

**CONTRIBUTIONS**  
**IN NEW WORLD ARCHAEOLOGY**  
Volume 13

# CONTRIBUTIONS

## IN NEW WORLD ARCHAEOLOGY



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IN NEW WORLD ARCHAEOLOGY**

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Part 1

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## FROM THE EDITORS

This issue of the *Contributions in New World Archaeology* journal contains papers from the 24<sup>th</sup> European Maya Conference that took place in Kraków between the 11<sup>th</sup> and 16<sup>th</sup> of November, 2019. The main conference theme was: ‘*Contact and Conquest in the Maya World and Beyond*’. The intention was to refer to events from 500 years ago, since the start of the conquest of Mexico, the colonization and collision of cultures from the early sixteenth century onwards, the changes it brought about and the dawn of globalization. The conference also addressed the subject of conquests and contacts between different Mesoamerican societies and cultures before the Spanish invasion.

During the conference, more than 20 papers were presented, most of which are published in this (No. 13) and the following volume of CNWA (No. 14). The first of these two volumes presents the subject of interaction between the Maya and Teotihuacan and concentrates on interactions and contact between different Maya and Mesoamerican groups as seen in linguistic, epigraphic and archaeological records.

The volume begins with an article by Stephen Houston, Thomas Garrison, and Omar Alcover (‘*Citadels and surveillance: conflictive regions and defensive design in the Buenavista citadels of Guatemala*’) who describe different military features that have been recently discovered to the west of Tikal, thanks to the LiDAR technology, and place them in the context of Teotihuacan invasion of the second part of the fourth century.

The following article ‘*Uaxactun after the Conquest by Teotihuacanos as told by the Mural from Palace B-XIII*’ by Milan Kováč, Dmitri Beliaev, Jakub Špoták, and Alexander Safronov reports on the reexamination of Uaxactun mural paintings from Structure B-XIII, which provide new insights on the problem of the ‘*entrada*’ and Teotihuacan invasion in the Maya Lowlands.

The next paper in the volume is by Joanna Jabłońska and it is entitled ‘*What do ceramics tell us about the contacts between the Maya and Teotihuacan? The meaning and social context of Teotihuacan-like ceramics in the Maya area and Maya-like ceramics at Teotihuacan in the Early Classic period*’. It builds on the subject of Teotihuacan invasion and contact and concentrates on the ceramics discovered in the Maya Lowlands, that exhibit Teotihuacan influences or were imported from this central Mexican metropolis. Based on ceramic data, the author attempts to show the character and intensity of the Maya-Teotihuacan relations within different Maya sites and regions during the Early Classic period.

Mary Kate Kelly’s paper (‘*Political domination and linguistic preferences in ancient Maya hieroglyphic writing: A case study of Piedras Negras and Yaxchilan*’) focuses on what may be termed the prestige language used by the Maya elites at court, and shows how conquest and political domination in the region of Usumacinta influenced the written language of the elites used by different scribal schools.

In their paper titled '*Gold and calques in Mesoamerica: tracing the introduction of gold to Mesoamerica through linguistic evidence*', Magnus Pharao Hansen and Christophe Helmke describe the linguistic contact between different cultural groups of Mesoamerica. The authors show how the term for 'gold' was adopted from Central America and then spread through different Mesoamerican languages from east to west.

The volume closes with an article by Rosa-Maria Worm Danbo titled '*An investigation of shared signs and xenographs in Maya writing*'. The author describes certain signs that bear graphic similarities which were used in different writing systems of Mesoamerica, and discusses the implications of such signs sharing.



# **POLITICAL DOMINATION AND LINGUISTIC PREFERENCES IN ANCIENT MAYA HIEROGLYPHIC WRITING: A CASE STUDY OF PIEDRAS NEGRAS AND YAXCHILAN**

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## **Abstract**

Long prior to the arrival of the Spanish to the New World, ancient Maya history relates tales of contact and conquest among the inhabitants of the Maya region. Composed of a set of related but distinct cultures who spoke a spectrum of Mayan languages, the prestige language used in the written tradition was broadly homogeneous. Prior studies have suggested that regional language varieties influenced scribal preferences in a handful of linguistic features that appear in the texts. New linguistic data from Late Classic (AD 650–830) monuments reveal a more nuanced story — a tale in which political domination impacted the elite written language.

This paper looks at a case study of monuments from Yaxchilan and Piedras Negras whose authors employed specific linguistic traits. I argue these were enforced at the level of the scribal school, and these same traits are reflected in the scribal preferences of the sites subordinate to each. Scribal schools, as they can be identified by paleographic, iconographic, and now linguistic styles, are themselves manifestations of the contemporaneous political dynamic. While conquest in the Classic era took a very different form than later colonization by Europeans, it nonetheless left a significant mark on Maya peoples' history.

**Keywords:** Maya epigraphy, language of the hieroglyphs, scribal schools

## **Resumen**

Mucho antes de la llegada de los españoles al Nuevo Mundo, la historia de los mayas antiguos ofrece relatos sobre el contacto y la conquista entre los habitantes de las Tierras Bajas. El lenguaje prestigioso utilizado en la tradición escrita, aunque acuñado por un conjunto de culturas relacionadas pero distintas que hablaban un espectro de las lenguas mayas, era en líneas generales homogéneo. Hay estudios que han sugerido que las variedades de los idiomas regionales influyeron en las preferencias de los escribas en cuanto a algunas características lingüísticas que aparecen en los textos. Los nuevos datos lingüísticos de los testimonios del Clásico Tardío (650–830 d.C.) revelan una historia más matizada, nos damos cuenta de que la dominación política impactó el lenguaje escrito.

El presente artículo analiza el material procedente de Yaxchilán y Piedras Negras cuyos autores demuestran rasgos lingüísticos específicos. Sostengo que dichos rasgos se impusieron a nivel de la escuela de escribas y luego se reflejaron en las preferencias de los sitios subordinados a cada una de las mismas. Las escuelas de escribas, que pueden identificarse por los estilos paleográficos, iconográficos y ahora lingüísticos, son en sí mismas manifestaciones de la dinámica política de su momento. Si bien la conquista que se produjo en la era Clásica tenía una forma muy diferente

de la colonización por parte de los europeos, sin embargo dejó una huella significativa en la historia de los pueblos mayas de las Tierras Bajas.

**Palabras Claves:** epigrafía Maya, idioma de los jeroglíficos, escuelas de escribas

“From the time of the earliest recorded sound changes, language and politics, literacy and the political-social establishment, have been intertwined.”

