

# Mayan\*

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## Abstract

Mayan languages are spoken by approximately 6 million people in Guatemala, Mexico, Belize, and Honduras. Mayan languages share a common ancestor, known as Proto-Mayan, which was spoken over 4,000 years ago in the Western Highlands of Guatemala. Many of the roughly 30 Mayan languages spoken today share properties of the proto-language, including glottalized stops, contrastive vowel length, and CVC roots. Mayan languages are primarily head-initial, head-marking, synthetic, and agglutinative. All Mayan languages are morphologically ergative and some are syntactically ergative as well. The field of Mayan linguistics benefits from both a long tradition of scholarship and invaluable contributions by native speaker linguists. The purpose of this chapter is to introduce the core linguistic phenomena shared by members of the Mayan language family, while highlighting some of the family’s internal variation.

## 1. Introduction

The Mayan language family consists of roughly 30 different languages spoken by at least 6 million people mainly in Guatemala and Mexico, but also in Belize, Honduras, and diaspora communities in North America. Census data for speakers of Mayan languages is unreliable for geographic, social, and political reasons, and so it should be assumed that population estimates are quite low. Present-day Mayan languages share a common ancestral language, Proto-Mayan, which was spoken over 4,000 years ago in the Western Highlands of Guatemala (Kaufman 1976). Today, the same region of Guatemala is the most linguistically diverse area of the Mayan speaking world. As many as 50% of the population of Guatemala, are speakers of Mayan languages and this number approaches 100% in some areas of the Highlands.

Although there are many fewer Mayan languages spoken in Mexico, nearly half of all speakers of Mayan languages live in Southern and Southeast Mexico, predominantly in Chiapas and

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Yucatán. Fleeing ethnic violence in Guatemala, speakers of Mayan languages formed diaspora communities in Florida, California, and Texas in the 1970s and 80s, but have since settled in more northern areas of the United States and Canada as well (Burns 1993; Morrison and May 1994; Loucky 2000). For more on the ancient, classic, and modern geographic distribution of Mayan languages as well as specific population estimates see Fischer and McKenna Brown (1996), England (2003), Richards (2003), Law (2014).

The names of the modern Mayan languages are listed in (1), mostly following conventions established by the Academia de Lenguas Mayas de Guatemala (ALMG) and the Instituto Nacional de Lenguas Indígenas (INALI). Alternative names in common use are also listed. The exact number of Mayan languages depends on how the boundaries between languages are drawn. Achi is considered to be a dialect of K'iche' and Akatek is considered to be a dialect of Q'anjob'al by some speakers and researchers. Here, Chalchitek is subsumed under Awakatek; other sources treat Awakatek and Chalchitek as closely-related, but distinct languages.

(1) The Mayan languages

<b>Language</b>	<b>Subgroup</b>	<b>Region</b>
ACHI	Central K'ichean	Highlands GT
AKATEK	Q'anjob'al	Highlands GT
AWAKATEK	Mamean	Highlands GT
†CHICOMUSELTEC (Kabil)	Huastecan	Southern MX
CHONTAL (de Tobasco)	Ch'olan	Southern MX
CHUJ	Chujean	Highlands GT; Southern MX
CH'OL	Ch'olan	Southern MX
†CH'OLTI'	Ch'olan	Lowlands GT; Southern BZ
CH'ORTI'	Ch'olan	Eastern GT, HN
HUASTEC (Teenek)	Huastecan	Southern; Northeast MX
ITZAJ (Itza')	Yucatecan	Lowlands GT
IXIL	Mamean	Highlands GT
KAQCHIKEL	Central K'ichean	Highlands, Pacific GT
K'ICHE'	Central K'ichean	Highlands, Pacific GT
LANCANDON (Lakantun)	Yucatecan	Southern MX; Lowlands GT
MAM	Mamean	Highlands, Pacific GT; Southern MX
MOCHO' (Qato'k)	Q'anjob'al	Southern MX
MOPAN	Yucatecan	Southern BZ
POQOMAM	Poqom	Eastern GT
POQOMCHI	Poqom	Highlands GT
POPTI' (Jakaltek)	Q'anjob'al	Highlands GT; Southern MX
Q'ANJOB'AL	Q'anjob'al	Highlands GT
Q'EQCHI	K'ichean	Lowlands, Highlands GT; Southern BZ
SAKAPULTEK	Central K'ichean	Highlands GT
SIPAKAPENSE	Central K'ichean	Highlands GT
TOJOLABAL (Tojol-ab'al)	Chujean	Southern MX
TSELTAL	Tseltalan	Southern MX
TSOTSIL	Tseltalan	Southern MX
TZ'UTUJIL	Central K'ichean	Highlands, Pacific GT
TEKITEK	Mamean	Lowlands GT
USPANTEK	K'ichean	Highlands GT
YUCATEC (Maya)	Yucatecan	Southeast MX; Northern BZ

As indicated in (1), two modern languages, Chicomuseltec and Ch'olti', have no living speakers. Two other languages, Itzaj and Mocho', have fewer than 100 speakers each (England

2017). In contrast, a number of Mayan languages have between 500,000 and one million speakers, including Kaqchikel, K'iche', Mam, Q'eqchi', and Yucatec. K'iche' also has a sizable population of L2 speakers. Nonetheless, all Mayan languages are under threat, as younger generations shift to Spanish for economic and sociopolitical reasons (England 2003).

Only the most basic genetic affiliation is given in (1), following Campbell and Kaufman (1985). See Bennett et al. (2016) and Aissen et al. (2017) for a more detailed overview of subgrouping in the family. Together the Ch'olan and Tseltalan languages form a subgroup of the Western branch, as do the Q'anjob'alan and Chujean languages. The Poqom and Central K'ichean languages are subgroups of K'ichean, which comprises the Eastern branch, along with the Mamean languages. Finally, each language's approximate geographic region is shown in (1). Highlands refers to Guatemala's Western and Central Highlands, but not Pacific Highlands, which is labelled Pacific. Southern Mexico refers to the states of Chiapas, Tabasco, and Veracruz, and Southeast Mexico refers to the Yucatán Penninsula.

The orthography for Mayan languages largely corresponds to the IPA, although there are exceptions. An umlaut marks a vowel as lax, e.g.  $\ddot{i}$  = [i̠]. Ejective consonants are digraphs consisting the relevant stop plus an apostrophe, e.g.  $k'$  = [kʰ]. The velar nasal [ŋ] is written as *nh*. The palatal nasal [ɲ] is written as *ñ* and other palatalized consonants are digraphs that represent palatalization with *y*, e.g. *ky* = [kʲ]. In other contexts *y* = [j]. Affricates are represented as follows: *ch* = [tʃ], *tx* = [tʃ], and *tz* = [ts] (in Guatemala) and *ts* = [ts] (in Mexico). For languages that do not have retroflex consonants, *x* = [ʃ], otherwise *xh* = [ʃ] and *x* = [ʃ]. Finally, *j* = [h], [x], or [χ].

The purpose of this chapter is to introduce the core linguistic phenomena shared by members of the Mayan language family, while highlighting some of the family's internal variation. The chapter includes a phonology section that covers consonant and vowel inventories, aspects of Mayan sound systems, root phonotactics and basic suprasegmental phonology. The morphology section introduces Mayan word classes and focuses on the derivational and inflectional morphology associated with nominal and verbal roots. Voice, valency, and embedded structures are covered in the syntax section, as are word order, topic, focus and Mayan's famous restriction on ergative argument extraction.

## 2. Phonology

Proto-Mayan's vowel inventory consisted of five different vowel qualities and a length contrast. Its consonant system was richer and included plain and glottalized stops at seven places of articulation (Fox 1978; Kaufman and Norman 1984; Campbell and Kaufman 1985).

### (2) PROTO-MAYAN phoneme inventory

<b>Consonants</b>								<b>Vowels</b>		
Plain	*p	*t	*tʲ	*tʂ	*tʃ	*k	*q	*ʔ	*i(:)	*u(:)
Glottalized	*p̚	*t̚	*tʲ̚	*tʂ̚	*tʃ̚	*k̚	*q̚		*e(:)	*o(:)
Fricative		*s			*ʃ		*χ	*h		*a(:)
Nasal	*m	*n				*ŋ				
Approximant	*w	*l	*r		*j					

This section focuses on the most common phonological properties of modern Mayan languages, including vowels, consonants, root phonotactics, and stress and intonation, with reference to Proto-Mayan. For more detailed overviews of Mayan phonology see Bennett (2016) and England and Baird (2017).

## 2.1 Vowels

Most Eastern and Yucatecan languages retain Proto-Mayan’s vowel inventory (2), yielding a ten-vowel system as exemplified by Sipakapense in (3):

- (3) SIPAKAPENSE vowel inventory (Barrett 1999: 17-20)
- |                            |                     |                             |                           |
|----------------------------|---------------------|-----------------------------|---------------------------|
| a. /i/ [k <sup>ʔ</sup> i:] | <i>k’ix</i> ‘shame’ | b. /i:/ [k <sup>ʔ</sup> i:] | <i>k’iix</i> ‘thorn’      |
| c. /e/ [k <sup>ʔ</sup> e:] | <i>k’ex</i> ‘pain’  | d. /e:/ [k <sup>ʔ</sup> e:] | <i>k’eex</i> ‘collateral’ |
| e. /a/ [tʃa:]              | <i>chaj</i> ‘pine’  | f. /a:/ [tʃa:]              | <i>chaaj</i> ‘ashes’      |
| g. /o/ [ʔo:]               | <i>oj</i> ‘us’      | h. /o:/ [ʔo:]               | <i>ooj</i> ‘avocado’      |
| i. /u/ [ʔu:]               | <i>us</i> ‘fly’     | j. /u:/ [pu:]               | <i>puus</i> ‘mold’        |

For many languages, Proto-Mayan’s length contrast has been reinforced by the centralization of short vowels (Baird 2010; Bennett 2016; England 2011a), as in Mam (4):

- (4) MAM vowel inventory (England 2011a: 32)
- |               |                           |                             |                          |
|---------------|---------------------------|-----------------------------|--------------------------|
| a. /i/ [ʔi:]  | <i>ich</i> ‘mouse’        | b. /i:/ [ʔi:]               | <i>iich</i> ‘chili’      |
| c. /e/ [tʃe:] | <i>che’w</i> ‘cold’       | d. /e:/ [ʃe:]               | <i>b’ee</i> ‘road’       |
| e. /a/ [tʃa:] | <i>chap</i> ‘crab’        | f. /a:/ [k <sup>ʔ</sup> a:] | <i>kyaa</i> ‘grindstone’ |
| g. /o/ [pɔ:]  | <i>poch</i> ‘bedbug’      | h. /o:/ [χo:]               | <i>jooj</i> ‘crow’       |
| i. /u/ [kɔ:]  | <i>kutz</i> ‘hummingbird’ | j. /u:/ [ʔu:]               | <i>utz</i> ‘cradle’      |

A related process of short vowel centralization has completely or partially replaced the historic length contrast in some cases. For example, different varieties of Kaqchikel (5), as well as some varieties of K’iche’, now have a tense-lax contrast instead of a long-short one (Campbell 1977; Majzul et al. 2000; England 2001; Bennett 2016).

