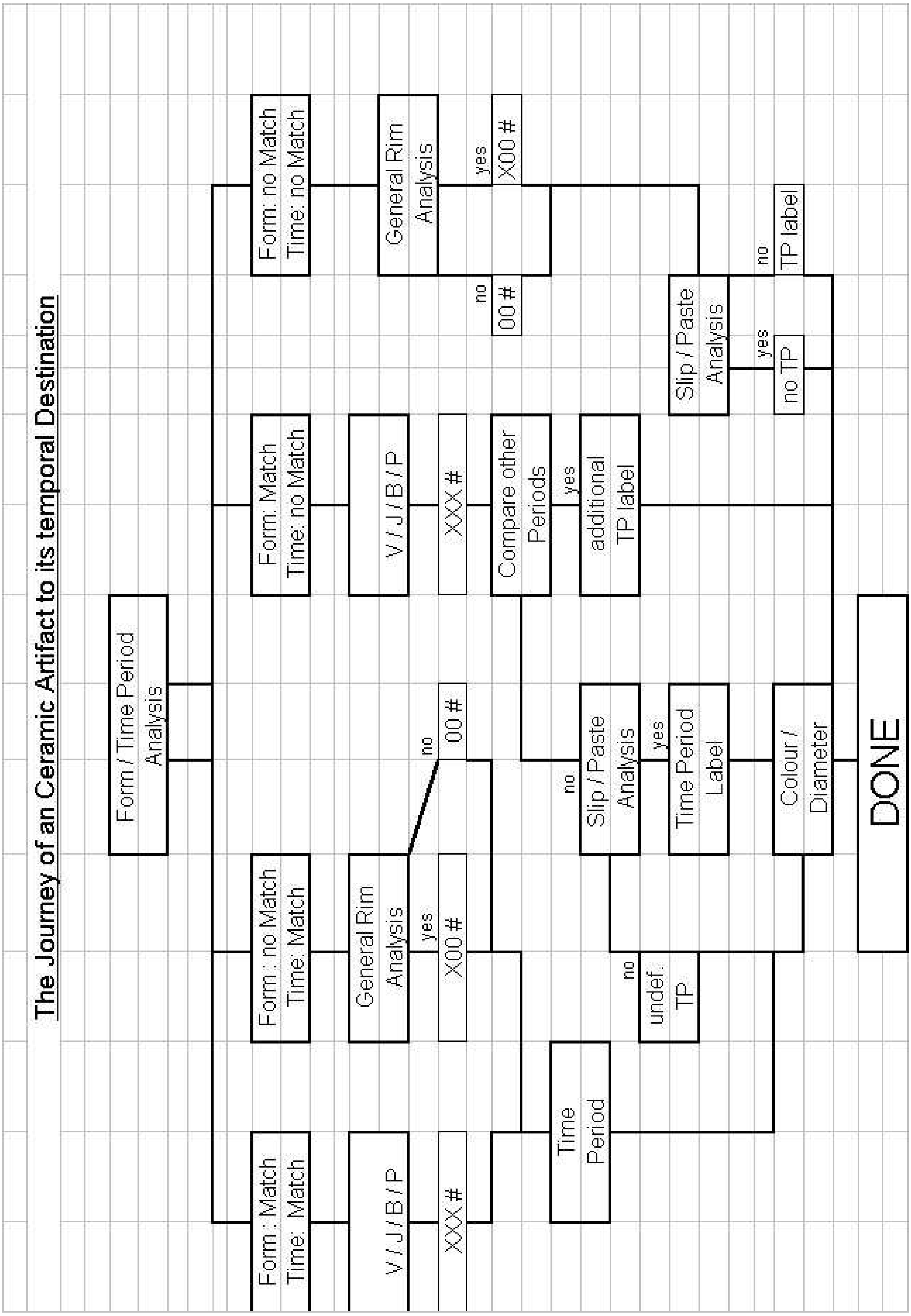

Table 3: Decision Making Chart by Christian Egere

El Pilar Monumental Core:	**# of sherds**		**percentage**
Plaza Axcanan			
PLZ A:	933		1.77%
EP1:	83		0.16%
EP3:	1843		3.55%
EP4:	1286		2.44%
Ball Court (Plaza B)			
PLZ B:	383		0.73%
Plaza Copal			
PLZ C:	1727		3.28%
EP7:	17211		32.67%
EP8:	707		1.34%
EP9:	2722		5.17%
EP10:	3687		7.00%
Plaza C-D Transition:			
PLZ CD:	609		1.16%
Plaza Duende			
PLZ D:	676		1.28%
EP11:	3		0.006%
Plaza Faisan			
EP15:	237		0.45%
EP32:	779		1.48%
EP34:	391		0.74%
EP37:	2		0.004%
EP41:	3		0.006%
EP43:	12		0.02%
EP48:	27		0.05%
AGU:	164		0.31%
Plaza Imix			
EP19:	8048		15.27%

Table 4.1: El Pilar Monumental Core Provenience Counts and Percentages (Part 1)

El Pilar Monumental Core:(Cont'd)	# of sherds		percentage
H’mena (Hatz, Jobo, Kibix, and Manax)			
JOBO (Plaza J)	217		0.41%
EP21: (Jobo)	104		0.20%
EP22: (Jobo)	3419		6.49%
EP23: (Jobo)	488		0.93%
EP24: (Jobo)	237		0.45%
EP53: (Jobo)	149		0.28%
EP25:	4081		7.75%
EP26:	495		0.94%
Plaza Gumbolimbo			
EP27:	518		0.98%
EP29:	1012		1.92%
Plaza Nabacuc:			
PLZ N:	97		0.18%
Plaza Okpich:			
PLZ O:	15		0.03%
Plaza Pom:			
PLZ P:	7		0.013%
EPSS:	316		0.60%
Total:	52688		100.00%