Thomas E. Toon (1983: 118)

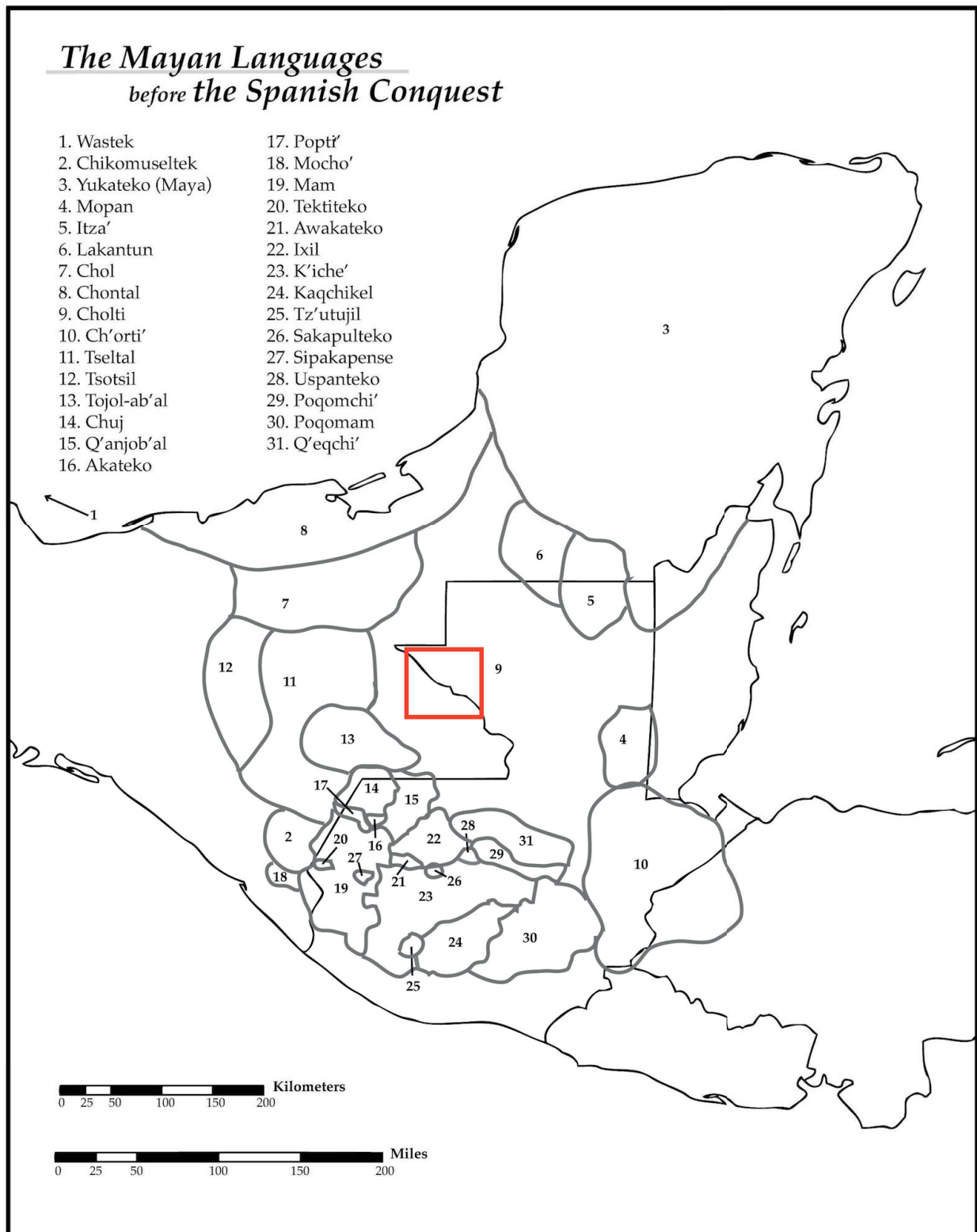
The ancient Maya sites of Yaxchilan and Piedras Negras, two powerhouses of the Classic Period (AD 250–900), were locked in seemingly unending conflict, contesting territory up and down the Usumacinta River which today forms a stretch of the border between Mexico and Guatemala. The history recorded on the inscribed and painted texts of the region details political rivalries, alliances, and battles among sites in the vicinity (Martin and Grube 2008). As the linguistic study of the Maya hieroglyphs deepens, the texts reveal a subtler story of the shifting political geography. This research exposes a complex sociolinguistic landscape as it was recorded in the hieroglyphic writing. While this study set out to find traces of the impact of native language preferences on scribal choices, the results implicate political institutions (scribal schools) as major influencers of variation in written traditions.

## BACKGROUND

The Maya are native to the section of Mesoamerica which spans Guatemala and Belize, eastern and southeastern Mexico, and the western portions of Honduras and El Salvador. Figure 1 illustrates this region and highlights the locations of the approximately 30 Mayan languages in Colonial times. Approximately 5.4 million speakers of Mayan languages inhabit this region today (Becquey 2014: fig. 1), and it is the Ch’olan languages, a sub-family of the Mayan languages (numbers 7-10 on Figure 1) which are of particular importance to this study. Though disjointed today, Figure 1 demonstrates that before the arrival of Europeans these languages formed one continuous belt across the area most densely populated by the ancient Maya.

Famously known for their ruined temples engulfed by jungle forest, the Classic Maya developed a complex landscape – not only in the physical, built spaces known archaeologically, but also in the sociopolitical interactions among polities. Equally complex was their writing system, composed of both logograms and syllabograms, directly recording the sounds of speech through a highly pictorial form. Similar to Latin across Europe for nearly two millennia, one prestige language was the standard for any written text. In the Maya area, this language was some form of a Ch’olan language, though the exact affiliation of this language with respect to the historical reconstruction of the family is still debated (Grube 2000; Houston *et al.* 2000; Kaufman 2003; Mora-Marín 2009; Wichmann 2002) and thus, this language will be referred to as Classic Ch’olan, following Wichmann (2002).

Although the target language of the Maya inscriptions was a relatively unified, prestige, Classic Ch’olan, a number of studies have shown that regional dialects existed on the ancient landscape and affected the texts, creating subtle variation along geographic lines (Colas 2006; Gronemeyer 2014a; Hruby and Child 2004; Lacadena 2000; Lacadena and Wichmann 2002, 2005; Law 2011; Wichmann 2006). This study looks at the impact of these linguistic variations on a small region, the Usumacinta region encompassing the sites of Piedras Negras, Yaxchilan,



**Figure 1.** Map of Mayan Region with estimated language boundaries around the time of Spanish Conquest (Law 2014: 23). Red box added to highlight the region discussed in this paper.

and their smaller regional allies (in red on Figure 1). The discussion of a historical linguistic situation, as documented by an ancient written tradition, and affected by social and political forces, falls squarely within the realm of historical sociolinguistics (or, socio-historical linguistics).