- (5) KAQCHIKEL vowel inventories (Majzul et al. 2000: 35-40)
- |                         |            |                                |
|-------------------------|------------|--------------------------------|
| a. TECPÁN, PATZICÍA     | 6-Vowels:  | /i, i, e, a, o, u/             |
| b. SAN MIGUEL PACHUTA   | 7-Vowels:  | /i, i, e, ə, a, o, u/          |
| c. SANTA MARÍA DE JESÚS | 9-Vowels:  | /i, ɯ, e, ə, a, o, ɔ, u, ʊ/    |
| d. SOLOLÁ, PATZÚN       | 10-Vowels: | /i, ɪ, e, ε, ə, a, o, ɔ, u, ʊ/ |

A handful of other languages have split \*/a/ into /a/ and /i/, rendering either an eleven-vowel system, as in Itzaj, or a six-vowel system, as in Ch’ol, depending on whether or not length is contrastive in the language (Fisher 1973; Kaufman and Norman 1984; Law 2014).

Like Ch’ol, most languages in the Western branch show a complete merger of Proto-Mayan’s length contrast. However, some Western branch languages, e.g. Akatek, have lost and subsequently reintroduced long vowels from historically \*[CVʔC], \*[CVxC], and \*[CVhC] contexts (Kaufman 1974; Raymundo González et al. 2000). \*[CVʔC] and \*[CVhC] are also environments that have famously given rise to tonogenesis in Yucatec, as well as a handful of other languages dispersed among the Yucatecan, Western, and Eastern branches (see Bennett & Henderson 2013, Bennett 2016, and England & Baird 2017 for more on tone).

A somewhat thornier area of Mayan vowel inventories concerns the status of rearticulated vowels, which are commonly described as a vowel interrupted by a glottal stop followed by an echo vowel ( $V_{\alpha}\text{ʔ}V_{\alpha}$ ). Most of what is known about these vowels in Mayan comes from the Yucatecan and Ch’olan branches (Pike 1946; Fisher 1973; Lacadena and Wichmann 2004; Vázquez Álvarez 2011). Phonetic work on Yucatec in particular demonstrates that, instead of being truly rearticulated, these are a subtype of long vowel realized with a period of glottalization (Avelino et al. 2011; Frazier 2009, 20011).

Phonologically speaking, it is fairly clear that rearticulated vowels in Yucatec are complex nuclei and are not literally composed of a series of two short vowels flanking a glottal stop (Orie and Bricker 2000; Bennett 2016): (i) they have a high-falling tonal pattern disallowed

in short vowels, which are usually specified as mid-tone or toneless and (ii) they surface in roots (see §2.3)—which generally take the shape CV(:)C—so a trisegmental analysis does not conform to Yucatec’s root phonotactics. Similar arguments can be made for the status of rearticulated vowels in Ch’ol (Coon 2017; Vázquez Álvarez 2011), a language that is usually described as having a 6-vowel inventory. The existence of non-derived, monosegmental vowels with internally-complex nuclei suggests that Mayan vowel inventories may be more elaborate than is typically acknowledged.

## 2.2 Consonants

All Mayan languages have stops at the labial, dental/alveolar, and velar places of articulation in addition to phonemic glottal stop. Only the Eastern branch and Q’anjobalan in the Western branch have retained Proto-Mayan’s uvular stops, although Q’anjob’al and Akatek may be losing theirs (Zavala Maldonado 1992). Plain stops are typically aspirated in final position (syllable-, word-, or phrase-final, depending on the language), except for /q/, which is more frequently realized as [qʰ] in this environment.

Proto-Mayan’s palatalized stops were lost in all Mayan languages, but they were reintroduced in Mamean, K’ichean and Ch’ol, as shown in (6). The palatalization of velar consonants is phonemic in Mamean, but allophonic in K’ichean. Ch’ol has a series of palatalized coronals without plain counterparts, likely borrowed from a neighboring Zoquean language (Vázquez Álvarez 2011).

(6)	Palatalized consonants (England 1983: 31; Dayley 1985: 17; Bennett 2016: 482)				
a.	MAM	/tʃikʲl/	[tʃikʲl]	<i>ch’ikyl</i>	‘vertical’
		/tʃi:kl/	[tʃi:kl]	<i>chüikl</i>	‘gum’
b.	TZ’UTUJIL	/k’im/	[kʲim]	<i>k’im</i>	‘straw’
		/k’aam/	[kʲa:m]	<i>k’aam</i>	‘twine’
c.	CH’OL	/tʲipim/	[tʲipim]	<i>tyiñäm</i>	‘cotton’
		/tʲatʲ-mutʲ/	[tʲatʲmutʲ]	<i>tyatymuty</i>	‘rooster’

Most languages have coronal affricates /ts tʃ ts’ tʃ’/ and plain fricatives at the same place of articulation /s ʃ/. For the most part, Proto-Mayan’s distinction between \*/h/ and \*/x/ has merged to /h/, /x/, or /χ/, depending on the language (Law 2014; Bennett 2016). A subset of the Q’anjob’alan and Mamean languages have a larger inventory of sibilants that include the innovative retroflex series /ʂ tʂ tʂ²/, as illustrated by Q’anjob’al of Santa Eulalia in (7)

(7)	Q’ANJOB’AL plain and ejective sibilants by place (Raymundo et al. 2000: 33)				
a.	/s/	[sik]	<i>sik</i>	‘cold’	
	/ts/	[tsu]	<i>tzu</i>	‘Tecomate’	/ts²/ [ts²ikin] <i>ts’ikin</i> ‘bird’
b.	/ʂ/	[ʂaxaw]	<i>xajaw</i>	‘luna’	
	/tʂ/	[tʂamex]	<i>txamej</i>	‘nose’	/tʂ²/ [tʂ²iʔ] <i>txâi</i> ‘dog’
c.	/ʃ/	[χalu]	<i>xhalu</i>	‘pitcher’	
	/tʃ/	[tʃanex]	<i>chanej skirt</i>		/tʃ²/ [tʃ²im] <i>ch’im</i> ‘straw’

Most languages have the sonorants /m n l j w/, although /w/ also surfaces as [v] or [β] depending on the language and context. The phoneme /r/ is only robustly attested in K’ichean; elsewhere, the reflexes of Proto-Mayan \*/r/ are /t j tʃ/. Proto-Mayan \*/ŋ/ is found in Chuj, Popti’, and Mocho’, for other languages it merged with /n/ or /x/ (Campbell & Kaufman 1985; Justeson et al. 1985; Law 2014). Final sonorant devoicing is widespread in the family. This is especially true for oral sonorants, but nasals can also be effected, as shown in (8) for Ch’ol:

- (8) CH'OL sonorant devoicing (Vázquez Álvarez 2011: 39-40)
- |        |                       |              |           |     |                     |              |               |
|--------|-----------------------|--------------|-----------|-----|---------------------|--------------|---------------|
| a. /l/ | [lum]                 | <i>lum</i>   | 'earth'   | /l/ | [ʃtʃil]             | <i>xchil</i> | 'grasshopper' |
| b. /m/ | [mut <sup>h</sup> ]   | <i>muty</i>  | 'chicken' | /m/ | [lum]               | <i>lum</i>   | 'earth'       |
| c. /ñ/ | [net <sup>j</sup> ]   | <i>ñety</i>  | 'between' | /ñ/ | [t <sup>j</sup> uŋ] | <i>tyuñ</i>  | 'stone'       |
| d. /w/ | [wiŋik <sup>h</sup> ] | <i>wiñik</i> | 'man'     | /w/ | [xojnow]            | <i>joñow</i> | 'bumblebee'   |

A defining feature of Mayan's consonant inventory is the contrast between plain voiceless and 'glottalized' stops (commonly C<sup>ʔ</sup>), which are monosegmental and contrast with C<sup>ʔ</sup> and ʔC sequences. The nature of glottalization depends on the language, segment, and context, although glottalized consonants are most frequently realized as either ejective or implosive (DeChicchis 1989; Zavala Maldonado 1992; Majzul et al. 2000; Zocal Chayax et al. 2001; Baquix Barreno et al. 2005; Polian 2013; England and Baird 2017). Bennett (2016) warns that the extensive variation shown in (9)—some of which is allophonic in a given language—may reflect methodological differences, e.g. instrumental vs. impressionistic, as opposed to genuine phonetic variation.