Table 4.2: El Pilar Monumental Core Provienience Counts and Percentages (Part 2)

Tzunu'un - Elite Residential Unit	# of sherds	Percentages:
Structure 1	23962	38.24%
Structure 2	10880	17.36%
Structure 3	2464	3.93%
Structure 4	4121	6.58%
Structure 5	7146	11.40%
Plaza	11859	18.92%
OPS	779	1.24%
TN5	820	1.31%
Chultun	75	0.12%
Looter's Trench	563	0.90%
Total:	62669	100.00%

Table 5: Tzunu'un Provenience Counts and Percentages

Domestic Units	# of sherds
Chiik Nah	
STR 1:	
TT3	795
TT4	1805
TT1	174
TT2	73
General Chiik Nah	32
Total:	2883
Cahal Tok - LDF - Chert site	4200
Limestone Quarry	
Q	32
QUA	1091
Total:	1123

Table 6: El Pilar Domestic Units Provenience Count and Percentages

Time Periods:				
Total recorded Sherds:	El Pilar Numbers	El Pilar %		
Unidentified Time Period	5,277	40.84%		
Identified Time Period:	7,644	59.16%		-
Total:	12,921	100%		
Identified Time Period Sherds:			Barton Ramie Numbers	BR %
Middle Preclassic	456	5.97%	6,527	3.53%
Late Preclassic	672	8.79%	33,931.1	18.37%
General Preclassic	792	10.36%	-	-

Early Classic	332	4.34%	23,957	12.97%
Late Classic	3,975	52.00%	95,880.6	51.91%
Terminal Classic:	217	2.84%	-	-
Postclassic	0	0%	24,415.5	13.22%
Multiple Time Period Sherds	1,200	15.70%	-	-
Total:	7,644	100%	184,710.8	100%

Table 7: Time Period Counts and Percentages

Ceramic Categories:	EP Numbers:		EP Subtotal	EP %
UnID	233		-	1.80%
Body Sherds with Flanges	148			
Generic Body Sherds	457	|------->	710	5.49%
Body: Handle:	105			
Generic Base Sherds:	1032			
Drum Base Sherds	16	|------->	1247	9.65%
Pod base sherds	199			
General Bowl Sherds:	2100		-	16.25%
Everted Bowl Sherds	1166		-	9.02%
Incurving Bowl Sherds	942		-	7.29%
Jar Sherds	3910		-	30.26%
Plate Sherds	2281		-	17.65%
Tecomate sherds:	84		-	0.65%
Vase Sherds	189		-	1.46%
Incencario Sherds	9		-	0.07%
Lid Sherds:	49		-	0.38%
Miniature	1		-	0.008%
Total:	12921		-	100%

Table 8: Ceramic Category Counts and Percentages

Appendix III

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Notes

Sherd – Weight Assessment

The El Pilar provenience catalog is the place where all collected objects excavated at the El Pilar site are recorded. This includes lithics, bones, ceramics and other more exotic complexes. Every entry gets classified by a class code as well as two specific and hierarchical object codes. These tags exactly describe the kind of material recorded and give additional details in a hierarchical manner starting with class, moving to object1 and object2. Importantly, the provenience catalog, as the name suggests, also records the exact location where the recorded material comes from and means of its recovery. In the laboratory the material is washed, weighted and counted and the itemization is catalogued in a computer file.

In the catalog record keeping, many of the very large collections were processed in bulk; this is especially true for the general ceramic body sherds and the unmodified chert flakes. Often considered insignificant and relegated to the project trash, these were carefully catalogued in the El Pilar Field Lab. In addition, the body sherds were subjected to a routine bulk analyses in a separate phase considering general attributes of shape and paste before they were discarded. While the latter data are not considered here, we are interested in the collections as a whole.

We can consider the El Pilar collections form two perspectives: by weight and by frequency. Here we calculate the total weight of the collections. We consider the weight of the ceramics and the potentially diagnostic ceramics as a proportion of the total. As well we consider Chert stone data and the shapes tools as a proportion of the total. We also consider the weight and numbers for the obsidian collections from El Pilar. These data provide a basis for understanding the virtuosity of the collections at hand and the complexity and diversity of the collections as a whole.

Given that there are some data where we only have weight or frequency, we can develop a basis for estimating the average weight form the data where weight and frequency are given. We can solve this problem as long as one of the two values, weight or count, are present and recorded. It is based on a statistical concept called the median value. Using this method it is possible to extrapolate the most likely value for either the weight of the sherds if the count is given or vice versa.

In order to get a connection between the sherd count and the sherd weight one needs to first determine the average weight of a sherd in the collection. For that all entries that have both, the count as well as the weight recorded, are used. All other entries which are either weight or count missing are disregarded at that point. As a first step the total weights of all eligible sherds in complete entries are summed up. The eligible sherds were all sherds called 1-90-xx through 1-95-xx, or in other words the unidentified body sherds that were only processed in bulk and not on a singular basis. In the case of the El Pilar project this was a fairly easy task with the weights all recorded in an excel file to which the “sum” function can be easily applied to and the computer does the rest. The result was that all sherds from eligible entries weighted together 568065.5 g or roughly 568 kg.

The next step is to get the total count of all sherds. This is also easy since the same “sum” function could be applied and the result was 50364 in the case of the El Pilar records. That means 42079 excavated sherds weighted roughly 568 kg.

Now the total weight needs to be divided by the total count to get the median or average weight of a single sherd. This value was determined to be 13.5g. One excavated sherd at El Pilar had the weight of 13.5g on average. The very high amount of sherds used for these calculations makes the result fairly accurate.