No writing system is able to encode all aspects of spoken languages, and yet writing must be tethered to spoken language. The goal of historical sociolinguistics is to use the inherently imperfect, limited textual sources to aid in “the reconstruction of the history of a given language in its socio-cultural context” (Conde-Silvestre and Hernández-Campoy 2012: 1). In discussing the employment of textual sources in the study of historical linguistic variation and change, Schneider (2002) suggests a set of criteria to assess textual sources. Among these is the “Principle of Filter Removal” in which he says it is necessary “to assess the nature of the recording process in all possible and relevant ways and to evaluate and take into account its likely impact on the relationship between the speech event and the record, to reconstruct the speech event itself, as accurately as possible” (Schneider 2002: 68).

In order to recognize and remove filters, Schneider suggests that four basic requirements must be met. First, the text must be as close to speech as possible, excluding formal and literary writing. Second, the texts should be from a variety of authors, of differing age groups, social classes, sexes, and written at varying stylistic levels. Third, the texts must display variability, and fourth, the texts must be of a length ample enough to allow for variations to occur (Schneider 2002: 71).

In the case of Maya hieroglyphic inscriptions, several layers of filters must be accounted for. First, we can assume that only the elite had access to either reading or writing, which limits our ability to see linguistic variation among social strata. Second, texts were generally written in a single, formal register; informal, colloquial registers are a rarity. The third and most substantial limiting factor in ancient Mayan historical sociolinguistics is our lack of information on the authors of texts. Though we do sometimes know the names of scribes, these individuals’ biographical information such as their age and gender are generally unknowable. The majority of texts were undoubtedly written by men, though there is evidence that women entered the scribal ranks as well (Ardren 2002; Closs 1992; Coe and Kerr 1997: 89-110; Joyce 2000; Matsumoto and Kelly 2018; cf. Houston *et al.* 2006: 52-53). All of these limiting factors exist in addition to the ravages of erosion due to the wet climate of the region, and serve as filters that affect our ability to see sociolinguistic variation in the inscriptions. Despite this, there is much recorded in the inscriptions that informs us of the political machinations of the time, and as the Maya meticulously date their monuments, we can place the historical (and linguistic) information precisely in time and geographic space.

The ancient polities of Piedras Negras and Yaxchilan are located along the Usumacinta River, a main thoroughfare that connects much of the southwestern Maya lowlands by means of waterways. Piedras Negras, on the east bank of the river in modern-day Guatemala, is only approximately 40 kilometers downstream from Yaxchilan, whose city center is located on the west bank in what is Mexico today. Each a medium-sized site of the Classic Maya world, both share roughly contemporaneous trajectories. Their political histories begin in the 4<sup>th</sup> and 5<sup>th</sup> centuries A.D., according to their inscriptions, and both were subject to the general decline of the southern lowlands in the 10<sup>th</sup> century (Martin and Grube 2008). Both seats of royal courts, Piedras Negras and Yaxchilan were inexhaustibly at war with one another, vying for regional dominance in, and enlisting several allies in smaller regional sites in the vicinity (Golden *et al.* 2008). The political intrigue of this region, as well as the plethora of texts from the two centers and the smaller allies, make of this region an ideal candidate for a study of the socio-political effects on language use in the Late Classic.

## DATA AND METHODOLOGY

The data discussed here are gathered from 173 hieroglyphic texts from the Usumacinta region, spanning 11 ancient Maya sites. They are limited to the period from roughly 650 to 830, in order to both minimize the impact of temporal variation on the data, and to gain the maximum amount of linguistic data, since this was the period of maximum text production. The total list of features tracked in this study number approximately 60; however, only six were found to be significant and will be discussed in detail. These are: two phonological features, one morphological feature, two lexical features, and one orthographic feature. Although syntactic and onomastic variability may exist, these datasets were not considered in this study. Maps were created for each of the six significant features (see Figures 3 to 9). While the maps display percentages of frequency, and these percentages are also given in the following sections, it is the presence or absence of each feature which is significant to the overall argument; thus, tables list only whether the feature was present (see Tables 1 and 2). All data used in this study are given in Table 3. In the following section, each of the six features and their frequencies at each Yaxchilan and Piedras Negras will be given. Then, these same features will be discussed with respect to the subordinate, regional sites.

**Table 1.** Summary of the six features in texts of Piedras Negras and Yaxchilan

| Feature   | Piedras Negras | Yaxchilan |
|---|----------------|-----------|
| a/AJ merged   | No             | Yes       |
| h/j merged  | No             | Yes       |
| CV <sub>1</sub> -CV <sub>1</sub> -ja passive spelling | Yes            | No        |
| i-PAS   | Yes            | No        |
| te' numeral classifier                                | No             | Yes       |
| Can drop blood scroll of cartouche                    | Yes            | No        |

**Table 2.** Tracking the presence of the six features in the texts of regional sites

|                           | Feature                                      | Allied with Piedras Negras |        |           | Allied with Yaxchilan* |             |           |        |
|---------------------------|--|----------------------------|--------|-----------|------------------------|-------------|-----------|--------|
|                           |  | El Cayo                    | La Mar | Sak Tz'i' | Dos Caobas             | La Pasadita | Laxtunich | Site R |
| Present at Piedras Negras | CV <sub>1</sub> -CV <sub>1</sub> -ja passive | Yes                        | Yes    |           |                        |             | Yes       |        |
|                           | i-PAS  |                            |        | Yes       |                        |             |           |        |
|                           | Can drop blood scrolls                       | Yes                        |        | Yes       |                        |             | Yes       |        |
| Present at Yaxchilan      | a/AJ merged                                  |                            |        |           | Yes                    | Yes         |           | Yes    |
|                           | h/j merged                                   |                            |        |           | Yes                    | Yes         |           | Yes    |
|                           | te' numeral classifier                       |                            |        |           |                        |             |           |        |

\* El Chicozapote and El K'inel were left off of this table as the texts from these sites are so few and short, the totals for these features were too small to be conclusive.