- (9) Glottalized Cs in approx. order of prevalence with one example language
- |               |                                   |                                  |                   |         |                   |                 |     |          |
|---------------|-----------------------------------|----------------------------------|-------------------|---------|-------------------|-----------------|-----|----------|
| a. <i>b</i> ' | [b]                               | Itzaj                            | [p <sup>ʔ</sup> ] | Popti'  | [b]               | Kaqchikel var.  | [b] | Huasteco |
|               | [m <sup>ʔ</sup> /w <sup>ʔ</sup> ] | Poqomchi'                        | [ <sup>ʔ</sup> b] | Tseltal | [f/ɸ]             | Huasteco        |     |          |
| b. <i>t</i> ' | [t <sup>ʔ</sup> ]                 | <i>most languages</i>            |                   | [d]     |                   | Mam var.        |     |          |
| c. <i>k</i> ' | [k <sup>ʔ</sup> ]                 | <i>reliably across languages</i> |                   |         |                   |                 |     |          |
| d. <i>q</i> ' | [q <sup>ʔ</sup> ]                 | Q'eqchi'                         | [ç <sup>ʔ</sup> ] | Mam     | [k <sup>ʔ</sup> ] | Q'anjob'al var. | [ʔ] | Akatek   |
|               | [ç <sup>ʔ</sup> ]                 | Kaqchikel var.                   |                   |         |                   |                 |     |          |

Other phonemic contrasts involving glottalization include /p, p<sup>ʔ</sup>, b/ in Yucatecan and Tseltalan (Campbell 1977; Kaufman & Norman 1984) and /t, t<sup>ʔ</sup>, d/ in Mopan (Hofling 2011).

## 2.3 Root phonotactics

While syllable structure is typically more varied, roots in Mayan languages (see Section 3.1) conform to a basic CVC pattern (Kaufman 1990), which may be extended to include CV:C and CV'VC roots, depending on whether a particular language has a length contrast and/or rearticulated vowels. Complex syllable margins on roots are nonetheless attested, especially in derived roots, loan words, and cases of diachronic vowel deletion (see Bennett 2016 for examples and references).

While underlying VC roots are attested in most Mayan languages; they typically surface with [ʔ] in initial position. Q'anjob'al and Chuj stand out in the family (and cross-linguistically) for contrasting vowel-initial and [ʔ]-initial words, as illustrated in (10); but see Bennett (2016) for an argument that [ʔ] in the non-possessed forms is nonetheless epenthetic.

- (10) QANJOB'AL V-initial and [ʔ]-initial words (England 2001: 28)
- |            |             |           |           |              |                |
|------------|-------------|-----------|-----------|--------------|----------------|
| a. [ʔiʃim] | <i>ixim</i> | 'corn'    | b. [iʃim] | <i>hixim</i> | 'your corn'    |
| c. [ʔun]   | <i>un</i>   | 'paper'   | d. [un]   | <i>hun</i>   | 'your paper'   |
| e. [ʔon]   | <i>on</i>   | 'avocado' | f. [on]   | <i>hon</i>   | 'your avocado' |

Finally, co-occurrence restrictions on stops and sibilants are prevalent in Mayan roots. Root-internal restrictions on stops focus on the intersection of laryngeal specification and place of articulation. As shown in (11), two versions of the restriction are found: a basic restriction that applies to all Mayan languages, and an extended version that applies to a smaller subset.

- (11) Co-occurrence restrictions on stops
- a. BASIC: If a CVC root contains two glottalized stops ( $T^{\text{ʔ}}$  &  $T^{\text{ʔ}}$ ), they must be homorganic.
  - b. EXTENDED: If a CVC root contains two homorganic stops ( $T_{\alpha}$  &  $T_{\alpha}$ ), they must have the same laryngeal specification.

For languages with the basic restriction, well-formed roots include all of those shown in (12) (e.g. see Barrett 1999 and Bennett et al. 2017 for K'ichean); for languages with the extended version, well-formed roots are limited to examples a-d in (12) (e.g. see Straight 1976 for Yucatecan). No Mayan language allows roots of the form  $T^{\text{ʔ}}_{\alpha}VT^{\text{ʔ}}_{\beta}$ .

- (12) Possible roots
- |  |   |
|--|---|
| a. $T^{\text{ʔ}}_{\alpha} V T^{\text{ʔ}}_{\alpha}$ | b. $T_{\alpha} V T_{\alpha}$            |
| c. $T^{\text{ʔ}}_{\alpha} V T_{\beta}$             | d. $T_{\alpha} V T^{\text{ʔ}}_{\beta}$  |
| e. $T^{\text{ʔ}}_{\alpha} V T_{\alpha}$            | f. $T_{\alpha} V T^{\text{ʔ}}_{\alpha}$ |

Mayan languages show similar co-occurrence restrictions on the place, manner, and laryngeal features of sibilants, but restrictions on these segments are more varied and less frequent (Edmonson 1988; Gallagher and Coon 2009; Bennett 2016).

## 2.4 Stress and intonation

Mayan languages show a variety of lexical stress patterns including both fixed and mobile systems. The K'ichean branch and Western Mam has fixed final stress, whereas Southern Mam has fixed penultimate stress (Kaufman 1990; England 2001). Mobile systems include quantity sensitive stress, as found in Huastecan and Northern Mam, and phrasally conditioned lexical stress, as found in the Q'anjob'alan and Tseltalan branches (Day 1973; Kaufman 1990; Hoffing 2000; Polian 2013). Stress variation in varieties of Mam is illustrated in (13).

- (13) MAM stress patterns (Godfrey 1981: 4; England 2001: 43; Bennett 2016: 495)
- |                  |             |          |                  |
|------------------|-------------|----------|------------------|
| a. TACANÁ        | [laʔ'ǵeʔ]   | la'q'e'  | 'advance'        |
| Final            | [keʔi'χi]   | ke'iji   | 'seen'           |
|                  | [la'χoχ]    | lajoj    | 'ten'            |
| b. CAJOLÁ        | [ʔaʔtsʔin]  | a'tz'in  | 'salt'           |
| Penultimate      | [ʔaʔlin]    | ja'lin   | 'now'            |
|                  | [ʔo:ʃeʔe]   | ooxeje   | 'three days ago' |
| c. IXTAHUACÁN    | [ʔspikʔa]   | spiky'a  | 'clear'          |
| Weight sensitive | [puʔ'laʔ]   | pu'la'   | 'dipper'         |
|                  | [ʔa'ǵu:ntɫ] | aq'uuntɫ | 'work'           |

The status of lexical stress and its interaction with lexical tone is debated in the Yucatecan literature, although these languages are generally considered to have quantity sensitive word-level stress (e.g. Bricker et al. 1998; Gussenhoven and Teeuw 2008; Herrera Zendejas 2014). Work on the acoustic correlates of stress includes Kidder (2013) and Baird (2015).

Turning to intonation, declarative clauses in a number of Mayan languages are realized with a rising contour, which is a fairly uncommon pattern cross-linguistically (see Berinsein 1991 for Q'eqchi'; Shklovsky 2011 Tseltal; Palosaari 2011 for Mocho'). The more typical association between falling intonation and declarative clauses is also found in the family (see Nielsen 2005 and Baird 2010 for K'iche'; Knowles 1984 for Chontal; Larsen and Pike 1949 for Huastec). Both polar and constituent questions are typically realized with a final rise.

Most work on sentence-level phonology in the Mayan family addresses the prosody of utterances with one of following constituent types: preverbal topic, preverbal focus, and in

situ focus. Aissen (1992) reports that preverbal topics are separated from the rest of the clause by an intonational boundary in Jakalteq, Tsotsil and one type of topicalized structure in Tz’utuujil, but constituents focused in preverbal position are not delimited by a similar boundary. Analogous phrasing has been reported for K’iche’ (Can Pixabaj and England 2011), Yucatec (Avelino 2011), and Tzeltal (Shklovsky 2011). Research on the prosodic phrasing of preverbal and in situ focus in K’iche’ can be found in Burdin et al. (2015), Velleman (2014), and Yasavul (2017).

Kügler et al. (2007), Kügler and Skopeteas (2007), and Gussenhoven and Teeuw (2008) report that lexical tone does not interact with focus or sentence-level intonation in Yucatec, which is an uncommon finding crosslinguistically. However, the distribution of pauses does set off focused constituents from the rest of the clause (Kügler and Skopeteas 2007; Avelino 2011). Clemens and Coon (2018) and Lesure and Clemens (2015) report on the acoustic correlates of phrasing at the level of the phonological phrase for Ch’ol. Based in part on these findings, Clemens and Coon (to appear) develop an account of word order for Ch’ol with prosodic predictions for extension to the rest of the family.

### 3. Morphology

Mayan languages have rich systems of inflectional and derivational morphology. They are highly synthetic, agglutinative, and predominantly head-marking. The Sakapultek example in (14) exemplifies these properties. Notice the large morpheme-to-word ratio, the easily differentiated morphemes, and the fact that syntactic relationships are indicated on the phrase head with Set A (ergative) and Set B (absolutive) markers. For more on the distribution of Set A and Set B markers see 3.3.

- (14) ...x- $\emptyset$ -a-r-siky’-o’-l                      juun,  $\emptyset$ -r-xub’u-j-poon                      l-aj-laab’...  
 CPL-B3-LAT-A3-pick.up-DEP-DIR one    B3-A3-whistle.to-SS-DIR DET-DIM-boy  
 ‘...one went and picked it up, he whistled to the boy...’                      (Du Bois 2006: 205)

The family’s morphological processes are mostly concatenative, e.g. suffixation, prefixation, and compounding, although non-concatenative patterns are also found, e.g. reduplication, vowel, and tone alternation. See Coon (2016) and Polian (2017) for recent overviews of common and less common morphological phenomena in Mayan languages and Grinevald and Peake (2012) for verbal morphology in particular.

#### 3.1 Root and Word classes

Mayan languages have root classes, e.g. transitive, intransitive, nominal, that do not necessarily correspond to surface lexical categories, e.g. verbs and nouns. Nominal roots can often serve directly as nouns (see also 3.2 on nominal morphology). Other roots, e.g. intransitive roots, must combine with certain functional morphology to form a stem before becoming a word, e.g. an intransitive verb or a derived transitive verb (see also 3.3 on verbal morphology). Other root classes include adjectives, positionals, and ideophones. See Haviland (1994); Lois (2011); Lois and Vapnarsky (2006); Coon (2018) for more discussion on the roots, stems, and words in Mayan languages.