What remains is simple arithmetic.

When the weight is given the formula reads:

$$\text{Weight} / 13.5 = \text{Count}$$

When the count is given the formula reads:

$$\text{Count} \times 13.5 = \text{Weight}$$

For example there is an entry that reads the weight is 412.1 g. In order to determine the count one simply divides 412.1g by 13.5. The result is 30.526 sherds. Of course there can not be fraction of sherds, therefore it is rounded to the complete number in this case 31. That means the weight of 412.1g roughly equals the amount of 31 sherds.

This system allows for an estimated the determination of counts and weights extrapolating based on known counts and weight form the existing data form archaeological collections. This provides a thoughtful estimation for the record.

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German Summary of the Magister Thesis

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Deutsche Zusammenfassung der Magister Arbeit

Deutsche Zusammenfassung der Magister Arbeit in Ethnologie / Altamerikanistik
mit dem Titel:
“The ancient Maya Ceramics of El Pilar – Characteristics and Comparison”

Kapitel 1 - Einleitung

Die Arbeit beginnt im ersten Kapitel mit einer Hinführung zum Thema, in der die Wichtigkeit von Keramik für die Archäologie hervorgehoben wird. Des weiteren wird der Zustand der archäologischen Keramikstudien angesprochen, der nach der Meinung des Autors verbesserungswürdig ist. Es wurden zwar in den Jahrzehnten seit Beginn der modernen Archäologie große Fortschritte erzielt, aber die derzeit verwendeten Methoden sind in die Jahre gekommen und bedürfen einer grundlegenden Überholung um wieder zeitgemäß zu werden. Außerdem kämpfen unterschiedliche Ansätze und Methoden eher gegeneinander als miteinander an einem Strang zu ziehen, und dies behindert das Vorankommen der Forschungen auf diesem Feld.

In diesem Umfeld kam ich, Christian Egerer, mit dem El Pilar Projekt in Berührung, das mir einen direkten Zugang zu dem Feld der Keramikuntersuchung ermöglichte. Während meiner Arbeit wurde ich in die El Pilar-Methode eingeführt, arbeitete ausführlich mit der Keramiksammlung und hatte Teil an wichtigen Arbeiten an den Katalogen, in denen die Daten gesammelt wurden. Meine Zusammenarbeit begann 2003 mit einer Grabungskampagne in Belize, setze sich 2004 mit einem Austausch an die University of California, Santa Barbara fort, wurde von einem weiteren Aufenthalt in Belize in 2006 aufrecht erhalten und kommt jetzt zu ihrem derzeitigen Höhepunkt, dem Schreiben dieser Magister Arbeit.

Die Arbeit umfasst vier Ziele, die der Reihe nach angegangen werden:

1. Die Vorstellung des El Pilar Projekts und der Maya-Stätte von El Pilar selbst.

    6. Die Vorstellung, Erklärung und Beschreibung der El Pilar Keramik-Methode selbst.

    6. Die Vorstellung der Keramiksammlung von El Pilar

    6. Der Vergleich der El Pilar-Methode mit einer in der Maya Archäologie sehr weit verbreiteten Methode Keramik zu untersuchen – Die Type-Variety Methode von James C. Gifford.

In der Folge wird kurz der Inhalt der einzelnen Kapitel behandelt, wie sie in der Arbeit nacheinander folgen. Dabei ist zu beachten, daß in dieser Zusammenfassung einzelne Aspekte der Arbeit überhöht herausgestellt sind , um das dominierende Thema der Arbeit deutlich zu machen und andere stärker zurückgestellt sind, als es in Wirklichkeit bei den einzelnen Themata in der Arbeit selbst der Fall ist, um den Vorgaben für den Umfang dieser Zusammenfassung gerecht zu werden,

Kapitel 2 – Geographischer Hintergrund

Das zweite Kapitel widmet sich bereits dem ersten Ziel der Arbeit – der Beschreibung der Geographie in der die Arbeit angesiedelt ist inklusive einer ausführlichen Vorstellung der El Pilar Maya-Stätte.

El Pilar liegt auf einem Grat am Nordhang des auslaufenden Belize River Valleys. Es liegt nicht nur in der Übergangszone zwischen Belize River Valley und den Central Maya Lowlands, sondern auch direkt auf der politischen Grenze der beiden Staaten Belize und Guatemala. Der Ostteil von El Pilar – Pilar Saliente – liegt auf belizianischem Territorium, während sich der wesentlich kleinere westliche Teil – Pilar Poniente – auf guatemaltekischem Hoheitsgebiet befindet.

Der Ostteil beinhaltet den Hauptteil des großen Monumentalkerns, das architektonische Zentrum der Stätte. Der Monumentalkern wiederum teilt sich in zwei Teile, den südlichen der Nohol Pilar genannt wird und den nördlichen, der als Xaman Pilar bezeichnet wird.

Der Südteil wird von großen Plätzen, geläufig als Plazas bezeichnet, dem spanischen Wort für Platz, beherrscht. Dort findet sich auch die grösste Plaza von El Pilar, Plaza Copal, mit einer Größe von 8525 m². Zusammen mit Plaza Duende bildet sie den Kern von Nohol Pilar. Plaza Copal wird von den beiden größten Strukturen in El Pilar flankiert, den Pyramiden EP10 und EP7. Dies gibt dem ganzen südlichen Teil einen monumentalen Eindruck. Kleinere Plazas sind um die beiden großen herum gebaut inklusive einem Ballspielplatz. Trotz dieser kleineren, mehr abgeschotteten Teile ist der Gesamteindruck von Nohol Pilar der von Offenheit, Zusammenkunft und Versammlungen. Es war wohl früher das öffentliche Zentrum El Pilars.