**Table 3.** All data used in the creation of the maps

| Site           | Feature | a_AJ_expected | a_AJ_unexpected | h_j_expected | h_j_unexpected | w_bloodscrolls | wo_bloodscrolls | nonbackgroundedpassive_CVI | nonbackgroundedpassive_Ca | nonbackgroundedpassive_other | nonLCcal_wPAS | nonLCcal_woPAS | TE_numclass | total_YAX | total_PN |
|----------------|---------|---------------|-----------------|--------------|----------------|----------------|-----------------|----------------------------|---------------------------|------------------------------|---------------|----------------|-------------|-----------|----------|
| Dos Caobas     |         | 9             | 3               | 4            | 1              | 0              | 0               | 0                          | 0                         | 0                            | 0             | 0              | 0           | 4         | 0        |
| El Cayo        |         | 17            | 0               | 15           | 0              | 16             | 5               | 2                          | 0                         | 9                            | 5             | 14             | 0           | 0         | 12       |
| El Chicozapote |         | 1             | 0               | 0            | 0              | 0              | 1               | 0                          | 0                         | 0                            | 0             | 1              | 0           | 0         | 1        |
| El K'inel      |         | 1             | 0               | 0            | 0              | 1              | 0               | 0                          | 0                         | 0                            | 0             | 1              | 0           | 0         | 0        |
| La Mar         |         | 6             | 0               | 6            | 0              | 6              | 0               | 1                          | 0                         | 1                            | 0             | 6              | 0           | 0         | 1        |
| La Pasadita    |         | 1             | 2               | 3            | 1              | 3              | 0               | 0                          | 1                         | 0                            | 0             | 3              | 0           | 3         | 0        |
| Laxtunich      |         | 8             | 0               | 2            | 0              | 3              | 1               | 2                          | 0                         | 3                            | 0             | 5              | 0           | 0         | 3        |
| Piedras Negras |         | 99            | 2               | 41           | 1              | 123            | 29              | 6                          | 4                         | 25                           | 35            | 95             | 0           | 3         | 70       |
| Sak Tz'i'      |         | 15            | 0               | 4            | 0              | 11             | 8               | 0                          | 3                         | 2                            | 1             | 17             | 0           | 0         | 9        |
| Site R         |         | 7             | 8               | 4            | 2              | 4              | 0               | 0                          | 0                         | 0                            | 0             | 4              | 0           | 10        | 0        |
| Yaxchilan      |         | 123           | 57              | 74           | 24             | 108            | 2               | 0                          | 27                        | 17                           | 0             | 96             | 11          | 92        | 2        |

### Phonological features: a vs. AJ<sup>1</sup> and /h/ vs. /j/

Sometime during the Late Classic period, all Ch'olan languages lost the distinction between the glottal fricative [h] and the velar fricative [x], transcribed here following the Spanish lettering of <h> and <j>, respectively (Grube 2004). As spelling conventions are wont, the written form preserved this distinction presumably long after the spoken language had merged the two phonemes. The fossilized spelling rules around this set of phonemes affected two spelling conventions: the separation of the syllabogram **a** from the logogram **AJ**, and the division between syllables that begin with /h/ (**ha**, **he**, **hi**, **ho**, **hu**) from those that begin with /j/ (**ja**, **je**, **ji**, **jo**, **ju**). While many sites maintain the more ancient rule preserving the distinction

<sup>1</sup> A brief comment on epigraphic transcription practice: the first level of analysis of a Maya text, the transliteration, is by convention written in **bold**, with uppercase letters used for logograms, and lowercase letters used for syllabograms. The second level, the transcription, is written in *italics*, with any underspelled phonemes added in [brackets]. The third level is the translation, written in “quotes”.



among these symbols, a few progressive spelling traditions sprouted which merged the symbols, so that they were used interchangeably.

One place where this merger of the symbols for **a** and **AJ** is evident is in agentives. The agentive in Classic Ch'olan, traditionally spelled with the logogram **AJ**, and anciently pronounced as /aj/, is found as the first element of many names and titles. As the merger and lenition of /h/ and /j/ wound through the Ch'olan languages, many scribes stopped making a distinction between the logogram **AJ** and the syllable **a**, and began spelling the agentive prefix of the names and titles with either of these two symbols. Figures 2a and 2b show these two symbols as they appear in a title of Itzamnaaj Bahlam IV, *aj winik baak*, “he of 20 captives,” but in Figure 2a it is spelled using the traditional **AJ** logogram for the agentive while on Figure 2b the agentive is written with the syllable **a**. In this data set, at Piedras Negras where a total of 101 instances of **a** and **AJ** occur, there are only 2 cases (2.0%) where the unanticipated form was used.<sup>2</sup> However, Yaxchilan scribes employed the unanticipated symbol 31.7% of the time (57 of 180 instances), using **a** where we would anticipate **AJ**, and vice-versa.

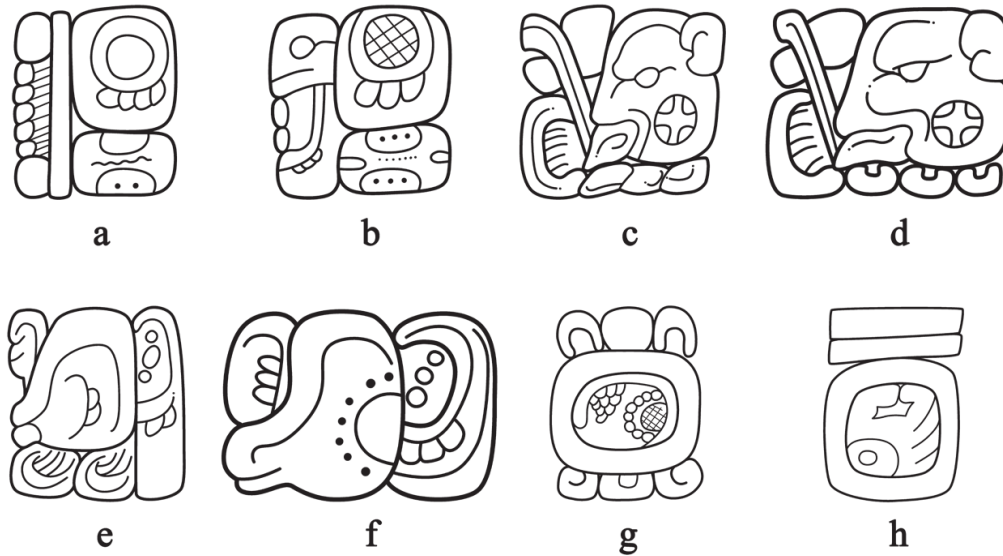
The merger of /h/ and /j/ also affected the scribal use of the syllabograms that spell syllables beginning with each of these letters. Excluding verbal endings, which invariably use the /j/ syllables, there were 42 instances of all /h/ and /j/ syllables at Piedras Negras, and only 1 case (2.4%) where there was use of /h/ when /j/ was anticipated, or the inverse. At Yaxchilan, however, of 98 instances of /h/ and /j/, 24 cases (24.5%) clearly demonstrate an unanticipated spelling. Within the same text, in the same phrase, two different syllables may be used: for example, Figure 2c and 2d both come from Yaxchilan Hieroglyphic Stairway 2, Step VII, in which the phrase *ch'ahkaj ubaah* “his head was chopped,” is alternately spelled **CH'AK-ka-u-BAAH-hi** (Figure 2c) and **CH'AK-ka-u-BAAH-ji** (Figure 2d), complementing *baah*, “head”, alternatively with the anticipated **-hi** or with the unanticipated **-ji**.