The number of adjectival roots in the family is limited, but there are a number of strategies for deriving adjectives and other modifiers, some of which are regularly occurring, e.g. partial reduplication (England 2004; Polian 2017a). Other strategies are unique to a particular language, e.g. the addition of the relative clause marker =*bä* in Ch’ol (Vázquez Álvarez 2011).

Adverbs are typically particles, i.e. morphologically simplex, although some are derived from number terms, as shown in (15) for Tsotsil.

- (15) TSOTSIL Adverbs derived from numerals (Cowan 1969: 42)
- |    |                |                |    |              |                  |
|----|----------------|----------------|----|--------------|------------------|
| a. | <i>cha'</i>    | 'two'          | b. | <i>ox</i>    | 'three'          |
| c. | <i>cha'-ej</i> | 'in two days'  | d. | <i>ox-ej</i> | 'in three days'  |
| e. | <i>chab-je</i> | 'two days ago' | f. | <i>ox-je</i> | 'three days ago' |

All Mayan languages have a class of roots known as positionals for their unique semantic properties often having to do with position, configuration, and shape (Kaufman 1977). Positionals are alternatively classified as a distinct word class, adjective-type, or participle, depending on the language and the author (Haviland 1994; Coon 2016; Polian 2017 and sources therein; Henderson 2018). The examples in (16) show non-verbal predicates formed from positional roots; positionals never surface independently.

- (16) Positional stems (Polian 2013: 54, 576; Coon 2018: 12; Bricker 1998: 15, 29)
- |    |         |                    |                    |
|----|---------|--------------------|--------------------|
| a. | TESLTAL | <i>nak-al</i>      | 'seated'           |
|    |         | <i>sep-el</i>      | 'in circular form' |
| b. | CHUJ    | <i>chot-an</i>     | 'crouched'         |
|    |         | <i>jenh-an</i>     | 'outstretched'     |
| c. | YUCATEC | <i>och-okbal</i>   | 'stooped, bent'    |
|    |         | <i>bech'-ekbal</i> | 'sprawled'         |

Mayan languages also have a class of roots known as ideophones (alternatively affect words or expressives) that employ sound symbolism often in the form of onomatopoeia (Barrett 2014; Henderson 2016; Polian 2017a). Examples from Yucatec (Pérez González 2012) and Tselal (Le Guen 2014) are given in (17).

- (17) YUCATEC and TSELAL Ideophones
- |    |                 |  |  |                            |
|----|-----------------|--|--|----------------------------|
| a. | Tso'oj          | bey u máan kitam,                        | jaaleb, kéej.                                  |                            |
|    | IDPH.crush      | thus A3 pass                             | wild.boar paca                                 | deer                       |
|    |                 |  | 'tso'oh is how wild boar, paca, or deer pass.' | (Le Guen 2014: 22)         |
| b. | Pura ch'il-bil, | tsok' x-chi ta                           | mantekat.                                      |                            |
|    | puro frito-ASP  | IDPH.fry CPL-say                         | PREP manteca                                   |                            |
|    |                 | 'Completely fried, they go <i>tsok</i> ' | in the fat.'                                   | (Pérez González 2012: 154) |

Closed class words include demonstratives, determiners, classifiers, pronouns (see 3.2), interrogatives, negatives, conjunctions, and discourse participles. Mayan languages have few if any true prepositions. Instead, they rely on a class of obligatorily possessed nominals called 'relational nouns' (Larsen 1988; England 2017) to express both spatial and thematic relations. The Akatek example in (18) shows relational nouns introducing the agent of a passive and an instrument.

- (18) X-i-le el yin an lima **y-uu** naj in-c'aal=an **y-etoj** ch'en nawa...
- CPL-take-PASS DIR peel CL orange A3-by CL A1-son=1P A3-with CL knife
- 'The orange was peeled by my son with a knife...'
- (Peñalosa 1987: 283)

Mayan languages have two sets of person markers known as SET A and SET B. Set A markers index the complement of relational nouns, as in (18), possessors, the subject of transitive clauses, and the subject of some intransitive clauses (see 3.3). Set B markers index the object of transitive clauses, the subject of most intransitive clauses, and the subject of non-verbal predicates (see 3.3); they are also related to free standing pronouns in many languages.

### 3.2 Nominal morphology

Functional morphology associated with the nominal phrase includes demonstratives and determiners, both of which typically precede the head noun. For many languages, demonstratives and determiners can cooccur.

Western branch languages also display a variety of classifier systems. For example, in Ch'olan languages, hundreds of different numeral classifiers, often derived from verbs, combine with numerals to make nouns countable. Numeral classifiers are typically only used with smaller numbers and are never used with the higher numbers that are typically borrowed from Spanish (Knowles 1984; Bale and Coon 2014).

- (19) CHONTAL numeral classifiers (Knowles 1984: 201)
- |    |               |                        |                       |                    |
|----|---------------|------------------------|-----------------------|--------------------|
| a. | <i>-tu</i>    | people and animals     | <i>un-tu ahlo'</i>    | 'one boy'          |
|    |               |                        | <i>cha'-tu wichu'</i> | 'two dogs'         |
| b. | <i>-k'e</i>   | flat, leaflike objects | <i>un-k'e pop</i>     | 'one sleeping mat' |
|    |               |                        | <i>cha-k'e wah</i>    | 'two tortillas'    |
| c. | <i>-ch'it</i> | long, slender objects  | <i>un-ch'it</i>       | 'one candle'       |
|    |               |                        | <i>cha-ch'it bih</i>  | 'two roads'        |

Q'anjobalan languages use only a handful of numeral classifiers, if any, but they have rich systems of noun classifiers. Noun classifiers are typically derived from nouns that are semantically bleached in their functional use (see Buenrostro 2009 for Chuj, Craig 1986 for Popti', Zavala Maldonado 2000 for Akatek). A subset of Chuj's nominal classifiers are given in (20).

- (20) CHUJ nominal classifiers (Buenrostro et al. 1987: 1229)
- |    |             |          |    |             |           |
|----|-------------|----------|----|-------------|-----------|
| a. | <i>ix</i>   | feminine | b. | <i>winh</i> | masculine |
| c. | <i>anh</i>  | plant    | d. | <i>nok'</i> | animal    |
| e. | <i>ixim</i> | grain    | f. | <i>a'</i>   | liquid    |
| e. | <i>te'</i>  | wood     | f. | <i>k'en</i> | metal     |

Noun classifiers also have a pronominal function, as shown for the Chuj example in (21)

- (21)  $\emptyset$ -s-wo' ixim wa'il ix malin.  $\emptyset$ -s-wo' ixim ix.  
 B3-A3-make CL:GRAIN tortilla CL:FEM Maria B3-A3-make CL:GRAIN CL:FEM  
 'Maria made the tortillas. She made them.' (Buenrostro et al. 1987: 1230)

Otherwise, independent personal pronouns in Q'anjob'alan languages and the family more widely are related to a language's Set B markers (see 3.3). This is shown for K'iche' in (22).

- (22) K'ICHE' Pronouns and Set B (absolute) suffixes (Larsen 1988: 100, 105)
- |             |         |             |          |              |         |               |          |
|-------------|---------|-------------|----------|--------------|---------|---------------|----------|
| <i>in</i>   | 1SG     | <i>-in</i>  | B1SG     | <i>oj</i>    | 1PL     | <i>-oj</i>    | B1PL     |
| <i>at</i>   | 2SG FAM | <i>-at</i>  | B2SG FAM | <i>ix</i>    | 2PL FAM | <i>-ix</i>    | B2PL FAM |
| <i>laal</i> | 2SG FOR | <i>-laq</i> | B2SG FOR | <i>alaq</i>  | 2PL FOR | <i>-alaq</i>  | B2PL FOR |
| <i>are'</i> | 3SG     | $\emptyset$ | B3SG     | <i>a're'</i> | 3PL     | <i>-e'~ee</i> | B3PL     |

Although Mayan languages are predominantly head-initial, the most common type of nominal compound is formed with a modifier that precedes the nominal head. Many Mayan languages also have nominal dvandvas, in which the resulting compound is an agglomeration of nouns conjoined without an overt conjunction. Examples of both head-final and dvandva compounds are given in (23):

- (23) Nominal compounds (Polian 2017: 206; Wälchli 2005: 239)
- |    |         |                      |                    |                              |
|----|---------|----------------------|--------------------|------------------------------|
| a. | K'ICHE' | <i>saq-wach</i>      | 'potato'           | lit: white-face              |
|    |         | <i>qati't-qamaam</i> | 'our grandparents' | lit: our grandma-our grandpa |
| b. | TSELTAL | <i>mak-te'</i>       | 'fence, corral'    | lit: close-stick             |
|    |         | <i>cham-balam</i>    | 'animals'          | lit: snake-jaguar            |

The primary inflectional processes applying to Mayan nouns involve possession and plurality. The basic structure of possession is fairly uniform across the family. If there is an overt possessor, it follows the possessum, unless it is a wh-possessor, in which case it precedes the possessum. The possessum is marked with a Set A prefix that cross-references the possessor. In most languages, certain noun classes are obligatorily possessed, while others may not be directly possessed. Inalienable nouns, e.g. body parts, clothing, and kinship terms, typically require special morphology, such as a distributive or abstract noun suffix, in order to surface in their unpossessed form. The possession of nouns belonging to the natural world, e.g. wild animals and weather phenomena, is either disallowed or restricted to certain contexts. Examples from Uspantek are given in (24).

