Calendars, Rituals, and the Ethnographer

Examining the changing ethnographic attitudes towards Maya time perception in the documentation of indigenous calendars during the 20th century in Mexico and Guatemala.

RMA thesis by Paul van den Akker

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Front Cover Image: Maya priest Miguel praying at cave shrine. Photo made by Paul van den Akker

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‘Τὰ πάντα ῥεῖ καὶ οὐδὲν μένει’

[Everything flows, nothing remains]

Ancient Greek dictum based the philosophies of Herakleitos and Plato.

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Chapter One. Introduction

1.1 Aims and Goals

After 500 years of intense cultural interaction between cultures from the Americas and cultures from Europe, the conceptualization of time has remained a central issue of the Maya worldview. The colonial period, which involved the complex paradox of documentation of indigenous practices and beliefs while at the same these time indigenous religious practices were extirpated, was followed by the independence of Mexico and most other countries in Central America. For the Maya peoples however, this independence meant periods of civil war, genocide, militaristic dictatorial regimes, poverty and forced labor on far away plantations. Nonetheless, many traditional customs have survived the obstacles of the past centuries, and have been the object of study for ethnographers since the late 19th century.

My research deals with the surviving Maya calendar system that is currently threatened by the advancing globalization. The changing environment caused by globalization has been affecting Maya culture dramatically over the past century and has already led to the disappearance of many traditions. To inform future generations of Maya peoples about their current practices and beliefs as well as to gain more insights in the possible belief systems of the past, it is necessary to document the knowledge present in contemporary villages. Before new ethnographic fieldwork can be done, however, it is first necessary to look into what has been investigated already and how the Maya calendar has been approached in the past. Therefore, this research focuses on the one hand on the mapping of surviving calendar features and related ritual practices, while on the other hand attention is paid to the development of ethnographical research in the Maya area over time. Basically, two main questions with related sub questions are put forward which will be addressed throughout the thesis:

1. In what form has Maya time perception continued over the course of history? This broad research question entails the answering of the following sub-questions: Where and in what form is the Maya calendar still present today? Who is in charge of keeping the count of time, and how is this person educated? How do ritual and the Maya calendar relate to each other in different Maya communities?

2. How do the developments in Maya calendar research relate to changes in the general field of Maya studies and ethnography? This research question involves the answering of several related sub-questions, among which: How have earlier

ethnographers approached the calendar and the related rituals? Who are the leading figures in contemporary Maya calendar research?

The last synthesis of Maya calendar ethnographies was made by Suzanna Miles in 1952. Her research, although pioneering at the time, contains several mistakes (see chapter three) and is moreover outdated since new studies on this subject have been performed ever since the 1950s. Her structural approach does neither consider the theoretical discourses or movements in social sciences that influenced the investigators of the Maya calendar at the time. In fact, an analysis of the development of calendar ethnographies over time, which includes not only the theoretical discourses but also the data that is presented in these studies, is currently lacking in academic literature. The general theoretical development of Maya research is discussed in Wilfried Westfahl's (1991) important book *Die Mayaforschung*. Acknowledging the importance of this work, it will form the backbone of the theoretical framework of my research. This thesis contributes to the understanding of the development of Maya research as it provides a more detailed analysis of the approaches to the specific topic of the Maya Calendar over time.

The research topic of this thesis is performed in the line with the research of the Faculty of Archaeology at the Leiden University and especially in accordance with the investigations performed by the section of Indigenous American Cultures as it focuses on religion, worldview and ritual, and the relation between anthropology and archaeology. Recently a new ERC-funded (European Research Council) research project has commenced under the name of 'Time in Intercultural Context: Indigenous Calendars of Mexico and Guatemala' by the department of Mesoamerican studies (see Jansen 2012). The research of this group is performed with the idea that, in the case of Mesoamerican studies, disciplines such as anthropology, history and archaeology should not be considered as separated entities; they should be combined in an integrated approach. Agreeing on this matter, this thesis is mainly based on ethnographic sources and is supported by and contributes to archaeological and historical research (which will become clear in chapter three and four). During the time that this thesis was written, I was also working as a student-assistant within the Time in Intercultural Context project. This position gave me the opportunity to work closely together with the researchers and to be aware of the most current debates. Writing this thesis I am also aiming to contribute to the current investigations of this research group by providing an synthesis of calendar systems in the Maya area as well as by discussing the general development of calendar research.

As already implied, this thesis largely consists of a literature study on the ethnographies that deal with Maya calendar. Due to the specialized research topic it was needed to perform a part of this literature study in the Museum of Ethnology in Leiden, the Netherlands, and in the libraries of the *Ibero-Amerikanisches Institut* and the *Ethnologisches Museum der Staatliche Museen* in Berlin, Germany, of which the archives of latter two contain the largest corpus of Latin American research publications in Europe. Apart from the literature study I have also visited at least three international conferences in Vienna, Dresden and Helsinki, that dealt with the Maya calendar and the ancient and contemporary Maya culture in general. These conferences were very helpful in the sense that apart from becoming familiar with the most recent debates in Maya research, I was able to discuss my ideas with some of the leading investigators of the Maya culture.

After analyzing the calendar ethnographies, a small fieldtrip was undertaken to Yucatan, Mexico, where I joined Manuel May Castillo, one of the ERC-investigators, on his fieldwork. During the two weeks I was able to contextualize the literature data by staying in a Maya village and working on the fields. Manuel and I were also able to witness several religious ceremonies in and around churches and attend rituals performed by a local Maya ritual specialist.

What a preliminary literature review shows is that over time Maya ethnographies have mostly been conducted in service of the past and are mainly used as a source of information for the reconstruction of the ancient Maya society. As will become clear in the second chapter, Maya research has mostly been dominated by the discipline of archaeology. In chapter five I will elaborate on my proposal for future research which should be performed in the light of decolonization, involving a close collaboration between researcher and the indigenous peoples. Additionally, this future research aims to serve the present-day and future social conditions of the indigenous peoples.

The following part of this introductory chapter contains a description of the geographical setting of the Maya as well as a small sketch of the linguistic and socio-historical context of the Maya peoples. The general literature on Maya culture is extensive and therefore this part will be far from exhaustive. However, the aim of this section is to provide an introductory contextualization prior to the discussion of the research data. Especially the Maya history is of importance for the contents of this thesis as the social processes that have taken place over time have influenced the culture severely. These processes have an enduring impact on the contemporary Maya communities and can therefore not be left out of the discussion.

In chapter two the theoretical background of this research master thesis will be discussed. The theoretical framework focuses mostly on the development of Maya research over time and discusses how the discipline became more polarized through the decades. The general advancement of Maya research and its effect on Maya ethnography, as well as the most important developments in the anthropological discipline over the last decades are discussed in this part. Apart from this, the strongly related question of cultural continuity will be addressed here. In other words, chapter two deals with the development of Maya studies in general and ethnography in particular together with the concept of cultural continuation which has been of high interest to most of the ethnographers. Several of the discussions from this chapter will come back in the first part of chapter five where the development of Maya calendar ethnographies are discussed.

Chapter three deals with the general characteristics and mechanisms of the Maya calendar. Here we will discuss the different calendar features and how the ethnographers over time dealt with them. This chapter involves questions related to the functional aspect of the calendar, e.g. how does it exactly work? As well as questions related to the persistence, where and in what form is the calendar still preserved? The ethnographic data will be complemented with data from the archaeological record to strengthen the argument of cultural continuity. Disagreements between Maya researchers on the general characteristics of the Maya calendar will also be addressed here.

Chapter four goes into two important themes related to the calendar: firstly the daykeeper and secondly the ritual act of divination. The tasks, education and initiation of the ritual specialist, who is in charge of keeping track of time, are examined here by consulting the different ethnographies. Additionally, a case-study of calendar related rituals will be looked at in great detail by discussing the practice of divination. We will explore the general outline of this ritual and how it contributes to the continuation of Maya worldview.

Subsequently in chapter five, we will focus more on the ethnographers and discuss on what parts their approaches and observations overlap or differ. In this part a critical stance will be taken against earlier ethnographies and it will elaborate on some general assumptions. Of the main questions of the first part of this chapter is: How did the ethnographies on the Maya calendar system develop over time, and how does this relate to the discussed general development of Maya research? Subsequently the empirical data from the performed fieldwork in Yucatan will be presented, after which a proposal for future research will follow.

Finally, chapter six will be the concluding chapter. Here the findings will be discussed, the approach will be reflected upon, and a path for future research will be defined.

Figure 1. Geographical location of the Maya area (Google Earth)

1.2 A Geographic Sketch

The Maya area lies within the larger cultural area of Mesoamerica, which occupies the region between Northern Mexico and Central America (see fig. 2). It has been determined as an overarching culture due to several shared characteristics between the several subcultures (for an enumeration of features see: Sharer 1994, 20). The contemporary Maya peoples share an area of around 324.000 km^2 with their ancestors which overlaps a number of Middle American countries (see fig. 3): Eastern Mexico, Guatemala, Belize, western Honduras and El Salvador (Sharer 1994, 19). In general there are four greater geographical regions: (1.) the Yucatecan Lowlands, which cover almost the Yucatan Peninsula entirely; (2.) the Central Maya Lowlands, also known as the Petén; (3.) the Southern Maya Lowlands, which follows the Usumacinta River and encompasses Southern Belize and the Mexican states of Tabasco and Campeche; (4.) The Maya Highlands, which covers the region stretching from the Sierra Madre de Chiapas towards the Pacific Coastal plain, including the volcanic chains in Southern Guatemala. Therefore the Maya area encompasses a variety of natural environments which alternate between highland, the pacific coastal plane, and the lowlands.

The Highlands, where most ethnographic studies on the Maya traditions have been performed, can be divided into the northern Highlands and the western Highlands (Sharer 1994, 26-33). In the bigger part of the Highlands are classified as *tierra templada* (temperate land) which means that the temperature in these regions varies between fifteen and twenty degrees Celsius. In the higher parts, which is classified as *tierra fría* (cold land), temperature can drop below zero and occasional snowfall may occur. The rainy season runs generally from May to December and brings a steady rainfall which increases towards the North. The northern Highlands, which exist of mountain ridges up to 3.000 meters high, are mostly drained by tributaries of the Usumacinta River. However, the soils on the slopes in this part of the Maya area are poor for agriculture, and therefore ill suited for agriculture. Therefore, the practice of agriculture is mostly concentrated in the richer valleys. The southern Highlands are situated in an area of volcanic activity. Its fertile soils together with the many small rivers make this this area a suitable region for agriculture.

The presence of both *tierra fría* and *tierra templada* in the Highlands and the availability of different types of soil, make it an area of high interaction between different communities as agricultural production differs greatly due to the variation in height (Sharer 1994, 28). As will be argued throughout this thesis, the continuing interaction between Maya communities does not only involve the exchange of agricultural products, but also contributes to the preservation of shared traditions such as the calendar system.

Figure 2. Detailed map of the contemporary Maya area (www.latinamericanstudies.org).

1.3 The Linguistic Context

Although the Colonial Period (discussed below) had an enormous impact on the traditions and languages in the Americas, there are currently still twenty-eight different Maya languages being spoken by several million people as their primary language (see fig. 3) (Sharer 1994, 582). Most of the Maya speakers are bilingual though in the smaller communities older generations may depend mainly on one of the Maya languages. The

most widely accepted idea about the origin of the many Maya languages today, is that about 4000 years ago there was a ‘common language’ which is referred to as Proto-Maya (Sharer 1994, 584).

More than 3000 years ago this Proto-Maya separated into a Waxtekan-group and rest-group who remained separated over the years (Sharer 1994, 584). The contemporary Waxtek speakers currently live isolated from other Maya groups in the region of Veracruz, Mexico. Following this development, another group became isolated from the rest-group over time, which then formed the Yucatekan-language group. Finally the rest-group got separated into four main language groups: Greater K’ichean, Mamean, Greater Q’anjob’alan, and Tzeltalan-Ch’olan. These Maya language groups continued to develop over time through migration, isolation and exchange after which finally the twenty-eight currently known Maya languages came to be (Table 1).

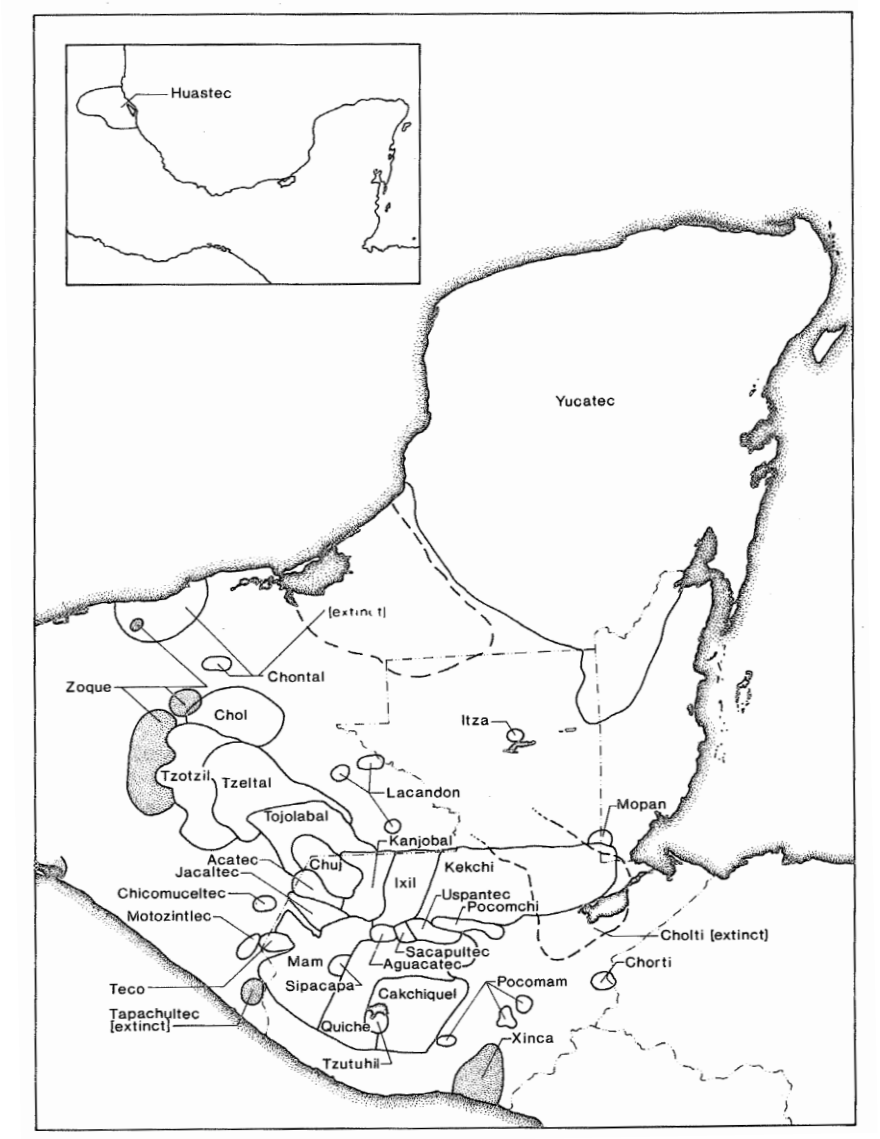
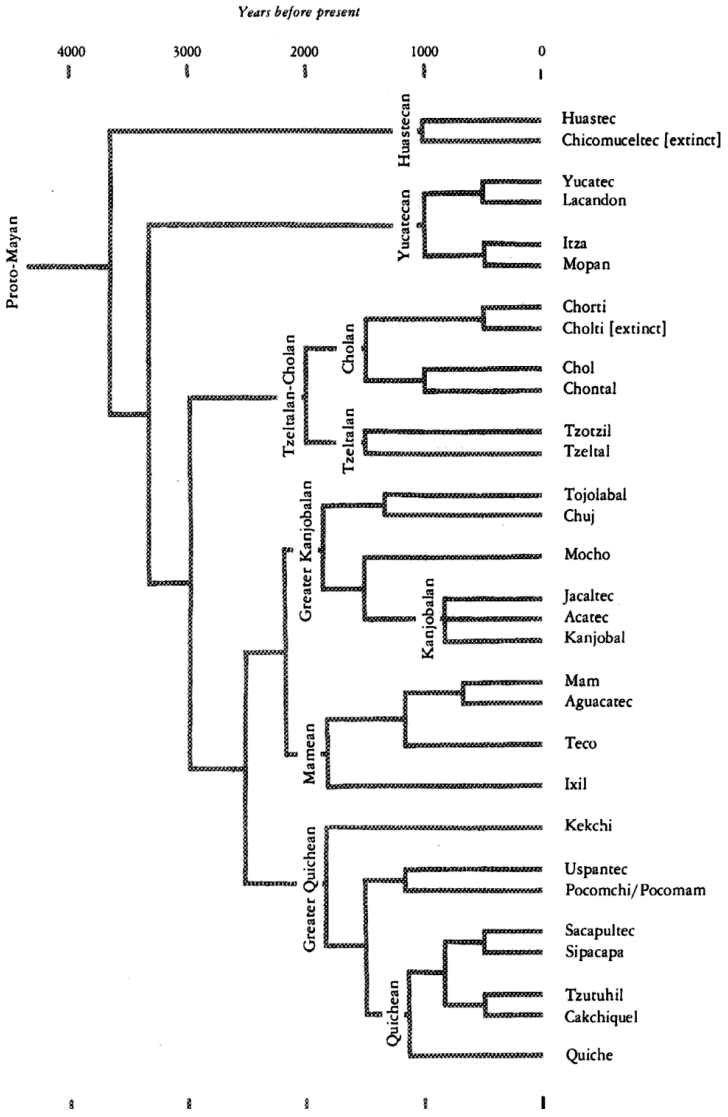


Figure 3. Linguistic groups in the Maya area (Sharer 1994, 583)

Although different Maya groups interact with each other and share rituals, the calendar system and its related practices are slightly different per language group due to their individual development (Sharer 1994, 584). Therefore, when discussing the Maya calendar system, mostly the comparison will be made in concordance with language groups, with an occasional exception for community-based comparisons. A community, a term used throughout in this thesis, is considered to exist of a core village or town together with its neighboring hamlets which are tied to each other through intensive contact on the basis of trade, shared religious practices, family ties and language.

Table 1. Development of Maya languages (Sharer 1994, 585)



1.4 An Overview of the General Maya History

In this section there will be a short elaboration on the Maya history and the subdivisions that archaeologists (see table 2) and historians have made. Although the so-called

‘Olmecs’ already established a stratified society that included large monumental buildings as early as the Early Preclassic Period around 1500 B.C., signs of beginning sedentism, can be witnessed in the Maya area, together with intense agriculture along the Pacific Coast (Sharer 1994, 44-70). Around 400 BC interaction with the Olmecs and Epi-Olmecs (which is probably a Mixe-Zoquean language-group deriving from the Central Mexico) led to the development of a 400-character script and the first monumental sculpture and architecture in the Maya region (Sharer 1994, 44-70). Around that same time the first Maya cities started to be established in the Central Lowlands.

The Middle and Late Preclassic are characterized by the presence of ceramic producing settlements, the construction of huge ceremonial structures at specific sites (e.g. Nakbé), the growing stratification of society (indicated by wealthy burials), and the appearance of the first hieroglyphs in the southern Maya regions (Sharer 1994, 71-137). It should be stressed that the Maya did not develop as an isolated culture, but that intensive contact with neighboring cultures, for example the earlier mentioned Mixe-Zoquean language-groups, was an important factor for the formation of Maya society. Finally, in the Terminal Preclassic Period the construction of monumental buildings spread through the Maya Lowlands which led to an enormous growth of monuments and increasing importance of cities such as El Mirador, Tikal, Cerros and Lamanai. The site of Tikal seems to have had trade connections with the important and powerful Central Mexican Teotihuacan. However, at the end of the Terminal Preclassic Period most of these cities suddenly declined for currently unknown reasons.

The Classic Period spans a long time-period that runs from 250 AD to around 900 AD. This period is characterized by the emergence of the first Maya states (which competed and made alliances between each other), the growing importance of Tikal, and influence of Teotihuacan on architecture and iconography (Sharer 1994, 138-211). During the Middle Classic the powerful sites of Palenque, Calakmul, Naranjo and Dos Pilas developed. Typical for this time is the continuing competition between the different city states. The Terminal Classic Period shows political and social changes in Maya society that are heavily related to a phenomenon that the Mayanists generally refer to as the ‘Maya collapse’. The change of power relations, the decline and, eventually, the end of the construction of monumental buildings and indications of violence that distinguish this period are probably caused by many interwoven occurrences. Academic theories on this topic are as abundant as they are extensive, including natural disasters, political clashes, the growing distance between ‘commoners and ‘elite’ followed by a revolution, and invasions from ‘outsiders’. This Period, however, not only meant the destruction and decline of Maya centers. In the so-called Puuc region new cities (e.g. Uxmal, Kabah, Sayil, and Labná) were constructed and flourished greatly until in the Postclassic Period.

The Postclassic Period is marked by the emergence of a new political power in the Yucatan Lowlands around 900 AD: Chichen Itza (Sharer 1994, 384-434). Style differences with earlier sites might indicate that there was an influence from Central Mexico; however, how this interaction actually functioned has not been archaeologically determined yet. The city remained powerful until 1200 AD after which the city Mayapan, also in Yucatan, started to develop.

The conquest of Central Mexico by the Spaniards was a turning point in Mesoamerica's history. The Conquest and the following Colonial Period had also a great impact on the Maya societies. The many processes resulting from the cultural contact between Spaniards and indigenous peoples are to complex and too numerous to address them here. Many expeditions and battles were needed before the Spaniards finally ruled over the whole Maya area in 1697 (Prager 2007, 381). The many battles between the natives and the Spaniards cost many lives; according to Bartolomé de las Casas at least four million indigenous peoples were killed between 1524 and 1540 by the Spanish conquistador Pedro de Alvarado (Prager 2007, 380).

Life in the Colonial Period involved dramatic changes on the economic, social, religious and political spheres for the Maya peoples. This was enforced by the new Spanish *encomienda* system in which landowners, who were rewarded by the Spaniards for their special services during conquest by the gift of land, and their offspring were allowed to demand tribute and forced labor of indigenous people. The working forces were collected from neighboring villages or even whole regions (Gunsenheimer 2007, 385). Christianization was introduced at the time of conquest when the mendicant orders joined the conquistadores from their first expeditions onwards (Gunsenheimer 2007, 390). In spite of extirpatory campaigns and the friars' best efforts to teach the Maya about the Christian values and traditions, traditional indigenous practices continued to exist and were often combined with Christian traditions (Gunsenheimer 2007, 391). Also the old Maya political system was replaced by the Spaniards with a newly invented hierarchical system. Resistance to this system and any other attempts to rebellion by the indigenous populations, such as the uprisings in the Highlands of Chiapas between 1708 and 1713, were repressed, and participants were executed or enslaved (Gunsenheimer 2007, 392). Another source of suffering was the variety of diseases, such as influenza, smallpox, measles, and scarlet fever, that the European conquistadores brought with them which led to enormous deadly epidemics (Gunsenheimer 2007, 389). The results were disastrous:

Table 2. A historical overview of the Maya cultures (Sharer 1994, 46-47)

General cultural eras	Chronology	Area: Pacific plain and highlands	Area: Southern and central lowlands	Area: Northern lowlands	
Colonial			Conquest of Tayasal Itza		
	A.D. 1500	Spanish Conquest	Cortés expedition visits Tayasal and Nito	Spanish Conquest	1500
Late Postclassic		Highland conquest states (Quiche, Cakchiquel)		Political fragmentation Fall of Mayapan	
			Itza occupation of Lago Peten Itza region	Domination by Mayapan	
Early Postclassic		Quiche warrior elites' entry into highlands from Gulf coast		Chichen Itza abandoned	
	A.D. 1000	Initial occupation of hilltop and fortified sites	Population loss and eventual abandonment of many centers	Domination by Chichen Itza Reoccupation of Chichen Itza by Itza	1000
Terminal Classic		Cotzumalhuapa sculptural style along coast	Putun Maya expansion; decline at many centers	Putun Maya expansion; rise of Puuc centers	
Late Classic			Peak of population and size at most lowland centers	Growth in size and population of many centers; ties to central lowlands	
			Increasing competition and warfare among polities		
Early Classic	A.D. 500	Renewed development at Kaminaljuyu with economic and political ties to lowlands	Expansion of Maya elite culture to peripheries of central lowlands	Initial sculptured stone monuments with hieroglyphic texts and dates; development of dynastic rule (origins of state systems)	500
Protoclassic		Eruption of Ilopango volcano Peak of population and size at many southern sites	Initial sculptured stone monuments with hieroglyphic texts and dates; development of dynastic rule		
	0				0
Late Preclassic		Sculptured stone monuments (early Maya and Izapan styles), some with hieroglyphic texts and dates; probable development of dynastic rule (origins of state systems)	Monumental architecture, including vaulted tombs, stucco-decorated façades, etc. (origins of state systems)	Monumental architecture (development of complex social, political, and economic systems)	
	500 B.C.	Interaction with adjacent groups (Mixe-Zoquean, Olmec, etc.); initial monumental sculpture and architecture (origins of complex social, political, and economic systems)	Initial monumental architecture (origins of complex economic, social, and political institutions)	Initial architecture (origins of economic, social, and political institutions)	500
Middle Preclassic			Expansion of settlement into nonriverine areas		
	1000 B.C.		Expansion of settlement along rivers into central lowlands		1000
Early Preclassic	1500 B.C.				1500
		Early sedentism along the Pacific coast (origins of village life?)			

the number of inhabitants on the Yucatan Peninsula declined from 2.3 million to only half a million within 200 years. Also Momostenango in the Guatemala Highlands is estimated to have lost 70 percent of its inhabitants. The impact of these events on the traditional way of life must have been enormous.