In both of these phonological cases, the scribes of Piedras Negras are preserving a written distinction that was likely no longer a distinction in the spoken language, while the Yaxchilan scribes flexibly alternated, conflating the signs, and reflecting that their phonetic distinction no longer held in the spoken tongue.

### Morphological feature: spelling of passive verbs

The formation of passive verbs in Classic Ch'olan takes the CVC root of the transitive verb, infixes a preconsonantal /h/ before the second consonant, and affixes a -Vj suffix and a -Ø absolutive suffix (Lacadena 2004). One example of this is the transitive verb *chuk*, “to capture,” which becomes *chu[h]k-aj-Ø*, “he/she/it was captured” in the passive. In the hieroglyphic script, there are two ways to write this passive verb in syllabograms, either as **chu-ka-ja**, using the construction CV-Ca-ja (Figure 2e), or with an echoed vowel in the second syllable: **chu-ku-ja**, following the pattern CV<sub>1</sub>-CV<sub>1</sub>-ja (Figure 2f) (see Lacadena and Wichmann 2005: 32-33). The latter is a rarer, later construction, and possibly represents a different pronunciation of the passive verb. Clearly, in CVC root transitive verbs with /a/ as the primary vowel, both the CV-Ca-ja and CV<sub>1</sub>-CV<sub>1</sub>-ja passive constructions appear identical, as in the verb *tz'ap*, “to plant, erect,” spelled syllabically as **tz'a-pa-ja**. Examples to test the distribution of the CV<sub>1</sub>-CV<sub>1</sub>-ja

<sup>2</sup> Of these two cases, one is uncertain, depending on the reading of the phrase **SAK-i-chi a 3-BAAH** on Piedras Negras Stela 6. In this case, the **a** may be referring to an agentive title, *aj ux baah*. The second, on a fragment from Piedras Negras, is the *y-ajk'uhuun* title, with the possessive /y-/ prefix, here spelled **ya-K'UH-na**, without the /j/ of the agentive.



**Figure 2.** a) **AJ-20-BAAK**, *aj winik baak*, “he of 20 captives.” Yaxchilan Lintel 16, F4. b) **a-20-BAAK**, *a[j] winik baak*, “he of 20 captives.” Yaxchilan Lintel 1, A6. c) **CH’AK[ka]-u-BAAH-hi**. Yaxchilan Hieroglyphic Stairway 2, Step VII, A2. d) **CH’AK[ka]-u-BAAH-ji**. Yaxchilan Hieroglyphic Stairway 2, Step VII, C1. e) **chu-ka-ja**, *chu[h]k-aj*, CV-Ca-ja passive verb. Yaxchilan Hieroglyphic Stairway 5, 148. f) **chu[ku]-ja**, *chu[h]k-aj*, CV<sub>1</sub>-CV<sub>1</sub>-ja passive verb. Kimbell Panel, A2. g) 1-Cauac tzolkin date, with blood scrolls. Piedras Negras Stela 12, A16b. h) 10-Manik tzolkin date, without blood scrolls. Piedras Negras Stela 12, A20b. Figure 2a illustrated by Mary Kate Kelly, based on photograph by Jorge Pérez de Lara and illustration by John Montgomery; 2b, 2c, 2d, 2e, 2g, and 2h illustrated by Mary Kate Kelly, based on photographs and illustrations by Ian Graham; 2f illustrated by Mary Kate Kelly, based on photograph by Justin Kerr and illustration by Marc Zender.

passive construction come from CVC roots with a non-/a/ vowel. In cases where the passive verb is backgrounded, such as **chu[ku]-ji-ya**, *chuhkjiiy*, “(since) he/she/it had been captured,” the second vowel is invariably written as an echo vowel. This backgrounded formation does not appear to follow geographic distributional patterns, and for this reason, I removed cases of backgrounding from the statistics.

The most common occurrence of the passive verb spelling in this data set is in the CV-Ca-ja construction. However, Piedras Negras does allow for the CV<sub>1</sub>-CV<sub>1</sub>-ja spelling of passive verbs. Out of 35 (non-backgrounded) passive verbs in the texts from Piedras Negras, 4 (11.4%) were spelled using the CV-Ca-ja structure, while 6 (17.1%) were spelled with the restricted CV<sub>1</sub>-CV<sub>1</sub>-ja pattern. Yaxchilan, in contrast, never uses the CV<sub>1</sub>-CV<sub>1</sub>-ja form, with 27 of 44 total passive verbs (61.3%) written using the traditional, CV-Ca-ja spelling. The remaining examples for each of these cases either have /a/ as the vowel in the verb root, and therefore the difference between the CV-Ca-ja and CV<sub>1</sub>-CV<sub>1</sub>-ja constructions are rendered invisible, or the spelling does not use an intermediary syllable, using a logogram with the -ja suffix, for example.

### Lexical features: i-PAS verb phrases and TE’ numeral classifiers

Two lexical features show stark distinction between the sites of Piedras Negras and Yaxchilan. First, in giving calendrical information, Piedras Negras scribes often opt for the verb phrase **i-PAS**,



*ipas[i]*, “then it dawned,” before giving the calendar round date. In 130 total calendrical phrases,<sup>3</sup> 35 (26.9%) included the **i-PAS** phrase at Piedras Negras. However, in the 96 calendrical phrases at Yaxchilan, there are no instances of this same verb construction.

The second lexical feature which differs between the two sites is the use of the numeral classifier *te'*,<sup>4</sup> also in calendrical information. Calendar dates were given as a number paired with the day or month name in the following structure: number-day, number-month. In the hieroglyphic writing system, these dates were nearly always written with the number directly preceding the day or month sign, but in some instances, the month was preceded by the numeral classifier, *te'*. This numeral classifier never occurred at Piedras Negras, on 146 examples of month names, there is not one example of the *te'* numeral classifier. Yet, of 111 examples of month names at Yaxchilan, 11 (9.9%) had the numeral classifier.