- (24) USPANTEK possession (Can Pixabaj 2006: 64-66; 106)
- |    |             |                  |              |                 |                         |
|----|-------------|------------------|--------------|-----------------|-------------------------|
| a. | Alienable   | <i>tz'i'</i>     | 'my dog'     | <i>ín-tz'i</i>  | 'my dog'                |
|    |             | <i>tiko'n</i>    | 'sowing'     | <i>a-tiko'n</i> | 'your sowing'           |
| b. | Inalienable | <i>q'u'-niik</i> | 'jacket'     | <i>ín-q'u'</i>  | 'my jacket'             |
|    |             | <i>ji'-xeel</i>  | 'son-in-law' | <i>a-jii'</i>   | 'your son-in-law'       |
| c. | Natural     | <i>koj</i>       | 'lion'       | <i>ín-koj</i>   | 'my lion (toy, etc.)'   |
|    | world       | <i>jaab'</i>     | 'rain'       | <i>qa-jaab'</i> | 'our rain (ceremonial)' |

Plural marking on lexical nouns takes the form of a suffix or enclitic that is optional or disallowed for non-human referents. Distributional patterns for plural marking on human nouns vary: for some languages, plural human nouns are obligatorily marked (e.g. England 2011b for K'iche' and Polian 2013 for Tselal). For other languages, plural human nouns are only usually marked (e.g. England 2011b for Mam and Butler 2011 for Yucatec). Even in cases of non-obligatory marking of plural human nouns, a tendency has been noted to mark animate plural nouns with either a plural suffix or via agreement with the predicate (Aissen 1987; England 2011b).

### 3.3 Verbal morphology

Most of the family's morphological complexity is found in the verbal domain. This section addresses the core elements of the Mayan verb stem, indicated in (25), except for the VOICE category, which will be addressed in Section 4.

- (25) **TAM** · {ABS} · ERG · **VERB ROOT** · VOICE · STATUS SUFFIX / MOOD · {ABS}

England (2017) observes that the verb stem's preverbal elements are mostly inflectional, while postverbal morphemes are predominantly derivational. Variation in verbal morphology within the family is mostly found in the postverbal, derivational domain. Another feature of Mayan verbal morphology is allomorphy driven by an opposition between transitive vs. intransitive roots and whether a stem's valency is derived or underlying.

Preverbal TAM markers are either represented as independent words or part of the verb, depending on factors ranging from the distribution of second-position clitics to orthographic convention. The primary function of preverbal TAM markers is to mark aspectual properties of the event; tense is indicated periphrastically and mood is predominantly marked with postverbal suffixes. Minimally, preverbal TAM markers in Mayan languages show a distinction

between the completive and incompletive aspects, but they may also mark the progressive and secondarily encode mood differences as well.

Postverbal mood markers are less uniform across the family and may include irrealis, perfect, and imperative. Some of Q'anjob'al's aspect and mood distinctions are illustrated in (26). The potential, exhortative, and optative moods are formed with the irrealis suffix *-oq*, which combines with the reportative *-ab'* in the optative.

(26) Q'ANJOB'AL Tense-Aspect-Mood (Mateo Toledo 2017: 539)

	<b>Intransitive</b>		<b>Transitive</b>	
a. CPL	<i>x=ach way-i</i>	'You slept.'	<i>x=ach y-il-a'</i>	'S/he saw you.'
b. ICPL	<i>ch=ach way-i</i>	'You sleep.'	<i>ch=ach y-il-a'</i>	'S/he sees you.'
c. POT	<i>q=ach way-oq</i>	'You will sleep.'	<i>q=ach y-il-a'</i>	'S/he will see you.'
d. EXH	<i>way-oq=on</i>	'Let's sleep.'	<i>j-il=eq (ix)</i>	'Let's see her.'
e. OPT	<i>way-oq-ab'=i</i>	'S/he may sleep.'	<i>y-il-oq-ab'=hach</i>	'S/he may see you.'

In (26) the irrealis *-oq* suffix is used in the exhortative and optative moods with intransitive verbs, but not transitive ones. As mentioned above, the opposition between transitive and intransitive verbs is observed in Mayan languages in a number of ways, including inflectional allomorphy, derivational strategies, and person marking on the verb (See Law and Stuart 2017 for a discussion of differences between transitive and intransitive verbs in Classic Mayan).

One or both person markers follow preverbal TAM markers. All Mayan languages have an ergative alignment pattern where ergative person markers (Set A markers) index the subjects of transitive clauses and absolutive person markers (Set B markers) index the objects of transitive clauses and the subjects of intransitive clauses.

Proto-Mayan's ergative and absolutive markers are shown in (27). Note that the Set A/ergative markers include distinct forms for affixing to vowel- vs. consonant-initial stems. This phonologically determined allomorphy remains present across the family. The third person singular Set B marker is null in all languages as well.

(27) PROTO-MAYAN person markers (Kaufman 1990: 71–72)

	<b>Set A / ERG</b>	<b>Set B / ABS</b>
	<u>V</u>	<u>C</u>
1SG	<i>*inw-</i>	<i>*in-    *iin</i>
2SG	<i>*aaw-</i>	<i>*a-      *at</i>
3SG	<i>*r-</i>	<i>*u-      *∅</i>
1PL	<i>*q-</i>	<i>*q-      *o'nh</i>
2PL	<i>*eer-</i>	<i>*iw-     *ix</i>
3PL	<i>*k-</i>	<i>*k-      *eb'</i>

As shown in (27), both the Set A and Set B series encode person and number. The number distinction has been most faithfully maintained in the languages of the Eastern branch. Other languages mark number with a generalized plural enclitic, e.g. *=o'ob* in Yucatec, or a plural person enclitic, e.g. *=aq* in Uspantek, in combination with Set A markers that encode person, but not number.

Languages differ with respect to the location of the absolutive person marker. Eastern branch languages, with the exception of Ixil, are described pretheoretically as 'high' absolutive languages: the absolutive marker is preverbal and follows the TAM marker. Yucatecan and Ch'olan-Tzeltalan languages are described as 'low' absolutive languages, because the absolutive marker surfaces at the end of the verb stem. This positional variation is illustrated for Achi and Ch'ol in (28).

(28) High and low absolutive markers (Lóopez and Sis Iboy 1992: 77)

- |    |                        |                         |                    |
|----|------------------------|-------------------------|--------------------|
|    | ACHI                   | CH'OL                   |                    |
| a. | <i>x-in-u-laq'apuu</i> | <i>tyi i-mek'ey-oñ</i>  | 'S/he hugged me.'  |
| b. | <i>x-at-u-laq'apuu</i> | <i>tyi i-mek'ey-ety</i> | 'S/he hugged you.' |
| c. | <i>x-∅-u-laq'apuu</i>  | <i>tyi i-mek'e-∅</i>    | 'S/he hugged him.' |

Languages in the Q'anjob'alan branch, with the exception of Tojolabal, utilize both positions depending on the context, e.g. whether or not the clause includes an overt preverbal TAM marker. When there is a TAM marker present, the absolutive marker cliticizes there, as in (25 a-c), otherwise, it surfaces in the low position, following the verb stem, as in (25 d-e). Based on arguments such as their variable position in some languages, absolutive markers are typically considered to be clitics instead of affixes. In contrast, ergative person markers are prefixes in every Mayan language except those in the Yucatecan branch.

Mayan languages show a number of other alignment patterns in addition to the strictly ergative pattern introduced above (see Zavala Maldonado 2017 for a more complete overview of morphological alignment in Mayan languages). Whereas the completive aspect is strictly associated with morphological ergativity across the family, the incomplete and potential trigger a tripartite system for Ch'orti' (Quizar 1979) and accusative alignment patterns in Yucatecan, Ch'olan and Poqom languages. Compare (29-a) to (29-b) for the ergative pattern in Yucatec and (29-a) to (29-c) for the accusative pattern in Yucatec.

(29) YUCATEC alignment

- |    |                     |                     |
|----|---------------------|---------------------|
| a. | <b>T-in</b>         | <b>w-il-aj-ech.</b> |
|    | CPL-A1.SG           | see-PERF-B2.SG      |
|    | 'I saw you.'        |                     |
| b. | <b>J-k'uch-ech.</b> |                     |
|    | CPL-arrive-B2.SG    |                     |
|    | 'You arrived.'      |                     |
| c. | <b>Táan in</b>      | <b>k'uch-ul.</b>    |
|    | DUR A1.SG           | arrive-IMPERF       |
|    | 'I am arriving.'    |                     |

(Bricker 1981: 83-84)

Split ergative patterns like the one shown for Yucatec in (29) likely developed from bi-clausal structures consisting of a matrix verb and an embedded nominalization (Bricker 1981; Kaufman 1990). Coon (2010a, 2013) develops a related, synchronic account of Ch'ol's apparent accusative alignment pattern, in which the imperfect and progressive markers are treated as intransitive predicates that select nominalized complements. On this account, the Set A marker indexes a possessor, not the subject of an intransitive verb, as it would in the opposing absolutive analysis.

In addition to person markers that indicate whether a stem is intransitive or transitive, most Mayan languages also have a series of inflectional suffixes known as status or thematic suffixes that vary according to certain properties of the verb stem, including the number of arguments it selects. The status suffixes that have been reconstructed for Proto-Mayan most closely resemble those found in K'iche' (Kaufman and Norman 1984; Kaufman 1990; Robertson 1992), which have different forms depending on whether the stem is transitive or intransitive and whether it is an independent clause. Depending on the language, status suffixes might also reinforce aspectual or derivational distinctions. The table in (30) represents some of the variation found in status suffix morphology.