The independence of Mexico and Guatemala, where the majority of the contemporary Maya currently live, from Spain in 1821 did not mean the independence for the Maya communities since they remained trapped in the Colonial system that was now being continued by the governments of Mexico and Guatemala themselves. Foreign

agricultural investments that followed the independence had a devastating impact on the Maya societies that had persisted during the Colonial Period (Grube 2007, 418). The boom in coffee production between 1870 and 1900 replaced the traditional Maya agricultural traditions and caused a collapse of the traditional agricultural economy in the Highlands. Ironically, the German Leonard Schultze Jena, one of the most elaborate and important ethnographers in the Maya area, came to this region the first time when visiting his relatives who owned a coffee plantation. The need for cheap working forces for the coffee and banana plantations grew to such an extent that the Guatemalan president Rufino Barrios (1873-1885) forced the indigenous peoples to work on these plantations in order to avoid imprisonment (Grube 2007, 418). Since the plantations were often located far from the home communities of the indigenous peoples, the practice of forced labor led to large population displacements as people were forced to move to the plantations where they worked. This is also mentioned by many ethnographers as being one of the reasons for the disappearance of traditional knowledge (Lincoln 1942, 116; Gossen 1974, 226). On the Yucatan Peninsula similar processes were happening: sugar plantations spread over the peninsula and indigenous peoples were forced to work here (fig. 4). The forced labor and high taxes finally led to an uprising of the Maya in 1847-1848, known as the Caste War, during which they conquered almost the whole peninsula back (except for the city of Merida) but were finally defeated in August 1848 (Grube 2007, 418-419).

Figure 4. The ruins of old hacienda buildings are silent testimonies of the former plantation economy in Yucatan.

In Guatemala, the plantation economy has been dominating and determining the character of the economy. A series of events, among which an earthquake in the Guatemalan Highlands followed by international support and the influx of foreign capital, led to political awareness among the Maya people in the late 1970s which was followed by the formation of the agricultural labor union, the *Comité de Unidad Campesina* (CUC), which aimed to improve the living conditions of the land workers (Grube 2007, 422). Guatemala's elite felt threatened and decided to repress the newly formed labor union and its members by using military force. Not only were villages forced to resettle in order to stop traditional life and culture, from the early 1980s onwards characteristics of genocide can be recognized in the government's campaign: 150,000 people were murdered, 400,000 people fled out of the country, and one million people became refugees in Guatemala (Grube 2007, 423). The resettlement of villages, the surveillance by the military and the executions by death squads finally ceased around 1984, and new democratic elections were held in 1986. Even though Guatemala finally got a democratic government, violence has remained on the surface of the country and many people continue to live in fear as currently gang-violence produces many victims.

In reaction to the Guatemalan civil war, a strong Maya movement was formed which is currently known as the Pan-Maya movement. This movement fights for the indigenous rights and promotes their cultural roots and traditions through publications, education, and political engagement. The Pan-Maya movement will be discussed further in the following theoretical part of the thesis

Chapter Two. Theoretical Background

2.1 Introduction

The temporal division used above dividing Mesoamerican culture in Archaic, Formative, Classic, and Postclassic Periods already shows the dominant and currently prevalent theory in Mesoamerican research: that of cultural evolution. When looking at Mesoamerican culture in the light of cultural evolution, it means that it has gradually developed from a starting point (the Formative Period) towards a cultural peak (the Classic Period) after which it only declined (the Post Classic Period). The idea of a Maya collapse strengthens this view and has led to a devaluation of contemporary Maya cultures in comparison to their ancient ancestors. This Darwinian point of view has led many archaeologists to focus purely on the archaeological record instead of looking at 'the people behind the artifact' in a broader sense by including and regarding the practices, ideas, and social organizations of contemporary Maya into their research. In order to come to a good understanding of why and how certain assumptions, interpretations and classifications were, and still are, made, the development of Maya research over time will be discussed in this chapter. In other words, the discussion of Maya research over time will help to understand where Maya research is currently situated in the theoretical debate, how it got to this point, and also helps us to position ourselves within the theoretical currents. Throughout the thesis we will come back to the following discussion as we can clearly see the relations between what and how ethnographers documented their information and the period in which they conducted their academic research. Although this will be pointed out throughout the thesis, it will also be elaborately discussed in chapter five.

As the developments of Maya research in general (including anthropology, archaeology, linguistics, epigraphy and history) are part of larger developments in the social sciences, we are aiming to also incorporate the important global events that had impact on the way research is performed. Therefore throughout the theoretical framework references to historical events are mentioned. Also, this theoretical examination will form one of the pillars for the interpretation of the Maya ethnographies from 1889 onwards which will be discussed throughout this thesis. Wilfried Westfahl's work *Die Mayaforschung* (1991) will form the basis for the discussion on the theoretical development in Maya studies since firstly this is the only detailed study after Franz Termer's 1952 publication (with the same name) that investigates this topic (Termer 1952) and secondly his observations and general ideas about the future are in line with the contents of this thesis as his work contains a strong argument in favor of the

decolonizing studies. His exceptional elaborate study, however, has not received a prominent spot in the international Mayanist debate as the language barrier, against which he also argues throughout the book, remains an obstacle for the international recognition of this important work.

The main topics of this thesis are situated at the juncture between archaeology and anthropology. One the one hand, ethnography and how the discipline has developed over time are looked at. On the other hand the data of these ethnographies will be discussed in order to come to a synthesis of the contemporary forms of the Maya calendar and its related rituals. But how do these themes interact with each other? The overarching theme is cultural interaction: firstly since the initial cultural contact there has been an 'outsider' debate on the link between the past and the present traditions. Secondly, the 500 years of extraordinary contact between European cultures and indigenous cultures have been impacting daily life and ritual practices. Lastly, the study of Maya calendars remains has been mostly done by Western ethnographers or archaeologists who interacted with indigenous religious specialists. As will become clear in the following section, the question of cultural continuation has been a persisting topic of debate throughout the history of Maya research. In this thesis, both archaeological and anthropological data are dealt with, which makes it important to elaborate on our position in this debate.

2.2 The Development of Maya Research: Approaches and Theories

Maya Documentation

When providing an overview of the history of Maya studies, many researchers begin with the arrival of the Spaniards in the Americas or even later ,with the jungle explorations influenced by the Enlightenment. The Maya themselves, however, have always had ways of documenting the way they perceived the world that we can still encounter in the archaeological record through writings, paintings and incisings on walls, steles, codices and ceramics. Other physical remains such as architecture and even human remains may provide information about how the Maya might have looked at themselves. However, these data are based mainly on the so-called Maya upper-class. Even though these descriptions are mostly interpreted by 21st century Western archaeologists, which inevitably biases the data, they do provide a rich array of historical and social information.

Sources for Maya research during the Colonial Period include the writings of Spanish *conquistadores*, friars and other officials and consist of questionnaires and travel

reports), and, to a lesser extent, native accounts. Although the traditions of building in stone, the making of polychrome ceramics and the writing of codeces quickly ceased after the Spanish conquest, indigenous accounts have survived in books such as *Chilam Balam*, Yucatec medicine and territorial books, family lineage documents, the famous Quiché *Popol Vuh* story (which survived as an account by the Dominican priest Francisco Ximénez) and the *Probanza de Votan* from Chiapas. As Dennis Tedlock (1996 ,30) elaborates in his translation of the Popol Vuh, the authors of the creation story are conscious about the fact that their knowledge is endangered and unsafe in the surroundings of Christianity. As a consequence, the creation story has been written down for later generations.

Early Colonial European Accounts of the Maya Culture

According to Westfahl (1991, 26) the Spanish accounts are significantly different from the Maya accounts the Spanish since accounts provide an external view on Maya identity and origin in contrast to the internal perspective provided by pre-conquest sources and colonial indigenous accounts. This might seem like stating the obvious; however, it becomes more interesting when trying to apply this statement to present day ethnographies which are usually done by people from non-Mayan cultures. As discussed in chapter five of this thesis, the ethnographers from the 1980s have struggled with this issue of representation as well.

Among the first Spanish chroniclers who mention the cultures of the Maya area are of course the well-known conquistadores Hernán Cortés, Bernal Díaz del Castillo (whose identity is questioned in the recent and controversial study by Christian Duverger [2012] who suggests that Díaz del Castillo is actually an *alter ego* of Hernán Cortés himself), Pedro de Alvarado and Francisco de Montejo. However, the account that is considered to be the most insightful study on the Maya culture during the Early Colonial Period was written by the infamous Franciscan friar Diego de Landa. His *Relación de las cosas de Yucatan* (Brasseur de Bourbourg 1864) is an elaborate study on the culture, writing traditions and history of the Maya. His Yucatec Maya dictionary and grammar books stand in great contrast to his extirpatory campaigns and large scale native book-burning, and is therefore a perfect example of the paradoxical behavior of the Catholic church during the colonial period. The sympathy and interest towards the indigenous peoples and their culture, which were studied and documented in the light of protection against the fallen angel Lucifer, led to the documentation of indigenous knowledge. At the same time, strong efforts were made by the mendicant orders to stop the indigenous, traditional, and heathen way of life in order for them become good Christians.

Diego de Landa is often mentioned as being the first ethnographer in the Maya area. However, can the term ethnographer be applied to him? Due to the strong socio-religious aim of his studies, it only possesses value when considered as ethnohistorical rather than an ethnographic study. Therefore we should not be talking about ethnography when discussing De Landa's work. Westfahl (1991, 30-33) states that Diego De Landa and the Spanish official Diego García de Palacio, who visited the ruins of Copán in 1576, independently came to the same conclusion that the impressive ruins shattered over Highland Guatemala, the Petén, Chiapas and Yucatán belonged to one cultural group of which the descendants were still living in the surroundings. This was the first determination of a distinct Maya culture, in both ancient and contemporary times, and in comparison to their northern and western neighbors. However, the following quote from García de Palacio implies that Westfahl's statement is not quite correct since in his report to the Spanish king, García de Palacio seems quite convinced that the current inhabitants of the Copan area could not be linked to the ancient architecture:

> "In the neighborhood, on the road to the town San Pedro, in the first town in the Province of Honduras, called Copan, there are ruins and traces of a numerous population and impressive fine buildings erected with such great skill that they can never have been constructed by such crude people as the present inhabitants" (Palacio 1576 in Eggebrecht 2007, 400).

The Enlightenment: Renewed Interest in the Maya

After the Englishman Thomas Gage's last report on the Maya in 1648, it remained silent regarding this topic for over 200 years. The recently renewed interest in the Maya is often considered to be result of Stephens and Catherwood's adventurous expeditions into the Maya jungle from which they came back with impressive stories and drawings of elaborate monumental buildings. Preceding this exploration which has led to worldwide attention for the old ruins, there were other expeditions. These expeditions were directly influenced by the new *Zeitgeist* of the Enlightment and the Romantic Period, which by mid 18th century had greatly changed the way people in Europe, but later also in the Americas looked at human kind, cultures and history as well as politics. In contrast to 16th and 17th century religious humanism, in which the natives were seen as objects that had to be converted to Christianity, the Enlightment portrayed the natives as noble savages who reflected an almost perfect state of humankind (Westfahl 1991, 36).

King Charles III (1759-1788) became interested in the ruins of the New World after he had been notified of an explorative trip in the surroundings of Palenque. In reaction to this news he sent an exploration team led by Del Río (1822) to the ruins of

Palenque with the orders to stay there until the origin and history of the ancient Americans were discovered. Subsequently, after the first book on Maya archaeology was published, Charles IV ordered Guillaume Dupaix to make three expeditions into the Maya area a few years before the independence of Latin America. In his publications he elaborated mostly on Palenque (Dupaix 1969). Around the same time, Edward King, Viscount of Kingsborough, published a work in which the Dresden codex and other Maya antiquities were made public (Westfahl 1991, 38-39). This led, together with the first publication of the archaeological site Palenque by Alexander von Humboldt (1810), to the first impression of cultural remains in the Maya area. During this early period of Maya investigations, in contrast to the Early Colonial Period, it was thought that the contemporary indigenous people could not have built constructions of such high cultural value (Westfahl 1991, 40). Therefore, to explain the presence of monumental ruins in the forest of Yucatan, diffusionist theories suggested that the Maya were migrated groups of Egyptians, Romans, Greeks, one of the Ten Lost Tribes of Israel, or descendants of the lost kingdom of Atlantis (Willey and Sabloff 1992, 15-17). Throughout our research we have also kept an eye on the role that the Maya development and place of origin have in current anthropological research which can be seen back in chapter five.

The first time North America became involved in Maya research, was when Lloyd Stephens and Frederick Catherwood went on expedition. After thoroughly studying the available Maya publications, they went on their first exploration to the Maya region in 1839, followed by a second investigation in 1841 (Stephens 1843a, 1843b). In total over 50 archaeological sites were reported by Stephens. Westfahl (1991, 39-41) points out several important statements about the Maya which were made in Stephens' reports. First, the ancient Maya culture has developed without any contact with cultures from the Old World. Second, the contemporary Maya are direct descendants from the ancient temple builders. Third, the contemporary Maya should be given freedom and education so that they will be able to restore, once again, their former high culture. What is interesting to note here is that his last statement consists of a political issue. This is interesting since it seems that most North American scholars did not want to get involved with political matters. This is notable in the ethnographic reports that were examined for this study as well. In the research on the Maya calendar we found for example, that only few ethnographers were willing to speak about the genocide in Guatemala in the 1980s.

Another contribution is made by Catherwood, who depicts the temples, altars, palaces and steles neither in classical style nor excessive romantic style, so their individual cultural style can be witnessed by a broad public which at the same time

contributed to Stephens' theory of an individual development of Maya culture (Westfahl 1991, 40). The accuracy of Catherwoods drawings were reached with not only his excellent artistic skills, but also the use of new technique called the *camera lucida* (Eggebrecht 2007, 405-406). This new technique involved the projection of an object on paper through a prism mounted on a stand, after which the object or image could be traced. The two travelers also encountered the Maya calendar on their travels and which they found extremely interesting, especially because it appeared to be almost similar to that of Central Mexican cultures (Stephens 1843a, 434-459).

Other important contributions to Maya research were done in the field of philology by Abbé Charles Étienne Brasseur de Bourbourg (1869) between 1751 and 1773. After studying history, philosophy and theology, Brasseur became interested in American indigenous history (Eggebrecht 2007, 402). His rediscovery of lost colonial documents in archives all over Europe and Mexico revealed numerous documents, such as a *Motul* dictionary, Ximénez' copy of the Quiché *Popol Vuh*, a piece of the Madrid codex and a copy of the De Landa manuscript. The contents of Brasseurs' diffusionis publications contain, in contrast to Stephens' rational observations, a strong presence of subjective fantasy. However, the documents he published are of great scholarly value. Currently Brasseur is often judged negatively for manipulating translations to his own favor, however his contributions to Maya research are remarkable (Eggebrecht 2007, 402). To paraphrase Westfahl's metaphor, Stephens' silent ruins were colored by Brasseurs' literary discoveries (Westfahl 1991, 43).

The Institutionalized Research Period

The Peabody museum at Harvard was one of the first institutions for the display and study of Maya culture in 1866 (Westfahl 1991, 44-45). Between its establishment in 1866 and World War I, the museum developed structured research methodologies and organized, in collaboration with Harvard University, twelve expeditions into the Maya area. This is considered to be a genuine turning point in the history of Maya research as explorations began to have a structured academic appearance. Although the French and Germans were also investigating the Maya culture, the North Americans became the dominant research group in Maya research for three reasons (Westfahl 1991. 44). First, the geographic vicinity of Latin America led to greater economic and political influence of Northern America which facilitated their researchers to perform studies on their ground. Second, Maya research received larger funds in the United States than in Europe. Third, the North Americans worked together and shared their knowledge, while their

European colleagues were doing more individual research. This leads one to wonder about the current situation. Which country has been most prominent in Maya research in the past decades? And how is this visible in the publications, interpretations and directions of research? Throughout this thesis we will address these questions.

Figure 5. Photograph taken by Maudslay: Stela F and Altar facing West at the Archaeological site of Copan (Maudslay 1889-1902, plate 50)

Influential Researchers and Research Fields

There were four highly influential researchers at the beginning of the institutionalized research period at the end of the 19th century. First on the list is the Frenchman Desiré Charnay (1885), who took the first photographs of the ruins of Tikal, Yaxchilan, and Comalcalco between 1857 and 1886, and also made molds of the elaborated reliefs and

inscriptions for the first time in Maya research history. Then there is the Englishman Alfred Percival Maudslay (publications: 1889-1902) who worked for the British Museum, and, between 1889 and 1902, used new photographic techniques in order to produce good quality photo copies which heightened the standard of Maya documentation (see fig. 5). Subsequently, Teobert Maler (1908) worked for the Peabody museum. Later he transitioned to the German journal *Globus* and travelled through the Maya area between 1898 and 1905, where he discovered the ruins of Piedras Negras and Altar de Sacrificios, and stayed with the isolated Lacandon Maya, comparing their physical characteristics to ancient depictions. Last is Edward Herbert Thompson (1932) who was the official North American diplomatic representative in Yucatan. Out of personal interest he undertook archaeological research in Chichen Itza for 25 years, and was the first to carry out underwater archaeology. By doing this, he discovered human bones, gold, and jade objects in the sacred *cenote*, a cave containing an underground water reservoir, on the site. Sadly, most of these excavated objects from Chichen Itza were taken away from the Maya region to be archived and displayed only in the United States.

While the French were focusing on colonial Maya philology, the Germans were mostly focusing on the Maya codices (Westfahl 1991, 49). The first breakthroughs in the study on the Dresden Codex came from the hand of Ernst Förstemann (1886) who, at the time, was head librarian of the *Königlichen Bibliothek* in Dresden. His research approach entailed careful preparation and the exact formulation of research questions prior to the investigation itself. This influenced the first official scholar in Maya culture Eduard Seler (1910) who undertook several trips to Mexico in which he mainly focused on the archaeological remains and from time to time made ethnographic notes. Seler's newly developed scientific framework and strict methodology provided many new insights in Maya archaeology and codices (Westfahl 1991, 50).

Karl Theodor Sapper (1895), Otto Stoll (1889) and Franz Termer (1952) were the first Mayanists to conduct ethnographic research among the present-day Maya cultures. Neither of them, however, had a systematic approach to investigate these cultures ,which, however, does diminish the importance of their work (Westfahl 1991, 51). As is mentioned for the work of Wilfried Westfahl (Ibid.), while these early Maya researchers have been recognized as the pioneers of ethnographic fieldwork in the Maya area, a language barrier seems to have kept them out of international scholarly discourse as currently their names are often mention although the contents of their studies have been scarcely explored.

One of the first 'modern' ethnographies that described the traditions and culture of the Maya was made by Otto Stoll in 1889. Brasseurs' at the time recently rediscovered colonial documents influenced Stoll in such a way that actually the majority of his publication is a summary of these accounts, while his own data on the contemporary Maya communities served to complement the past. How and where past and contemporary descriptions overlap with Stoll's own imagination is not particularly clear in his work. Otto Stoll's research lacked a clear research aim, structure, and methodology. This is typical for the 19th century Maya research, which at the time was still in its cradle. In continuing accordance with this period in time, he bases himself on diffusionist ideas and the classification of religions in 'high religions' and 'low religions' when stating that:

"Gegenüber der entwickelten Götterlehre der Azteken und Mayas finden wir diejenige der Quichés einfacher, ärmer, primitiver, gewissermassen der embryonalen Stufe einer hekastotheistischen Religion noch näher stehend. Dem entsprechend ist auch der gottesdienstliche und priesterliche Apparat der Guatemaltekischen Völker bescheidener und einfacher" (Stoll 1889, 45)

From this quote we can conclude that even though Stoll considers the existence of Quiché people in Highland Guatemala to be related to earlier cultures living in the same area, he avoids calling the Quiché by the name 'Maya'. It also clearly shows the general thought which was persistent among the first Mayanists about the native inhabitants of Guatemala which they considered to be more primitive culture than the preceding ones. A systematic ethnographic study that did reach the international public was performed by the North American Alfred Marston Tozzer (1907) who worked for the Peabody museum and the University of Harvard and conducted research among the Yucatec and Lacandon Maya. This resulted in the first published ethnographic monograph on Maya culture.

The Culture Historians

The Carnegie Institute, which was founded in 1902, became a leading institution in American anthropology through the influence of Franz Boas and his Cultural Historic School. Twelve years after its establishment the main center of attention became the Maya area partially due to the work of Sylvanus Griswald Morley (1946) who was a student of the earlier mentioned ethnographer Tozzer. The Carnegie Institute is of importance for the history of Maya research as it became one of the first centers for the combined research on the Maya which included archaeological and ethnographical, but also environmental, linguistic, ethnohistorical, historical and geographic research through cooperation with other institutes and disciplines (Westfahl 1991, 52-55). Archaeology, however, remained the dominant discipline within the institute (Westfahl 1991, 56).

Morley's contributions in Maya research are in both the fields of archaeology and Maya epigraphy, of which in the latter he made significant discoveries (Morley 1937). Although the United States became officially the dominant country to do research in Mesoamerica and especially the Maya region, the anthropological school was highly influenced by foreign ideas, most of which came from German schools. The whole concept of culture, which is currently inseparable from the social sciences, actually came from the German *Kultur* which was brought to the United States by the German intellectual Franz Boas in the beginning of the twentieth century (Gilkeson 2010, 1-2). Many of Boas' students were not born in America and for many, such as Robert Lowie, Alexander Goldenweiser, Edward Sapir and Alfred Kroeber (who later became highly influential scholars in American Anthropology as well), their native language was not English (Gilkeson 2010, 6). Therefore the situation is quite complex: while the United States did most research in the Maya area, their ideas and concepts were highly influenced by European thought.

Through the influence of Boas, Culture History became the dominant theoretical current in Mesoamerican research at the beginning of the 20th century (Willey and Sabloff 1993 91). In contrast to earlier researchers, Culture Historians considered that the Mesoamerican cultures and peoples had developed within the geographical boundaries of the area that we nowadays call Mesoamerica, and rejected ideas of European diffusion (Willey and Sabloff 1993, 141). The different cultures within Mesomerica, however, were thought to have common historical roots (Willey and Sabloff 1993 91). In the spirit of this theoretical current, the scholar Paul Kirchhoff (1943, 94) made a classification of the shared traits within the Mesoamerican cultures. Although this list has been criticized and revised over time, the idea of Mesoamerica as a cultural nucleus with shared characteristics has remained present over time in the archaeological and anthropological thought. A focal point for Culture Historian archaeologists was the Olmec culture, which they considered to be the 'Mother culture' of Mesoamerican cultures (Nichols and Pool 2012, 34-35). Architectural, ceramic and iconographic productions of other regions were therefore often explained as influenced by the 'heartland of Mesoamerican culture': the Olmec region (Nichols and Pool 2012, 34-35). In anthropology the Culture History movement was strongly present as well. Apart from arguing for the continuing presence of Mesoamerican cultural traits they also attempted to reconstruct moving patterns of different cultural groups (Nichols and Pool 2012, 34).

The Culture Historians have been heavily criticized for being 'idealists' as they tended to focus more on the essential features such as values and ideas than on the material determinants of Mesoamerican cultures (Nichols and Pool 2012, 36). Apart from this, the Culture History model has also been rejected because anthropological studies

had a tendency to look at cultures as isolated units and consider them to develop only gradually through incidental contact with other cultures (Nichols and Pool 2012, 36). In other words, the persisting intense contact on the level of villages, communities, and cultures was not taken in consideration.

Indigenismo and Post-WWII

The Mexican Revolution (1910-1920) was a reaction to the dictatorship of Porfirio Díaz and produced the new nationalistic idea of *indigenismo* in both Mexico as well as Guatemala. In contrast to earlier periods, this *indigenismo* glorified the countries' native histories which provided, together with the aftermath of the revolution, a new identity and self-consciousness for Guatemala and Mexico. As the archaeologist Kidder later explained, Morley's pioneering archaeology served three goals in reaction to the *indigenismo*:

"to conduct the work in a manner calculated to create a feeling of confidence by the Mexican government and people in the good faith of foreign scientific agencies; to handle the site in such a way as to make it a permanent record of the artistic achievement of the Maya; and to develop Chichén Itzá as a focal point of correlated researches" (Kidder 1930, 96).

The political and social climate in Europe around the late 1930s, 1940s and beginning of 1950s caused a migration wave of intellectuals from Europe to North America which had an impact on North American research in general (Gilkeson 2010, 271). After the Second World War, public interest from the social sciences to the natural sciences. The historical department of the Carnegie Institute was changed into a center for archaeological research in 1950, which meant an end for the high interdisciplinary level of research and a future of narrow archaeological interest (Westfahl 199, 56). The Englishman John Eric Sidney Thompson, who worked for the Carnegie Institute from 1935 to 1958, continued the interdisciplinary research by focusing on ethnohistory, epigraphy, and archaeology. He not only published in scientific journals but also reached a broader public through popular scientific publications (Westfahl 1991, 57). One of his mayor contributions is the work *Maya Hieroglyphic Writing: Introduction* (1950), which is currently is still of great importance for the interpretation and classification of the Maya hieroglyphs.

The strong interest in the so-called hard sciences led to the replacement of so-called soft approaches by the hard approaches (Gilkeson 2010, 259). Where interpretations were formerly based on description, looseness, empathy and subjectivity,

after the Second World War the new basis for interpreation became analysis, precision, neutrality and objectivity (Gilkeson 2010, 259). This led to a debate on the concept of culture. Clifford Geertz, one of the most influential anthropologists around that time, suggested in contrast to the earlier all-embracing definition of his teacher Kluckhohn to see culture as a performance which consisted of symbols and meanings (Gilkeson 2010, 260-263).