### Orthographic feature: Blood scrolls on the tzolkin cartouche

The Maya calendrical system includes day names in the ritual calendar, called the *tzolkin*,<sup>5</sup> which are written inside an element called a cartouche (Figure 2g). Reminiscent of Egyptian proper name cartouches (from which the name comes), Maya *tzolkin* cartouches are composed of an encircling element and a set of three scroll loops, iconographically rooted in blood imagery. In painted texts, these cartouches are often colored red, visually referencing blood. Over time, and possibly as a result of a slackening of the connection to blood, the three loops under *tzolkin* cartouches may be optionally dropped at some sites (Figure 2h). Piedras Negras scribes had the option whether to include these blood scrolls, and out of 152 instances of *tzolkin* calendar dates, 29 (19.1%) did not have them. In contrast, Yaxchilan scribes almost never dropped the blood scrolls, with only 2 instances out of 110 *tzolkin* dates (1.8%) that did not have the loops, and these two occur in instances where the scribe had limited room for the glyph, and likely dropped them to save space.<sup>6</sup>

## EXPANDING TO REGIONAL, AFFILIATED SITES

Overwhelmingly, the linguistic and spelling traditions of Piedras Negras and Yaxchilan are similar, as would be anticipated considering their close proximity. However, these six features which are differentiated in the styles of each written tradition mark these two sites as following separate scribal traditions.

By expanding our search to nearby sites in the Usumacinta region, we find that the pattern of writing traditions extends to the smaller allies of these two powerful sites. The historical information recorded in the texts of the smaller, regional sites gives insight into the political

<sup>3</sup> The total number does not include Long Count dates, as these never bear the **i-PAS** construction.

<sup>4</sup> It is possible that the numeral classifier was invariably a spoken element in the language of the inscriptions, and that it was simply an orthographic choice as to whether this feature was recorded graphically. In either case, the geographic distribution of these examples of **TE'** is striking.

<sup>5</sup> For the term *tzolkin* as well as the names of the calendrical elements, I use the Colonial orthography instead of the revised orthography since the Classic terms for these calendrical elements are not all deciphered.

<sup>6</sup> So strong is the desire to include the blood scrolls on *tzolkin* day names at Yaxchilan, that in 5 instances of a title that includes a name that sounds like a *tzolkin* date, Hix Witz Ajaw, Yaxchilan scribes added the blood scrolls even in this non-date context.

affiliation of these small sites - their rulers, generally given the subordinate title **sa-ja-la**<sup>7</sup>, claim to belong to or be enthroned by the kings, *ajaw*, of either Piedras Negras or Yaxchilan. The sites of El Cayo, La Mar, and “Sak Tz’i’” all fall subordinate to Piedras Negras, while the lords of Dos Caobas, El Chicozapote, El K’inel, La Pasadita, “Laxtunich,” and “Site R” claim allegiance to Yaxchilan (the dotted line on Figures 3 through 9 represents the division in alliance, suggested by Scherer and Golden 2009).

Figures 3 through 9 give maps generated using ArcGIS for each of the six features that are discussed in this paper. A boundary line was drawn in each delineating a border proposed by Scherer and Golden (2009) which divides the sites affiliated with Piedras Negras to the north from those allied with Yaxchilan to the south. The location given for Laxtunich are the coordinates for El Tunel, as recent evidence suggests this to have been the site from which the Laxtunich panels were looted (Scherer *et al.* 2017). The site known epigraphically as Sak Tz’i’ was recently identified to be Lacanjá Tzeltal (Golden *et al.* 2019), and thus Sak Tz’i’ was placed at these coordinates. The location of Site R is still unknown, and was placed in proximity to Yaxchilan, though its location is tentative. All geographic coordinates were produced with the help of Clifford Brown and Walter Witschey (2019).

The maps are colored in such a way that any trait that was a part of the Piedras Negras scribal canon is represented in red, and any Yaxchilan scribal trait is represented in blue. The yellow represents the expected, or baseline variants, and the green on the map of the passives indicates any examples which were inconclusive (either the root vowel was /a/ and thus CV-Caja and CV<sub>1</sub>-CV<sub>1</sub>-ja passive constructions appear identical, or the verb was written without the intermediary syllable).

For both of the phonological features (**a** vs. **AJ** shown in Figure 3 and /h/ vs. /j/ in Figure 4), although very infrequent examples of merging exist at Piedras Negras, there is a much larger proportion of both features merging at Yaxchilan, a trend which is echoed in the examples from Dos Caobas, La Pasadita, and Site R. The unanticipated spelling of passive verbs (CV<sub>1</sub>-CV<sub>1</sub>-ja in Figure 5) appears at Piedras Negras, El Cayo, La Mar, and across the “border” in Laxtunich texts. All examples of the **PAS** verb in calendrical constructions (Figure 6) were found on the Piedras Negras side, while the only examples of **TE’** as a numeral classifier (Figure 7) exist at Yaxchilan. The dropping of blood scrolls on tzolkin days (Figure 8) is more prevalent on the Piedras Negras side, El Cayo and Sak Tz’i’ drop blood scrolls, however Laxtunich also has a sizeable proportion of this feature. El Chicozapote also has one example of a tzolkin day name during this time period, and it does not bear a blood scroll. While this site claims allegiance to Yaxchilan, this feature is surprising, however as the data are so few from El Chicozapote, it is difficult to draw any final conclusions on this site’s language affiliation.

Predominantly, the linguistic data for these smaller sites parallel their overlord site’s linguistic preferences, with one notable exception: Laxtunich (see Table 2, Figure 9).

### The exception that proves the rule: Laxtunich

The site of Laxtunich is known most famously from the writings of Dana and Ginger Lamb, who claimed to have discovered and named the “lost” Maya site of Laxtunich in 1950, as published in the fanciful, and archaeologically irresponsible, *Quest for the Lost City* (Lamb and Lamb 1951). In it, they publish in-situ photographs of two monuments which were later looted