(30)	Status suffixes (Larsen 1988: 194; Hofling 2017: 709-710; Vázquez Álvarez 2011: 188)				
a.	K'ICHE'	INTRANS	-ik	<i>k-at-b'iin-ik</i>	'You are walking.'
		TRANS	-o/-u	<i>x-∅-at-k'ex-o</i>	'You changed it.'
		DEP INTRANS	-oq/-a	<i>k-at-b'iin-oq</i>	'Walk!'
		DEP TRANS	-V'/V	<i>cha-∅-k'ex-a'</i>	'Change it!'
b.	MOPAN	ICPL INTRANS	-Vl	<i>walak a-jok'-ol</i>	'You go out.'
		ICPL TRANS	-ik	<i>walak 'aw-il-ik-en</i>	'You see me.'
		CPL INTRANS	-∅	<i>jok'-∅-eech</i>	'You went out.'
		CPL TRANS	-aj	<i>aw-il-aj-en</i>	'You saw me.'
		DEP INTRANS	-Vk	<i>ka'-jok'-ok-ech</i>	'that you go out'
		DEP TRANS	-V'	<i>ka'aw-il-a'-een</i>	'that you saw me'
c.	CH'OL	ICPL CVC TRANS	-∅	<i>mi i-tyaj-∅</i>	'S/he finds it.'
		CPL CVC TRANS	-V	<i>tyi i-tyaj-a</i>	'S/he found it.'
		ICPL DERIVED TRANS	-Vñ	<i>mi k-il-ãñ</i>	'I see it.'
		CPL DERIVED TRANS	-V	<i>tyi k-il-ä</i>	'I saw it.'

One final note about status suffixes is that, for some languages, whether or not they surface, or the particular form in which they surface, depends on whether or not they are located in the final position of the phrase. If the K'iche' examples in (30) were followed by an adverb, e.g. *iwiir* 'yesterday,' the status suffix would drop in both examples of independent clauses and it would surface as *-a* for the dependent intransitive and *-V* for the dependent transitive (Larsen 1988; Can Pixabaj 2015). As such, status suffixes in languages displaying this type of distribution are described as 'phrase-final' suffixes (Mondloch 1978; Larsen 1988; Kaufman 1990; Can Pixabaj 2015); for a prosodic analysis see Aissen (1992) and Henderson (2012a).

## 4. Syntax

Mayan languages are robustly head-initial in all domains. In most languages, the order of the major sentential constituents in discourse neutral context is verb-initial; however, when a constituent is questioned, focused, or topicalized it surfaces before the verb. Many Mayan languages have restrictions on the extraction of ergative arguments, which condition the use of a special AGENT FOCUS construction. This section focuses on a description of a few core aspects of verbal and clausal syntax, but see Aissen (1996), Lois and Vapnarsky (2006), and Coon (2010b) for connections to the nominal domain. Data from Mayan languages have contributed to recent theoretical developments in a number of areas of syntactic research, including morphological ergativity and extraction restrictions (Coon et al. 2014; Assmann et al. 2015; Polinsky 2016, 2017; Deal 2016; Douglas et al. 2017), phi-feature agreement (Preminger 2014) and split ergative systems (Coon 2013; Coon and Preminger 2017).

### 4.1 Voice and valency

Mayan languages have complex grammatical voice systems with both valency-increasing and valency-decreasing operations that include dedicated suffixes for causative, applicative, passive, anticausative, and antipassive constructions. Grammatical voice is a particularly well-studied area of Mayan linguistics; overviews include Dayley (1981), Grinevald and Peake (2012), Coon (2016), England (2017), Polian (2017a), and Zavala Maldonado (2017).

### 4.1.1 Increasing valency

Causative suffixes in Mayan languages offer a productive means to increase the valency of both verbal and non-verbal predicates. Tojolabal stands out among Mayan languages for relying primarily on periphrasis to form causative constructions (Curiel 2017, cf. Gómez 2017), which is a strategy that other languages use only with root transitives. For more on the topic of syntactic causatives see Aissen (1987) and Coon (2010a).

In K'iche', the morphological causative *-isa* combines with intransitive verb roots (Larsen 1988; Can Pixabaj 2017), whereas in Q'anjob'al, the morphological causative *-ne* combines with adjectival and nominal roots (Mateo Toledo 2008, 2017). In Tseltal, *-(t)es* applies to both verbal and non-verbal predicates (Polian 2013, 2017a). Causative suffixes that apply to positional roots typically take a different form than those that apply to other types of predicates, e.g. *-ab'aa* in K'iche', *-b'a* in Q'anjob'al, *<h/j>-an* in Tseltal. Examples of morphological causatives are given in (31).

(31) Causative suffixes (Larsen 1988: 185; Mateo Toledo 2017: 541; Polian 2017: 627)

	<b>Root</b>		<b>CAUS stem</b>	
a. K'ICHE'	<i>kam</i>	'die'	INTR	<i>kam-isa</i> 'kill'
	<i>b'iin</i>	'walk'	INTR	<i>b'iin-isa</i> 'drive'
	<i>tzay</i>	'hanging'	POS	<i>tzay-ab'aa</i> 'hang'
b. Q'ANJOB'AL	<i>miman</i>	'big'	ADJ	<i>miman-ne</i> 'make big'
	<i>winaq</i>	'man'	NOM	<i>winaq-ne</i> 'make a man'
	<i>tel</i>	'lying'	POS	<i>tel-b'a</i> 'lay s.o. down'
c. TSELTAL	<i>lok'</i>	'exit'	INTR	<i>lok'-es</i> 'take out'
	<i>ejch'en</i>	'wound'	NOM	<i>ejch'en-tes</i> 'hurt'
	<i>ban</i>	'lying'	POS	<i>ba&lt;h&gt;n-an</i> 'set down'

Many Mayan languages can increase the valency of a root transitive with an applicative suffix that is cognate with Proto-Mayan *\*-b'e*. Huastec is an exception for having non-cognate applicative suffixes *-chi~tsiy* and *-na'* and Yucatecan languages lack a morphological applicative construction entirely (Mora-Marín 2003). In the Western branch, the applicative's third argument is typically a benefactive that is treated like a direct object, as evident from Set B agreement. In the Eastern branch, the applicative suffix is only used when an instrument is focused, questioned or relativized. Otherwise, the applicative is expressed in an oblique phrase. Languages in this group vary as to whether the instrument is indexed on the verb, as in K'iche', or the direct object is, as in Tz'utujil (Dayley 1981; Mora-Marín 2003).

Ixil is the only Mamean language that has reflexes of Proto-Mayan *\*-b'e*. In the example in (32) (from Mora-Marín 2003), the instrument is licensed by the applicative *-b'e* when it undergoes focus-fronting, but is introduced by a relational noun when it surfaces in postverbal position. In both cases, the person features of the direct object are indexed on the verb.

(32) IXIL applicative constructions

- a. A-k'oni=in            t-a'n        uula.  
 A2SG-shoot=B1SG A3SG-RN sling  
 'You shot me with a sling.'

- b. Uula A-k'oni-b'e=in.  
 sling A2SG-shoot-APL=B1SG  
 'With a sling, you shot me.'

(Ayres 1983: 42)

For more on the syntax of applicative constructions in Mayan languages see Henderson (2007) for Kaqchikel and Coon (2016) for a comparative perspective.

### 4.1.2 Decreasing valency

Turning to valency-decreasing operations, Mayan languages often have multiple passive constructions. Passive verbs in Mayan languages show intransitive person marking. The patient is promoted to the subject position and the agent, or canonical subject, may either be unexpressed (34-b) or surface as an oblique (33-b) and (38-b).

Passive voice, and voice morphology more generally, is an area where nonconcatenative morphology arises in Mayan languages. In Yucatec, a vowel alternation marks the passive for certain root classes. As shown in (33), the difference between the root transitive *jek'* ‘break’ and the passive stem *jé'ek* is one of vowel quality (Bricker et al. 1998; Lois 2011; Avelino et al. 2011). In K'iche', the root vowel is lengthened in the passive (Larsen 1988), which is one of the many reflexes of Proto-Mayan's \*<h> infix found in Mayan languages today (Campbell 1977, 2017; Law and Stuart 2017).

- (33) YUCATEC passive
- a. T=in      jek'-ah=∅.  
CPL-A1SG break-SS-B3SG  
'I broke it.'
  - b. Je'ek'-∅=∅                      tuméen teen.  
break<PASS>-SS=B3SG because 1SG  
'It was broken by me.'
- (Bricker 1978: 8)

Mamean languages have particularly rich passive inventories, in which a particular passive voice suffix may change the semantics of the event by adding, e.g. an iterative, durative, achievement, or purpose meaning. (England 1988, 2011a; Pérez Vail 2014; Pérez Vail and Jiménez 1997). The iterative and durative passives, two of seven distinct forms, are shown for Cajolá Mam in (34) below:

- (34) Two CAJOLÁ MAM passives
- a. In    ∅=q'maa-**njtz**.  
ICPL B3SG=say-PASS  
'It is said (non-stop).'
  - b. In    ∅=q'um-**li**.  
ICPL B3SG=say-PASS  
'It is said (repeatedly).'
- (Pérez Vail 2014: 104)

As in the passive, the subject of the anticausative construction is the semantic patient. Polian (2017b: 626) describes the effect of the anticausative in Tzeltalan as allowing “the event to be presented from the viewpoint of the patient.” Also called the mediopassive or middle voice construction, analogues are found in each of the major branches. Depending on the language, authors report that agents are i) disallowed in the anticausative, ii) less likely to appear in the anticausative as compared to the passive, iii) expressed in the anticausative in order to add a particular meaning to the event, e.g. an abilitative sense, as in (35).

- (35) TSELTAL anticausative
- a. La j-mak-∅      te    ti'nah=e.  
CPL A1-close-B3 ART door=ENC  
'I closed the door.'
  - b. Ma<h>k-∅              te    ti'nah=e.  
close<ANTIC>-B3 ART door=ENC  
'The door closed.'



- b. I- $\emptyset$ -poxta-at            ta pox        li    Xun=e.  
 ICPL-B3SG-cure-PASS by medicine DET Juan=ENC  
 ‘Juan was cured by the medicine.’ (Aissen 1997: 727)

The reverse is also true: detransitivizing voices are disallowed or dispreferred for events in which an actor is ranked higher than the patient. An example from Ch’ol is given in (39).