In both Mexico and Guatemala interest in the native past of the country was growing due to the earlier mentioned *indigenismo* which led to a nationalistic archaeology. This caused the approaches of North American and Middle American anthropology to conflict as the first was in looking for general laws in human development, while the latter used Maya research as a tool for political power and nation building (Westfahl 1991, 59). In the case of Mexico, the nationalist movement led to the establishment of a department of archaeology in the ministry for Economy and Development in 1917, the *Instituto Nacional de Antropología e Historia* (INAH) in 1935, *the Escuela Nacional de Antropología e Historia* (ENAH) in 1942, and the construction of an enormous *Museo de Antropologia* in 1964 in the center of Mexico City (Westfahl 1991, 60). From 1923 onwards, archaeological research was conducted by the Mexican state, often in cooperation with the Carnegie Institute, as well as ethnographical research, such as for example the study of Alfonso Villa Rojas (1988). Until 1948 Mexican anthropology followed the North American line of thought. However, anthropology begot a developmental character by the establishment of the *Instituto Nacional Indigenista* in 1948, which made it possible for anthropologist to work in programs for the social development of indigenous peoples (Westfahl 1991, 62). After Guatemala's Revolution that overthrew the Dictator General Jorge Ubico's government in 1944, anthropology came to serve nationalistic goals during the period that is now known as the 'Ten Years of Spring'. During this small period of time the *Instituto de Antropología e Historia* (IDEAH) was established together with a *Museo Nacional de Arqueología e Etnología*, again in cooperation with the Carnegie Institute (Westfahl 1991, 62). However, the threat of Guatemala's reform policies led North America to overthrow the democratically elected government which resulted in the installation of a repressive militaristic regime in 1954 and was also devastating for the Guatemalan *indigenismo* movement. This had a huge impact on the Carnegie Institute as the North American reputation was severely damaged, which greatly hindered anthropological research (Westfahl 1991, 63). In the case of ethnography, the last signs of the Guatemalan *indigenismo* movement can be witnessed in the same 1954 when the work of Schultze Jena on the Quiché Maya was translated into Spanish (Schultze Jena 1954).

Cultural Ecology

Mid 20th century the influence of Culture History declined and a new theoretical movement gained importance: Cultural Ecology. While Culture History focused on ideas and values, Cultural Ecology centered on the behavior of human groups in relation to their material environment (Joyce and Hendon 2004, 35). According to the latter, cultures should be seen as responsive and adaptive mechanisms which help to deal with the changing environmental conditions of human groups (Joyce and Hendon 2004, 35). Accordingly, Cultural Ecology is based on the strong functionalist current within the social sciences. Especially in the archaeology of the Maya area Cultural Ecology ideas have influenced interpretations and led to hypothesis about the Maya collapse (Joyce and Hendon 2004, 35). According to Cultural Ecology the culture area of Mesoamerica is not defined by the shared cultural traits, as it was according to the Cultural Historians, but rather it is characterized by similarities in the evolutionary stages (**see fig. …** Chapter One) that were responses to the environment (Joyce and Hendon 2004, 35).

Polarization in Maya Research

Westfahl (1991, 64-65) distinguishes five reasons for the growing polarization on both the individual as well as the institutional level in Maya research from the sixties onwards:

1. The loss of a coordinating center of research, which used to be the Carnegie Institute, together with further institutionalization resulted in less coherent research aims.

2. The growing importance of the natural sciences resulted in a greater variety of research techniques which is heavily dependent on specialist knowledge.

3. The quantity and volume of publications on the Maya culture grew so quick that it became impossible to stay up-to-date of all new investigations.

4. The international interest in Maya research led to the situation that all national research institutions followed their own traditional line of research on the Maya. At the same time language barriers became more problematic.

5. Different political ideologies caused divergences in the research of post-revolution Mexico, capitalist United States, the Soviet Union, and Europe.

In the case of the Maya calendar one may wonder if these five points are also visible in the ethnographic record. One of the aims of the thesis is to see if the general polarization

in Maya research is also visible in the ethnographies on the Maya calendar. Do we, for example, see problems related to language barriers or different approaches per country? We will come back to this issue in the conclusion of this thesis.

After decades of positivist thinking, a new theoretical movement was established in Latin American investigations in the sixties: dependency theory. This Marxist-based idea entails the exploitation of poor underdeveloped states by richer states and became mostly evident in sociological and ethnographical studies, while archaeology followed the line of the New Archaeology (Westfahl 1991, 67). With New Archaeology, archaeology shifted from being a descriptive and static discipline towards an interpretive and analyzing discipline.

In the United States there were attempts to make research more coherent once again resulting in the extensive *Handbook of Middle American Indians* (Wauchope 1964-1976) and the growing importance of the Middle American Research Institute. Simultaneously, in Mexico efforts for interdisciplinary research were made by establishing a Maya seminar by the foundation of the *Instituto Yucateco de Antropología e Historia* in Yucatan, which was later named *Centro de Estudios Mayas.* This institute started organizing annual congresses, and publishing the interdisciplinary research journal *Estudios de Cultura Maya* (Westfahl 1991, 69).

Archaeology, however, remained the dominant discipline in Maya research during this period and critical notes related to the living conditions of contemporary Maya were almost completely absent. As in many regions of the world, functional analyses were dominant in Maya archaeology during the sixties and seventies, and the emphasis was on the Classic Period of Maya culture. New archaeological research during this period led to interesting and important discoveries of the past Maya culture. However, a question that is attempted to be answered in this thesis is: can the dominance of archaeology also be seen in general research on the Maya calendar? How is dealt with the past in the ethnographical studies and does ethnographic research currently serve a goal for its own or is it performed in service of the past?

A couple of new developments can be seen in the area of Maya research in the 1970s (Westfahl 1991, 73-74). For example there was a renewed interest in ethnohistory which led to a more coherent picture of the Maya culture together with archaeology and important advances in the hieroglyph research. Linguistic research also became more important now that data could be stored and processed more systematically with new computer technologies, and contributed significantly to epigraphic studies. Ethnography became another important field of research. Until the seventies, ethnography was always

looked upon as an supportive discipline that could help archaeological and ethnohistorical interpretations. Interesting enough, the dependency theory did not influence ethnographic studies performed by North Americans in the same way it influenced Latin American researchers. During the late 1980s Geertz (1983) was one of the first to remark a certain nervousness among anthropologists. In general there were two mayor reasons for this troubled condition. First, the 1980s meant the breakup of old European empires all over the world which inextricably brought with it the fact that anthropologists were "not longer sheltered by colonialism" (Gilkeson 1991, 266). No longer were researchers studying colonial subjects; now they were studying sovereign citizens of independent countries. Of course, in the case of Mexico and Guatemala, independence was already acquired in the first half of the 19th century, but a global change in the theories of social sciences occurred in the 1980s. However, post-colonial thinking was not restricted to only the social sciences, as in reaction to the new circumstances indigenous peoples all over the world gained interest in what was written about them and their culture (Gilkeson 1991, 266). Not only were the works read by the people that had been the object of study, they also contested the research and conclusions and accused anthropologists of being uninterested outsiders with lack of their indigenous insider's point of view (Gilkeson 1991, 267).

The second point of nervousness is related to the above mentioned critique of indigenous people on anthropologists and is called the crisis of representation (Gilkeson 1991, 267). The accuracy and transparency of ethnography as a mode of representation were questioned by anthropologist themselves (Gilkeson 1991, 267). It was generally debated to what level anthropologists were able to represent other cultures. Subsequently, archaeology became affected by this crisis of representation as well. In other words, post-colonialism caused and increased self-reflection among social scientists. This dramatic change in anthropological behavior should be visible in the ethnographic work on the Maya calendar. In other words, are we able to see Geertz' observed 'nervousness' back in the Maya ethnographies from around this period?

Current Developments

According to John Watanabe (2000, 4) we can, in comparison to earlier research, in the last decades see three heavily interrelated theoretical developments which in general turn away from looking at Maya cultures as being composed of continuing or lost essential traits, and instead consider them to be strategic self-expressions of Maya identity. The main developments are the following:

1. Instead of looking for continuing Maya cultures, current anthropology considers the processes and changing social contexts that have led to the present state of Maya traditions.
2. The capacity for changing political economic systems has become a growing focal point. This includes both the influence of capitalism on local economic systems as well as the resistance against it which has produced alternative market systems.
3. The below discussed Pan-Mayanism movement has led to the interpretation of the most basic and traditional Mayan cultural patterns as expressions of Maya ideology and autonomy, and the resistance against repression.
4. The study of Maya culture is increasingly placed within a global perspective. This has led to the incorporation of world-systems, by for example relating local developments in Maya culture to wider regional, national and global events, in the anthropological studies of the Maya.

Currently is there is a growing attention for a new movement that has mostly developed with the help of Maya intellectuals in Guatemala and which is often defined by the term Pan-Mayan Movement. In short, the aim of this movement, which came from within the Maya communities themselves, is to revitalize the Maya language, religious ideas, and indigenous knowledge by constructing schools and promoting political awareness among the people. The Pan-Mayan Movement goes parallel with the growing indigenous awareness in Mesoamerica which has led to the possibilities for indigenous investigations by indigenous themselves. However, archaeological and anthropological research continues to be dominated by foreign investigators who perform research for their own purposes. This is not only visible in the many publications but also in the Maya conferences where the Maya people themselves remain mostly unrepresented. Currently there are plans for the establishment of the first Maya University in Guatemala, which will hopefully in the long term contribute to the ethnographic research among the Maya.

Future Directions

As Westfahl (1991) was able to show in his extensive work on Maya Research over time, the Maya themselves have remained voiceless. Most of the archaeological and ethnographical works are empirical descriptions or behavioral analyses of Maya people, who continue to be seen rather as objects of study than as social and living human beings with hopes, needs, rights, and dreams. From this prespective the colonial period has not yet ended for the Maya, and many other indigenous peoples in the Americas with them.

Their true independence is yet to come. As has been already acknowledged for a long time, ethnography and archaeology are inextricably involved with politics and ideologies. However, researchers still try to play down their impact on society and refuse to accept or use the power of their studies. Therefore it is argued here (in accordance with *Indigenous Archaeologies: a Reader on Decolonization* by Margaret Bruchac and colleagues [2010]), that in order to come to a genuine decolonization we should accept the value and power of ethnographic fieldwork and make it accessible for contemporary indigenous peoples through close collaboration and free access to publications. Archaeologists and anthropologists should become conscious of the current social circumstances of the indigenous people and become actively participants in improving the lives of contemporary indigenous peoples by cooperating with them because they often continue to live in poor and underprivileged circumstances.

Decolonizing does not only mean that ethnographers should provide their studies in order to help the indigenous peoples, it also entails an extraordinary change in how we, ethnographers and archaeologists, study the other. Currently North American and European researchers continue to investigate the Maya culture from a Western point of view. What should happen is that the social sciences have to be decolonized. Research should be conducted in cooperation with the indigenous people instead of them being mere objects of study, while at the same time research should contribute to improve the living conditions of these peoples.

2.3 Cultural Continuity

In general there are four ways to look at cultural continuation (see table 3). Currently, at least half of our information about the ancient Mesoamerican culture depends on analogies and ‘upstreaming’: the direct linking of past and present practices, cultures, and beliefs. Upstreaming is based on three premises (Fenton 1957, 20-22). Firstly, it infers data from the ethnographic present to the past; secondly, it transfers the known to the unknown;thirdly, it accepts gradual historical changes over time; fourthly, it generates hypotheses about the past

Table 3. Theoretical currents and their approach towards memory and the past.

Present to past	Description	Theory/Method	School
	Gaps and ruptures	Social and Cultural Memory	Assmann (2003) / Connerton (1989)
	Not fully linear	Deconstructivism	Derrida (1967)
	Not necessary	Analogy / Functionalism/ Network Analysis	Malinowski and Kaberry (1946)
	Fully linear	Structural functionalism, hermeneutics, upstreaming	Fenton (1957)

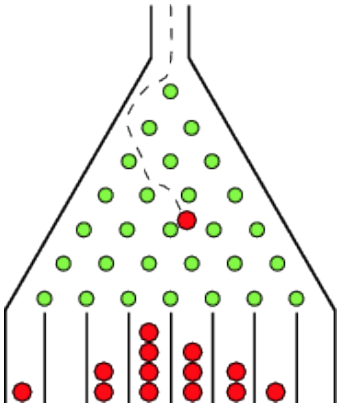


Figure 6. Standard Galton Board

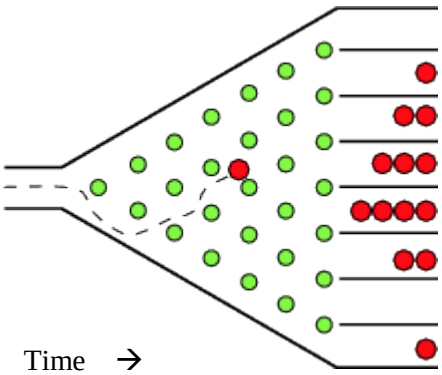


Figure 7. Modified Galton board

Figure 7 is a modification of the original Galton board (fig. 6) in which time has become the horizontal vector. For example, when interested in the influence of the cultural contact with Europeans and other social developments on the Indigenous cultures over the last 400 years, then the cultural point of departure is just before the arrival of Europeans, which is situated at the extreme left side of figure 7. Recent reports documenting and studying the contemporary indigenous cultures describe the red beans on the extreme right side of the board: the outcome of hundreds of years cultural change. The green dots are obstacles, i.e. the processes that influence the way certain cultural traits develop. This explains the extensive introduction in the Maya history that was discussed in chapter one

of this thesis, as it provides a little insight in the far more complex reality of impacting processes that have occurred in Maya past.

A straight line from left to right on the modified Galton board is almost impossible as cultural traits will always bump into obstacles that could change their direction (Zerubavel 2003, 23-54). Therefore, direct upstreaming is not a good approach for handling anthropological and archaeological data. This does not mean, however, that cultural continuity does not exist at all, as has been argued in the past decades by scholars such as Harris (1964) and Friedlander (1981). Simply put, the idea exists that indigenous cultures in Mesoamerica were destroyed and dislocated by the arrival of the Spaniards in such a way that we cannot talk about cultural continuity (Carlsen and Prechtel 1991, 23-25). Scholars adhering this line of thought could be called the non-cultural continuity school.

The contents of this thesis, however, are based on the archaeological, historical and anthropological evidence that indicates a clear cultural continuity. This point will be stressed throughout this thesis. One obvious point of continuity is of course the Maya calendar system itself. Therefore, several questions will be addressed in the following chapters, such as: what factors have influenced the loss and survival of calendar systems in Maya communities? How can current differences in calendar systems between villages and communities be explained? How is cultural continuity involved in the current practices related to the Maya calendar? In other words, can we distinguish the matters that have contributed in the continuation of performances and beliefs related to the traditional Maya worldview? These questions will be addressed in chapters three and four.

Both the Colonial Period and recent history have left their marks on the Maya culture. Dislocation of Maya, and more generally Mesoamerican, cultures has occurred on a certain level and actually still occurs (Zerubavel 2003, 38-39). This does not mean that these cultures are destroyed, but their development has been influenced by the processes of the colonial and post-colonial period (Zerubavel 2003, 37-100). The rituals and the ritual languages related to the Maya calendar contain clear influences from cultural contact between Europeans and indigenous peoples, a topic that will be elaborated upon in chapter four. However, this contact has led to a coherent worldview in which both the Christian God and the Daylords influence daily life and should be worshipped. Therefore, this thesis will follow the line of thought of the social and cultural memory studies by Assmann (2003) and Connerton (1989.) in which they argue that the past and present are connected, though gaps and ruptures occur between the two. It is the task of the disciplines of archaeology, anthropology and history to find out what the processes behind these gaps are and how they have influenced Maya societies.

Chapter Three. The Maya Calendar

3.1 Time and Worldview

Time in Mesoamerica

All over the world, calendar systems, together with their related practices, provide order and "give socially meaningful definitions to the passage of time" (Bell 2009, 102). Calendrical rites impose a cultural scheme on nature, and may provide means to gain a certain control or influence over nature or harmonize human activities and daily life with their surrounding environment (Bell 2009, 103). The interrelation of many sacred entities, rituals and the traditional Maya calendar indicates the central role of time-perception in Maya cosmovision. At the end of Chapter Four these important features of the rituals related to the Maya calendar will be discussed in more detail.

Similarity in calendar systems is one of the characteristics that led to the definition of Mesoamerica as being one cultural area (Kirchhoff 1943, 94). When the Spaniards arrived to Mesoamerica the use of indigenous calendars was widespread. The general structure of this Mesoamerican calendar involved the count of 260 days which was intertwined with a count of 365 days. There are strong indications that the calendar interacted with many more time-counting layers (Thompson 1950, 208-245; Sharer 1994, 577-581; Bricker and Bricker 2011). However, most of these have become lost over time. In her revised edition of *Time and the Highland Maya*, Barbara Tedlock (1992, 173-197) shortly elaborates on the role of astronomy in structuring daily life among contemporary Quiché Maya.

The days of the two most prominently remaining calendar cycles are named by combining a number with a sign. For a long period of time, European time reckoning was thought to be linear while Maya time perception would have only had a dominant cyclical form. The presence of a Long Count calendar, which will be discussed below, and the measuring of time intervals in Maya culture show nevertheless that time was perceived in both a linear as well as cyclical way. Parallel to this, in Europe, cyclical time perception, with the repetition of months, weeks, and days, goes together with a linear count of time as well, which starts with the birth of Jesus a little over 2000 years ago

The earliest signs of the use of a calendar system in Mesoamerica come from the archaeological site of San José Mogote, in the current state of Oaxaca, Mexico (Marcus and Flannery 1983, 58) The earliest evidence of the presence of a calendar system combining both the 365-day count and the 260-day count in the Maya area comes from the area between the Gulf Coast of Mexico and the Maya highlands of Guatemala (Joyce

and Hendon 2004, 23). Although social processes have left their marks on the surviving traits of the calendar through time, the calendar and its ritual value have remained of high importance on the life of contemporary Maya living in Guatemala and Mexico, which will be illustrated in this chapter.

The knowledge of the calendar mechanisms by the laymen differs per community. Oliver La Farge (1947) remarked after doing research in two communities (Jacaltenango and Santa Eulalia) that information related to the calendar was handled differently. He describes that in Jacaltenango the calendar specialists "took pain to keep the outsiders from learning the [day-]names, and the common men were hardly aware that they existed" (La Farge 1947, 165), while in the community of Santa Eulalia the ordinary man had a fair knowledge of the calendar days, the day-lords, and certain prayers related to these days (ibid, 164).

Structuring Time in the Maya Area

It is important to know that time is a structuring principle of daily life and forms a central part of the Maya cosmovision (Earle 1986). The tracking of time has both a utilitarian as well as an esoteric basis, which are both heavily intertwined. Archaeologists and ethnographers (eg, Broda 1990; Bowditch 1910, Furst 1986, 71; Earle and Snow 1985, 160-161; Schultze Jena 1933, 32-38) suggest that there is a strong relation between creation of the 260-day calendar count and human gestation and maize cycle. Being one of the first anthropologists in the Maya area, Leonard Schultze Jena was also the first to address the calendar's relation with human pregnancy in 1933 after his fieldwork in the Quiché villages Chichicastenango and Momostenango. He recognized the importance of the moon in relation to humans. The reference to a human being as *áχ bilχép ik', áχ bilχép č'umil* (creature of nine moons, creature of nine stars), the mentioning of a woman's period as *rí kiǩ reč íǩ čawué* (the blood that originates from the moon), and the pregnancy-related idea that *ǩolik retál reč ri íǩ- č'umil čawué: wué ŝáč'abéχ χun ačí, kept čík reč íǩ čawué* (there is a sign from the moon and stars: after being involved with a man your period will not come to you), led Schultze Jena (1933, 34) to the conclusion that the behavior of the moon and human gestation are heavily intertwined. Before a baby is born, nine moons (each moon period containing 29 days) will have passed since the mother's last menstruation, which equals around 261 days (9 x 29 days) (Schultze Jena 1933, 35). Only on two possible occasions in human life the 260-day cycle returns (Schultze Jena 1933, 34): firstly, 260 days after a baby is born, a ritual specialist will make an offer to the mountain god for the baby's prosperity, and secondly, 260 days after the beginning of the training of a ritual specialist, the student is considered to be an official daykeeper.

Local oral traditions provide their own explanation for creation of certain elements of the calendar which have been documented by Lincoln (1942, 119) in for example the 'Legend of the Origin of Uinals', as well as by Tedlock (1982, 181-187) who elaborates on the creation of the *costumbres* (traditions) and the creation of the solar year count in the appendix of the publication. There are also historical sources that document the calendar creation. Early in the 18th century Father Francisco Ximénez mentioned the local belief of the Quiché calendar creation:

"Aqueste calendario ó prognostico dicen en el, que lo conpusieron doce hijos en once noches en el monte: todo el está lleno de supersticiones y por el se gobiernan hasta hoy en muchos pueblos"
(Francisco Ximénez 1722 in Lehmann 1911, 404)

[They say about this calendar that it was made by twelve sons during eleven nights in the mountains; it is full of superstition and until today many villages are governed by it]

Even today the by Ximénez mentioned mountains surrounding Highland Maya villages continue to form a central part of calendar rituals. Among the contemporary Quiché, for example, the mountains are considered to be sacred places where the vital clouds float, and the daylords and ancestors wander (Schultze Jena 1933, 39-41). Also there is a temporal-spatial dimension in directional terminology: the rising or setting sun is often used as spatial reference (Tedlock 1982, 2). Before beginning the practice of divination, the nearby sacred mountains are often summoned to participate as authorities.

An interesting interpretation of time-perception by the Maya comes from Duncan Earle (1986). He explains daily life, birth and growth, gender roles, and the agricultural and environmental cycles as metaphors for smallest time structuring element: the movement of the sun through the sky. All follow the same path of birth, gaining strength, reaching climax, decay and finally death. Earle (1986) suggests that metaphorical speech related to the path of the sun can be witnessed often in daily life. This is also visible in the work of Tedlock a few years earlier in *Time and the Highland Maya* (1982, 2) where she discusses the Quiché word *k'ij* which means both 'day' as well as 'sun', and can be conceived as the closest word for the term 'time'. This was already suggested in the work of Otto Stoll (1889, 29-30), almost hundred years earlier. Gary Gossen (1974, 224) also elaborates on the fact that among the Tzotzil-speaking Chamulas there are at least thirty ways to refer to the time of the day, and the sun is involved in each one of these terms. Therefore, Maya time perception might be indeed strongly related to the sun.

However, Schultze Jena (1933, 34) already documented in 1933 that the moon is very prominently present when discussing human life, menstruation, and birth. Among the Quiché in the Guatemalan Highlands, at least ten references of time are associated with the moon (Gossen 1974, 224), which plays an important role in Maya cosmology, together with the sun, Venus, and the constellations (Tedlock 1992, 173-197). Therefore, it is argued here that there seems there is not just one entity that has the most influence on Maya time perception, but rather that there are many elements, such as agriculture, the sun, the moon, human gestation, and animal migration, entangled and together contribute to the concept of time.

The 260-day period, which is divided in smaller units of time as will be explained below, is mostly known, however, for its divinatory purposes as will become clear throughout this thesis. Time, however, is not only organized in sets of 260-days but also in 'vague solar years'. The combination of the 365-day count and the 260 day count makes that only after 52 years a year name will reoccur. The vague solar year is mostly used for tracking the agricultural cycle, the setting of annual events and occasional ritual performances such as for example the flowering of Saints in Chamula at the beginning of a *uinal* (Gossen 1974, 222-224).

3.2 The Maya Calendar: the Cycles and Mechanisms

The 260-day Count

When talking about calendar systems, what first needs to be done is to define what a day actually is. We often tend to skip this step and assume that a day begins at midnight. In the case of the Maya it seems that a new day begins somewhere between midnight and dawn, depending on the community (Gossen 1974, 220-221; Tedlock 1982, 100-101). J. Stewart Lincoln (1942, 113) mentions that his Ixil informants did not agree on this matter: some said that new days began at midnight while others were convinced that that it began at sunset. According to Benjamin Colby and Lore Colby (1981, 223) the day reigns among the Ixil Maya from dawn until after midnight, while the ceremonies for important days already start the evening prior to it and continue until dawn. This leads to the suggestion that at least among the Ixil, days are often perceived in pairs (Colby and Colby 1981, 223). The beginning of rituals the day before the specific day is reminiscent of the ancient Maya concept of the seating of a month: instead of naming the current month it was mentioned that it was the *uinal* (a twenty day period) before another *uinal*.

As we can witness in almost all cultural areas in Mesoamerica, days are constructed by the combination of one of the thirteen possible day numbers with one of the twenty possible Daylords or day-signs. Every day in a twenty-day period is ruled by a different God. As will be discussed in the next chapter, these Gods have an important impact on daily life. La Farge (1947, 172-178) reports that among the Chuchumatans days are perceived in teams. These teams are not the same as the pairs of days that Colby and Colby distinguish. Rather they are groups of days that share important connotations and whose divinities have particular characteristics in common. It seems, however, that this is quite a personal perception of one informant, not something that is shared by all daykeepers (La Farge 1947, 178). At first glance this may seem unimportant, but it shows the flexibility in interpretation and offers a glimpse in the freedom of agency within the structures of Maya daykeeping.

There is an abundance of evidence that shows us that the 260-day count has been in use from before the Spanish conquest. The reoccurrence of thirteen numbers in combination with twenty different hieroglyphs found on stela at archaeological sites throughout the entire Maya area indicates not only the importance of this calendar cycle before conquest but also provides evidence for the continuation of cultural traditions and worldviews. The Spanish priest Francisco Ximénez made important notes about the use and mechanisms of the Quiché calendar as early as the first quarter of the 17th century (Francisco Ximénez in Lehmann 1911, 104)

Schultze Jena was one of the first researchers to connect the symbolism of the twenty signs to the human property of ten toes and ten fingers, which is in accordance with the etymology (Schultze Jena 1933, 36). Subsequently, the thirteen numbers are the result of the division of the 260 day time-period of human gestation by the twenty signs (discussed in more detail later in this chapter). Both the numbers as well as the signs follow a strict sequence. For example, Lincoln (1942, 107) did an ethnographic study in 1939 in the Ixil area. The thirteen day numbers, which his informants referred to as the 'Thirteen Kings', are known in the Ixil Maya language as follows:

1. Umvwal; 2. Kawal; 3. Oxwal; 4.Kajwal; 5 Owal; 6. Vwajil; 7. Bujwal; 8. Vwashakil; 9. Beluwal; 10. Lawal; 11. Hunlawal; 12. Caplawal; 13. Oxlawal.