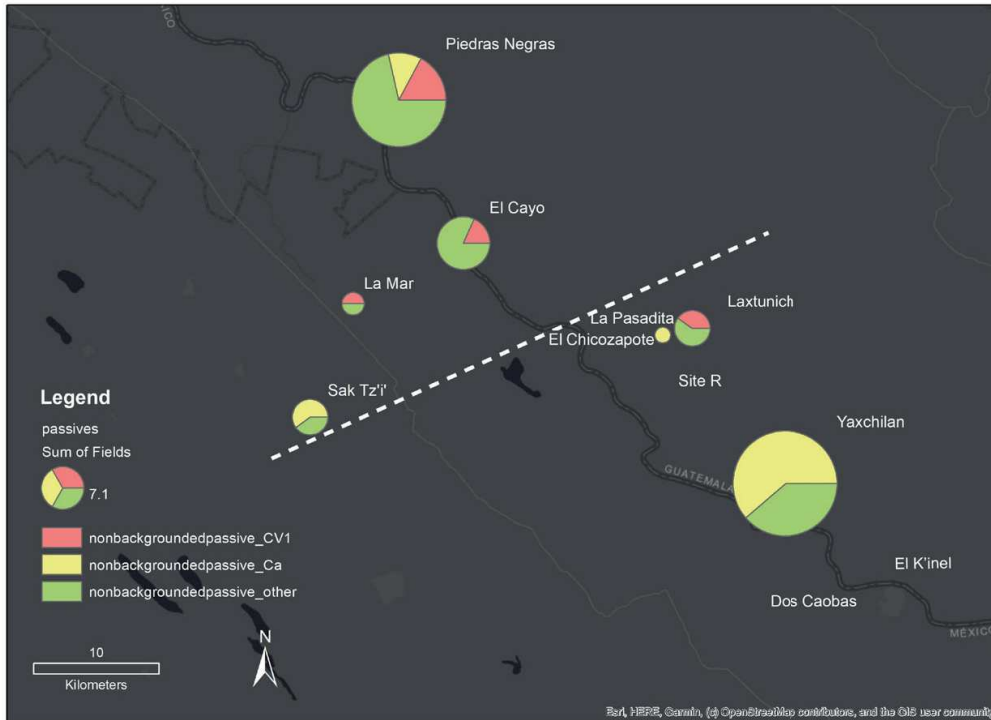
<sup>7</sup> Following Zender and Kelly (2017), I use the syllabic reading in lieu of *sajal* because the exact reading and meaning of this title remain uncertain.



**Figure 3.** Distribution of unexpected spellings using **a** or **AJ**, shown in blue. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).



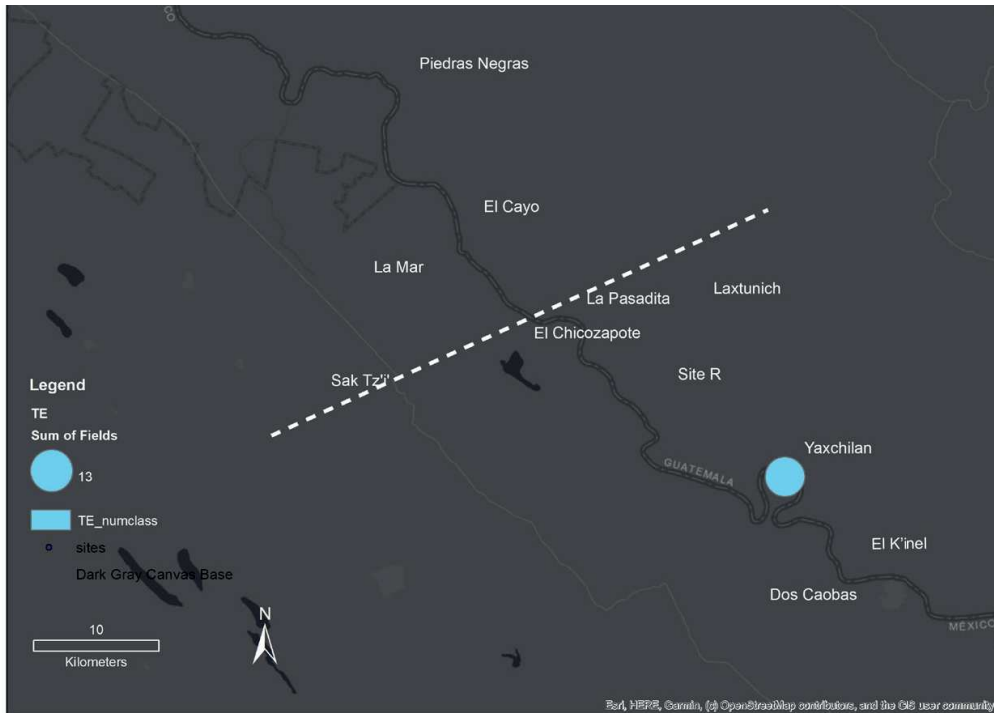
**Figure 4.** Distribution of unexpected spellings using /h/ or /j/, shown in blue. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire based on spatial data by Brown and Witschey (2019).



**Figure 5.** Distribution of spellings of passive verbs, with the non-standard CV<sub>1</sub>-CV<sub>1</sub>-ja spelling shown in red. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).



**Figure 6.** Distribution of calendrical information using **PAS** verb, shown in red. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).



**Figure 7.** Distribution of calendrical information using TE’ numeral classifier, shown in blue. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).



**Figure 8.** Distribution of blood scrolls on tzolkin dates, those without blood scrolls are shown in red. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).





**Figure 9.** Distribution summarizing all six features, including only those which are the unanticipated or non-standard variants, red showing the features that align with Piedras Negras scribal tradition, and blue for those that align with Yaxchilan scribal tradition. Map by Mary Kate Kelly and Maxime Lamoureux-St-Hilaire, based on spatial data by Brown and Witschey (2019).

and sold on the art market, and are known today to Maya scholars as Laxtunich Lintels 1 and 2. Two additional looted monuments are believed to also come from Laxtunich, recognized on the basis of stylistic and epigraphic details: the first is the unprovenienced lintel at the Kimbell Art Museum (Mathews 1997: 243), and the second is another unprovenienced lintel (Houston *et al.* 2017). However, as the Lambs did not document their travels and discoveries precisely, scholars have had difficulty locating the original provenience of these monuments. Recent work by Scherer and colleagues (2017) suggests that the site of El Tunel was likely the site found by Dana Lamb, and thus the origin of the Laxtunich panels.

The monuments of Laxtunich detail a political history in which the rulers of this site are subordinate to the kings of Yaxchilan, in particular Itzamnaaj Bahlam IV, also known as Cheleew Chan K'inich, who ruled Yaxchilan for at least 30 years at the end of the 8<sup>th</sup> century. Two of the four lintels linked to this site, Lintel 1 and the Kimbell Lintel, were both signed by the same author, Mayuy Ti' Chuwen, and there is reason to believe that the other two were also authored by him, although they were not signed (Zender and Kelly 2017). Recent stylistic studies of the Laxtunich Lintels link these panels and their deep relief style to the carving traditions of Piedras Negras, suggesting that Mayuy Ti' Chuwen was trained at Piedras Negras, and left, whether by choice or force, to be a scribe in a Yaxchilan-affiliated court (Houston *et al.* 2017). Corroborating this shift in allegiance, the linguistic preferences used on these lintels more closely parallel those of Piedras Negras than of Yaxchilan. Though admittedly short texts, there are 2 examples (40%) of passive verbs spelled with the CV<sub>1</sub>-CV<sub>1</sub>-ja syllabic construction out of 5 total passive verbs, and 1 example of 4 (25%) tzolkin dates which does not carry the blood scroll loops.