Der Nordteil dagegen, Xaman Pilar, ist sehr verwinkelt und unzugänglich,also das genaue Gegenteil von Nohol Pilar. Die dort vorgefundenen Plazas sind eher klein und ähneln mehr Höfen als echten Plätzen. Sie sind außerdem - anders als im Südteil - meistens komplett von Steinarchitektur umgeben. Das Zentrum von Xaman Pilar ist die sogenannte H'men Na, die Akropolis von El Pilar. Diese Anlage wird als Palast für die damaligen Herrscher von El Pilar gedeutet. Allerdings ist der Begriff „Palast" hier relativ zu sehen, denn die Anlage besteht grademal aus drei Höfen und einer großen Pyramide, EP20, deren Plattform zugleich den höchsten Punkt von El Pilar markiert. Von einem Palast im europäischen Verständnis kann hier also keine Rede sein.

Der kleine Westteil des Monumentalkerns der mit diesem während der Maya Zeit durch eine erhöht gebaute Straße verbunden war, ist weitgehend unerforscht. Man weiß, daß es dort eine Plaza gibt, die von mehreren Strukturen umgeben ist und daß sich dort auch ein weiterer Ballspielplatz befindet. Allerdings werden weitere Untersuchungen und vor allem eine Sicherung der Gebäude nach einer Ausgrabung durch deren Lage in Guatemala sehr erschwert und somit bis auf weiteres nicht in Betracht gezogen.

Neben dem Monumentalkern gibt es in El Pilar noch einige weitere Strukturen in dessen Umfeld. Die wichtigste davon ist der Wohnkomplex Tzunu'un, in Maya der „Kolibri". Der Komplex besteht aus 5 Gebäuden, die sich um einen zentralen Platz anordnen. Gebäude 1 ist das größte und diente als Empfangsort für Gäste und Besucher. Gebäude 2 war ein nach Osten ausgerichteter Tempel oder Schrein, in dem mehrere Bestattungen gefunden wurden. Gebäude 3 – 5 waren Plattformen aus Stein auf denen vergängliche Häuser aus Holz und Pflanzenmaterialen gebaut waren. Diese werden als eine Art Küche oder Vorratshaus, als

Schlafplatz der Bewohner und als eine mögliche abgetrennte Unterkunft für den Herrn der Anlage gedeutet..
Ein anderer sehr viel kleinerer Wohnkomplex wurde ebenfalls gefunden und mit dem Namen Chiik Nah versehen.
Die beiden restlichen Areale, denen besondere Untersuchung zukam, sind die sogenannte Larry DeForest Chert Site, kurz LDF, und ein Kalkstein-Steinbruch. Bei LDF handelt sich um eine Grube, die mit Feuersteinsplittern gefüllt ist und eine angrenzende Arbeitsplattform. In der Grube wurden eine Million Splitter pro m³ gemessen. Der Kalkstein Steinbruch befindet sich in der Nähe von Tzunu'un und wurde zur Beschaffung von Baumaterialien für diesen Wohnkomplex und für den Rest von El Pilar verwendet.

Außer der El Pilar Stätte werden noch weitere Stätten behandelt. Dies umfaßt die Stätten von Uaxactun, Tikal und Holmul im Petén, Guatemala und die Stätte von Barton Ramie im Belize River Valley in Belize.

Kapitel 3 – Wissenschaftliche Einflüße

Das dritte Kapitel ist der Beginn der Behandlung des zweiten Ziels der Arbeit, das zugleich auch das umfaßendste der Arbeit ist – Der Vorstellung, Erklärung und Beschreibung der El Pilar Keramik-Methode.

Eine wissenschaftliche Methode, wie sie hier vorliegt, entsteht nicht einfach aus dem Nichts, sondern basiert immer auf früheren Arbeiten und unterliegt auch Einflüssen von diesen. Es ist wichtig, diese Einflüsse und den Hintergrund zu kennen, um eine solche Methode besser zu verstehen. Daher werden genau solche zuerst in diesem Kapitel untersucht und dargestellt, bevor die El Pilar Methode selbst vorgestellt wird.

Der erste Teil des Kapitels widmet sich früheren Arbeiten von Keramikstudien. Den Anfang macht Harold S. Colton, der in den dreißiger Jahren des 20. Jahrhunderts die sogenannte Type-Variety Methode für Keramik aus dem Südwesten der USA entwickelte. Diese Methode basiert darauf, daß eine gewisse Anzahl von Attributen, zum Beispiel Farbe, Durchmesser oder Dekoration zusammengefasst und als ein bestimmter Typ definiert werden Wenn, zum Beispiel, ein Typ durch die Farbe rot, große Öffnung und Dreiecksverzierung festgelegt ist, dann gehören alles Gefäße die diese Eigenschaften besitzen zu eben diesem Typ. Ausnahme bildet hier die Form von Keramikgefäßen, die Colton als Sonderattribut betrachtet hat. Die Variety, zu deutsch Variante, entsteht dadurch, daß eine oder mehrere der vorgegeben Attribute sich in manchen Gefäßen ändern; so zum Beispiel ist ein Gefäss zwar rot und hat eine große Öffnung, allerdings ist es mit Kreisen verziert statt mit Dreiecken. Dies stellt eine Abweichung zum bestehenden Typ dar und wird als Variante bezeichnet. Das bedeutet, daß die Charakteristiken einer Variante immer abhängig sind von dem jeweiligen Typ, dem sie angehören oder anders gesagt: sie sind dem Typ untergeordnet.
Diese Existenz mehrerer Ebenen in einer Klassifikationsmethode bezeichnet man als taxonomisch. Eine taxonomische Klassifikation verwendet mindestens zwei Ebenen, um in mehreren Schritten die vorhandenen Gegenstände der Untersuchung, in diesem Fall Keramiken, zu sortieren und einzuteilen. Jeder Faktor, der eine Aufteilung des Materials in weitere Gruppen bewirkt, wird Taxon genannt. Die Position eines jeden Taxons im Gefüge des Systems ist einzigartig kann und nicht nach Belieben verschoben werden. Das Verschieben eines Taxons bewirkt in den allermeisten Fällen die Veränderung von dessen Eigenschaften und somit eine Veränderung in den Verhältnissen des ganzen Systems.