For the sake of a structured analysis, for a direct understanding of which number is meant, and to be able to make direct comparisons with other Maya areas, the day numbers will be referred to by using the Arabic numerals 1 to 13 instead of the Maya words, since

the different languages produce many variations of Maya numbers. The thirteen day numbers are combined with one of the following signs to their sequence (table 4):

Table 4. Overview of the day signs in different linguistic Maya communities (Thompson 1950, 68)

Yucatec	*Tzeltal or Tzotzil*[4]	*Chuh S. Mateo*[10]	*Jacalteca*[21]	*Ixil*[30]	*Quiche (1722)*[35]	*Quiche (Goubaud)*[36]	*Pokomchi*[46]
Imix	Imox[5]	Imox	Imox[26]	Imux[31]	Imox	Imox	Mox
Ik	Ikh	Ic[11]	Ikh[26]	Ikh	Ikh	ikh	Ik
Akbal	Uotan	Woton[12]	Watan	Akbal	Akhbal	Akhabal[37]	Acabal[47]
Kan	Khanan	Cana[13]	Cana	Katch	Kat	Kat	Kat
Chicchan	Abakh	Abak	Abac[27]	Can	Can	Can	Can
Cimi	Tox[6]	Tox	Tox	Camel	Ceme	Came[38]	Cime[48]
Manik	Moxic	Ceh[14]	Che	Tche	Ceh	Cieh[39]	Kih[49]
Lamat	Lambat	Lambat	Khanil	Kanil	Khanil	Khanil[40]	Kanil
Muluc	Mulu[7]	Mulu[15]	Mulu	Tcho	Toh	Toh	Toh
Oc	Elab	Elab[16]	Elac	Tchii	Tzih	Tz'i[41]	Tzi
Chuen	Batz	Bats[17]	Batz	Batz	Batz	Batz[42]	Batz[50]
Eb	Euob	Ehub[18]	Euup	E	Ee	Eeh	Ih[51]
Ben[1]	Been	Been[19]	Ah	Ah	Ah	Ah	Ah
Ix[2]	Hix	Iix[20]	Hix[28]	Ihx	Iix	Ix[43]	Ix
Men	Tzikin[8]	Tzikin[21]	Tzicin	Tzicin	Tzicin	Tzicin	Tzicin
Cib	Chabin	Chabin	Chabin[29]	Ahmac[32]	Ahmac	Ahmac	Ahmac[52]
Caban	Chic[9]	Kixcab[22]	Noh	Noh	Noh	Noh	Noh
Etz'nab[3]	Chinax	Chinax	Chinax	Tihax[33]	Tihax	Tihax	Tihax[53]
Cauac	Cahokh	Chavuc[23]	Cak	Cauoc	Caoc	Cauac[44]	Cahuc[54]
Ahau	Aghual	Ahau	Ahau	Hunahpu[34]	Hunahpu	Hunahpu[45]	Ahpu[55]

Therefore, if a day count among the Quiché would start on day 1 Eeh, the second day would be 2 Ah, and the third would be 3 Ix. After day 13 Imox the day count would continue with 1 Ikh, 2 Akhabal and so forth, until the day 10 Batz arrives after which the following day is 11 Eeh. The result of this is that after 260 days (13 numbers x 20 signs= 260 possible day names), the same day name returns. In epigraphic research the Yucatec Maya term *Tzolk'in* is used to refer to the 260-day count (in Yucatec Maya: *tzol* means 'count' and *k'in* means 'day'). For reasons that will be discussed later on we have consciously chosen to use the neutral term '260-day count' to refer to this cycle.

Apart from being a constitutive element of the naming and structuring of the 260-day cycle, the twenty day signs also indicate the deity or lord that rules over the day (Lincoln 1942, 108; Tedlock 1982, 107-131; La Farge 1947, 172-176). These lords have several characteristics, which are known and determined by the diviner. The day lords heavily influence daily life on the day they rule. Several ethnographic studies have documented the significance of the day signs in different communities (Schultze Jena 1933, 29-32, Colby and Colby 1981, 223-226). It is beyond the scope of this chapter to discuss all the different individual meanings for the day signs in every single Maya community. Nonetheless, the value of a day is a constituting element of the practice of divination, which will be discussed in the next chapter.

A Starting Day in the 260-day count

In contrast to La Farge (1947, 179), Lincoln (1942, 108) argues that among the Ixil of Guatemala] no fixed starting point for the 260-day count exists. As Tedlock mentions (1982, 95), La Farge seems to be influenced by earlier scholars and archaeologists who argue for the existence of a beginning of the 260-day calendar in the form of the sign Imox, while La Farge's informants do not share this thought. Especially the great Mayanist Eric Thompson (1950, 102) persistently argues in favor of the concept of the starting-day Imox among contemporary Maya people. However, even though it may be possible that among the ancient Aztecs and Lowland Maya the day Imox was the starting date of the divinatory calendar as shown by Thompson (1950, 66-103), there does not seem to be any strong evidence that this is the case in contemporary Maya communities.

Table 5. Begin-dates of the divinatory calendar (after Tedlock 1982, 93-96)

Day	**Where**	**Who**	**Èthnographer**
Ee		Ixil	Lincoln
1 Batz'	Chichicastenango	Quiché	Bunzel
1 Batz'	Chichicastenago	Quiché	Schultze Jena
8 Batz'	Momostenango	Quiché	Schultze Jena
Ee	Todo Santos	Mam	Oakes
8 Batz'	Momostenango	Quiché	Goubaud
8 Batz'	Momostenango	Quiché	Girard
8 Quej	Santa Maria Chiquimula	Quiché	Girard
1 Batz'	Chichicastenango	Quiché	Girard

Tedlock (1982, 96) strongly questions the idea of a starting day and finds three reasons why the indigenous informants would refer to a certain day as 'first day' when asked for it by the ethnographer. The first possibility is that they list the days starting from the actual day one is questioned, the second possibility is that they mention the solar-year related year bearer (the first day of the Maya solar year, see below) as 'first day', and the third possibility is that they begin with the most recent day that bears the number one. In the Quiché town Momostenango, 8 Batz' is often referred to as the first day of the divinatory calendar by the ethnographers (Table 5). However, this highly important day

for rituals, prayers, commemorations and daykeeper initiations is rejected as a starting day by all of Tedlock's informants (Tedlock 1982, 97). It seems therefore that, as Morley (1946, 269) suggested, the divinatory cycle is continuous without a start or an end.

The Solar Year and Divination

Just like in the rest of Mesoamerica, the solar year forms an important part of Maya time reckoning both for the timing of the annual agricultural cycle as well as for important annual periods of hunting and horticulture (Rice 2007, 55). Whether agricultural and hunting activities were always solely related to the 365-day count remains questionable. In scholarly discourse, the 260-day cycle is often referred to as the divinatory or ritual cycle, while the 365-day cycle is referred to as the solar year, implying that the latter has a mostly functional significance. This distinction between a divinatory cycle and a solar cycle, however, is somewhat simplistic since it is clear that the days in the solar year have an impact on the life of people as well. Researchers often neglect the fact that the days of the solar year are strongly involved in divination rituals just like the days related to the 260-day cycle. As will be elaborated upon in the following chapter, the year bearers (see below), which are related to the solar year, constitute an important part of the divination process. First of all, the prayers during divination involve a constant asking for permission from the year bearer days, and second, during divinations (in the Quiché town Momostenango) small crystal stones embody the year bearers to whom the individual calendar days are summoned to speak to (Tedlock 1982, 155-160). In other words, the year bearers from the solar year have an authority over the 260-day cycle days. However, Tedlock (1982, 93-99) still uses the term Divinatory Calendar when discussing the 260-day count. In this thesis it is suggested that not only one cycle of the Maya calendar should be referred to as the 'divinatory count', but rather it should be accepted that divination is a fundamental part in Maya daily life which encompasses both the 260-day count and the 365-day count. In chapter five, where we will discuss the ethnographic fieldwork performed among the Yucatec Maya on the Yucatan peninsula in Mexico, we will also elaborate on a form of divination which is not based on the calendar. Several ethnographers in Mesoamerica have already discussed the practice of divination being used apart from the calendar (Bruce Love 2012, 30-40; Rojas Martínez Gracida 2012, 152-166; Vogt 1970, 90-99). Subsequently, it is argued here that we should use more neutral terms such as 'the 260-day count' instead of the confusing and misleading term 'divinatory calendar'.

Year Bearers

The 260-day count and the solar year, of which the latter is known in academic literature by the Yucatec Maya word *haab*, interact as follows: the twenty day signs fit eighteen times in the solar year, leaving five days at the end. In other words the *haab* is divided in 18 periods of 20 days and a final period of 5 days. This means that if we look at Thompson's (1950) schedule (table 4), the new solar year will begin with a day sign located five places under the former year's first day sign. As there are twenty available day signs in the Maya calendar, it results that there are only four day signs on which a new solar year may begin; in the literature these day signs in combination with their accompanying number are called 'year bearers' (see Apendix A for an overview of calendar characteristics per community).

In the Ixil Maya language the year bearers are referred to as *cu bal* (our father) (Lincoln 1942, 109). The four possible day signs that may constitute the year bearer are often seen as important, favorable days, and are referred to in this thesis by Lincoln's (Lincoln 1942, 109) term 'dominical days'. Logically, these favorable dominical days occur four times during a twenty day period (see next section). The day sign of the current year bearer has special importance and returns every twenty days, which is referred to as the *acalde mayor* (Lord Mayor) (Lincoln 1942, 109). This relates to what Tedlock (1982) describes during a divination in Momostenango. Ten crystals are lined up on the table, of which the largest one in the middle is also referred to as the *alcalde mayor* and embodies the two most important year bearers (see following chapter).

The Calendar Round

The day numbers (1 to 13) fit 28 times in a solar year, leaving only one day. This means that every solar year the first day number will be only one number after last year's first day number. To exemplify how this concept of year bearer would work in an Ixil community the following example is given: if this solar year began on day 1 E, the next solar year will begin on day 2 Noh, after which the next year bearer will be 3 Ikh, followed by a solar year beginning on day 4 Tche. The fifth year would include the same year bearer sign as the first year but accompanied by the number 5, so this would be day 5 E. The particular day of the year bearer will also reoccur during the solar year (because the 260-day cycle fits more than once in the solar year) and is also celebrated with special ceremonies (Lincoln 1942, 112).

By a quick mathematical calculation we can see that after only approximately 52 years, or 18980 days, the exact same year bearer denotes the solar year (4 day signs x 13 day numbers = 52 combinations). Mayanists call this 52-year cycle the 'Calendar Round'

and dates in the archaeological record that refer to a specific day in this Calendar Round are known as Calendar Round dates. Both Lincoln (1942, 115), La Farge (1947, 163), and Girard (1962, 330) mention that the majority of calendar specialists in the contemporary Maya communities have only a vague idea of the 52-year cycle. Lincoln (1942, 115) states that the Calendar Round, the 52-year period, was only scarcely understood and that only one of his informants understood the calculation. Others thought that the same year would return in 48 years. Although in general the ability to count days further into the future is somewhat weak, these communities will reach the same date after 52 years whether the current daykeeper knows about it or not.

The Uinal: A Twenty-Day Period

The term *uinal* seems to have derived from the pre-European-contact Maya society, but currently continues to be in use in Chichicastenango as the word for a private altar where monthly offerings are made (Schultze Jena 1933, 41). The sequence of the twenty Daylords forms a *uinal*, a time period comparable to the western concept of a month, but instead of 30 days it contains a 20-day period. A Maya vague year (a 365-day solar year instead of the actual 365.24-day solar year) consists of eighteen *uinals* and five supernumerary days known as the *wayeb*, of which these last five days are regarded as dangerous days on which people should behave very careful. The *uinal* seemed to have been a structuring element in the pre-conquest Maya time perception. This can be seen in the archaeological record where stellas combine hieroglyphs of the 260-day cycle with hieroglyphs of the *uinals*, to refer to Calendar Round dates.

However, the practical and theoretical knowledge of the *uinal* concept has greatly disappeared since the arrival of Europeans at the Americas, which has led to a poor understanding of the contemporary *uinal* system in Maya communities. Several early ethnographers (e.g. Lincoln 1942, 115-118; La Farge 1947, 167-169) and more recent ethnographers (Tedlock 1982, 103) have tried to recover the surviving knowledge of the *uinal* system such as the names of the individual *uinals*, but this has only led to fragmented *uinal* names which in general differ significantly per community. Lincoln provides a good example of the problems one may encounter when doing ethnographic surveys. After visiting many different communities in search of a calendar specialist with knowledge of the *uinals*, he was finally invited by members of the religious brotherhood *(la Cofradia*) of Chajul to accompany them to the sacristy of the church where a highly educated calendar specialist provided him with a list of the eighteen *uinal* names and their exact dates (Lincoln 1942, 116-117). Three days later the calendar specialist and Lincoln met again, however this time the specialist mentioned only the first six *uinals* in the exact

same order while the following twelve *uinals* followed a totally different sequence in comparison to his first list (ibid.). It is therefore not surprising that surviving *uinal* fragments differ greatly between communities.

Uinal Survivals

When discussing the *uinals* , there seems to be an important difference between the two Ixil villages Nebaj and Chajul, as in the latter there were at the time eighteen *uinals*, while in Nebaj only twelve *uinals* existed (Lincoln 1942, 115). He mentions that in surrounding areas only a vague idea of *uinals* existed and that people didn't agree whether there were twelve, forteen, sixteen or eighteen *uinals*. According to one of his informants a severe cultural break occurred in 1984 resulting in the loss of *uinal*-knowledge and the calendar round when many people where sent from the villages to the coastal plantations (Lincoln 1942, 116). In a similar way Gossen (1974, 226) also elaborates on the impact of the (seasonal) movement of people in the 1960s to the coastal coffee plantations on the conservation of indigenous knowledge related to the calendar. This shows the impact of socio-historical events on native communities and the traditional way of life.

Contrasting to what Lincoln found in Nebaj and Chajul, among the Chamula where Gossen did his fieldwork there "is a remarkable consistency in the order of the months in all of the Tzotzil-Tzeltal area" (Gossen 1974, 230). The sequencial order seems to have remained very consistent as Gossen (Ibid.) notes as well. A quick comparison between Gossen's (1974) data and the writings of the Franciscan Friar Juan de Rodaz (in Berlin 1950, 157) indeed shows that there is a strong continuation in the *uinal* sequence among the Tzotzil-speaking Maya. The difference that the ethnographers encounter in the current remains of Maya calendar elements, such as the preservation of the *uinal*, shows that each community has gone through case-specific processes over time. Due to this processes it is impossible and unnecessary, to distinguish an all-encompassing red line in the development (or deterioration) of the Maya calendar.

Gossen describes the preservation of only the vague solar year among the Tzotzil Maya of Chamula. Although the 260-day count has not been documented here, there is a continuation of the tracking of time in eighteen months of twenty days, followed by the feared five-day period (Gossen 1974). Individual day signs and day numbers, however, are not present anymore. Strangely, the *uinal* names, are fairly well known in Chamula while many ethnographers have had trouble recovering these in communities where the both the vague solar year and the 260-day count were conserved (Gossen 1974, 230-241).

Leap Years

The 365-day count is also referred to as the 'vague solar year', because it is often thought that the Maya do not intercalate leap years. So instead of the astronomical solar year of 365,24 days the Maya vague year would contain 365 days. This would mean that every four years the Gregorian calendar and the Maya solar calendar would differ one day and that over time the *uinals* would not fall within the same Gregorian month as they did before. This, however, does not seems to be the case as we can see in the work of Berlin (1950), who compares the *uinal* dates on a Tzotzil calendar from 1688 with *uinal* dates in the early 20th century and subsequently comes to the conclusion that even though some dates have shifted one or two days, over the past 300 years the Tzotzil did use a correction similar to a leap year count.

Even though Berlin's informants maintained that there has never been a final year period of six days or a month of twenty-one days, the similarities between 1688 and the early 20th century imply that there is a form of correction present. Currently Saint Days of the Gregorian calendar seem to be used as landmarks for the correction of leap years, for example All Souls' Day is always celebrated on the fifth day of the *uinal* Pom in the community of Santa Marta (Berlin 1951, 158). Before the arrival of Europeans on the American continent natural phenomena could have taken the role as calendar landmarks in the leap year correction. Simple astronomical observations such as the zenith passage which was observed throughout Mesoamerica by natural or man-made holes in bedrocks, caves and buildings could have functioned as such a leap year correction (Aveni 1980, 43). The appendix of John Lloyd Stephens' (1843a, 1843b) account of his travels in Yucatan indicates there is indeed a relation between the zenith passage and the solar year: Don Juan Pío Pérez, a political chief in Yucatan, states that the 365-day count was used as a device to determine the time of the zenith passage, or at least the period from which one could measure the proximity of this astronomical event (with the help of the above mentioned man-made holes or a simple vertical stick) (Stephens 1843a, 447). Also Alfonso Villa Rojas' (1988) study among the Tzeltal Maya seems to be an argument in favor of this proposal. He states that according to his informants the *uinals* have a strong meaning related to agricultural cycle; this means that due to this fixed meaning the *uinals* could not shift over the years (Villa Rojas 1988, 146-149). However, this entails the practice of direct upstreaming (the immediate projection of current view onto the past) which does not consider the processes of the past that altered the cultural traditions. For example, Villa Rojas states that he was not able to find any ritual of calendrical nature (Villa Rojas 1988, 149).

Gary Gossen, however, made an important discovery in the late 1960s. One of his Tzotzil speaking informants provided him with a solar calendar board which used to be of

a very influential daykeeper in Chamula (Gossen 1974). On this board the daykeeper kept track of the days by drawing a line with carbon on the board for every day that had passed, a thick line for the last day of the *uinal* and thin lines for the rest of the days, which she would only wipe out after 365 days had past (Gossen 1974). If once in a while a correction in the calendar would occur, the daykeeper would be very conscious about it. Also, a leap year would have huge implications for the following year bearers. We can assume that if there would be an extra day somewhere in the year, this day would receive its name by the combination of the sign and number that are next in the sequence. In the case of a leap year this would mean that the year would consist of 366 days instead of 365, so there would be a different year bearer than the four that are known to us. Throughout the history of the Maya calendar, however, the year bearers have always remained the same, except for post-classic Yucatan where the year bearers suddenly shifted two places (Thompson 1950, 127-128). The existence of a leap year could therefore only exist in communities where there is no year bearer cult, where the extra day in the year is named after an already existing day, or if this extra day would get a special name and meaning. The latter seems highly unlikely since Berlin (1950, 158) already mentions that all informants agree that the traditional calendar does not have a leap year. Would the leap year therefore have been introduced by the Spaniards, resulting in the loss of the year bearer in some communities?

There is another explanation, however, on how to deal with year bearers and the leap year. Maarten Jansen, Ferdinand Anders and Luis Reyes García (1993, 60-69), who mainly focus on ancient Central Mexican codices, argue that there was no crucial need for the incorporation of a leap year in the Mesoamerican calendar system. Boturini (1746, 57-59) determines four calendar forms in Mesoamerica, which he divides in first a ritual calendar, second a chronological calendar, third a natural calendar and fourth an astronomical calendar. Jansen and colleagues (1993, 61, 65) argue that the ritual and chronological calendar do not have to be parallel to the natural, or astronomical calendar, and that therefore the calendars may shift position in relation to each other. This idea is supported by the fact that most repetitive feasts related to agriculture among the ancient Mesoamericans were not directly related to a specific date in the 260-day count or the 365-day count (Jansen *et al.* 1993, 61). The hypothesis of a separated calendar shows close similarity with the lunar-based Islamic calendar. The Islamic year is based on lunar-cycles and counts 354 days, which is not adjusted by any means due to the laws of the Qur'an (Bell 2009, 103). The days of Islamic ritual feasts are therefore not directly related to the (astronomical) seasons in the solar year; meaning the ritual and astronomical calendars shift in relation to each other (Bell 2009, 103).

Taking this into account, the hypothesis of Jansen and colleagues seems very plausible. However, it does not explain why the Tzotzil *uinal* dates mentioned above differ very little over the past 300 years. Therefore it is safe to conclude that further investigations on this topic are very much needed.

Interaction Between the Solar Year and the 260-Day Cycle

Now that both the 365-day calendar and the 260-day calendar have been discussed, it remains the question what the exact interaction between the two is. The explanation used here is based on Schultze Jena's hypothesis which has remained strong over time. Starting at the basis, as discussed above, the presence of twenty signs derives from what makes us human: ten fingers and ten toes (Schultze Jena 1933, 36). Subsequently, the division of the period of human gestation by the twenty signs results in thirteen numbers. The fact that the solar year cannot be measured in full moon cycles begs for a different counting system, which is present among the Maya in the form of 20-day periods (Schultze Jena 1933, 36). The importance of the number nine, as it is related to the nine moons of human pregnancy, is also visible in the solar year as it is divided in two times nine periods of twenty days, plus the five extra days (Schultze Jena 1933, 36). Subsequently the 360 days divided by the twenty day signs results in eighteen periods, the *uinals*. So the eighteen *uinals* that constitute a solar year, which is a substantial count for any agricultural cycle, exists of two times the number nine: an important reference to pregnancy and fertility (Schultze Jena 1933, 36). In other words, both the solar year as well as the 260-day count refer symbolically to birth and fertility. Schultze Jena (1933, 37) also suggests that the number four one gets when dividing the 360 days of the solar year by the number nine, refers to the four cardinal points, which hold a special significance in Maya cosmovision. The hypothesis explored above also accounts for the special last five days of the year as these are necessary to complete the solar year and structure the long-term Year bearer system.

The Long Count: An Archaeological Case

This section will be used to shortly discuss another concept time reckoning that was used by the ancient Maya. The Maya stopped using the Long Count as instrument for measuring time around the time that is known incorrectly as the 'Maya Collapse', that is between the 8th and 9th century (Joyce and Hendon 2004, 24). Although this form of keeping track of time does not exist anymore in contemporary Maya communities it is important to discuss here in order to become familiar with the complexity of time-perception by Maya cultures as well as to show the changing nature of time-counting

mechanisms within these cultures. The 'Long Count' was a way of time-tracking based on the time-distance between a fixed starting point in time and another specific moment in history. In other words the days that had passed since the beginning of time were counted to commemorate certain events. The days that had passed were structured in in groups of *tun*, *k'atun*, and *b'ak'tun* (see table 6). The presence of time-distance shows us the importance of intervals of time in addition to specific moments in time. For example in the Dresden Codex we can see in the Venus table that the time-distance or time intervals between different Venus-events was studied and correlated with the calendar (Bricker and Bricker 2011, 67). The counting of periods of time was based on the descending positions of the vigesimal system of counting which were added to a starting date (see table 6) (Thompson 1950, 157-180).

Table 6. The Maya Long Count vigesimal system

Time period	**Number of Time Periods**	**Number of Days**
1 Bak'tun	20 K'atun	144 000
1 K'atun	20 Tun	7 200
1 Tun	18 Uinal	360
1 Uinal	20 K'in	20
1 K'in		1

The Long Count was calculated from the starting date 13 Bak'tun 4 Ajaw 8 Kumk'u (written by Mayanist as 13.00.00.00.00, 4 Ajaw 8 Kumk'u) which is correlated to the Gregorian date 13 August 3114 B.C. (for a full discussion of the correlation method see Aveni 1980, 204-210). The *Bak'tun* refers to the Long Count while *Ajaw* and *Kumk'u* refer to a date on the Calendar Round. Commemoration dates and future prognostications were set by adding days or groups of days in form of the *K'in*, *Uinal*, *Tun*, *K'atun* and *Bak'tun* to the starting date of 13 Bak'tun 4 Ajaw 8 Kumk'u. The east side of Stela E at the archaeological site of Quirigua, Guatemala, will be used here to exemplify the Long Count system (see fig. 8). On the drawing of Stela E we see seven rows of two Maya glyphs with on top of these rows a bigger glyph. The latter is the so-called Long Count Introductory Glyph (LCIG) which indicates that a long count date will follow. The head-sign that is incorporated in this LCIG indicates the patron-deity of the month; in the case of Stela E this is *Kumk'u*. The bars and dots that can be seen in front of some of the individual glyphs are numbers. The bars represent the number five while each separate dot represents the number one. The glyphs following these bars and dots can be identified

with specific time markers (for a list of these glyphs see Thompson [1950]). When translating the separate glyphs, the following sequence can be found:

A 1: 9 Bak'tun; **A 2**: 17 K'atun

B 1: 0 Tun; **B 2:** 0 Uinal

C 1: 0 Kin; **C 2:** 13 Ajaw

D 1: Glyph G_9; **D 2:** Glyph F

E 1: Glyphs E and D; **E 2**: Glyph C

F 1: Glyph X_3; **F 2:** Glyph B

G 1: Glyph A_9; **G2:** 18 Kumk'u

1 2

Figure 8. Stela East Side of Stela E at Quirigua, Guatemala (Sharer 1994, 569)

Glyphs A1 to D2 refer to the period that is classified as the Long Count. The cumulative value of 9 *Bak'tun* 17 *K'atun* 0 *Tun* 0 *Uinal* 0 *Kin* are added to the starting date of the calendar. To define the value of the Long Count interval we use the following mathematical formula:

(9 x 144 000) + (17 x 7 200) + (0 x 360) + (0 x 20) + (0 x 1) = 1,418,400

The Long Count date of 9 *Bak'tun* 17 *K'atun* 0 *Tun* 0 *Uinal* 0 *Kin* follows from this and points to the passage of 1,418,400 days after the Gregorian date 13 August 3114 B.C. The actual 365-day count date is also mentioned in the hieroglyphs on Stela E by glyph C 2: 13 *Ajaw*. This date, together with the *uinal-name*, creates the Calendar Round date 13 *Ajaw* 18 *Kumk'u*. The hieroglyphs D1 and D2 give information on the Nine Lords of the night, while hieroglyphs E1 to G1 provide additional information about the lunation (Shrarer 1994, 569). Therefore the first four rows are generally referred to as the Long Count, while the last three rows are known as the Lunar Series.