- (39) CH’OL passive
- a. Tyi i-mel-e- $\emptyset$             waj    k- $\tilde{n}$ a’jel.  
 CPL A3-make-SS-B3 tortilla A1-aunt  
 ‘My aunt prepared the tortilla.’
- b. \*Tyi me<j>l-i- $\emptyset$             waj    tyi    k- $\tilde{n}$ a’jel.  
 CPL A3-make<PASS>SS-B3 tortilla PREP A1-aunt  
 (‘The tortilla was prepared by my aunt.’) (Zavala Maldonado 2007: 297)

## 4.2 Embedded clauses

Embedded clauses in Mayan languages vary according to how much they resemble matrix clauses. Finite embedded clauses may be introduced by a complementizer, as in (40-a), in which case they are extraposed in many languages. Embedded clauses without a complementizer, as in (40-b) do not necessarily have this requirement (Aissen 2017a).

- (40) TSOTSIL finite embedded clauses
- a. I-y-il            ti    s-me’            un-e    [ ti    muk’bu ta    s-sa’    y-ajnil  
 CPL-A3-see DET A3-mother PAR-ENC    COMP never    ICPL A3-see A3-wife  
 ti    s-krem un-e    ].  
 DET A3-son PAR-ENC  
 ‘His mother saw that his son was never going to find a wife.’
- b. Mu s-kan    [ch-k-uch’-be-tik]            li    yajval=balamil-e.  
 NEG A3-want ICPL-A1-drink-APPL-1PL.INCL DET lord=earth-ENC  
 ‘The Earth Lord didn’t want us to drink it.’ (Aissen 2017: 261)

Verbs in finite embeddings have the full range of aspectual marking and person marking, and so they must project at least as high as IP. Predicate negation in embedded clauses is only possible when the clause is introduced by an overt complementizer. Because negation is higher than IP in Mayan languages, e.g. see (44-a) and (47) where negation precedes the aspectual marker, embedded clauses without an overt complementizer must project only as high as IP (Aissen 2017a).

Nonfinite embedded clauses in Mayan languages do not surface with preverbal TAM markers, but variation occurs with respect to whether or not arguments are indexed on the verb stem. Nonfinite embedded clauses with intransitive verbs often show no person marking, as in the Q’eqchi’ and Ch’ol examples from Coon (2016) in (41).

- (41) Q’EQCHI’ and CH’OL embedded nonfinite intransitives
- a. N-inw-aj            [ xik sa’ li    k’ayil    ].  
 ASP-A1SG-want    go into DET market  
 ‘I want to go to the market.’ (Kockelman 2003: 30)
- b. K-om    [ wäy-el    ].  
 A1-want    sleep-NML  
 ‘I want to sleep.’ (Coon 2016: 545)

In nonfinite embeddings of transitive verbs, person marking varies. Consider the Q’eqchi’ example in (42-a) (from Coon 2016), in which the person marking indexes the third person singular object *ch’op* ‘pineapple’, whereas in the Ch’ol example in (42-b), person marking on the verb is first person singular, indexing the subject.

- (42) Q’EQCHI’ and CH’OL embedded nonfinite transitives
- a. T-inw-aj [ x-loq’-bal li ch’op ].  
 ASP-A1SG-want A3SG-buy-NML DET pineapple  
 ‘I want to buy the pineapple.’ (Kockelman 2003: 32)
- b. K-om [ k-mãñ jiñi pajch’ ].  
 A1-want A1-buy DET pineapple  
 ‘I want to buy the pineapple.’ (Coon 2016: 545)

In cases like (42-a), derivational morphology transparently indicates that embedded clauses are nominalizations. Examples like (42-b), in which the nonfinite embedding does not bare nominal morphology, are also analyzed as involving nominalization on the basis of syntactic characteristics (Coon 2013). See Aissen (2017a) for cases of nonfinite embedded clauses that resist a nominalization analysis. For more on embedded clauses in individual languages and from a cross-linguistic perspective see Craig (1977), Dayley (1981), Mateo Toledo (2008), Coon (2013), Vázquez Álvarez (2013), Imanishi (2014), Can Pixabaj (2015), among others.

### 4.3 Word order

Although ‘basic’ word order is an ill-fitting concept for many languages, including those in the Mayan family (Brody 1984; Larsen 1988; England 1991; Quizar 1979; Robinson 2002; Clemens and Coon to appear), they typically exhibit verb-initial word order in discourse neutral contexts. Non-verb initial word orders arise in information-structural configurations that involve topic and focus, both of which are associated with preverbal positions across the family. For some Mayan languages all six possible permutations are attested: VSO, VOS, SVO, SOV, OVS, OSV (Brody 1984; Hoffling 1984; Can Pixabaj 2006).

#### 4.3.1 Discourse-neutral word order

The Mayan family is described as verb-initial, because VSO and VOS order are associated with discourse-neutral contexts for many languages. A more specific statement about ‘basic’ word order in individual Mayan languages is more challenging, in part because core-arguments are often not realized as full lexical nominal phrases. A K’iche’ corpus example is provided in (43), in which the person and number features of the subject and object are marked on the verb, but only the oblique argument is expressed lexically.

- (43) K-∅-in-tzijo-j chi k-e konojeel l=a’k’al-aab’.  
 ICPL-B3.SG-A1.SG-tell-SS PREP A3.PL-RN all DET=child-PL  
 ‘I tell it to all children.’ (Can Pixabaj 2017: 480)

Drawing heavily on Tseltsal data, Norman and Campbell (1978) argue that Proto-Mayan word order alternated between VOS and VSO. In the Tseltsal corpus examples below, the subject precedes the object in (44-a), while in (44-b), the object precedes the subject.

## (44) TSELTAI verb-initial clauses

- a. Ma' ba s=tak' xlok' **j=k'atin** [s jo'tik ] [o te  
 NEG A3=be.possible AUX A1=take.warmth.from 1PL.PRON DET  
 j=ch'ul-tat-tik=e ].  
 A1=holy-father-1PL=ENC  
 'It is not possible for us to get out and warm ourselves in the sun.'
- b. Ja' nax laj jich, la laj **s=ta** [o alchaxiltik ] [s te winik=e ].  
 EMPH only HS thus PFV HS A3=find orange.orchard DET man=ENC  
 'Thus it was, the man found an orange orchard.' (Robinson 2002: 61, 76)

Word order in the family is often categorized as i) strictly VSO; ii) strictly VOS; or iii) VSO/VOS alternating. More accurately, languages in the family differ with respect to the availability and frequency of VOS word order; however, all Mayan languages allow VSO order in some contexts (England 1991, 484; Clemens and Coon to appear). In languages with fully transitive VOS clauses, postverbal argument order is often determined by definiteness or D<sup>0</sup>-level material on the object, e.g. a determiner or demonstrative, but not typically a numeral classifier (England 1991; Coon 2010b; Clemens and Coon to appear). VSO is found with DP objects, as in (44-a), whereas VOS is found with NP objects, as in (44-b) and (45-a).

Phonological weight and/or syntactic complexity also contributes to determining the relative order of postverbal arguments; heavy arguments tend to surface towards the end of the clause (Larsen 1988; England 1991). Word order examples from San Mateo Chuj, are given below. Note the heavy object in (45-b).

## (45) SAN MATEO CHUJ verb-initial clauses

- a. **Ix=∅=y-il** [o waj Xun ] [s ix Malin ].  
 PFV=A3=B3-kill CL Juan CL Maria  
 'Maria saw Juan.'
- b. **Ix=s=milcham** [s eb' winak ] [o cha'-wan eb' winh k-et' b'ey-um ].  
 PFV=A3=kill PL man two-CL PL CL A1P-RN walk-NML  
 'The men killed two of our companions.' (Buenrostro 2013: 108-109)

A frequent claim, especially in the early literature on Mayan word order, is that the relative animacy of the subject and object determines the order of postverbal elements. While certain combinations of animate and inanimate arguments are only licit with certain predicate types (see §4.1), animacy probably does not contribute more directly to word order alternations (Minkoff 2000; Robinson 2002; Skopeteas and Verhoeven 2005; Clemens and Coon to appear).

There are a variety of accounts for verb-initial word order in Mayan languages that include i) generating the subject in a right-side specifier to derive VOS (Aissen 1992), ii) raising the VP into a position above the subject to derive VOS and evacuating the object in advance of VP-raising to derive VSO (Coon 2010b), and iii) cyclically X<sup>0</sup>-raising the verb into Infl<sup>0</sup> in all clauses, which results in VSO, and deriving VOS via prosodic reordering of bare NP objects, right-side topicalization, and heavy-NP shift (Clemens and Coon to appear). Also see Chung (2017) and Clemens and Polinsky (2017) for overview articles on the derivation of verb-initial structures in Mayan and other languages.

### 4.3.2 Topic and focus

Subject-initial word order also occurs frequently across the family and is argued by some to be the canonical word order for varieties of Ch'orti', Yucatec, and Kaqchikel (Quizar 1979; Gutiérrez Bravo and Monforte y Madera 2008; Gutiérrez Bravo 2011; Clemens 2013). SVO

order is most commonly the result of a specific information-structural configuration, e.g. when the grammatical subject is a designated topic, as in (46-a), or when the subject undergoes constituent focus, as in (46-b).

- (46) CH'OL SVO clauses
- a. [TOP (A) li aj-Wañ=i ] **tsa'=bi kej-i-∅** tyi troñel.  
 (TOP) DET CL-Juan=ENC CPL=REP start--SS-B3 PREP work  
 'As for Juan, it is said that he started to work.'
- b. [FOC Jiñ=bi aj-Wañ ] **tyi kej-i-∅** tyi troñel.  
 FOC=REP CL-Juan CPL start-SS-B3 PREP work  
 'It is said that it is Juan who started working.' (Vázquez Álvarez 2011: 325)

Topicalized constituents in Mayan languages are characterized as either 'external' or 'internal' depending on how well integrated they are into the main clause (Aissen 1992, 2017). The Ch'ol example in (46-a) exemplifies Mayan's external topic construction (Vázquez Álvarez 2011); the topic is followed by the intonational enclitic =i, which is typically found in clause-final position. Also note the placement of the reportative marker =bi in (46-a) as compared to (46-b): unlike the focused subject, the topicalized subject in (46-a) is skipped by second position clitics. In contrast, the Tz'utujil example in (47) exemplifies Mayan's internal topic construction, in which the topic is more fully integrated into the clause. For an overview of the differences between the two types of topics in different Mayan languages see Aissen (2017), who analyzes external topics as adjoining to CP and internal topics as generated in the specifier of CP.