While absence of evidence is not evidence of absence, especially with such small samples, it is worth noting that there are no examples of the merging of **a** with **AJ** (out of 8 instances) or of /h/ with /j/ (out of 2 instances). All of these items suggest a closer connection with the Piedras Negras written tradition.

In comparing the texts of Laxtunich with those of its neighbor, La Pasadita, Zender and Kelly (2017) note that the spelling of the pre-accession name of Yaxchilan ruler Itzamnaaj Bahlam IV, Cheleew Chan K'inich, bears different spellings at these two sites. At La Pasadita, as at Yaxchilan itself, Cheleew is spelled **che-le-we**, with the recently deciphered **we** syllable (Zender *et al.* 2016), while at Laxtunich, such as on the Kimbell lintel (Miller and Martin 2004), we find the spelling **che-le-wa**, using the disharmonic **wa** syllable. The use of a disharmonic vowel likely signals vowel length (or complexity) in the preceding vowel (following Houston *et al.* 2004)<sup>8</sup>, hence the transcription as Cheleew, with a long /ee/ vowel, allowing for Cheleew Chan K'inich to be translated as “(The) Sun God Fills/Spreads (the) Sky” (Zender *et al.* 2016: 39).

Long vowels, as with the distinction between /h/ and /j/, were lost in all Ch'olan languages as none of them maintain this distinction today. This process seems to have begun in the languages at some point before AD 650, and this is reflected in an increase in synharmonic spellings in Late to Terminal Classic spellings (see Houston *et al.* 2004: 97; Grube 2004). Writing disharmonic vowels and preserving the distinction between /h/ and /j/ both likely represent more ancient spelling conventions. It is possible that these spelling conventions were recording real-time sound changes, where the scribes of Laxtunich were pronouncing long vowels and conserving the distinction between /h/ and /j/, while the scribes of La Pasadita no longer preserved those distinctions. However, it seems more likely considering the proximity of these sites that these people had all forgone the distinctions in pronunciation in everyday speech, and that Mayuy Ti' Chuwen at Laxtunich, following a Piedras Negras scribal tradition, preserved these ancient distinctions while the *avant-garde* scribes from Yaxchilan and its subordinates moved toward spelling traditions that more closely reflected the way they spoke.

Regardless of how and when the changes worked their way through the spoken language, it is clear that political alliance drove the trends in how scribes chose to compose texts, from phonological, morphological, lexical, and orthographic evidence. From a stylistic, now as well as from a linguistic vantage point, it seems clear that while the **sa-ja-la** from Laxtunich claimed allegiance to Yaxchilan, at least one scribe at the site was trained in and conserved a Piedras Negras variant of text composition. Whether it was the rulers of Laxtunich who changed allegiance from Piedras Negras to Yaxchilan, or whether Mayuy Ti' Chuwen himself “was a turncoat, lured away for better employment, or, perhaps, a captive of war” (Houston *et al.* 2017), this story of betrayal is not only reflected in the art style, but also in the linguistic choices made by the scribe of the Laxtunich lintels.

<sup>8</sup> However, see Gronemeyer (2014b, section 4.2.3) and Kettunen (2014: 43) for discussions of the potential problems with the direct connection between disharmony and vowel length. Kettunen (2014: 43) in particular notes the syllable **wa** as problematic with respect to the disharmonic spelling of long vowels.

## DISCUSSION: THEORIZING WRITING PRACTICE

Studying the distribution of these six features on the small-scale level of Piedras Negras, Yaxchilan, and their direct subordinates allows for the development of some theoretical perspectives on the role of writing. Considering the proximity of these sites to each other – they are all within approximately 50 kilometers as the crow flies, or a two-day walk – we would not anticipate there to be stark differences in the spoken dialects, but certainly local preferences would have been detectable to the native, contemporaneous inhabitants.

Yet, because these divisions exist along political borders, we must consider that scribal schools played a role in the differences that appear in their written traditions. The scribal school was undoubtedly an institution bound closely to the royal court. Only the elite had access to learning the art of literacy, and writing was a highly politicized act. The majority of texts which remain to us in the archaeological record treat topics of pertinence to the lives of kings and queens: their birth, accession, wars, ceremonies, alliances, and death. The “scribal school” must have been at the very least a consortium of minds, practicing and training successive generations of young nobles in their art. Some archaeological evidence suggests the existence of physical locations where these scribal schools met and practiced, the most convincing being structure 10K2 at the site of Xultun (Saturno *et al.* 2017).

The effects we are seeing in the linguistic variation is a combination of the explicit, conscious choices taught in a scribal school, with the tacit, subconscious decisions made by individual scribes based on their native language preferences. For example, the practice at Piedras Negras to conserve the distinction between /h/ and /j/<sup>9</sup> as well as **a** and **AJ** are likely due to an intentional, learned practice of spelling. The scribes of Yaxchilan who eschewed this rule may have done so knowingly, aware of the ancient distinction, yet choosing to allow these sounds to merge as if to follow new rules of pronunciation. Spelling is an overt marking in written texts, learned quite explicitly, and thus more susceptible to the direct influences of conscious choices toward, or away from, some perceived norm. The optional dropping of the blood scrolls on cartouches of tzolkin days is likely in this same category.

Variable elements that are lexical, onomastic, and syntactic choices, however, are suggestive of more subconscious, native language-driven variation. The presence of **i-PAS** in the calendrical phrases at Piedras Negras suggests a spoken tradition that differed from Yaxchilan, whose scribes could, and did, write this same verb, but never in calendrical contexts. Syntactic data appeared broadly similar among sites in the region, likely the result of little dialectical difference in this area, and onomastic data was not considered for this study. Yet, over a broader area, syntactic and onomastic elements have the potential to be striking distinguishing features.

## CONCLUSION

Returning to this paper’s opening quote, this study shows how sound changes, particularly in the context of a literary tradition, are inherently intertwined with socio-political contingencies. One’s language is deeply rooted in identity, and both language and identity are affected by social status and political aspirations. Writing, as a skill which must be explicitly taught, is subject to conscious efforts to approach (or eschew) a perceived, accepted standard. And as a direct

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<sup>9</sup> This distinction (or lack of distinction) is also noted by Carter and suggested to be the cause of divergent scribal practices (2009: 29).



consequence of the permanent nature of writing as compared to the ephemerality of spoken language, spelling rules are more durable than spoken pronunciation. Just as with any written tradition, we cannot assume that Classic Maya scribes were speaking amongst each other in the same manner and pronunciation as the way that they wrote. Language change processes continue to affect spoken language, while spelling rules become fossilized, preserving older pronunciations. Yet, despite the standardization, evidence of variation appears in the texts of the ancient Maya lowlands, and sheds light on the geographic distribution of linguistic markers and the varying languages that supported these features.

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