The Long Count system disappears from the archaeological record during the Terminal Classic. However, how and why this calendar system exactly disappeared remains a topic of debate. Often the intense social changes during this period are considered to have played an important role.

3.3 Calendar Survivals

Fragmentation of the Maya Calendar

The features mentioned above, apart from the disappeared Long Count system, are parts of what can be found of the traditional calendar in contemporary Maya communities. It must be stressed, however, that we do not find all of these characteristics in all communities that still continue the use of some form of the Maya calendar. Sometimes we find only the 260-day count, sometimes the 260-day count together with the traditional solar year, and in exceptional cases also the *uinals* can be recovered. However, not all elements are needed for the practices related to the calendar since only fragments of the calendar have survived the past centuries and they differ from town to town. La Farge provides an insightful comment about this. He points out that in "general today, the survivals of the calendar depend upon its magico-religious values" (La Farge 1947, 170). What he exactly means by magico-religious values in not explained however. He might be referring to the endurance of the calendar use for ritual and divination but a more thorough explanation is not given.

The last section of this chapter discusses the different surviving forms of the Maya calendar. It is important to bear in mind, however, that a total similarity in calendar use and calendar perception between the different regions has probably never existed in the past and that local variants of the calendar have always been present. Still it is important to explore the surviving remains of the calendar as it has been shown that the perception of time is a principal element in the cosmovision of the Maya in general and

therefore contains some shared cosmological roots. Exploring the fragments still in use in contemporary Maya communities will help gaining more understanding of these shared cosmological roots in both the present as well as the past.

Calendar typologies

La Farge (1947, 170) already explicitly mentions the multitude of calendar variations present today. This can be seen among the Jacalteca, for instance, where the *uinals* lost their function even though the solar year and 260-day count survive, or the presence of divinatory systems without the use of numbers among the Mam of Santiago de Chimaltenango, or the lack of the *haab* but the importance of day 8 *bats* among the Quiché of Momostenango. Contrary to La Farge, Tedlock (1982, 92) states that the 365-day count is present in Momostenango, where she stayed most of the time during her fieldwork. For Suzanna Miles (1952) the fragmentation of the traditional calendar provided the opportunity for a typology of surviving Maya calendars. With her structural approach she differentiates between three different types of calendar survivals: Type A, which is defined by the presence of on the one hand year bearers in the calendar, the 365-day cycle containing eighteen *uinals* and the additional five days, and on the other hand the 260-day count with both the day numbers as well as their signs. Type B, which consists of calendar survivals that only contain the 260-day count with the day numbers and signs. Type C, deals with calendars that have diminished to only the use of *uinals* (the days are numbered from one to twenty without the accompanying signs) and the five-day terminal period (Miles 1952, 273-276). Then, apart from these types there is also a group of typological exceptions (ibid., 276) which holds four calendars that do not fit in Miles' typology.

Miles' work is of great importance as she is the first to make a comparative analysis of ethnographic studies on the Maya calendar in which a huge quantity of data is combined. Miles was as one of the first scholars able to move comfortably within the three disciplines of anthropology, archaeology and ethnohistory (Proskouriakoff 1968, 753). However, a small critique should be noted. Being a child of her time, Miles seems very keen on typologies. However, the typology for calendar survivals has a slightly reductionist character since the complexity of individual and shared processes that have led to different or similar forms in the Maya communities are masked by the focus on the present day appearance of the calendar. Some important mistakes in her analysis are put forward by Tedlock (1982, 92, 104), who states in contrast to of Miles that Momostenango, Santa María Chiquimula together with other Quiché communities do have the Year Bearers of the Solar year.

FIG. 1. Mesoamerican areas retaining varying features of calendric systems.

Figure 9. Nash' geographical division of calendar traditions (Nash 1957, 150)

Calendar Distribution

Manning Nash (1957, 149) reworked Miles' distributional data. By projecting Miles' data on a map of the area, Nash was able to determine a geographical border between two calendar traditions (see fig. 9) (Nash 1957, 151). North of this border the communities have preserved a calendar that contains elements for the counting of the solar year, while south of this line only the 260-day calendar is present and there are no references to the solar year (Nash 1957, 151). Using Miles' data Nash (1957, 151) continues that systematic differences are present in the social and religious organizations of the communities from the two areas. In the northern region the persons who deal with the calendar are an official part of the formal religious and social organizations of the community, while in the southern region the calendar specialists are not part of this. Again, the presence of the concept of a year bearer in Momostenango causes Nash' distributional analysis harm.

The data provided by Miles and reworked by Nash contains several issues that hinder further analysis. The two main problems are the following:

- First, it is not clear on what data Miles bases her analysis. Nowhere in her article is to be found where she got here data from: did she collect them herself or did she use the data from ethnographic fieldwork reports as basis for her analysis?
- The second problem, which is related to the first, is that there are clear mistakes in Miles' data. For example, the fact that the Quiché of Momostenango, in contra of what Miles suggests, do have a year bearer cult, proves that the data is dangerous to work with. This can be witnessed in the distributional analysis made by Nash, which after all is proved to be wrong.

These two points of critiques highlight that not possible to determine where the mistakes in her research derive from. If it would be clear where Miles based her data on, a new model could have been made based on her information and by reexamining the data. However, the fact that this data is not available is reason enough to reject her information for further use in this thesis. Therefore a reassessment of ethnographic studies is needed in order to get a clearer image of especially the early research in this area.

3.4 Discussion

As discussed in the previous section, the general characteristics of the Maya calendar 'mathematics' are known, but there are still many doubts, discussions and uncertainties in current research. The two largest debates deal with the 260-day count and the leap year. Although Tedlock has provided some persuasive arguments in favor of the idea that the 260-day calendar does not have set starting sign in contemporary Maya communities, other scholars have remained certain that the starting sign would be *Imux* as it appears in the archaeological record as well. As argued in this and the following chapters, it should be kept in mind that the current presence of calendar traits in Maya communities are formed through processes that are case-specific. This means that in a certain village use of the ancient starting sign, *Imux*, could have continued until present day, while in other communities the starting sign shifted or begot the same characteristics as the other days, producing a continuing cycle.

In general we still see that ethnographers try to look for an all-encompassing explanation, applicable for every single community. Tavárez (2011) showed in his study of the political-religious developments in colonial Oaxaca and valley of Mexico that a general summary of influential events is of a reductionist character. He correctly implies that many big and small occurrences carry weight on a community and cause complex and case-specific evolvement. It is suggested here that this is the case for the conservation of the Maya calendar as well.

In the case of the discussion about the leap year, things might be a bit different as the continuation of the Maya calendar simultaneously depends on a shared calendar structure. As becomes clear after analyzing the ethnographic reports, the same day falls on the same Gregorian date in communities that continue to count dates with combinations of signs and numbers. As explained above, if communities would have dealt with the leap year in different ways, the traditional calendar would per community have shifted differently in relation to the Gregorian calendar. This implies that there is a general shared way of dealing with leap years in these communities. However, in cases where the sign-number construction is lost leap years can be dealt with differently with per community.

We have shortly touched upon Boturini's (1746, 57-59) classification of four interrelated calendar types, the natural, the ritual, the astronomical, and the chronological calendars. However, how these calendars types would relate to each other remains unclear in the case of the Maya area since only very few researchers dealing with the ritual calendar actually mention agricultural cycles and even less discuss contemporary astronomy. As discussed, the observations are mostly presented as separate entities and researchers tend to refrain from analyzing their complex relationship. In chapter five, where the small-scale ethnographic fieldwork of the author will be discussed, a first attempt will be made to investigate the relationship between the natural calendar and other calendar systems.

Now that the basics of the Maya calendar have been discussed, it is time to continue to the question of how is being dealt with the calendar in Maya communities. As will become clear in the following chapter, time perception, which is structured by the presence of a mathematical formula, is a structuring element in Maya worldview. But how does the calendar contributes to sustain Maya worldview? Many rituals and ceremonies are directly related to the calendar, but what effect do these rituals have on the participants? Who is in charge of keeping track of the days and the organization of rituals? How is this person trained so they are able to fulfill their profession? The practice of calendar based divination will be analyzed in great detail in order to answer these questions. First, the education of the calendar specialist, or the daykeeper, will be discussed. The daykeeper is in most cases also a ritual expert (Tedlock 1982, 47-53). Since calendar rituals and the daykeeper's education differ per community different ethnographies are incorporated and the focus will be on a variety of communities. Questions related to the ethnographic approaches can be looked at this way. How do different researchers deal with the ethnographic information? What data are mostly

documented and what is left out of discussion. More generally: what aspects should be taken into account for future research?

Chapter Four. The Daykeeper and Calendar Rituals

4.1. Persons and Practices Entangled with the Calendar

Ethnographers and the Daykeeper

This chapter discusses the concept of a daykeeper and the rituals that are involved with the calendar. By taking a closer look at the ethnographic reports one comes to the conclusion that a quite important element often receives little attention. This element is the daykeeper. The education of this person, who is in all cases an individual of great religious and ritual importance, has been overlooked for a long time. The studies of Tedlock (1982) and Colby and Colby (1981) are the first to really put the daykeeper at the center of attention. Therefore the first part of this chapter will mainly consist of a comparison between their descriptions of daykeepers in respectively a Quiché community and an Ixil community.

Mantic systems

The daykeeper's education, his initiation and the rituals he performs are strongly involved with mantic techniques. But what are mantic techniques actually and how are they carried out? Although there are many forms of divination, it can be said that in general there are two types of mantic techniques: an intuitive method and an inductive method (Jansen *et al.* 1993, 40). The former is based on directly receiving of messages from gods supernaturals through personal contact and internal communication (Jansen *et al.* 1993, 40). This contact can be reached with the help of an oracle, the presence in a dream, and through altered state of consciousness (Jansen *et al.* 1993, 40).

The latter deals with receiving messages from the supernatural realm through external messages which indicate the benevolence or malevolence of the gods or through which advice is given (Jansen *et al.* 1993, 40). Simply put, the inductive method can be divided into two forms by their characteristics, since firstly there signs that show up out of themselves and which are considered to be sent by the gods (e.g. animal behavior, natural phenomena, and astronomical observations), and secondly signs that are specifically searched for with the help of a variety of mantic techniques (e.g. astrology, numerology, cartomancy) (Jansen *et al.* 1993, 41).

In the next part the education of the daykeeper will be discussed, as well of one of his mantic rituals. The presence both the intuitive as well as the inductive method can be seen. The intuitive method is present in the direct personal contact with the gods and can be witnessed in dreams during the calling (and can be continued throughout the

daykeeper's life) as well as in the Quiché 'speaking of the blood' (discussed below). The inductive method involves the application of specifically learned techniques related to the calendar system that lead to an interpretation of the will of the gods or the cause for a current situation. In other words, the mantic system surrounding the Maya calendar involves a combination of both the intuitive and the inductive method. This is in accordance with the general Mesoamerican calendar system of which the related divination is mainly based on the inductive method (Jansen 1993, 41). However, the diviner's contact with the gods may influence the interpretation of the outcome (Jansen 1993, 41).

4.2 The Calendar Exper: An Analysis of the Learning Trajectory

The Role of the Daykeeper

First, the tasks of a daykeeper will be explored. The learning trajectory begins with a calling and after this training follows. During the training and later the initiation the daykeeper forms an important part of the his identity. This is discussed in more detail in the second paragraph of this subchapter. In Mesoamerican traditions the daykeeper is referred to as the person who keeps track of the days and performs rituals and divinations related to the traditional Mesoamerican calendar. As Colby and Colby (1981, 102) stress in their important ethnographical work on the Ixil daykeeper Shas Ko'w, it is challenging to describe the role of a daykeeper since there are many complex structures of knowledge and informal rules attached to this profession. The problem becomes more complicated when comparing several studies dealing with this matter since every author uses a different set of definitions to refer to the role of the daykeeper.

Therefore, it is necessary to elaborate on the definition of the term daykeeper that will be used in this thesis. It seems that there are as many definitions for the religious specialist involved with the traditional calendar as there are ethnographies.. Terms such as soothsayer, shaman, shaman-priest, priestly shaman, prayersayer, curer, witch, *Hexenmeister,* and *Wahrsager*, are used throughout the literature to refer to some kind of calendar expert. Currently the term shamanism is hotly debated; however, at the time when Tedlock (1982, 47) and Colby and Colby (1981, 46) performed their research it was still generally accepted and they put a lot of emphasis on whether or not this specialist is a shaman. If he is indeed a shaman, then what kind of shaman is he? Tedlock (1982, 53) argues that an ordinary daykeeper should be described as a 'shaman-priest', while a so-called mother-father (ritual specialists who perform public rituals) is defined as a 'priest-shaman' (Tedlock 1982, 52). The difference between the two is that the former is

involved with rituals and prognostications on the individual level, while the latter deals with lineage or community-wide rituals. The advantage of such a Durkheimian distinction between priest and shaman, however, does not become very clear. La Farge (1947, 149) differentiates between born shamans and ceremonial officials 40 years earlier. He places daykeepers, which he names 'soothsayers' in the group of born shamans together with other religiously related professions such as *curanderos* (healers), *brujos* (sorcerers), and *ilūm k'inal* (watchers of time) (Ibid.). Of these different types of shamans only the soothsayer deals with the calendar and divinations (Ibid. 159). The name of the *ilūm k'inal* seems to imply a strong relation to time and maybe the calendar as well, but this connection has not been documented by La Farge. The term shamanism will deliberately not be used in this thesis as this term derives from cultures outside the Americas and bears connotations that do not connect to the practices and beliefs of the ritual specialists in the Americas. Instead of describing a daykeeper as a priest or a shaman it is argued here that a daykeeper should simply be called a daykeeper.

In order to not get constricted in the debate of religious terminology the term daykeeper will be used here when referring to the person in an indigenous community who deals with the traditional Mesoamerican or Maya calendar (as discussed in chapter two) and performs divinations and rituals with or without divination paraphernalia. for the community, for individuals or for himself which are related to this calendar The daykeeper's profession is to make prognostications and to advise clients, both individuals or entire communities, about which actions they ought to take. BHe prescribes prayers, offerings, and/or whole ceremonies (La Farge 1947, 160). Simply put, even though earlier researchers may have applied different names for the profession described above the term daykeeper will be used in this thesis for the sake of a structured comparative analysis and to prevent the risk of drowning in a whirlpool of terms that all refer to the same profession in a Maya community.

Becoming a Daykeeper

Dreams form an important part in the so called calling, i.e. the begin of the apprenticeship, of the daykeeper. For instance, Colby and Colby (1981, 58-62) illustrate the dreams that Shas Ko'w, the 71 year old daykeeper who is the subject of their publication, experiences and how this is interpreted. His calling to become a daykeeper came when he moved out of his village as an adult to earn money at the hacienda of a Ladino women (a not native Guatemaltecan) (Colby & Colby 1981, 58). After he worked here for some time, he had a dream in which a Ladino man tells him to move back to his own village or otherwise he would die within six months (Ibid. 108). The local daykeeper

interprets the dream for Shas Ko'w (Ibid, 61): "Go, and perhaps a year after you have arrived in your village the Day will give itself to you". Meaning that within one year he would receive a calling to become daykeeper. In the Ixil communities one becomes a daykeeper when the twenty day names of the Maya calendar present themselves in one's dream (Ibid., 65). After these dreams occur repeatedly this person will have them professionally analyzed by a daykeeper from that community. This daykeeper will determine if the dreams are truly a calling to become daykeeper and in that case a head daykeeper will become the personal counselor of the novice during the time of intensive dreaming (Ibid., 64-65). In a similar way Tedlock (1982, 53-54) describes that a person who is summoned to become a daykeeper experiences particular dreams in which he or she will see large mountains and lakes, will have sexual intercourse with a person from the opposite sex, or is being chased by the *Mundo* (the earth deity) who is manifested as a large animal. Lincoln (1942, 121) performed an ethnographical study among three Ixil communities (Nebaj, Chajul, and Cotzal) during the period of 1939-1940, and mentions the importance of dreams. If someone would ignore the urgent dreams in which he is summoned to become a daykeeper he would turn yellow, sicken, and die soon (Lincoln 1942, 121).

In the account of Colby and Colby it seems that the dreams form the most important element in determining the future of a daykeeper, Tedlock (1982, 54-58) shows that among the Quiché of Momostenango more signs are needed. A person can only become a daykeeper when he or she is born on the right day in the 260-day calendar which determines if a child has a 'lightning' soul which makes him or her able to receive messages from the external world (Tedlock 1982, 53). Earle (1986, 161) shows that the presence of lightning in the body is also a requirement for the daykeepers in the Quiché town Chinique. The third sign among the Quiché of Momostenango that indicates one is destined to be a daykeeper is the strike of illnesses. Six illnesses are known to signal the becoming of a daykeeper (for a detailed discussion of the diseases see Tedlock 1982, 56): the snake illness (*cumate*), before the horse (*choquej*), dislocated bone (*k'ajinak bak*), inebriation (*k'abaric*), and loses-his-money (*tzako' upwak*). What these illnesses have in common is the loss of ability to normally go about in the world (Ibid. 54-58). At first a local daykeeper will treat the symptoms of the illnesses, however, if two or three illnesses strike a person it becomes clear that the person can only be cured by receiving instructions for becoming a daykeeper (Ibid. 56). Lincoln (1942, 121), who studied the Ixil Maya before Colby and Colby, does mention the occurrence of illnesses as being a calling to become daykeeper. Lincoln (Ibid.) describes how his informant, D.C., had illnesses that closely resembled the 'snake illness' and the 'before the horse illness' as documented by Tedlock, after which he was advised by a cousin who had studied the

calendar in Momostenango (the Quiché area where Tedlock did her research) to become a daykeeper. On the first day of his education the pains and bad dreams disappeared (Ibid.). He mentions, however, that another local Ixil daykeeper told him that a person could only become a professional daykeeper through dreams in which each one of the twenty days present themselves (Ibid.). This is in accordance with Colby and Colby's research as he argues that one learns the day names through his dreams where one is pointed at his mistakes in the counting of the days by divine interaction (Ibid.).

La Farge (1947, 149) studied the Mayas of the Chuchumatán area in the highlands of Guatemala in 1932, and mentions the striking of illnesses as a sign for becoming educated as 'ritual specialists' in general (whether daykeeper, *curandero*, or *ilūm k'inal*). He describes a particular case in which a woman became tremendously ill because she refused to follow her destined path to become a *curandera* and could only be cured by following the training (Ibid.).

Among the Quiché studied by Tedlock (1982, 54-58), the local ordinary daykeeper will refer the patient to the head priest-shaman of the patient's own patrilineage to seek for guidance and training, just as in the case of Colby and Colby. La Farge's research sadly remains quite vague about the exact education of the daykeeper. He mentions that most daykeepers claim that they have not received any form of education. La Farge, however, takes a skeptical stance against this proclaimed form of autodidactism, since according to him "[t]he unanimity of individuals, even of different tribes, on many fine points show without question that much of the soothsayer's [daykeeper's] knowledge is the result of careful instruction" (La Farge 1947, 162). According to him the daykeepers mention their pure divine inspiration in the process of becoming a daykeeper only to impress laymen and unqualified investigators (Ibid.). This analysis by La Farge may seem somewhat exaggerated today, but is perfectly understandable when considering placing his research in the academic background of the 1930's when indigenous views on the world where still considered to be primitive and inferior to the Western worldview, which was already discussed in the second chapter. While the daykeepers in this case probably considered the divine education in their dreams or during other moments in their life as most the important element of their training, it seems that La Farge was in fact looking for a physical human instructor which may have seemed of much lesser importance to the Chuchumatáns. This seems to be a somewhat similar situation as Colby and Colby (1981, 64-65) encountered among the Ixil of Nebaj, where the daykeeper Shas Ko'w shares his recollections about his education and mainly refers to the symbolism and encounters with gods in his dreams, which were interpreted by guides in the community after awaking. The daykeepers in the local

community will help the novice to understand his dreams and to learn the rituals and prayers, while the dreams actually tell the apprentice where he is situated in the trajectory and what his subsequent steps are (Ibid.). Due to the developments in anthropological theory during the 40 years gap between La Farge's and Colby and Colby's research, they were, however, able to take the recollections of education trajectory more serious then La Farge at the time. La Farge (1947, 162) does mention, however, that befriended daykeepers from different communities would gather once in a while to perform divinations together and discuss the outcome. In this way a commonly shared set of beliefs, practices and interpretations related to divinations and the calendar was probably established and maintained.

In the case of the Quiché of Momostenango the daykeepers are mainly educated by the head daykeepers of the novice's own patrilineage on twenty-one 'permission days' (days on which certain services need to be done) during which the teacher trains the novice and explains to him where they are in the trajectory (Tedlock 1982, 61). Lincoln (1942, 121) received information about the education of the novices from two informants: an Ixil daykeeper who studied the calendar with a relative and who learned about his tasks in the Quiché area of Momostenango and an Ixil daykeeper whose provenance is not documented. In both cases the apprentice is said to be educated by an older daykeeper (Ibid.), however it remains unclear if this teacher has a higher status than ordinary daykeepers or not.

Among the Ixil and the Quiché the apprentices need to present themselves to the day gods after receiving their calling. Colby and Colby (1981, 62-66) describe that as the day gods start to present themselves in one's dream, a reciprocal relationship is started in which the apprentice has to give something in return for the knowledge he received and to present oneself before the day gods). The apprentice will have to pray to the earthly counterparts of the day gods, as well as to four large crosses that are related to the four calendrical yearbearers, and to the statues of saints located in the church (Ibid., 62). Candles, incense and prayers are often offered at mountain shrines and in the cemetery during special ceremonies performed conform the wishes of the gods. Candles are offered to the Virgin Mary in the church to "announce one's new status and to ask for blessing of one's difficult new profession" (Ibid.). From Tedlock's study it appears that among the Quiché of Momostenango the apprentices are presented to the day gods, Tiox (God, who is not a day god), the *Mundo* (the earth god) and the deceased calendar diviners of the student's lineage on twenty-one permission days (Tedlock 1982, 62). Schultze Jena (1933) documented the surviving knowledge of the traditional calendar among the Mayas in Momostenango and Chichicastenango in 1930 (some 55 years before Tedlock), but does

not mention these twenty-one permission days in his publication. What he does mention is the education period of nine months, which is in accordance with Tedlock (Schultze Jena 1933, 34-35). However, whereas Schultze Jena explicitly mentions that this period of nine months is counted in lunar months (Ibid. 107), Tedlock explains that the daykeeper training will take nine months of twenty days (i.e. nine *uinals*) (Tedlock 1982,62). Taking in consideration that an average lunar month spans 29.53 days, the training described by Schultze Jena (265 days) and the one described by Tedlock (180 days) differ 85 days. This means, that since both of their research is based on the same Quiché Maya communities in Highland Guatemala, that within 55 years the educational trajectory of new daykeepers has been radically changed or, more plausible, that one of the researchers erroneously refers to the wrong type of month. However, Schultze Jena (1933, 34-35, 107) explicitly states that the date on which a novice starts his training of the traditional calendar will be the same day as the day on which he will be initiated as official daykeeper, which means a training period of 260 days. After the principal day for the start (and therefore the end) of the training passes unnoticed on 3rd of December 1930, however, he mentions that he is not sure if the instruction of the daykeeper began 260 days earlier in that same year (Ibid.). According to Schultze Jena (Ibid.), the day *oxlajúj bát's* is the best day to be initiated in the community of Chichicastenango, while in Momostenango the best day of initiation would be *guajxaquíp bá'ts*. Tedlock (1982, 66-71), on the other hand, documented the three sequent days 7 T'zi', 8 Batz', and 9 E as days of initiation followed by a 40-day period containing four important '9' days (9 E, 9 Can, 9 Tijax, and 9 Batz'), after which one call finally can be called an official daykeeper.

So, Tedlock (Ibid., 62) explains that the training will take nine months (nine times twenty days) which may begin on two possible dates: 1 Quej and 1 Cawuk. On the twenty-one permission days the novice and the teacher will meet to discuss the week's dreams which are interpreted through complex symbolism (Ibid.). Apart from this the permission days also serve other elements of the daykeeper's education, such as (Ibid. 61-64):

1. The teacher explains the novice how to perform divinations with his own sacred paraphernalia;
2. The counting and structure of day names is explained;
3. The experience and interpretation of the movement of lightning within one's body is made clear.

The study of the calendar names is quite contrasting to the account of Ko'w in Colby and Colby's book, who stresses that one who wants to become a daykeeper should not study the day names but rather learn them through dreaming about them, because otherwise sickness will strike them for it (Colby & Colby 1981, 62). Lincoln's study which was also performed in the Ixil area implies in accordance with Colby and Colby that the days are only studied in the dreams of the apprentice (Lincoln 1942, 121), while prayers and calendar lore are taught to the novice by his older teacher. The movement of lightning is something very important for the Quiché daykeepers. Simply put, it involves an uncontrollable twitching of blood and muscles (which is linked to the flashing of sheet-lightening over the sacred lakes) on particular locations inside the daykeepers body (Tedlock 1982, 133-150).

La Farge also mentions briefly something alike. According to him the really gifted daykeepers are able to receive prognosticating messages in dreams, feel external messages through sensations in their hands and legs which they interpret for the client, and are able to hear messages through sounds or voices in their head especially after consuming alcohol (La Farge 1947, 160). Apart from this, the Chuchumatan daykeepers are also able to divine through twinges in their legs and by receiving signs from a glass of liquor (La Farge 1947, 182).