- (47) [TOP Ja ch'ooy ] ma **x-uu-tij** ta ja kéeso.  
 DET rat NEG CPL-A3SG-eat IRR DET cheese  
 'The rat didn't eat the cheese.' (Dayley 1985: 321)

Clauses in many languages can surface with two preverbal arguments yielding both OSV and SOV orders. The topic position precedes the focus position, as shown in (48) for Itzaj.

- (48) ITZAJ SOV and OSV clauses
- a. [TOP In-tech-ej ] [FOC b'a'ax ] **k-a-kiix-t-ik** wa'yej?  
 EMPH-2SG-TOP what ICPL-A2-see-TR-SS here  
 'You, what are you seeking here?'
- b. [TOP U-meyaj-ej ] [FOC in-ten ] **k-inw-il-ik** ti'i.  
 A3-work-TOP EMPH-1SG ICPL-A1-see-SS 3SG.IO  
 'His work, I look after it for him.' (Hoffling 2000: 196)

Topicalized constituents can also occur on the right periphery of the clause, in which case the resulting word order might be verb-initial (Can Pixabaj 2004; Curiel 2007). An example of a VOS clause with a topicalized subject is given in (49) for Tojolabal.

- (49) **S-mak'-unej** [o ja jorje ] [TOP ja jwano='i ].  
 A3-hit-PERF DET Jorge DET Juan=TOP  
 'Juan hit Jorge.' (Curiel 2007: 74)

Discussing topic and focus in the context of word order only provides the most basic introduction to the phenomena. For more on the syntax and semantics of these constructions and the morphosyntactic realization of information structure more generally, see the works cited above as well as Can Pixabaj and England (2011), Gutiérrez Bravo and Monforte y Madera (2010), Vázquez Álvarez and Zavala Maldonado (2013), and Velleman (2014).

## 4.4 Syntactic ergativity

As introduced in Section 3.3, all Mayan languages are morphologically ergative, but the absolutive person marker can occur in one of two positions. In high absolutive languages, the absolutive marker is preverbal and precedes the ergative marker. In low absolutive languages, the absolutive marker surfaces at the end of the verb stem. The position of the absolutive person marker is a good predictor for whether or not the language in question is syntactically ergative. For a syntactic explanation of this correlation see Tada (1993) and Coon et al. (2014); for a historical, diffusion-based explanation see Aissen (2017b).

High absolutive languages display ergative patterns in their syntax, i.e. transitive subjects are treated differently than objects and intransitive subjects in certain syntactic contexts. For Mayan languages, ergative patterns in the syntax are mostly found in focus constructions, relative clauses, and *wh*-questions, i.e. constructions that involve A'-movement. For a broader discussion of syntactic ergativity in Mayan languages see Zavala Maldonado (2017).

In Ch'ol, a low absolutive language (28), the structure of subject and object *wh*-questions is comparable. In Ch'ol, the object of the transitive clause can be questioned directly (50-a), as can the subject of the transitive clause (50-b).

- (50) CH'OL constituent questions
- a. Chuki tyi i-k'ux-u- $\emptyset$  jiñi ts'i'?
- what PFV A3-eat-SS-B3 DET dog
- 'What did the dog eat?'
- b. Maxki tyi i-k'ux-u- $\emptyset$  jiñi waj?
- who PFV A3-eat-SS-B3 DET tortilla
- 'Who ate the tortilla?' (Jessica Coon p.c.)

In Achi, a high absolutive language (28), the structure of the object *wh*-question (51-a), looks quite similar to the Ch'ol object *wh*-question (50-a): the *wh*-word precedes the aspect marker, the verb shows transitive person marking, and the subject follows the verb. In contrast, Achi uses an intransitive, antipassive construction to question the semantic agent (51-b). In (51-b), the verb lacks the ergative, Set A marker that is present in the object *wh*-question (51-a). In addition, the theme in (51-b) is introduced in an oblique phrase. Finally, the antipassive suffix *-ow* appears on the verb. Thus, in order to form a *wh*-question targeting the thematic agent, the thematic agent must first be placed in a grammatical context in which it is the subject of a formally intransitive clause.

- (51) ACHI constituent questions
- a. Sa' x- $\emptyset$ -u-tij ri ts'i'?
- what PFV-B3.SG-A3.SG-eat DET dog
- 'What did the dog eat?'
- b. Chinaa x- $\emptyset$ -tij-**ow** r-e ri wa?
- who PFV-B3.SG-eat-ANTIP A3.SG-RN DET tortilla
- 'Who ate the tortilla?' (López and Sis Iboy 1992: 163)

While the thematic patient is introduced by a relational noun in Achi (51-b), it can be introduced directly in other syntactically ergative languages, e.g. Q'anjob'al, in the context of agent focus (also known as agent voice or the focus antipassive). Agent focus circumvents the transitive subject extraction restriction without relegating the object to an oblique phrase.

- (52) QANJOB'AL agent focus
- a. Miman- $\emptyset$  jun no' ch-ach xib'te-**n**-i.  
big-B3 one animal CPL-B2SG frighten-AF-SS  
'An animal that frightens you is big.'
  - b. A naq unin max- $\emptyset$  tayene-**n** te na.  
FOC CL child PFV-A3S take.care-AF CL house  
'It is the child who took care of the house.' (Mateo Toledo 2008: 79, 2017: 558)

Agent focus constructions have a notionally dyadic predicate with intransitive person marking. In many Mayan languages, the agent focus marker (*-n* in the Q'anjob'al examples above) is found in other types of constructions including antipassives and embedded transitives. Agent focus constructions in individual languages differ with respect to a number of properties including i) whether the thematic agent or patient controls person marking on the verb and ii) whether or not the person hierarchy (1/2 > 3PL > 3SG) plays a role in the use and form of agent focus constructions. Furthermore, the use of an agent focus Construction is nonobligatory in some cases, e.g. see Heaton, Deen, and O'Grady (2016) for Kaqchikel.

In some languages, including Q'eqchi, the semantic agent always agrees with the Set B marker on the verb (Berinstein 1985). In contrast, in Q'anjo'bal, the thematic patient always determines the form of the Set B marker (Mateo Toledo 2008). For other languages, including K'iche' (Larsen 1988; Davies and Sam-Colop 1990), whether or not the thematic agent or patient is marked on the verb depends on which argument is highest ranked according to the person hierarchy. Person hierarchies are also important in determining whether an Agent focus construction is even necessary. In Q'anjob'al, agents freely extract when they are speech act participants (Mateo Toledo 2008), and in Tsotsil, agents freely extract when the agent is higher on the person hierarchy than the object (Aissen 1999a). When these conditions are not met, the agent focus construction is otherwise required.

Mayan's agent focus construction has received a good deal of attention in the theoretical literature. Formal analyses of agent focus constructions have been constructed on the basis of case-assignment (Ordóñez 1995; Coon et al. 2014), person features (Stiebels 2006; Aissen 1999a), and anti-locality (Erlewine 2016, but see Henderson & Coon 2018). See Aissen 2017b for more on Mayan's agent focus construction and and Zavala Maldonado 2017 for syntactic ergativity in Mayan languages more generally.

## 5. Conclusion

The Mayan language family is one of the best documented and well-studied language families in the Americas. This chapter focused on core aspects of Mayan phonology, morphology, and syntax, but the variety of topics covered in the literature is considerably more extensive (see Section 6). Our understanding of the structure of Mayan languages is enriched by a long history of linguistic research, many native speaking linguists, and interest from around the world. Despite this rich tradition, research on Mayan languages continues to be time sensitive, as speakers in many communities shift to Spanish at increasing rates. Speakers of Mayan languages have faced centuries of marginalization that continues to the present day. Yet, with the rise of the ethnopolitical Pan-Maya Movement in Guatemala and Mexico in the late 1980s, language shift has been met with language activism that has made sizable gains in areas including language ideology, Mayan-medium primary school education, community-based radio, and digital technologies (Brody 2000; Barrett 2008; Cru 2017; Maxwell 2011).

## 6. Further reading

Mayan languages are among the most well-studied languages of North America. Major works in the phonology, morphology, and syntax of Mayan languages were named above, but also see England and Zavala Maldonado (2013) for a comprehensive bibliography. Other reference works on Mayan languages include England (1988, 2001, 2017), the papers in Bennett et al. (2015), and the chapters in Aissen et al. (2017). Beyond phonology, morphology, and syntax, research on the semantics and pragmatics of Mayan languages – see Henderson (2016) for an overview – covers topics such as pluractionality (Henderson 2012b, 2017), focus and questions (Tonhauser 2003a,b; Brown 2010; AnderBois 2012; Velleman 2014; AnderBois 2017), the organization of space (Hanks 1990; Bohnemeyer 2017), and discourse and conversational interaction (Datz 1980; Hofling 1982; Haviland 2017). There have also been a number of studies on the acquisition of Mayan languages, including Pye (1980), Mateo Pedro (2015), and sources cited in Pye et al. (2017). Major works on the sociolinguistics of Mayan languages include Romero (2006), Caz Cho (2007), Law (2014) and other sources cited in Romero (2017). Finally, for further reading on the topic of language shift and revitalization see the papers cited in Section 5 as well as Richards and Richards (1998), Collins (2005), England (2003), and the chapters in Fischer and McKenna Brown (1996).

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