Eine Zeitgenossin von Colton war Anna O. Shepard die unter anderem in Uaxactun Keramik untersucht und klassifiziert hat. Sie geht einen komplett anderen Weg. Sie lehnt die Type-Variety ab und schlägt eigene Vorgehensweisen vor. Diese sind wesentlich naturwissenschaftlicher geprägt als die Type-Variety, die eher einen kunsthistorischen Ansatz hat. Schon in den fünfziger Jahren des 20. Jahrhunderts hat sie Untersuchungsmethoden wie Petrographie und Röntgenrefraktur-Analyse vorgeschlagen. Außerdem legt sie großen Wert auf Formuntersuchung der Keramiken. Für sie ist Form eine der , wenn nicht sogar die wichtigste Basis um Keramiken zu klassifizieren. Entsprechend basieren die zwei Klassifikationsmethoden, die sie am meisten herausstellt, auf Form. Die eine heißt Gefäß-Kontur-Untersuchung, in der die Silhouette eines Gefäßes betrachtet wird. Anhand von Präsenz oder Absenz sogenannter Start- oder Endpunkte, Wendepunkte, Eckpunkten und anderer Punkte werden die Gefäße in verschiedene Gruppen eingeteilt. Die andere Methode bedient sich der Geometrie und setzt die Formen von Keramikgefäßen mit einfachen geometrischen Formen wie Kugel, Quader , Zylinder und anderen gleich, beziehungsweise bildet zusammengesetzte Formen um komplexer geformte Gefäße beschreiben zu können.

Während Anna O. Shepard ihre Forschungen in Mesoamerika betrieb, forschte ein gewisser James C. Gifford im selben Teil der Welt an seiner eigenen Methode um Keramik zu beschreiben. Diese Methode basiert auf der Type-Variety die Colton eingeführt hat, verändert sie aber, um sie auf die Besonderheiten der Maya Keramik einzustellen. Die Veränderungen sind so umfassend, daß bei dieser Type-Variety Version im allgemeinen von „Giffords Type-Variety“ geredet wird um sie von der ursprünglichen Methode von Colton für den Südwesten der USA zu unterscheiden. Gifford richtete den Fokus seiner Type-Variety wesentlich stärker auf Farbe und Dekoration der Gefäße. Diese beiden Faktoren werden seine Basispunkte, auf denen er seine Methode aufbaut. Aspekte wie Form die bei Colton noch wichtig waren, werden nicht weiter verfolgt. Er verwendet außerdem nur wiederherstellbare Gefäße als Grundlage für seine Klassifikation. Die Grundstruktur der Typen als Bausteine der Klassifikation und die Abhängigkeit der Varianten von den Typen behält er bei. Allerdings fügt er eine weitere Ebene unterhalb der Variante ein, die der „Modes“. Ein „Mode“ ist ein bestimmter Aspekt des Gefäßes der sehr auffällig ist. So wird zum Beispiel eine bestimmte Art von Gefäßfüßen als „Mode“ angesehen. Weiterhin baut er oberhalb der Typen ein großes Geflecht aus verschiedenen Gruppen, in denen seine Typen unterschiedlich einsortiert werden können.

Der zweite Teil des Kapitels widmet sich dem Entstehen der Maya-Chronologie im Lauf der Jahrzehnte. Begonnen wird mit Uaxactun, einer der ältesten archäologischen Projekte im Maya Gebiet. Es wird gezeigt wie die Fundumstände der Keramik waren, die einen so großen Einfluß auf das Verständnis der Vorklassik der Maya haben sollten. Darüberhinaus werden die Erkenntnisse von Anna O. Shepard und Robert E. Smith betrachtet, welche die ersten diagnostischen Eigenschaften von vorklassischer Keramik beinhalten. Als diagnostische Eigenschaften werden spezielle Charakteristika von Keramik bezeichnet, die sich dadurch auszeichnen, daß sie einzigartig sind und dadurch eine genaue Zuordnung einer Keramik zu einem bestimmten Zeitabschnitt ermöglichen. So ist zum Beispiel bekannt, daß Keramik, die sich bei Berührung wächsern anfühlt, nur in der Vorklassik vorkommt. Dies bedeutet, jede Keramik die diese Eigenschaft besitzt, stammt aus der Vorklassik, wodurch sie eindeutig zugeordnet werden kann. Solche diagnostischen Eigenschaften existieren faktisch für jeden Zeitabschnitt von der Vorklassik bis zur Nachklassik. Zusammen mit Stelae, die zusammen mit Keramik gefunden worden sind, samt der architektonischer Datierung ist diese eine der drei Pfeiler gewesen auf denen die Maya Chronologie, wie man sie heute kennt, basiert.
Andere wichtige Fundstätten die Chronologie betreffend sind Tikal und Holmul.