The Initiation Ritual

Of all ethnographers discussed in this thesis, Tedlock is the one who provides the most detailed information about the initiation process at the end of the novice's training. Due to its importance as a *rite de passage*, transitioning the apprentice from being a novice to being an official daykeeper, this closing part of the daykeeper's education should be discussed here as well, although there is only one source that elaborates on the initiation ritual. The initiation process of a new daykeeper takes quite a while among the Quiché Maya of Momostenango. It starts on the day 7 T'zi' when the teacher goes to the home of the novice where they make a joined interpretation of both their dreams as if they part of one and the same narrative (Tedlock 1982, 65). If the dream is positively interpreted the initiation process may begin and the novice and teacher will drink an *atole* ("the water of the service" [Tedlock 1982, 65]) together, after which the teacher will pray at the temporary house shrine of the novice (Ibid.). After addressing the *Mundo*, the Day Lords, Tiox and the deceased ancestors of both his own and the novice's patrilineage the teacher breaks an unused pot and uses the potsherds as incense burners (Ibid.). Thereupon they continue the prayers (Ibid.). Halfway the ceremony the teacher and novice have dinner with the novice's family after which the ceremony continues until all the copal and candle

have been burned. Subsequently the ashes are scraped out of the potsherds and put together with sacred water in a small gourd which is closed with the pine needles from the house altar (Ibid. 66). Next this gourd is wrapped up with the potsherds, divining seeds and crystals in a square cloth. The family share *aguardiente* (strong alcoholic beverages) and set off fireworks, and the payment of 20 quetzals is completed (Ibid. 66).

The next day, 8 Batz', the teacher and his wife take the novice and the bundle to Ch'uti Sabal (the eight place shrine) before dawn. This is the place where the teacher himself was also initiated. Here the bundle is unpacked and the potsherds are deposited in the midst of a ten feet high pile of potsherds next to the shrine. Next the teacher presents the new daykeeper by praying again to Lord 8 Batz' and the deceased members of his patrilineage after this the singer sings and recites elegant prayers. Following, the bundles are twirled through copal smoke by the teacher. After this the novice and his teacher go to a lower shrine where they conduct a similar ritual except that the novice this time twirls his own bundle through the copal smoke (Ibid. 69). After the session at the shrine both walk towards the church where they each burn three candles on the high altar, for Saint Santiago and San Antonio Pologuá, and they pray to their ancestors again. Subsequently they meet with other teachers and their novices in the town center where they have a social drinking. The day is closed by the first official divination by the initiated and the teacher together, using for the first time the paraphernalia of the initiated. The teacher and the novice (and their wives) develop throughout the training a strong relationship as friends, which continues after the initiation ritual (Schultze Jena 1933, 39-46).

A day later, on 9 E, the teacher and the initiated visit a shrine at Nima Sabal (" the nine place" shrine) where the novice is presented once again. The following four consecutive days "9" (40-day period) the novice will return here: 9 E, 9 Can, 9 Tijax, and 9 Batz'. These 40 days are important to set the marriage between the daykeeper and his divining paraphernalia according to Tedlock (Ibid. 71). On 9 Batz' the teacher and novice will return together to Nima Sabal after which the training is completed and the novice can be considered a proper daykeeper (Ibid.). Daykeepers can continue education later during their career by being trained to become a midwife, bone-setter, singer, marriage spokesman, spiritualist, or mother-father

4.3 Calendar Based Divination

Definitions

Divination, in popular culture often wrongly referred to as 'fortune telling', has frequently been discarded as ineffective medicine or being a deceptive, deluding the lay

people through mysticism and ritual obscurity (La Farge 1947, 182-183, Wagley 1949, 68-75). Nonetheless, the ritual therapy of divination can be easily compared to the Western practice of psycho-therapy. Modern research in biology has shown that the hormonal output of the brain can be influenced by stress and how one deals with this stress (Colby and Colby 1981, 223). This can be witnessed in the behavior of a person as well as his or her physical condition. The hormonal output of the brain even has an effect on the cellular level, and can therefore have both a positive as well as a negative effect on the physical curing of a patient (Colby and Colby 1981, 222). Divination in this sense is a devise to make the client cope with a situation mentally and gives him or her the sense of personal control over problems which triggers a positive effect on the physical as well as the mental state. Therefore it can be concluded that divination is definately not quackery since it has real curative results.

The terms divination and diviner are currently being debated, as they presently bear the connotations of being the same as a charlatan, amateur, or fake doctor. During the discussions in the meetings of the ERC-project 'Time in Intercultural Context', legitimate arguments against the term 'divination' were given when discussing the prognosticative rituals. To use the indigenous words to refer to this practice would be a solution for this problem. However, every language group has its own terminology related to divination and therefore this would lead, in a comparative study such as this one, to an unclear web of words which basically refer to a quite similar ritual. Also, it would not be advisable to have only one indigenous term that would be used instead of the terms in all other indigenous languages. It is clear that the terms used for divination by the indigenous people are important, and may provide insights in their perception of the practice. For example the Quiché term for divining paraphernalia is *rišimbál ḳíχ*, which means "the grains cause of the day" (Schultze Jena 1933, 43), while divination itself is called *ḳíχbál*: "the medium to find the day" (Schultze Jena 1933, 43). However, due to the argument mentioned earlier it is suggested here that instead of changing the terminology, the general connotations that people have with certain terms should change. Following this, the term 'divination' will continue to be used throughout this thesis.

In this thesis we follow Rappaport's definition of ritual, which describes ritual as "*the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers*" (Rappaport 1999, 24) (his emphasis). Divination is a ritual that is performed to answer questions of any kind: illnesses, land disputes, to determine the *nagual* of a newborn child, business transactions, travel, accidents, when to harvest or plant, to set the date for *cofradia* (religious brotherhood) ceremonies, house-building, for confession, inheritance, lost property, marriage, birth, death, interpretation

of dreams, determining time and place of rituals, quarrels, interpretation of omen, and adultery (Lincoln1942, 122; Colby and Colby 1981, 223; Tedlock 1982, 153). The practice of divination has especially been studied among the Quiché Maya (Schultze Jena 1933, 39-46; Tedlock 1982, 153-171; Lincoln 1942, 121-122), which explains the dominant presence of analysis on the Quiché divination method in this section. Colby and Colby (1981, 222-247) have been the only ones to document the divination ritual among the Ixil Maya, and La Farge (1947, 171) the only researcher on divination in Chuchumatan communities.

Normally the diviners work in their own home where the divination paraphernalia feel best, however occasionally they perform at their client's house (Colby and Colby 1981, 225; Tedlock 1982, 153). Lincoln (1942, 121) is the only one who describes a group of Quiché diviners that perform cliental divinations together with the client outside, next to the church of Santa Maria Chiquimila. In theory divination may take place every day, but in practice people try to avoid days with a high number, as they are perceived to be very strong and dangerous (Colby and Colby 1981, 225; Tedlock 1982, 153). Only very sick people who are strongly in need of help will visit the daykeeper on such days (Colby and Colby 1981, 225). In the case of the Quiché of Momostenango no divination takes place on days that the daykeeper had sexual intercourse since the the diviner has a marital relationship with his divination paraphernalia, and they could be jealous of the daykeeper's spouse and may therefore produce erroneous outcomes (Tedlock 1982, 153).

The practice of divination may differ between communities, but also between daykeepers in the same community. Nonetheless, they all share the basic act of grabbing a handful of sacred seeds and crystals, and dividing this group of seeds into smaller piles. Subsequently, the piles, which are sequences of days, are counted from a certain day onwards; for example this could be the day that one became sick but it could also just be the day that the divination takes place. Particular days will have the function of 'speaking days' (term is taken from Colby and Colby [1981, 227]), which have special importance to the interpretation of the answer or the progress of the divination. The repetition of grabbing the seeds, laying them out, and reading them differs from community to community. Also the amount of seeds that constitute a pile is distinct.

When describing the practice of divination, the description of prayers and hand movements are often forgotten. This could very well be explained by the fact that for an outsider the prayers may be difficult to follow or understand, while the hand gestures

might not even be noticed[1]. Overall, the focus of most researchers is to describe how the beans are being handled. What is missing here, however, is the interaction between the client and the diviner which makes this kind of divination a non-Western form of psycho-therapy. Divination basically depends on the interrelationship between the daykeeper, the client, and the sacred seeds (of which the arrangement is influenced by several sacred entities). God, the world, the ancestors, the divining paraphernalia, sacred places and shrines, but also the lightening in the daykeeper's body, all join together in the act of divination which is interpreted through the communication between the client and the daykeeper. Not only does this show the central place of divination within a Maya community and worldview, it also demonstrates that the communication between the daykeeper and the client is of indispensable importance. However, most researchers still focus only on the acts of the diviner without paying attention to the important communicative part of divination. For example, Lincoln's (1942, 121-122) account of the Quiché divination is only a quick description of the division of a handful of *pito* beans into groups of four after which the daykeeper determines Lincoln's favorable day, nothing more, nothing less. Therefore, the Ixil divination and the Quiché divination rituals will be looked at in the following section. The communicative part will be discussed as a case study of divination and its documentation.

The Practice of Divination: A Comparative Analysis

Detailed descriptions of calendar related divinations are scarce. The early ethnographers seemed to have had a hard time following the structure, prayers, acts, and counting during the ritual (for example see La Farge 1947, 182). An exception to this is the account of Schultze Jena who provides a fairly detailed description of "*Das Bohnenorakel*" [the bean oracle] (Schultze Jena 1933, 42-46). Later, in the 1980s, Tedlock and Colby and Colby provide remarkably detailed accounts of traditional divinations.

Both in the Quiché as well as in the Ixil communities, clients are free to choose their own daykeeper, who is often selected by his status and achievements (Tedlock 1982, 153). Only Tedlock (1982) provides detailed descriptions of the use of ritual language before and during a divination ritual. Although one suspects that prayers addressing at least the ancestors and the gods would be present in practically all Maya communities, these have not been emphasized by the documenters. Whereas Colby and Colby (1981, 226) almost immediately begin with the reading of the sacred seeds, Tedlock (1982, 154)

[1] During the fieldwork in Yucatan, discussed in the following chapter, we saw that divination rituals are highly complex performances which involve an altar, language, and physical acts. We experienced that it is indeed hard to document the whole ritual as many things take place at the same time.

elaborates first on details such as where the diviner's bag and the client's money are exactly placed and secondly presents the reader with the potential prayers that could be said before the actual divination takes place. The aim of Colby and Colby's research does also not directly ask for the incorporation of ritual language, as they focus on 'an active system' and do not want to provide "a static structural account of symbolic oppositions and similarities" (Colby and Colby 1981, 223). Rappaport, however, argues that: "[w]ords themselves, when they are no longer "just talk" or "mere words" but ritualized formulae as stylized as curtseys or genuflections, may, and often are themselves, constituents of display" (Rappaport 1999, 151). Ritual language contributes to the ritual act while also the other way around the ritual act is complementary to the ritual language (Rappaport 1999, 152). For example, entities such as ancestors and gods may be present during a ritual, but due to their invisibility their presence is indicated by addressing them with ritual words (Rappaport 199, 152). In other words, ritual language constitutes an important part of the ritual display. Therefore, the lack of their documentation by Colby and Colby leaves an incomplete and fragmented account of the so-called 'active system' of divination.

Among the Quiché the divining bag and the client's payment are usually placed in the center of the table where they remain during the whole ritual. The daykeeper and the client sit down facing each other (Tedlock 1982, 154). The four year bearers, God, the earth, the ancestors, but also the four cardinal points, the sacred four mountains and the sacred four lakes are asked permission through prayers to perform the divination (Tedlock 1982, 155-160). In the meantime the client's question is put forward and the three main community shrines are summoned, while lightening is borrowed from the cosmos to help the daykeeper with the interpretation of his blood movement (Tedlock 1982, 154-158).

Subsequently, the diviner takes a handful of quartz crystals and corral tree seeds out of his divining bag and places them on the table (Schultze Jena 1933, 42; Colby and Colby 1981, 226; Tedlock 1982, 158). Whereas Colby and Colby (1981, 226-227) only document the use of the corral seeds (from the *Erythrina corallodendron L.*) during a calendar divination among the Ixil, Tedlock (1982, 159-162) describes the use of both quartz crystals and corral seeds among the Quiché. La Farge (1947, 182) mentions that if there are no corral trees or crystals available, the Chuchumatán daykeepers will use grains of corn to replace these two media. Schultze Jena (1933, 42) even states that any kind of natural curiosity could be used as divining material, including: mountain crystals, amethyst, quartz, glass, and obsidian splinters.

In the case of the Quiché, ten crystals are taken out of the divining bag. The biggest is placed in the center of the table and the smaller ones are placed on the left and right side of this large crystal (Tedlock 1982, 159-162). Interestingly, although this act is described by Tedlock in the 1980s, Schultze Jena does not mention this practice 50 years earlier. The central crystal, which is referred to as the '*ilol*' (the mayor), represents the two most powerful year bearers *Quej* and *Ik'*; the crystals on its left and right hand are known as the '*rach'il*' (the aldermen), and symbolize the less powerful year bearers *E* and *No'j*; the second crystal left from the central one is the '*ajtz'ib*' (the secretary) and embodies the day *C'at* while the second crystal right from the central piece is the '*c'olol pwak*' (the treasurer) related to day *Tz'iquin*; the remaining five crystals are the so-called messengers or policemen (Tedlock 1982, 159-162). All together these ten crystals mirror the political organization of the indigenous community and function as an authority to which the 260-day calendar days are summoned to talk to (see fig. 10).

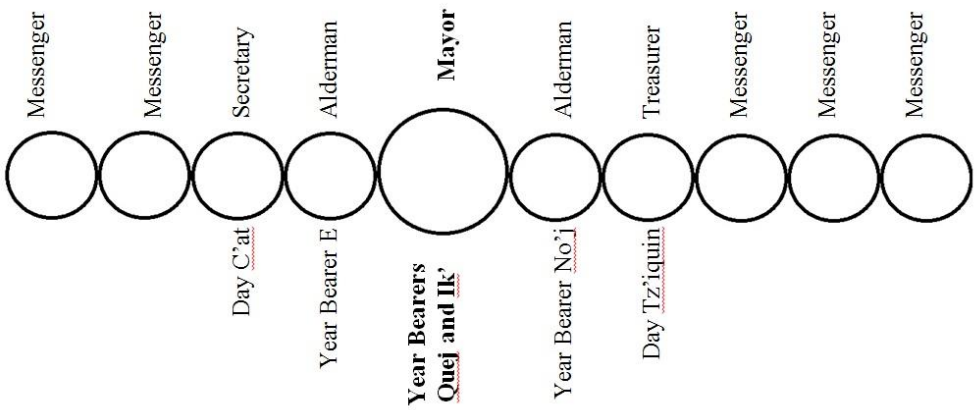


Figure 10. The organization of crystals during a Quiché calendar divination

Although the placement of central crystals does not take place among the Ixil, the subsequent daykeeper's action is comparable in the Ixil and Quiché communities: the handful of seeds and crystals are divided into smaller groups which are placed in rows and columns on the table. In the case of the Ixil diviner Shas Ko'w, pairs of seeds are grouped to represent a day (Colby and Colby 1981, 226). The daykeepers of Momostenango group four seeds together (Schultze Jena 1933, 42; Tedlock 1982, 160), while the Chuchumatán tradition seems to group a number of five seeds (La Farge 1947, 183). The number of piles per row is case specific and does not seem to have any consistency apart from the fact that it generally varies between five to nine piles (Schultze Jena 1933, 42; La Farge 1947, 183; Colby and Colby 1981, 226; Tedlock 1982, 162). Although the piles among the Quiché and Ixil seem to occupy both rows and columns, the Chuchumatán order them generally in one straight line consisting of around eight piles

(La Farge 1947, 182). As the handful of seeds and crystals contains an uncalculated amount of items, it is very well possible that the last pile does not contain two, four or five seeds (Lincoln 1942, 122). According Tedlock (1982, 159-162), among the Quiché of Momostenango the amount of final seeds indicates the reliability of the divination: the presence of only one seed in the final pile suggests an unreliable outcome while the presence of two or four seeds signals a trustworthy result. If there are three seeds remaining they will be split up in a group of two and a final 'pile' of only one seed (Tedlock 1982, 162). Schultze Jena (1933, 42) states, however, that in the Quiché town Chichicastengo the even or odd amount of seeds in the final pile indicates respectively the positive or negative outcome of the whole divination. In other words, Tedlock describes that the last pile indicates the reliability while Schultze Jena suggests that it displays the outcome's value.

What does it mean to have a divination with a negative or positive outcome? Divinations are case-specific and a negative or positive augury can have many interpretations. For sick people, negative outcomes could mean that the cause was related to a quarrel or the neglecting of ancestors or gods, while it may also point out to persistence of their sickness or in the worst case even death. Sometimes among the Quiché, the final speaking day generally bears a positive value, however the amount of seeds could be uneven, which has as a result that the day keeps its dangerous character, and could still lead to death in the case of sickness (Schultze Jena 1933, 44). If a negative cause is determined, the diviner will try to find a way to cure the client by performing another reading. If the subsequent reading points out a day with a positive value the daykeeper will determine the actions that need to be taken on that specific day. When divination points out to a positive day value this could refer to the recovering from a disease, the willingness of the daylords to accept an offering or for example the future rediscovery of earlier lost items.

When the seeds and crystals are grouped, the daykeeper repeats the client's question and starts counting the piles from a specific point in time. This could be, for example, the day that his client got sick or just the present day of the divination. The reading order of the seeds seems to differ per daykeeper; some count the days from left to right starting at the upper left corner, others reverse the reading direction per row just as we know it from some of the ancient Central Mexican Codices. The day count can involve several rounds, which means that after naming the final pile the daykeeper continuous counting from the first pile onwards. La Farge (1947, 182) reports that he is unable to determine any structure in this, and suggests that the amount of rounds depends on the daykeeper's personal taste.

Important for the interpretations of the divination are the so-called 'speaking days', which are the days that provide the daykeeper with information about his client's situation. Among the Ixil and the Chuchumatán these speaking days are generally the days that are situated at the end of every row (Colby and Colby 1981, 227; La Farge 1947, 182), while occasionally in the case of the Chuchumatán the fifth pile in a row may also hold special importance. La Farge (1947, 182) mentions that especially the final day of the outlay is crucial for the divinatory interpretation. For the Quiché divination the concept of speaking days is more complex. Based on the client's personal story, the daykeeper decides for himself on which days he should pause and wait for his blood to speak (Tedlock 1982, 163). As is often the case with mantic performances, every day consists of a several attributes or a cluster of characteristics that may vary between a broad range of topics and could even be contrasting to each other. The role of the daykeeper is therefore to select and interpret the correct meanings from the pool of possibilities. As mentioned in the third chapter, the meaning and significance of days differ per community, but this will not be discussed in this thesis. Instead, emphasis is put on the ritual practice of divination.

Ixil divinations generally exist of two sets of day-countings: the first set is carried out in order to diagnose the cause of a current situation. The second set serves to prescribe a cure, which almost always involves the performance of offerings and prayers to appease the entity that caused the situation, and to determine a date for this cure (Colby and Colby 1981, 226). Information about the Chuchumatán divination ritual is scarse but it seems that the rounds of counting vary between one and three sets (La Farge 1947, 184). During a Quiché divination several sets of counting take place. The multiplicity of counts together with the conversation with the client generates a knowledge through which the daykeeper becomes more familiar with the situation and is able to perform a better divination as he will know at which days he should pause and wait for blood movement (Tedlock 1982, 162). Again the importance of the relation between the year bearer and the divination becomes clear because before the first set of counting the current year bearer is summoned to oversee the divination (Tedlock 1982, 162). This strengthens the argument against a strict division between a solar cycle and a divinatory cycle as mentioned in the third chapter. After each set of counting the daykeeper will take the last pile of seeds and crystals away and place it next to the ten large crystals which functions as a mnemonic for the days that this pile exists of according to Tedlock (1982, 163). The placement of these piles next to the crystals, however, may also have to do with their strong (symbolic) authority and the influence they have on these days to speak the truth.

After the divination has been finished the daykeeper will thank the Earth God with a prayer and stow the seeds and crystals back in his divining bag (Tedlock 1982, 170). This is the moment that the daykeeper receives his payment for the provided services and also collects money which he will use to perform the prescribed rituals on set days (Tedlock 1982, 170). Although the money is partially meant to buy the items for offerings, Schultze Jena (1933, 42) critically mentions that the client's money is sometimes spend for the daykeeper's personal purposes.

The Importance of Divination

Now the traits of calendar divination among different Maya peoples documented by various anthropologists have been discussed, a closer look will be taken at the effect of divination on the client and society as a whole. The importance of divination in the curative process of a person has already been discussed, so this part will elaborate on the ritual significance of this broadly distributed practice. Apart from the curative dimension provided by divination, the diviner himself is also the guard of morality within a Maya community (Schultze Jena 1933, 42). For example, to avoid death, a sick person has to confess his sins to the daykeeper (Schultze Jena 1933, 42).

As stated in chapter three, calendar rites give meaning to the passage of time and provide means to control nature or harmonize the interaction between daily life and the natural environment. The cultural schemes that are imposed on the passage of time constitute the meaning and interpretation of the natural and social world (Bell 2009, 103). This is exactly what happens in Maya rituals during both the education of the daykeeper as well as during the practice of divination. The rituals performed during these practices constitute and reinforce the way the world around one is perceived (of which time forms a basic element), and therefore they have a great impact on the survival of cultural traits. As Lincoln (1942, 113) mentioned, ritual specialists from different communities come together to perform divinations and discuss the outcome, which reinforces the traditional knowledge and keeps it synchronic in different communities. Subsequently, the daykeepers conduct individual calendar based rituals for their clients or communities which reinforce the cosmovision on the level of the individual. As discussed in the part above, most rituals include the ancestors, daylords, God, and many other sacred entities that form the basis of Maya cosmovision. Therefore the performance of calendar based rituals by the daykeeper strengthens the Maya worldview on both the individual as well as the community level.

As Rappaport discusses, a ritual contains two types of messages, a canonical message and a self-referential message, which contribute to the validation of the ritual as well as to the beliefs related to this ritual (Rappaport 1999, 69-106). The canonical message is the part of the ritual that is prescribed by former ritual acts earlier in time. In other words, the canonical message is the nucleus of the ritual which in general does not change. The self-referential message is affected by the current physical, psychic or social state of the participants themselves and can therefore be different per ritual performance. Both messages, however, influence each other as over time the self-referential messages can make certain changes to the core of the canonical message (leading to the incorporation or exclusion of certain performances, prayers or other acts), while the canonical messages provide the structures that control the variety within the self-referential messages.

In the case of the divination ritual discussed earlier, the canonical and self-referential messages can be distinguished. For example the basic traits of divination, such as the grabbing of maize, chrystals, or beans, and their placement on the table are a clear case of prescribed rules, the canonical messages. The amount of maize, crystals, or beans, however, is not exactly prescribed and depends on the size of the hands of the diviner, how deep he reaches into the bag, and the quantity of materials that he carries within it.

After comparing the act of divination in different communities there seems to be a grey area between the canonical and self-referential messages as the material with which the divination is performed as well as the quantity of seeds, beans, crystals or maize per pile on the table seems to differ per community. We hypothetically suggest that this differentiation per community is the outcome of the earlier mentioned mutual influence of the canonical and self-referential messages. In general the divination depends on the outlay of piles of seeds or stones on a table which are counted as days afterwards. As one ethnographer (Schultze Jena 1933, 42) argued, the divination in the place where he was could be performed with any kind of small objects that were available while other ethnographers (Colby and Colby 1981, 226; Tedlock 1982, 158; La Farge 1947, 182) clearly stated that prescribed materials could only be used. It is suggested here that certain local preferences of material selection for divination used to be of the self-referential character, but have at some point become part of the prescribed ritual act due to strong internal contact and specialist education, and in such way became incorporated into the canonical message. Both messages together provide validation for the ritual as it is clear that the ritual is not invented at the moment, but rather derives from the past and has been handed down from person to person, while at the same time the self-referential messages make it possible to apply this old prescribed performance in the current context as it

provides space for personal adjustments (Rappaport 1999, 69-106). Therefore, apart from having a physical and mental healing result, this process also provides evidence for the current perception of the world around oneself and as this ritual is open for every person of the community it simultaneously contributes to the continuation of this worldview.

4.4 Calendar Rituals and the Continuation of Maya Worldview

In this chapter the roles of the daykeeper, his education and the rituals related to the calendar that are performed by him or her in different communities have been discussed. The divination ritual, although a very important one due to the characteristics discussed above, is just the tip of the iceberg of calendar-based rituals. It has become clear that the education trajectory of the daykeeper is filled with rituals that have to be performed on set calendar dates or after the passage of a specific amount of days. As discussed, these rituals are important for the reinforcement of the Maya worldview and the continuation of it among its participants. It can be stated that mantic rituals, which include self-referential and canonical messages can have genuine healing effects, both on the physical as well as the mental level, and at the same time create a strong basis for the worldview of the culture the ritual is performed in. Therefore, calendar rituals play a crucial role in the continuation of the Maya worldview. Subsequently the documentation and analysis of these rituals, including the ritual language which forms an important part of it, can contribute enormously to the general understanding of the Maya culture, for both insiders and outsiders, and could aid against the growing threat of the disappearance of Maya cultural traits as we mentioned in the beginning of this thesis.