Abschließend in diesem Kapitel wird der Einfluss des Angesprochenen auf das El Pilar-Projekt und dadurch auf die El Pilar Methode selber betrachtet. Wer El Pilar Unterlagen anschaut, die einen ersten Blick auf die Methode gewähren, kann mit ziemlicher Deutlichkeit feststellen, daß in Sachen Methodik Anna O. Shepards, sowohl ihre Methoden wie auch ihre Ansichten und Herangehensweisen einen großen Einfluss hatten. Type-Variety wird als Methode an sich gar nicht berücksichtigt. Anders ist dies im Fall der Chronologie. Dort wurden selbstverständlich solche fundamentalen diagnostischen Eigenschaften, wie sie in Uaxactun gefunden wurden, übernommen. Aber in Sachen Chronologie wurde auch viel von den Erkenntnissen der Type-Variety berücksichtigt. Man macht sich also alle gefundenen Erkenntnisse über die Maya Chronologie zunutze, durch welche der etablierten Methoden sie auch immer entstanden sind.

Kapitel 4 – Die El Pilar Methode

´Nachdem der Hintergrund ausführlich behandelt wurde, kann jetzt die Methode selbst dargestellt werden.

Die Betrachtung beginnt mit den allgemeinen Charakteristika der Methode. Grundsätzlich erachtet die El Pilar Methode alle gesammelten Attribute als gleich wichtig, anders als die Type-Variety, die ja besondere Aufmerksamkeit auf bestimmte Attribute richtet und diese Attribute in Typen zusammenfasst. Daraus resultiert eine Klassifikation die nur eine Ebene besitzt und auch sonst keine hierarchischen Einteilungen. Man spricht in diesem Fall von einer paradigmatischen Klassifikation. Sie ist in gewissem Sinne genau das Gegenstück zur taxonomischen Klassifikation. Eine paradigmatische Klassifikation baut dimensionale Räume auf, die mit Attributszuständen gefüllt sind. Eine Dimension kann zum Beispiel die Farbe sein, oder die Form oder ein beliebiges anderes Attribut einer Keramik. Solange es drei oder weniger Dimensionen sind ist eine graphische Darstellung noch möglich, danach geht nur noch mathematische Darstellung. Attributszustände innerhalb einer Dimension sind die möglichen Eigenschaften, die eine Keramik innerhalb einer Dimension haben kann, im Fall von Farbe zum Beispiel rot, braun oder weiß. Hier ist zu beachten, daß Attributszustände exklusiv sind. Das heißt, ein Gefäß kann nicht rot und weiß gleichzeitig sein aber es kann durch aus bei einem Mal rot sein und ein anderes Exemplar desselben Gefäßes kann zu einem anderen Zeitpunkt weiß sein. Die Einheiten einer paradigmatischen Klassifikation werden durch Permutation gebildet, daß heißt jeder Attributszustand wird mit jeder Dimension kombiniert. Dies bedeutet einen enormen Anstieg an Kombinationen mit jeder neuen Dimension oder jedem neuen Attributszustand. Sind es bei zwei Dimensionen mit zwei

Zuständen nur vier Möglichkeiten so sind es bei drei Dimensionen mit drei Zuständen bereits 27 und mit vier Dimensionen und 4 Zuständen gar schon 256.
Obwohl für eine paradigmatische Klassifikation üblicherweise mindestens zwei Dimensionen mit zwei Zuständen vorhanden sein müssen, gibt es den Sonderfall der eindimensionalen paradigmatischen Klassifikation. Dieser Fall wird als Index bezeichnet und trifft zum Teil auf die El Pilar-Methode zu.

Nachdem der allgemeine Charakter der Methode dargestellt wurde werden als nächstes die Kataloge vorgestellt, die im El Pilar-Projekt in Gebrauch sind. Das ist erstens der Herkunftskatalog in dem jedes Artefakt, das in El Pilar gefunden wurde, aufgezeichnet ist. Dies gilt nicht nur für Keramik, sondern auch für Feuersteine, Knochen und anderes Fundmaterial. Der Umfang des Katalogs umfasst etwa 12000 Einträge und der Keramikanteil macht etwa zwei Drittel aus. Zweitens gibt es den Keramik Katalog, in dem alle keramischen Fundstücke aufgezeichnet sind die erfolgreich untersucht wurden. Der Umfang dieses

Katalogs beträgt etwa 12000 Einträge. Als dritter Katalog existiert noch der Formenkatalog, in dem alle Keramikformen eingetragen sind, die bis jetzt in El Pilar identifiziert wurden. Der Umfang beläuft sich bis dato auf 370 Formen, Tendenz steigend. Während der Herkunftskatalog der Ausgangspunkt für die Methode ist und der Keramikkatalog der Endpunkt, kommt dem Formen Katalog eine besondere doppelte Bedeutung zu. Er wird während der Anwendung der Methode zur Untersuchung der Scherben benutzt um die Form zu identifizieren.Gleichzeitig dient er als Basis für die Hauptsortierung der Keramik in die Gefäß Kategorien von El Pilar. Von diesen Kategorien gibt es sieben: Trinkgefäße, Krüge, drei Arten von Schüsseln, ein Maya-spezifisches Gefäß, das Tecomate genannt wird und Teller. Diese Kategorien sind die Haupteinteilungen in El Pilar. Sobald einer Keramik eine Formnummer gegeben wurde, wird sie damit automatisch einer dieser Gruppen zugerechnet. Dies kann man als eindimensionale Variante der Paradigmatischen Klassifikation sehen.

Neben der Form werden noch eine ganze Reihe anderer Attribute aufgezeichnet, zum Beispiel Farbe, Dekoration, Durchmesser und andere. All diese Werte werden dauerhaft behalten und nicht in späteren Schritten fallengelassen.

Als nächsten Schritt in diesem Kapitel wird über die Art der Datengewinnung berichtet. Die El Pilar-Methode setzt hier auf starken Gebrauch von Zahlen und Prozenten, da diese sehr viel leichter nachzuvollziehen sind als individuelle Bezeichnungen. So könnte man sagen ein Krug sei rot, aber dies würde zu Unsicherheit führen, was denn für ein rot gemeint sein könnte. Wenn man stattdessen das Munsell Farben System verwendet kann man mit Hilfe einer Munsell Tabelle sehr leicht herausfinden, welches rot mit 10YR 5/8 gemeint ist selbst wenn man die Keramik selber nicht zur Hand hat. Diese starke Nutzung von eindeutigen Zahlen und Nummern führt zu einem hohen Grad an Nachvollziehbarkeit, einem Ziel der El Pilar-Methode.

Da Genauigkeit ebenfalls ein Ziel der El Pilar Methode ist, wird nicht nur darauf geachtet wie die Daten notiert werden, sondern auch auf welcher Art und Weise sie gesammelt werden. In jeder Methode steckt natürlicherweise der menschliche Faktor. Dieser kann unter Umständen zu größeren Abweichungen führen, wenn es um die Aufzeichnung von Daten geht. Um dies zu minimieren wurde ein sogenanntes Entscheidungsdiagramm entworfen, das aufzeigt wie man eine Keramik nacheinander zu untersuchen hat und was in verschiedenen Fällen zu tun ist. Neben einer Darstellung dieses Diagramms werden auch vier Szenarien durchgespielt um zu veranschaulichen wie die Methode in verschiedenen Situationen funktioniert.

Abnahme und Aufzeichnung von Daten sind wichtige Schritte aber nicht alles. Mindestens genauso wichtig wenn nicht sogar wichtiger ist die Lagerung und Aufbewahrung der Daten. Wenn diese verloren gehen oder unübersichtlich werden leidet das gesamte Projekt, bis zu dem Punkt wo alles umsonst war. Dessen waren sich auch die Mitglieder des El Pilar Projektes bewusst und ergriffen Maßnahmen dagegen. Sie bestehen in der Überführung sämtlicher Daten vom herkömmlichen Papier auf moderne digitale Medien in einem möglichst frühen Stadium. Dies ermöglicht eine sichere Aufbewahrung an mehreren Orten gleichzeitig, ebenso beliebig viel Kopien davon anzufertigen, andererseits erlaubt es den gleichzeitigen Zugriff beliebig vieler Personen auf die gleichen Datensätze. Damit wird der Zugang zu den Daten und der Umgang mit ihnen wesentlich flexibler.

Digitale Medien machen jedoch nicht nur Aufbewahrung und Zugriff leichter, sondern auch die weiteren Schritte in Analyse und Interpretation. Die existierenden Daten können zu einer Datenbank zusammengeschlossen werden. Diese ermöglicht nicht nur die Entdeckung neuer Verbindungen zwischen den vorher getrennten Datensätzen. Sie erlaubt auch das Betrachten der Daten nach mehreren Aspekten schnell nacheinander oder sogar gleichzeitig. Der Effekt ist ein erheblich dichteres Netzwerk und somit höherer Detailgrad des Bildes, das von den Daten geformt wird. Dies wiederum hat zur Folge, daß die Ergebnisse einer Analys bedeutend akkurater und genauer sein können als in herkömmlichen Methoden.

Kapitel 5 – Die El Pilar Keramik Sammlung

Da die El Pilar-Methode im vorherigen Kapitel ausführlich vorgestellt und somit das zweite Ziel der Arbeit erreicht wurde, steht nun das dritte Ziel an: Die Vorstellung der El Pilar Keramiksammlung. Dies kann gleichzeitig als Test gesehen werden ob die Daten, welche die El Pilar Methode erzeugt, brauchbar sind.

Es wird zunächst die Sammlung von drei Standardperspektiven her betrachtet: Der Herkunft, der Zeitperiode und der Keramik-Kategorie. Für die Herkunft wird der Herkunftskatalog benutzt. Nach eingehender Untersuchung zeigt sich ein interessantes Bild. Mehr als die Hälfte der Keramiken in der Sammlung kommt aus Tzunu'un und nur der kleinere Teil aus dem wesentlich größeren Monumentalkern. Dies hängt zusammen mit dem Umstand, daß Tzunu'un komplett ergraben ist wogegen beim Kern noch viele Areale unerforscht sind. Im Kern ist ein Schwerpunkt der Herkunft Plaza Copal in Nohol Pilar. Dies ist zu erklären mit den ausgiebigen Ausgrabungen in EP7 und der kompletten Ausräumung eines Tunnels unter dem Gebäude. Ein zweites Zentrum mit vielen Keramikfunden ist die Akropolis von El Pilar.

Für die Zeitperioden wird der Keramik-Katalog herangezogen. Es zeigt sich, daß die frühesten Funde aus der Mittleren Vorklassik stammen. Die komplette Vorklassik weist eine umfangreiche Anzahl an Funden auf. Dagegen nimmt die Anzahl der Frühklassik-Funde verglichen mit der Vorklassik stark ab. Dies wird auf eine Problematik mit sehr selektiven diagnostischen Eigenschaften bei Keramik in der Frühklassik zurückgeführt. Viele Frühklassik-Keramiken werden wohl nicht als solche erkannt weil eindeutige Charakteristika weitgehend fehlen. Die Spätklassik dagegen besitzt wieder eine große Menge an Keramikfunden. Die Spätklassik scheint eine Phase von sehr hoher Aktivität in El Pilar gewesen zu sein, da die Spätklassik von allen gefundenen Perioden in El Pilar die meisten Stücke besitzt. Bedingt durch den Kollaps der Maya in der Endklassik nimmt auch in El Pilar die Häufigkeit von Endklassik-Keramik ab im Vergleich zur Spätklassik. Für die Nachklassik schließlich werden überhaupt keine Keramiken mehr gefunden. Es scheint, als ob El Pilar das Schicksal von vielen anderen Maya Stätten teilt und zum Beginn der Nachklassik aufgegeben wurde.