With the information provided in the previous chapter, it can be understood what role rituals play in the synchronized continuation of calendar days in different communities: throughout an enormous area Maya calendar dates continue to follow the same sequence and fall on the same Gregorian dates. An important reason for this is mentioned by Lincoln (1942, 113) who describes that calendar specialists “come to perform devotions at Huyl [two hours from Chajul] singly and in small groups from Huehuetenango, Quetzaltenango, Momostenango, Totonicapan, Santa Maria Chiquimula, Chichicastenango, Naguala, Coban, Tactic, and Rabinal and Solola” during the year bearer ceremonies. This indicates first of all that shared calendar concepts exist which connect not only neighboring villages of Ixil Maya, but also indicates interaction between Ixil and Quiché Mayas. Secondly, it is suggested in this thesis that the cultural schemes imposed on the passage of time by the Maya are reinforced during rituals by the presence

of self-referential and canonical messages in rituals. Therefore the Maya interpretation of the world is strengthened by the performance of these rituals. During shared and communal rituals the continuation and the synchronization of the Maya calendar is ensured in different communities. In other words, the shared calendar rituals seem to work as a mechanism that integrates the traditional calendar structure in different communities.

As was hinted at in the previous chapter, time related rituals do not always need to be strictly connected to the number-and-sign dates as several systems of time tracking seem to be present in Maya communities. In the following chapter this matter will be looked into in more detail. After discussing some general observations in the development of Maya calendar ethnographies, the fieldwork performed on the Yucatan Peninsula will be at the center of attention. During this fieldwork it became clear that the mathematic system of the Maya calendar discussed so far is just one dimension of time tracking and that in certain places where this system has been lost, such as Yucatan, other calendar forms have survived. This takes us back to Boturini (1746, 57-59) who distinguished the four calendar forms that constitute Mesoamerican time perception: firstly, a ritual calendar; secondly, a chronological calendar; thirdly, a natural calendar, and lastly an astronomical calendar. These four forms should not be considered to be strictly separate as they are heavily entangled and depend on each other to a certain extent. At the same time, the disappearance of one of these forms does not necessarily mean all calendar forms have disappeared. The following chapter will focus on the natural calendar and its related rituals as witnessed it in Yucatan. The performance of divination will be looked at by describing the experience of the author with the ritual of a non-calendar based divination.

Chapter Five. Ethnographic Fieldwork

5.1 Contextualizing the Ethnographic Studies

This final chapter deals with ethnographic fieldwork. As the performed ethnographic fieldworks and their data has been discussed and described in the previous chapters, it is now time to continue to analyzing these studies. As the development of Maya research is already discussed elaborately in the he first chapter, our data will now be analyzed in the light of these broader developments. Basically, what is questioned here is what developments have taken place in the ethnographic documentation of Maya time perception in the last century. Is it possible witness a similar kind of specialization on this topic as we see in Maya research in general? Have approaches to certain themes or topics changed over time? Is it possible to see how and why these changes happened?

In the second part of this chapter we will discuss the fieldwork performed by the author on the Yucatan peninsula, Mexico. This fieldwork was not performed in order to collect the main data for the analysis in this thesis but rather as an empirical study of ethnographic research, and Maya time perception and related rituals in an area where no number-sign calendar has survived. The fieldwork has given the author the experience needed for a better contextualization of the ethnographies because a literature study can never give you the same impression of a culture as an actual ethnographic exploration. This fieldwork has therefore been substantially useful for the formulation of future research topics, which will be discussed in the final part of this chapter.

5.2 Discussion of Earlier Ethnographic Research

Increasing Specialization

The earliest ethnographies, such as the work by Leonard Schultze Jena (1933) and Otto Stoll (1889), are mostly focusing on a broad range of topics, in which the calendar often comes second place, together with the values of the days, the correlation to the Gregorian calendar and the interwoven mechanisms. Leonard Schultze Jena provides an important study on the Quiché Maya in the 1930s. He starts out with a clear methodology in which he elaborates on why and how different themes are addressed throughout his book. This self-reflective development implies a maturation of Maya research and the presence of clear research aims. Additionally, Schultze Jena's personal interest in the use of (ritual) language leads him to document the exact prayers of ritual specialists. This enables the reader to restudy these prayers and also makes the ritual specialist step away from the

overshadowing interpretation of the ethnographer. In others words, a space is provided for the indigenous specialist to talk. Although this space is rather limited and often immediately followed by Schultze Jena's own interpretation, it is the first study that elaborates on the traditional Maya calendar by incorporating the words of the calendar expert and that acknowledges the importance of ritual language during a ritual. Even though he provides this useful information, his books are mainly about a great variety of topics, describing the daily life of the Quiché.

Over time we slowly see a shift in focal point as in the 1940s Lincoln (1942) and La Farge (1947) show a greater interest in the rituals that constitute and accompany the calendar, and around the end of the 1970s anthropologists such as Tedlock (1982) and Colby and Colby (1981) become more interested in the calendar specialist, his education, and (in the case of Colby and Colby) his personal story. Although a higher value tends to be attached to the latest ethnographies as they are the most extensive ones, it should not be forgotten that these are in fact based on the work of pioneers such as Schultze Jena, Stoll, La Farge, and Lincoln. Their lack of attention for the daykeeper is understandable when contextualizing their ethnographies. Until the mid-19th century anthropology performed in Mexico and Guatemala mostly served the interpretation of archaeology. The clear evidence of continuation of a solar year cycle, a 260-day cycle, day names and their mantic meaning, and *uinals*, led researchers to focus on these elements of the calendar, rather than the daykeeper. The daykeeper was often seen as a primitive survival that only in the smallest sense was reminiscent of the former high culture, which must have held high status priests. These broad studies were of course also needed to provide the backbone of later research. The earliest accounts are highly important for contextualizing descriptions and forming the basis of later research, while in some cases they also could be used to analyze changes in practices and beliefs.

In short it can be concluded that in relation to the general polarization and specialization of Maya research over time we also see a polarization and specialization within the different disciplines. This does not only include the different theories and theoretical frameworks authors are keen on, but also the topics they discuss. Where early ethnographies deal with a wide range of topics, later ethnographies such as Tedlock and Colby and Colby start to focus on one specific topic, in this case the calendar and its related rituals.

Self-reflection in Ethnographic Research

As discussed in the first chapter, the 1980s was a period of self-reflection for the anthropological discipline. This is visible in the important work of Barbara Tedlock and

the way she approaches the meaning of a Maya day. She (Tedlock 1982, xi) clearly indicates in her work that a strong positive versus negative division is not perceived by the local community. She explicitly states that her informants where contradicting each other when asked if a certain day was good or bad (Tedlock 1982, 98). This is quite contrasting to what Schultze Jena states about the same Momostenango and the neighboring Quiché community of Chichicastenango 50 years before Tedlock's fieldwork:

> "Welche Tage als "gut", welche als "slecht" zu gelten haben, darüber herrscht im groβen und ganzen Einmütigkeit." (Schultze Jena 1933, 28)

He admits however, that the strength of the value of the day is dependent on the number and that the interpretation is highly dependent on the specialist's personal knowledge, which could indeed be contrary to another specialist's interpretation (Schultze Jena 1933, 29). Additionally, he mentions that the personal interpretation of a day's value does lead to opposite ideas on the ritual contents of a day (Schultze Jena 1933, 29). Tedlock (1982, 98) came to the conclusion that a strict division into bad and good was not perceived by the local people through the questioning of several informants who disagreed on the day-value. In contrast, Colby and Colby (1981, 224) only focused on one particular diviner and the way he perceived and acted in his environment. This explains why they also talk about good, bad, and neutral days, because by focusing on one informant they did not stumble upon the contrasting views of other daykeepers. They do implicitly seem to agree that there is no strict boundary between good and bad, as they elaborate that the negative or positive value of a day is also influenced by the number of the day (Colby and Colby 1981, 224).

There is a gradual change over time in how anthropologists look at the values of particular days. The earliest reports seem to have been heavily influenced by the Christian or European division of good versus bad, which is reflected in the ethnographies by the strong similar division between good and bad days as in European though. For example, this can be seen in the work of Eric Thompson in the 1950s, who attempts to integrate the work of early ethnographers such as La Farge and Lincoln in discoveries from the archaeological record. After reassessing several ethnographies, he provides a table in which he plots the positive and negative values per day sign per contemporary community (Thompson 1950, 90). Here, Thompson also wrongly states that the work of Schultze Jena and Sapper are in conflict with each other on the matter of positive or negative day values. Otto Stoll (1889, 63) also approaches the days through the strong

dichotomy of good versus bad. In the case of Stoll this opposition seems to derive almost directly from the colonial accounts that were rediscovered by Brasseurs (1864) some fifteen years before Stoll's publication. What we in fact see here is that 16th and 17th century Catholic perception of the other was captured in text, forgotten, and resurrected once again after 200 years of silence. After the Age of Enlightenment (1650-1800), which not only entailed a radical turn in the way of thinking as it also involved the establishment of the study of other peoples by German researchers in the form of "Völker-Beschreibung" (Vermeulen 2008, 99-160), one would expect that colonial-based assumptions would be revised critically. The persisting black-and-white thinking, however, seems to be such a basic part of European culture that assumptions related to this kind of thinking are often taken for granted without any critical remarks, and causes genuine problems with the representation of other cultures.

La Farge's report on Santa Eulalia shows a change in approach to the day-value and simultaneously indicates a clash between worldviews. As he explicitly elaborates, the Chuchumatans avoid calling a day or daylord 'bad' or 'hostile' when they were directly asked for it: on days with a negative value his informants would only tell him against what they should pray (La Farge 1947, 178). The daylords themselves can be good while their effects are negative (La Farge 1947, 178). The definition of a day as a bad day seems to derive from the ethnographer's own interpretation. La Farge himself directly offers an example of the dominance of the ethnographer's interpretation over the indigenous perception as he ignores the problem mentioned above and continues to refer to days being bad and good. Therefore there seemed to be a clash in worldviews with on the one hand the North American and European ethnographers who experience difficulties when encountering a concept that bears both positive as well as negative values, and on the other hand the indigenous peoples for who entities may carry positive and negative meanings at the same time. La Farge (1947) seems to consider the indigenous people of the Maya area as unknowledgeable agents, who just do what they are taught to do. Apart from the problem of bad and good days he also mentions that even though his informants state that there is no first day in the 260-cycle, he is convinced that the first day should be *Imŭx*. So here he regards the ethnographer's interpretation over the indigenous specialist's knowledge again. Later in his work, when describing the act of divination, he even explicitly states that he is "quite sure that on occasion the soothsayer makes mistakes" (La Farge 1947, 182).

So in general we can see that ethnographers have changed their attitude towards day values. Analyzing the ethnographies on the Maya calendar it can be seen that over the

past 100 years, dichotomy between good and bad has changed into a more appropriate perception of days which can both be bad and good depending on the context and the person involved. This is the direct result of the insecure period of anthropology in the late 1970s and early 1980s that was discussed in the second chapter. The 'nervousness' that Geertz observed among the anthropologists led to extensive theoretical frames and elaborate methodologies prior to going on field work. The uncertainty about representativeness of the indigenous people appears to have made researchers consider their own background and has made them more critical of projecting their own concepts on other cultures. The studies of Colby and Colby and Tedlock are representative of this important period as they provide elaborate notes on what they are doing, why they are doing this, and what approach they have taken during their work. Apart from this they provide extensive discussions on the concepts and terminology used in their work which all together contributes to a better image of the cultures that were studied and it facilitates the reassessment of their data.

There is a similar kind of development in the ethnographic approach to the whole phenomenon of divination. In early studies the researchers seem skeptic towards the ritual, while over the past 100 years this has gradually changed. Lincoln (1942, 122), for example, starts his description with a clear skepticism and is genuinely surprised when two divinations in two different communities have almost the same outcome. Also La Farge (1947, 184) is somewhat surprised when his wife, in accordance with an earlier divination, becomes sick for two days when visiting him on his fieldwork. Tedlock (1982) provides an account of the interaction and entanglement of the many entities and layers involved in divination, while Colby and Colby (1981, 235) are interested in a cognitive study where they focus on the intentionality and consciousness of the daykeeper. In the case of the latter their point of departure is the idea that a daykeeper will have a stereotype (together with related archetypal problems and circumstances of his client) in his mind, which forms the basis of his questions and interpretations (Colby and Colby 1981, 235). This resulsts in the production of an abstract system that accounts for the cognitive processes in the mind of the daykeeper. The distillation of a daykeeper's cognitive reasoning, however, produces an image that is far detached from reality. This causes their analysis to be a mere translation of indigenous practices into Western concepts; a one way system of interpretation.

The 1980s: Cognitive and Empirical Studies

As discussed in the previous paragraph, Colby and Colby and Tedlock initiate a turn in the ethnographical approach towards time among the Maya. The researchers themselves, however, do not seem to be in total agreement on the correct approach and methodology. In this part the disagreements between the researchers will shortly be explored.

Colby and Colby (1981) concentrate the life of one single Ixil diviner and perform a cognitive analysis on his decisions in life and his practices while Tedlock (1982) actually goes through the process of becoming a Quiché daykeeper as an apprentice. Because of their personal approach Colby and Colby manage to show that the daykeeper in an Ixil community is just a person like any other, who has his own life history, bad habits, desires, and preferences in life. Shas Ko'w is contextualized through the extensive description of his personal history which contained the tragic loss of his parents, a period of being homeless, his former concerns about earning money, problems with women, and also the excessive use of alcohol. This contextualization aids the ethnographic description of the ritual specialists. When studying the practices of such a person they tend to be unconsciously classified as special (because they are in fact the subject of an entire study), while Colby and Colby correctly show us that they are just as human as anyone else and they have personal concerns as well. Schultze Jena (1933, 34-42) also stresses this important observation in his work. He mentions that Quiché daykeepers justify their work simply by saying that for them divination is just a way to make money for sustenance just as trading is for a trader (Ibid.).

It is important to note that Tedlock underwent a formal education as daykeeper in 1976. Her book contains a description of this educational path, explaining as an anthropologist what happened and how things were perceived. She herself is very aware of the fact that on the one hand she is an anthropologist while on the other hand she is a traditional Quiché daykeeper. Where many critics would see a problem related to objectivity and subjectivity, she argues against the analytical construction of opposition between self and other (Tedlock 1982, 5). She finds herself in agreement with Bennetta Jules-Rosette who during her anthropological fieldwork in Africa developed "a repertoire of knowledge and expectations, or a common culture, that was shared with the participants and created in interaction with them" (Jules Rosette 1975 in Tedlock 1982, 5), while at the same time she was still continuing her work as anthropologist. So what she basically proposes is that one is able to change their mindset according to the cultural context one finds himself in. This seems to be a good alternative to the persisting emic and etic distinction in anthropology which maintains that an emic description comes from a person within the culture (the insider's view), while an etic account should be culturally

neutral and comparable to other regions and cultures (the outsider's view). Tedlock's approach offers therefore a better model that includes human adaptation to cultures and the inevitable change of frame of mind.

Tedlock's study has been critized by Benjamin Colby (1983) on three points. Colby's first point of critique is that the Quiché have been modernized too much and ethnographic fieldwork should focus therefore on the Ixil, which he argues to be bypassed by the Postclassic. Tedlock's book, however, shows that traditional culture is still very prominently present among the Quiché of Momostenago. Colby's focus on conservative peoples is also too simplistic as it is highly interesting and important to see how people deal with their traditional knowledge in a time of change and globalization. Secondly, Colby implies an analogy between Tedlock's education as a Quiché daykeeper and the unreliable and severely criticized account of Carlos Castaneda. Castaneda is infamous for publishing ethnographic reports that contain many false statements. This accusation is practically based on nothing, as Tedlock (1984, 424-425) reacts, because photos, names, maps, and drawings are evidence of the reliability of her work. Finally he argues against Tedlock's theoretical approach and suggests analyzing the data with his own theoretical models. Colby and Colby's theoretical framework, however, has been criticized by both Mayanists and non-Mayanists (e.g. Gossen 1983, 814; Agar 1982, 182-183). Although Colby and Colby's account should be praised for the personal description of the Ixil diviner, their theoretical analysis leaves too many gaps and the results are doubtful. Concepts are abundant in the book, but what their exact meaning or definition is and how they interrelate exactly remains unclear. The same problem arises for the individual boxes with extensive lists presented in the chapter on divination: what function these boxes have and how they actually relate to each another stays obscure**.** What they try to do is "discover the behavioral logic that underlies Ixil stories as well as other Ixil cultural systems" (Colby and Colby 1981, 164). The above mentioned points, however, severely hinder their analysis. Tedlock's phenomenological approach is more persuasive: in accordance with Pierre Bourdieu, she argues that practice and theory are assigned to both the ethnographer and the indigenous people. Her empirical account therefore stays close to the actual reality, while Colby and Colby's models give priority to the cognitive interpretation instead of the actual indigenous practices and beliefs.

At the end of his review Benjamin Colby (1983) critically mentions the lack of information about the civil war that was raging through Guatemala at the moment of publication. At this point Colby is correct. It is very striking that many Maya researchers (anthropologists as well as archaeologists) did not mention the Guatemalan civil war in their publications at the time it was occurring. Although Tedlock at first reacts that the

civil war "is not what my book is about" (Tedlock 1984, 426), in her revised edition she does elaborate in the new preface and afterword on the country's state of conflict (Tedlock 1992).

As Westfahl (1991, 75) mentioned, the North American scholars have so far tried to stay out of political related debates, and therefore their studies have not really contributed to the living conditions of contemporary Maya as they are purely reports on a surviving culture without using their data to give voice and power to the people of this culture (Westfahl 1991, 75). This was the case in the time that the indigenous populations were seen as the lower case of society, when the military overthrew the Guatemalan government in 1954, and apparently as well during the genocide in the 1980s. This strangely contrasts however, with the status of anthropologists as prominent public intellectualists in the United States from early in the twentieth century onwards (Gilkeson 2010, 7). The great anthropologist Franz Boas, himself an immigrant, was well-known for fighting against nativism, racism, and hostility and persecution of foreigners in the United States (among which many Germans) (Gilkeson 2010, 7). The anthropologist's fight for human rights, however, does not seem to have influenced ethnographers in the Maya area.

5.3 The Calendar and Rituals on the Yucatan Peninsula, Mexico

The Fieldwork

Complementary to the literature research, a small scale ethnographic fieldwork trip was conducted on the Yucatan Peninsula, in the states of Campeche and Yucatán, Mexico, where I went to visit Manuel May Castillo, a researcher of Leiden University, who is currently performing a long-term ethnographic study among the Maya. Manuel, being Mayan himself, provided me with useful information and insights during this fieldwork. The aim of the fieldwork was to make a small inventory of traditions related to time perception among the Yucatec Maya, a people that have often been left out of consideration by ethnographers who are interested in time related rituals and knowledge as the sign-number based calendar is not used anymore in this region. The main questions of this fieldwork were the following: what forms of time tracking are we able to encounter in contemporary Maya communities on the Yucatan Peninsula? What kind of rituals and ceremonies related to the Maya worldview are being performed in these communities? Connected to this, I wondered if it is possible to distinguish direct threats for the traditions of the Maya culture?

As the ethnographic fieldwork was performed in a period of only two weeks (29th of April 2013 – 13th of May 2 2013) the inventory will surely be incomplete. However, for now it is not my intention to provide a full inventory of time perception in Yucatan and Campeche in this thesis, as space does not allow me to do so. This part of the thesis should rather be considered as a small ethnographic sample of time perception on the Yucatec Peninsula (see fig. 11) also aiming to point out topics for future research.

Apart from the bigger cities such as Campeche and Mérida, the Yucatan peninsula is covered with small villages whose inhabitants spend their days working on their agricultural fields, the *milpas*. Although the general academic conclusion holds that the Maya calendar is nearly extinct in this region, we have witnessed a fascinating knowledge of time passage in these small communities. We did indeed not encounter remains of the 260-day count and the 365-day count, however the time tracking systems that are currently visible on the Yucatec Peninsula are most often related to environmental cycles and agricultural practices. This knowledge is often overlooked by ethnographers who deal with the Maya calendar. As already discussed, the environmental changes and cycles form an additional calendar which is a constituting part of Maya time perception. Celebrations of certain days often involve a combination of characteristics of Christian and indigenous beliefs, practices and symbols; over time this has resulted in coherent and complementary world view.

We witnessed this in one of the first days in the village of Chumayel where the feast of the *Cristo Negro* was celebrated: visitors would enter the Catholic church of Chumayel with branches of wild basilica and rosemary, and rub these plants over the body of the Black Christ (fig. 12). These plants would then be taken home and could be used in healing rituals as they had received a special blessing from the body of the Black Christ.

Figure 12. Visitors receiving the blessing of the Black Christ in Chumayel, Yucatán, Mexico

Figure 11. Map of the location of the Yucatan Peninsula (Google Earth)

The following part will elaborate on the most important observations and experiences during the fieldwork. First an average village will be described after which the effect of advancing Protestantism on Maya traditions will be discussed. Later on, the time perception, divination and the *ritual de la quema* will be looked at.

Figure 13. Map of Cumpich (A) and Calcehtok (B) in the states of Campeche and Yucatan (Rough Guide Map).

A Description of the Maya Village

During the two weeks in Yucatan and Campeche we have been moving around from village to village quite a lot. All these different villages have contributed to my impression of contemporary Maya villages, however we considered Cumpich (fig. 13), a small village of around 2,000 inhabitants, to be our main base as this is where we slept and where we helped with the everyday activities. Almost everybody in the community has a *milpa* on which they work during the week days. Apart from these fields for agriculture, some people also have land with livestock or boxes with bees for the production of honey (fig. 14). The Maya *sacerdote* (priest) Miguel had a *milpa* on which he normally worked during the week days. The ritual we performed with Miguel (see below) was therefore planned on a Sunday so he would not miss a day on the field. During our stay we helped our host, the cousin of Manuel, with the honey production and the feeding of his livestock (fig. 15).

The houses in most of the villages were a mix of traditional houses built of wooden sticks filled up with clay on a stone base and a thatched, and concrete houses (fig 16). In Cumpich the gardens of the houses were clearly delineated with small stone walls about a meter high, of which at least some derived from one of the many nearby archaeological sites as they contained Maya inscriptions and carvings. Whether concrete or traditional houses, the kitchen is often located in a wooden construction outside the house and the whole village is usually covered in an intense smell of burning wood and herbs for the preparation of food from 06:00 in the morning until late at night.

Figure 14. Daily life in the Maya village of Cumpich: Beekeeping.

Figure 15. Beekeepers are taking a rest after the hard work and drinking the traditional *pozol*. The balls of maize-dough are prepared in the morning and taken to the fields where it is mixed with water and salt during the lunch break.

Figure 16. An interesting mix of building traditions: a base of concrete, the traditional Maya wooden and clay walls, thatched roof partly covered with corrugated iron

History and stories of the past are often dealt with through oral traditions. The advancement of many new protestant churches in the villages, however, has a restrictive effect on what stories are transmitted and on the general opinion about which stories are considered to be appropriate and which convey a demonic past and should therefore be forgotten. Among these are creation stories and those stories which are now being referred to as "*leyendas*" (legends).

Apart from a several exceptions, there is generally no real concern about the many archaeological sites spread over the peninsula. Apart from the awe that people have for the most famous excavated and restored sites, many people do not realize that the stone hills next to their village is of similar importance (fig. 17). In contrast, many of the facade stones are sacked from archaeological sites and used to construct houses and stone fences. Maya *sacerdote* Miguel, however, performs rituals on the archaeological zones around his village and is well aware of the Maya cultural inheritance as appeared during our talk after the ritual.

Figure 17. One of the many unexplored ruins on the Yucatan Peninsula. This mound of approximately 25 to 30 meters high was located a few minutes driving from the highway. A small machete-cut route led up to the top of the mound where there was hole made by looters

Protestantism

The traditions, beliefs and practices related to the traditional way of time tracking, however, are severely under threat. Although the encompassing threat to local traditions is grouped under 'globalization', on a smaller scale it is possible to see that the advancing presence of Protestantism in Mexico, whose followers preach heavily against the traditions and ceremonies that are several centuries old as they would be acts from the devil. It seems to have currently a great (if not the greatest) influence on the disappearance on local traditions. While the youth, influenced by the growing connections to the rest of the world delivered by internet, television and contact with foreigners, begin to lose interest in the old traditions that according to them are not relevant to the world of today, the older generations, who still hold the knowledge of the past, are severely affected in their behavior of the protestant church. A very clear example of this can be seen in the case of a man we used to work with on the field. He used to be an assistant of a local ritual specialist and still knows many of the rituals by heart. However, now that he became converted to Protestantism he refuses to continue these practices and does not like to talk openly about it. Only in the field, where other people from the community they live in cannot hear him, he sometimes opens up and elaborates on the ceremonies of the past.

The Catholic Church is of course also notorious for its extirpatory campaigns in Latin America. However, the Catholic Church seems to be more open for an indigenous interpretation of Christian beliefs and practices, such as for example the cult of the Christo Negro in Chumayel, while the Protestant Church in general refuses any indigenous revision of the Christian belief. On the first of May, people go to the Catholic church of Chumayel to worship the Christo Negro and to wait in long lines to pass the statue of Christ and rub medicinal plants over his body. These medicinal plants can later be used in cleaning rituals. Catholic rituals and ceremonies that are the result of interactive processes between indigenous beliefs and Christians beliefs are rejected by the Protestant Church as they involve idolatry. Currently, the Protestant Church divides up the communities. For example in Cumpich, a little village with an estimated amount of inhabitants around 2,000, there were already six or seven different Protestant Churches (and one Catholic Church) and a new one was being built. We heard several stories about families that became divided and fought among each other because they attended four different churches and could not agree on religious matters. In an environment like this it is hard for indigenous traditions to survive, as the indigenous *sacerdote* Miguel from the village Calcehtok shared with us. He explained that currently people who continue the traditions of their ancestors are the focal point of mocking for the rest of the community and they are considered to be both charlatans as well as assistants of the devil. When we

came to visit Miguel to perform the *ritual de la quema* (ritual of the burning), we noticed indeed that in the *tienda* (a small grocery shop) across the street and in the gardens of the neighbours people stood still for a moment to see who was coming to see the *sacerdote*. It seems that in small communities with high social pressure, many ritual specialists leave their traditional beliefs and join the stronger movement of Protestantism out of fear for exclusion.

The fact that younger generations have access to internet and television could have an influence on their (lack of) interest in old traditions. However, there are many examples in the world of social media (among which several Maya Facebook groups) where indigenous traditions and virtual developments go hand in hand. Two weeks in a Maya community, however, is not enough to distinguish all the factors that underlie the decrease in traditions. Protestantism was clearly present as one of the factors, but it must be stressed here that many other processes must be at play which I could not determine yet. This would be therefore an important point for future investigations.

Non-Calendar Based Divination

Since calendar based divination is abundantly discussed in previous chapters, it would be interesting to shortly share my experience of non-calendar based divination. As the divination was done only once during my stay it was not possible to make an in-depth analysis of the performance. Therefore the information provided here will remain on the empirical level.

On Thursday the 2nd of May 2013 we passed by Calcehtok (fig.) to speak with Miguel. After making some arrangements for the *ritual de la quema* we asked him if it would be possible to perform a divination for us one of these days after which he immediately invited us into one of the houses on his terrain. In the wooden house, where two hammocks were hanging, an older man of around sixty year old was sitting in one of them, and in the far right corner of this house was a table decorated as altar. The altar was covered with many objects: a little statue of Jesus Christ on the cross at the center of the table; directly on its base there was a stone spearhead; to the left of the statue a candle with the image of the Virgin of Guadalupe was positioned; in front of it there was a small statue of Buddha; on the left the *jicara* with *baalché* (a light-alcoholic substance) was placed; right next to it two containers of which the first contained small crystal stones and the other one three or four cacao-nuts; in the corner of the altar next to the wall of the house there were pieces of the wood that are used to make *baalché*; between the cross and the wood two candles were situated.

As soon as the ritual started Miguel put a white ribbon over his forehead. To make a divination ("*leer la suerte*" [reading the luck] as Miguel called it) one of us had to sit down next to Miguel while he started to pray in Maya in front of the altar. Subsequently the same person had to sit on the spot where Miguel was sitting before while he continued to pray in Maya and started to move the container with the crystal stones vertically along the body, touching the head every time when moving up. Then, this person had to change places again to the seat where he was sitting before and Miguel would sit down in front of the altar again and hold one crystal shortly in the fire of one of the candles. Manuel and I noticed that when he made a divination for us he did not pick out the same crystal twice at this point. Analyzing the crystal he told me the following about my current situation:

You are moving a lot but the gods and angels are on your side. Everything is going right at this moment and you will not encounter any malicious people or forces. Notwithstanding these positive messages you are worried about something, but this will be brought to a good end.

After the divination the moment of payment came, which I think was very interesting. Miguel refused to give us a price for the divination and continued to repeat that we could give whatever we could afford. As we had never done a divination ritual before we were not sure how much to pay for his service so in the end we decided to 75 pesos per person. On a later moment Miguel shared with us that during his education as *sacerdote* he learned that the participation in a ritual should be open for both poor and wealthier people and that if both would pay what they can afford, the prices would be balanced and Miguel would receive his normal payment. Therefore there is no fixed price: if one day somebody will pay him below the normal costs another day there will come somebody who will pay above it. The idea behind this system is that the services of the *sacerdote* should be open for everyone from every layer of society.

Indications of Time Perception

Even though Protestantism has become a growing threat in the small communities, certain traditions have persisted over time. My arrival in Yucatan was around the same time that the first rain should fall after seven months of drought. Therefore I was just in time to experience the preoccupation with rain and the sowing of plants such as maize in the little villages. The *Día de la Santa Cruz* (Day of the Holy Cross), for example, is celebrated on the 3rd of May in Mexico; a day that is mostly celebrated by masons who

return to their community on this day. Ethnographic and archaeological research has provided evidence that the *Día de la Santa Cruz* is strongly connected to the zenith passage of the sun and the arrival of the rain (Wisdom 1940, 462-471).

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Figure 18. The 3rd of May: Planting calabash on the *milpas*

There seems to be an indication that the sowing of certain agricultural crops is also involved in this moment of the zenith passage and the arrival of rains. In the village of Cumpich in the state of Campeche, which is the basis of Manuel May Castillo's fieldwork, we heard that the 3rd of May is the day that calabash should be sown in order to have a good harvest (fig. 18). Calabash is a vegetable that is often used in traditional rituals. Miguel, the *sacerdote* of Calcehtok, confirmed the use of calabash and the period of sowing. However, in neighboring villages people told us that the 3rd of May used to be the day of sowing the calabash but that nowadays it actually does not matter on which day this is done.

El ritual de quema

The *ritual de la quema* is directly related to what we call the natural calendar. This calendar does not involve days composed of signs and numbers, a 260-day cycle or a 52-year cycle. This system of tracking time is strictly related to the natural environment of, in this case, the Yucatec Maya and its changes throughout the year. We visited the

peninsula in the beginning of May, the time of the year in which after a period of seven months of drought the first rains should fall. The average conversations in the small villages were therefore mostly about the preparation of the *milpas*, as everything had to be ready for the first rain showers because as soon as that happened people could start planting the maize. If one would plant the maize earlier it would be eaten by the birds. Once the ground is wet from rain, however, the maize seeds cannot be found back and digging them up would take too much energy for birds. As we discussed before, calabash can be planted earlier than maize and on a set date (whether rain has already fallen or not) as the birds do not fancy these seeds. *La petición de la lluvia* (request for rain) is a well-known Mesoamerican ritual that is generally performed around be end of April or beginning of May in which, simply put, the sacred gods are asked to let the rain arrive (see for more details Bruce Love [2012, 87-106]).

The *peticiones de la lluvia* had already been performed prior to my arrival to Yucatan. The preparation for the rainy season involves the cleaning of the fields and its fertilization, which was both done by burning the *milpas*. The *ritual de la quema* was performed in order to ask the gods permission for the burning of the fields, to ask to prevent accidents from happening, to prevent the uncontrolled spreading of fire, and to ask for good crops. One of my first thoughts was that Manuel and I both do not own agricultural fields to perform this ritual for. This is just a small example of how one can be influenced by his own background during ethnographic fieldwork, as Miguel explained that a ritual like this one cannot be performed for only one or two individuals, but serves the whole community, even though they are not present at the moment that the ritual is performed.

The ritual was performed by the *sacerdote* Miguel from Calcehtok. Three days before it was actually performed we passed by his house to ask if it was possible to perform the *ritual de la quema* for us. He needed at least three days to produce the needed beverages so we came back on Sunday the 5th of May. After picking up Miguel and his brother, who worked as assistant during the rituals, at their house in the center of Calcehtok we drove to the caves of Calcehtok, just a few kilometers farther (fig. 19). Although three days before Miguel had said that we would perform the ritual somewhere else he changed his mind the night before and the guides at the caves, which is also a touristic attraction, were already notified of our arrival.

Figure 19. The sacerdote and his assistent lead the way into the cave of Calcehtok.

After entering the space in the cave where the ceremony would be performed the local guide left us alone because everyone who would be near would have to undergo the ritual. As the ritual involved a ritual cleansing (the ritual removal of negative forces) it could happen that the negative powers that are taken away from a person would go to the one person who would not do the ritual, and he could become severely sick. While entering the cave, however, the guide was able to tell us about the presence of archaeological remains; and indeed, the floors in the caves were covered with ceramic sherds. The entrance of the main cave was marked by an ancient wall and according to the guide archaeologists have documented at least 80 c*haltuns*, which are human-made holes in rocks and stones that were used to collect so-called virgin: water which dripped down from the stalactites and has not been touched by any humans (*chal* = water, *tun* = stone). This virgin water is used in rituals, for example for the preparation of the drinks. One of the *chaltuns* served for Miguel as an altar on which he placed the ritual objects that formed part of the ceremony. The place where the ritual was to be performed was known as '*la capilla*' (the chapel), which was a huge room with a high concentric ceiling. Next to the entrance of the room was a stalagmite which was referred to as the *virgen* because, according to the guide, after entering the Spaniards placed a statue of the *virgen María* which overtime begot covered by calcium from the dripping cave-water. During

the ceremony the altar was oriented towards the *virgen* and Miguel was almost continuously facing her.

Figure 20. The altar for the *ritual de la quema*. In the middle, where the three containers are placed, you can distinguish the lines of the carved *chaltun*.

The altar contained the following objects (fig. 20): in the right corner a *jicara* (a natural container made of fruits from the jicara-tree) filled with *xtabentun* (a ritual alcoholic drink) and next to it a container with mashed cacao nuts and water; in front of the *jicara* a container was placed with four crystals in it; a container in which the *xtabentun* was poured and a container with *pozol (*a beverage made from soaked and cooked corn mixed with water) and honey; on the front there was a necklace made of seeds from the Cedar tree.; in the left corner of the altar there was an incense burner with smoking copal and a container with wooden sticks of a plant we could not determine; the altar was illuminated by four candles which were placed in an almost straight line across the altar; three conch shells formed a triangle in which the drinks mentioned earlier were centered; finally in

Figure 21. Sacerdote Miguel praying and singing on his knees in front of the altar.

Figure 22. The necklace and pozol are taken from the altar and given to the participant who is waiting on his knees on the platform.

the front two cigarettes were placed (one of which broken) with next to that a box of matches; in the center a blue bottle containing olive oil was placed.

The *chaltun* that served as an altar was situated in a circular platform that was enclosed by low rocks and stones. Only one of the participants could enter the platform where the *sacerdote* and the assistant stood while the ritual was being performed, so we had to take turns. When entering the circular platform our t-shirt had to be taken off. However, before we could enter the platform Miguel kneeled and prayed and sung in Yucatec Maya to the gods (fig. 21), after which he would stand up straight and ask one of us to enter the platform. Here we had to kneel and close our eyes. Before the ceremony began Miguel put on a hat that was decorated with feathers which were sticking up in the air. As soon as the ceremony was over he took the hat off (fig. 22).

While Miguel went to stand behind the client he prayed and cleansed the body by encircling it in copal smoke (fig. 23). During the prayers, his assistant would knock two *jicara*-containers against each other a prescribed amount of times, which was mentioned beforehand by Miguel. Following this, the incense burner was placed on the ground in front of the participant and Miguel would offer a drink to the gods by holding it with two hands above his shoulders while praying. Subsequently the first of the beverages, the *pozol* with honey, was handed to the participant who had to empty the container by drinking it. Next the cacao drink was presented to the gods and given to the participant who had to eat three spoons of the substance. Finally the third drink, *xtabentun*, was presented and handed to the participant to drink in its totality.

After the beverages were consumed, Miguel stood behind the participant and first asked in Maya to make a personal promise, which he repeated in Spanish. After receiving a positive answer Miguel picked one of the conch shells from the altar together with one piece of the earlier mentioned stick of wood, and gave them to the participant. He explained afterwards that these two items should always be carried with you wherever you go as they will provide you a safe journey. The wooden stick could also be placed on the spot where you sleep to guarantee a safe sleep and secure that no bad forces would harm you during your sleep.

Before performing the ritual I had asked Miguel if he maybe knew a medicine for the rash that I had on my hand after collecting honey. Before handing me the conch shell and the wooden stick, he asked me where exactly my disease was located poured some of the olive oil on the spot and rubbed it in the skin. Indeed, within two days my rash had disappeared.

Figure 23. On this photo you can see the sacerdote standing behind the participant. With the help of burning copal he is making sure that any malevolent entity will leave his body.

Figure 24. Smoking a cigarette and blowing its smoke from left to right.

The assistant also had to undergo the ritual cleaning because of the reasons mentioned above. Finally Miguel himself drunk the beverages while praying. Subsequently he began to sing with a face full of emotion and poured some *xtabentun* behind the altar on the ground. Next, he took a cigarette, lit it with one of the candles, smoked it and blew the smoke in a range of 180 degrees starting at his left and ending at his right side (fig. 24). Finally he went so sit down on his knees and continued to pray. To close the ritual, Miguel drunk sips of *xtabentun* which he spat out on the ground in the same range as he done with the cigarette smoke (fig. 25).

Figure 25. Finally, to end the ritual, *xtabentun* was spit on the ground in three directions.

5.4 Future Ethnography

During the two weeks in Yucatan it became clear that the passage of time and the perception of it has remained an important part of Maya community life even though the sign-number construction and the earlier discussed 260-day and 365-day mechanisms are not present anymore in this area. It would be interesting for future research to take a closer look at the continuation of time perception in Maya communities that have lost the most well-known calendar types, as much research is still needed here. It would be interesting to perform comparative fieldwork in Maya communities from the Highlands of Guatemala where the calendar system continues and the Yucatan peninsula of Mexico where the most visible system has disappeared. Another recommendation for future

research involves the Catholic feasts. Certain feasts have gained a great importance in the Maya area in comparison to Catholoic areas in Europe, which leads me to wonder if we can distinguish underlying Maya calendar structures that have been covered by the Catholic ritual calendar, in the same way as many pyramids have been covered by Catholic churches in the 16th and 17th century.

Doing research on Maya calendar types, my attention was drawn to the near absence of anthropological fieldwork in Belize. Information about contemporary calendar systems in this region is completely lacking. For quite a while Belize has been an odd case in the recent history of Central America since it has gone through a different historical process then for example countries such as Mexico and Guatemala due to its British colonial rule, which has undoubtedly led to distinctive cultural outcomes. If we recall the Galton board, as discussed in Chapter Two, the green dots against which the ball clashed must have been differently placed on the British board in comparison to the Spanish board. This stresses the importance of anthropological fieldwork in this area even more as studies in this country will, apart from providing new data about calendar systems in this Maya area, also produce new insights in the distinct historical processes and their related cultural outcomes in Guatemala, Mexico, and Belize. A future ethnographic study focusing on a comparison of time perception in Guatemalan, Mexican and Belizean Maya communities would be therefore tremendously interesting.

The ethnographies that so far have been done are currently not easy accessible for people from the indigenous communities. This is caused by the language barrier between the indigenous communities and the ethnographer, of who the latter mostly publishes in English. Since English is not spoken by many people in the indigenous communities from Guatemala and Mexico and because books are relatively very expensive, the documented knowledge often stays outside the area where it was taken from. Future ethnographic research should therefore focus more on the accessibility of ethnographic works for indigenous people. In order to come a close collaboration between researcher and indigenous community, mutual sharing of knowledge should become incorporated in future research.

Apart from providing interesting data about the future development of Maya knowledge, such a fieldwork may have also interesting results for archaeological research. Many assumptions of the Maya calendar in pre-Hispanic Mesoamerica are still under debate, as research on the different calendar systems is currently still lacking. The Dresden Codex, one of the three surviving Maya books, contains a lot of information about time related to astronomy, agriculture, and the sign-number calendar system. Interpretations of the document, however, are very broad. The above proposed research could help in defining the contents of documents such as the Dresden Codex.

Chapter Six. Conclusions

From the preceding chapters it can be concluded that ethnographic studies on Maya time perception, and more specifically the Maya calendar, has gone through quite a change over the last century. The first ethnographers had a strong ethnocentric approach in which they were skeptic of the daykeeper and his actions, and interpreted the Maya culture purely trough own cultural background. The clearest example of the latter is the interpretation of good and bad days in the Maya calendar, which seems to relate directly to the Catholic Church and the dichotomies that constitute its worldview. The changes in the anthropological discipline around the 1980s have greatly contributed to the consciousness of the background of the researcher. It can be seen that Colby and Colby and Tedlock spend a great deal of their books elaborating on methodologies, definitions, concepts, and theories. It remains difficult to put aside for researchers to put aside their cultural background. Ethnographers stress the fact that all calendar cycles are entangled with each other while at the same time they still continue to refer to a one calendar type as the 'ritual calendar' and the other one as the 'solar calendar' even though both clearly relate to astronomical events and both involve rituals.

Another clear development in the study of Maya calendar systems is the increasing specialization since the beginning of the 20th century. As we have seen in the more theoretical part of this thesis, the development of Maya studies in general is characterized by polarization and specialization, and the study of the Maya calendar is no exception. The pioneering researchers attempted to give a general description of behavior, practices, beliefs, living conditions and political organization of Maya communities while the later ethnographic studies focus purely on the details of the calendar and leave the community to be discussed somewhere else. This development is inevitable as there is a growing volume of publications on the Maya culture and in-depth studies are needed in order to a better of the current Maya culture, its past, and its future developments. The increasing specialization may lead researchers to become specialists in a restricted area of expertise while at the same time it becomes more and more difficult to keep up with the development in other Maya research fields, which is in accordance with what Westfahl (1991) mentioned. Disagreeing with Westfahl, it is argued in this thesis that the increasing specialization of Maya studies has led to the maturation of Maya ethnography as a study that stands on itself and is not necessarily in direct service of archaeology. It must be admitted, however, that archaeology remains to be the most dominant discipline in academic Maya meetings or conferences and publications.

Although these increasingly specialized studies have been performed in the Maya area, certain topics of debate still remain unresolved. The best example of this is the discussion on the existence of a leap year. Valid arguments are provided by both the researchers who argue in favor of the existence of a leap year corrections as well as the ones who argue against it. This topic is certainly in need of further research in the future.

Although Westfahl argued for an indigenous anthropology as early as the beginning of the 1990s. this has sadly not yet reached the academic levels of Maya research. Even though the Pan-Mayanism movement is growing at the moment in both Mexico and Guatemala, conferences on Maya topics in Europe remain dominated by non-indigenous Mayanists and most internationally available ethnographic research continues to come from researchers in the United States. We must also dolefully also conclude that most publications continue to be published in English and remain therefore inaccessible for the indigenous populations themselves.

The colonial and recent histories have left an enormous mark on the indigenous cultures of the Americas. Although periods of slavery, extirpatory campaigns, and civil war are brought to an end, the Maya traditions currently continue to be under threat by changes introduced by capitalism, poverty, and the advancing and polarizing Protestant communities. As extensively discussed in this thesis, however, Maya calendar systems, which form a crucial part of the Maya worldview, continue to be active in many different forms and in many different (linguistic) communities. The basis for the continuation of the calendar system seems to be the ritual which through its self-referential and canonical messages consolidates the Maya worldview. Joined participation, in which people from different communities come together to perform a ritual, help the days to continue to fall on the same Gregorian calendar date and ensures that the main characteristics of a belief or ritual act remain (almost) identical over a large area. The dissimilarities that can be encountered in the different communities, however, are the result of the space for personal alteration related to the context this person is in. Intensive religious interaction within the community in comparison to the sporadic religious interaction outside the community can result in a gradual change of common practices and beliefs as the contextual alterations may in the course of time become part of the prescribed acts and beliefs. Even though ritual interaction may have an enforcing effect on the perception of the world, it can, however, not prevent the (local) loss of certain traditions or calendar traits such as for example the *uinal*. However, loss and change is an inevitable feature of cultures, already seen in the case of the sudden disappearance of the long-count calendar system during the Terminal Classic Period.

The small-scale ethnographic research among the Yucatec Maya of Mexico has indicated that even though the actual sign-number system may disappear from a community, its related perception of time may continue over time. The Maya calendar does not consist only of a 260-day and a 365-day cycle, but is a complex system that incorporates natural phenomena such as the changing of seasons as well as astronomical observations. The past and how it is looked at can also be described as a distinctive perception of time. Most calendar researchers, however, do not go into other types of calendars and on the rare occasion they do, the relation between these calendars are left out of the discussion. As witnessed in Yucatan, there is a clear relation between the natural phenomena and rituals, even though the most well-known Maya calendar system is not present. This topic is in severe need of investigation. For example the act of rubbing plants against the statue of Christ during the celebration of the *Christo Negro* of Chumayel on the first of May (and which would later be used in other rituals) as well as the limited time period in which certain rituals, such as the *ritual de la quema*, could be performed, provide clues for the interrelationship between the calendar variants. Future research on this topic should provide insights in the exact relation between the different calendar structures and how they contribute to the Maya worldview.

Even though some of the most renowned Maya ethnographies have been criticized, it must be said that they have been a great contribution to the Maya research. The ethnographies that were made in the first half of the 20th century are of great importance since apart from their surprisingly high level of documentation, the Maya communities have changed incredibly over this past century. When the Greek philosopher Plato stated that τὰ πάντα ῥεῖ καὶ οὐδὲν μένει (everything flows, nothing remains), he was referred to the idea that one can never enter the same river twice as the river will have changed as soon as one comes out the first time. The river is subject to constant change, in some cases large changes and in some cases only small changes, but alterations are inevitable. Similarly, we state that you can never encounter the exact same community or cultural traditions twice. On the one hand your visit will influence the community's currents, while simultaneously other external as well as internal forces will influence the flow of the community's practices, behavior and beliefs. As everything flows and nothing remains, cultures will be different at another time. We will never be able to revisit the exact same communities where La Farge, Schultze Jena, or Lincoln did most of their studies in the state they were in at the time of research. Their ethnographies are therefore of great value for Maya research and will continue to contribute to our understanding of the developments of cultures, as they documented how the cultural river once flowed.

Abstract in English

Perception of time is a constituting pillar in the Maya worldview. The Maya calendar system, which has been in use for thousands of years, however, is currently under threat by a variety of developments. This research master thesis focuses therefore on the contemporary practices and beliefs related to the Maya calendar in Mexican and Guatemalan Maya communities by analyzing ethnographies published between 1889 and 1982. The aims are firstly to analyze the forms in which the traditional time perception has continued over time, and secondly to examine how changes in the field of Maya research have affected the specific ethnographic investigations on the Maya calendar.

The main part of this thesis includes a literature study on three entangled topics which all have influenced how scholars currently look at the Maya calendar. Firstly, a synthesis of the different ethnographic works is provided, in which the different forms of Maya calendar systems in Mexico and Guatemala are discussed. The Maya calendar has played an important role in Maya archaeology and anthropology. This thesis provides the first overview of ethnographic research since a doubtful publication dating from 1952. The goal of synthesizing the ethnographies is to provide new insights in the variety of contemporary practices and beliefs related to time among the Maya. Secondly, based on this inventory, this thesis examines the changing ethnographic approaches towards this topic. By examining the assumptions, interpretations and approaches in the light of their time, it becomes clear how we have come to our current view on the Maya calendar system. Thirdly, this thesis looks into cultural continuity and how rituals contribute to the continuation of calendar systems and their related worldviews. Due to the decreasingly traditional way of life, more research into this topic is very much needed.

Additional to the literature research and a small-scale ethnographic fieldwork has been performed among the Yucatec Maya of the Yucatan Peninsula, Mexico, focusing on the perception of time based on environmental observations and related rituals. The empirical data that were collected during this fieldwork are presented in the final part of this thesis.

Abstract in het Nederlands

Tijdsperceptie is één van de basiselementen in de Maya wereldvisie. Het Maya kalender system, welke al over meer dan duizend jaar in gebruik is, wordt tegenwoordig echter bedreigd door verschillende ontwikkelingen. Deze research master scriptie concentreert zich daarom op de hedendaagse gebruiken en geloofsovertuigingen die zijn gerelatereed aan de Maya calendar in traditionale gemeenschappen in Mexico en Guatemala. Aan de hand van verschillende ethnografieën, daterend tussen 1889 en 1982, worden (1.) de verschillende vormen waarin de traditionele perceptie van tijd zijn overgebleven geanalyseerd, en (2.) wordt er gekeken naar de invloed van de algemene veranderingen in Maya onderzoek op de ethnografische onderzoeken naar de Maya kalender.

Het grootste deel van deze scriptie is gebaseerd op een literatuuronderzoek naar drie geïnterrelateerde onderwerpen die van invloed zijn op de manier waarop academici tegenwoordig de Maya kalender beschouwen. Allereerst wordt er een synthese gegeven van de ethnografische werken waarin de verschillende vormen van de Maya kalender worden besproken. Hoewel de Maya kalender een grote rol speelt in archeologisch en antropologisch onderzoek in deze regio, is deze scriptie het enige onderzoek, sinds een discutabele publicatie uit 1952, dat de verschillende studies bij elkaar brengt. Het doel is om nieuwe inzichten te verkrijgen in de gevarierde gebruiken en ideeën die gerelateerd zijn de Maya tijdsperceptie. Ten tweede, onderzoekt deze scriptie de veranderende ethnografische aanpak over de jaren door assumpties, interpretaties en benaderingen tegen het licht van hun tijd te houden. Zodoende wordt het duidelijk hoe wij tot de hedendaagse beeldvorming van de Maya kalender zijn gekomen. Ten derde kijkt deze scriptie naar de culturele continuïteit en hoe rituelen bijdragen aan de voortzetting van de kalender systemen en de Maya wereldvisie. Vanwege de eerder genoemde vermindering van het traditionele geloof en de gerelateerde gebruiken is zulk onderzoek hard nodig.

Aanvullend aan het literatuuronderzoek er ook een kleinschalig ethnografisch veldwerk verricht bij de Yucateekse Mayas op het Yucatan Peninsula, Mexico. Hier is gekeken naar de perceptie van tijd gebaseerd op veranderingen in de natuur en de hieraan gerelateerde rituelen. De empirische gegevens die hieruit voortkwamen zijn verwerkt in het laatste deel van deze scriptie.

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Appendix A: Ethnographies and Characteristics of Documented Calendars

Ethnographer	Linguistic Affiliation	Community	Year	Twenty Day	Thirteen Numbers	Vague Solar Year	Uinal Names	Calendar Round	Year Bearer
O. LaFarge	Mam	Santa Eulalia	1932	X	X		X		X
Colby and Colby	Ixil	Nebaj	1969-1976	X	X		X		X
J.S. Lincoln	Ixil Quiché	Nebaj, Chajul Chichicastenango	1939-1940 1939-1940	X X	X X	X X		X	X
O. Stoll	Ixil	Nebaj Chajul		X X	X X	X X			
B. Tedlock	Quiché	Momostenango	1975, 1976, 1979	X	X	X		X	X
D.M. Earle	Quiché	Chinique	1976-1979	X	X				
L. Schultze Jena	Quiché	Momostenango	1931?	X	X	X			X
G.H. Gossen	Tzotzil	Chamula	1969			X	X		