Für die Keramik-Kategorien wird ebenfalls der Keramik-Katalog verwendet. In Bezug auf Keramikgefäße selbst ergibt sich folgendes Bild: Die Anzahl von Trinkgefäßen ist recht niedrig, was zu erwarten war, da ja diese Gefäße erstens erst wirklich in der Spätklassik Verbreitung finden und zweitens selbst in der Spätklassik als Elite und Prestigegüter gehandelt werden und diese Gefäße selbst in der Spätklassik nur in gewissen Kreisen verbreitet wurden. Krüge dagegen sind die Art von Gefäßen, die am meisten gefunden wurden. Das deckt sich mit der Sicht, da9 diese Gefäße Vorratsbehälter aller Art waren und es ja an sich immer Dinge, gab die gelagert und aufbewahrt werden mußten. Neben Vorratsbehältern mußte es auch viele Gefäße geben, die zur Zubereitung und Herstellung von Nahrung und anderen Haushaltswaren dienten. Diese Aufgaben haben bei den Maya die Schüsseln übernommen und sind deshalb auch zahlreich anzutreffen. Tecomate sind eher eine Randerscheinung, aber da sie wichtig für Datierung sind werden sie trotzdem in einer eigenen Gruppe geführt. Abschließend gibt es zu den Tellern zu sagen, daß diese zu Servierzwecken verwendet wurden. Kleine Teller oder Platten sind durchaus häufiger zufinden, dagegen bleiben große Platten und Teller die Seltenheit, weil sie nicht für jedermann erschwinglich waren und eher selten als Prestigeobjekte bei großen Gelagen eingesetzt wurden.

Soweit die herkömmlichen Untersuchungen. Allerdings schaffen es die Kataloge dank der großen Atrributsfülle, die von der El Pilar Methode erzeugt wurde, die Sammlung auch aus anderen Aspekten zu betrachten. So ist es zum Beispiel möglich herauszufinden wieviele Gefäße Engobe besitzen und wieviele ohne gefunden wurden. Gefäße ohne Engobe sind sehr häufig reine Nutzgefäße, während jene mit Engobe je nach Grad der Bemalung und Verzierung eher in die Kategorie der Prestigeobjekte zählen können. Es ist auch zu sehen wieviele von den Objekten der El Pilar Sammlung bei einer Methode wie Giffords Type-Variety komplett weggelassen werden würden, da ja diese nur dekorierte Gefäße berücksichtigt, während sie mit Hilfe der El Pilar Methode zu dem Datenpool beitragen können.

Kapitel 6 – Vergleich zwischen El Pilar Methode und Giffords Type-Variety

Weil die Ergebnisse der El Pilar Methode so brauchbar waren wie das letzte Kapitel gezeigt hat, ist erwiesen, daß sich die El Pilar Methode bewährt hat und kann nun mit einer der etablierten Methoden verglichen werden, dem vierten Ziel der Arbeit.

Die beiden Methoden sind von Grund auf verschieden. Die El Pilar Methode ist eine paradigmatische Klassifikation, während die Type-Variety eine taxonomische Klassifikation ist. El Pilar hält Form für wichtig, während Gifford Farbe und Dekoration den Vorzug gibt. Die El Pilar Methode versucht exakte, nachvollziehbare Ergebnisse zu erreichen, während die Type Variety sich auf eher subjektive Eindrücke und Ausdrücke verlässt.

Bei Zugrundelegung einer theoretischen, perfekten Klassifikationsmethode als Maßstab, dann wird diesem die El Pilar Methode näher stehen als Type-Variety. Allerdings muss auch das Alter der von Gifford entwickelten Methode berücksichtigt werden und die technischen Neuerungen über die seitdem verfügt werden kann. Außerdem war damals die Zielsetzung viel eindeutiger und enger gesetzt als es heute ist. Damals war es wichtig die Chronologie herauszufinden, heute sind dazu noch viele andere Aspekte gekommen und Chronologie ist eher in den Hintergrund gerückt. Deshalb ist es kein Wunder, daß die El Pilar Methode in der Hinsicht fortgeschrittener wirkt.

Beide Klassifikationsmethoden besitzen inhärente Vor- und Nachteile, die sich aus ihren jeweiligen Systemen ergeben. Während die El Pilar Methode als paradigmatische Klassifikation besser geeignet scheint mit den neuen Anforderungen an eine Klassifikation, sollte die taxonomische Klassifikation in Form der Type-Variety nicht komplett abgeschrieben werden, weil auch sie gewisse Vorteile bringt. Als mögliches Zukunftsszenario wird deshalb eine Verschmelzung der beiden Methoden zu einer neuen, welche die Stärken von beiden einbringt, vorgeschlagen Ein erster Test war erfolgversprechend, den Rest muss die Zukunft zeigen.

Kapitel 7 – Zusammenfassung

Alle vier Ziele der Arbeit, die am Anfang ausgegeben wurden, wurden erreicht. Darüberhinaus hat das Erreichen aller vier Ziele bewirkt, daß ein übergeordnetes Ziel ebenfalls erreicht werden konnte: Der Vorschlag einer neuen Methode, die zwei bisher sehr unterschiedliche Methoden vereint.

Zur Zeit gibt es noch viele unterschiedliche Methoden die mehr gegeneinander als miteinander eingesetzt werden, aber nur eine dauerhafte und sinnvolle Vereinigung der verschiedenen Strömungen kann den Keramikstudien helfen einen notwendigen und großen nächsten Schritt zu gehen um ihrem Ziel, dem umfassenden Verständnis der Maya Keramik, näher zu kommen.