



An Exploration of Tense in Chuj

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— RÉSUMÉ

Traditionnellement, les langues mayas sont analysées comme des langues plutôt aspectuelles (England 1983 ; Craig 1977 ; Bohnemeyer 2002 ; etc.). Au lieu d'employer un système de temps, ces langues utilisent des adverbes de temps et le contexte du discours pour placer un événement dans le temps. De plus, les langues mayas ont une série de morphèmes aspectuels qui indiquent le temps interne d'un événement. Pourtant, des données amassées sur le chuj, une langue maya de la branche q'anjob'alan, indiquent qu'un système de temps est présent dans cette langue. Le chuj est une langue peu étudiée et les ouvrages existants en disent peu au sujet du système de temps ; de plus, les ouvrages ne sont pas d'accord sur le sens de ces morphèmes (Domingo Pascual 2007 ; Hopkins 2012 ; Buenrostro 2013 ; Xiao 2013). Dans cet article, je propose deux hypothèses : premièrement, je suggère l'existence d'un nouveau morphème de temps-aspect qui est phonologiquement vide et, deuxièmement, j'affirme que ce morphème vide ainsi que le morphème ix sont des morphèmes composites qui encodent l'aspect et le temps. Cet article a aussi pour but de contribuer au débat sur les langues sans temps grammatical, en réanalysant le chuj comme une langue avec une catégorie grammaticale de temps.

MOTS-CLÉS

temps, langues sans temps, aspect, chuj, maya

— ABSTRACT

Traditionally, Mayan languages have been described as primarily aspectual (Craig 1977; England 1983; Bohnermeyer 2002; among others). These languages make use of temporal adverbials and the discourse context to locate events in time instead of grammatical means. Additionally, Mayan languages have a series of aspect markers that denote the time internal to events. However, data collected on Chuj, a Mayan language of the Q'anjob'alan branch spoken in the highlands of Guatemala, gives evidence for a tense system. Chuj is an understudied language and the few sources that exist are mainly general accounts that only briefly describe the tense and aspect system of Chuj; none of these accounts agree on the status of these markers (Domingo Pascual 2007; Hopkins 2012; Buenrostro 2013; Xiao 2013). I make two main arguments in this paper. First, I posit the existence of a phonologically null tense-aspect morpheme that has not been previously described in the literature. Second, I argue that this phonologically null marker and *ix*, another of the temporal markers, are portmanteau morphemes that encode both tense and aspect features. Another goal of the paper is to contribute to the ongoing debate on tenselessness by re-analyzing Chuj as tensed.

KEYWORDS

tense, tenselessness, aspect, Chuj, Mayan

1. Introduction

Traditionally, Mayan languages have been described as primarily aspectual (Craig 1977; England 1983; Bohnmeyer 2002; Grinevald & Peake 2012). In lieu of tense markers, temporal adverbials and contextual information locate events in time. Additionally, finite eventive clauses are headed by one of a series of aspect markers which describe the time internal to the event (Grinevald & Peake 2012). However, in this paper I argue that Chuj, in addition to its aspect markers, has two portmanteau tense-aspect markers, suggesting that Chuj is a tensed language. This paper also contributes to the debate on tenselessness by discussing null tense and re-analyzing a language previously thought to be tenseless.

This paper is organized as follows. Section 2 presents background information on Chuj. In section 3, I will examine three different environments that surface without a Tense-Aspect-Mood (TAM) marker in order to motivate the existence of a fifth, phonologically null, TAM marker, written here as \emptyset . My analysis of \emptyset and *ix* appears in section 4, wherein I argue these two portmanteau morphemes encode both tense and aspect. Section 5 presents a discussion on tenselessness, addressing previous arguments for and against the idea of languages lacking a tense category and how Chuj fits into this puzzle. Conclusions, summary, and avenues for future research are presented in section 6.

2. Background : Chuj grammar

Chuj is a member of the Q'anjob'alan branch of the Mayan language family. It is an understudied language spoken by about 40,000 people in the Guatemalan highlands of the Huehuetenango Department. The two main towns in which it is spoken are San Mateo Ixtatán and San Sebastian Coátan. The data in this paper come from one-on-one elicitation sessions with a female native speaker of the San Mateo Ixtatán dialect who now resides in Montréal. The elicitation sessions involve data collection through translation from French given a specific context, as well as grammaticality judgments on sentences presented in Chuj. This section includes background information on the grammar of Chuj.

2.1. *Verb-stem and person marking*

As is common in the Mayan linguistics literature, verbs in Chuj are referred to as predicates (Grinevald & Peake 2012), a term that will be used in this paper. Predicates in Chuj are divided into eventive “verbal predicates”

and stative “non-verbal predicates”; this division is also common across the Mayan language family and thus, these terms will also be employed in this paper (Grinevald & Peake 2012). Verbal predicates appear with one of a series of TAM markers phrase-initially, as seen in Figure 1. The verbal root appears with a verbal status suffix: *-i* appears on intransitive verbal roots and *-a* appears on transitives. Optional nominal arguments appear post-verbally or in a pre-verbal topic/focus position (Bielig 2015).

Figure 1
Verbal Template of Chuj

TAM – Set A – Set B – Verb.Root – Voice – Status.Suffix

Chuj is an ergative-absolutive language, which is displayed through a series of agreement markers (Domingo Pascual 2007).¹ Ergative markers, known as Set A markers in Mayan linguistics, cross-reference the subject of a transitive verb while absolutive, or Set B markers, cross-reference the object of a transitive verb as well as the subject of an intransitive verb (Grinevald & Peake 2012). The two sets of person markers are listed in Table 3 in the Appendix.

2.2. TAM markers

Tense-Aspect-Mood (TAM) is a term used cross-linguistically to refer to tense, aspect, and/or mood markers. In many accounts of Mayan languages, these markers are predominantly referred to as “aspect” or “aspect-mood” (see Craig 1977; England 1983; Bohnemeyer 2002; among others). However, as I am arguing that two of these markers in Chuj encode both tense and aspect, I will refer to this series of markers as TAM, so as to encompass the fact that not all of these are aspect-only, at least in the case of Chuj.

There are four TAM markers in Chuj that have been mentioned in previous works (Domingo Pascual 2007; Hopkins 2012; Buenrostro 2013; Xiao 2013). These markers and their meanings are listed in Table 1 below. TAM markers appear sentence-initially, as seen in Figure 1 above, and are obligatory in finite eventive verbal constructions (discussed in 2.3).

While existing work on Chuj provides some basic information about the TAM markers, no work has provided a detailed discussion of these markers and their functions, which has been a motivation to investigate this further.

Table 1
TAM Markers in Chuj

TAM	Meaning
<i>tz-</i>	Imperfective
<i>lan</i>	Progressive
<i>ol-</i>	Prospective
<i>ix-</i>	Perfective

Also important to the analysis presented in this paper are the concepts pertaining to temporal and aspectual reference. At a basic level, temporal reference situates an event in time by relating it to a reference point (typically the present moment) while aspectual reference describes time internal to an event (Comrie 1976). These concepts can be grammaticalized as tense and aspect morphemes, either as individual morphemes (e.g. a language could have one morpheme for past tense and a separate morpheme for perfective aspect) or as portmanteau morphemes (e.g. a language could have one morpheme that encodes past tense and perfective aspect) (Cover & Tonhauser 2015). If a language does not have grammaticalized tense and aspect, it still has the ability to express temporal and aspectual reference. For example, a language could use temporal adverbials, like *yesterday* and *every day*, or the discourse context to make temporal or aspectual reference (Comrie 1985; Cover & Tonhauser 2015).

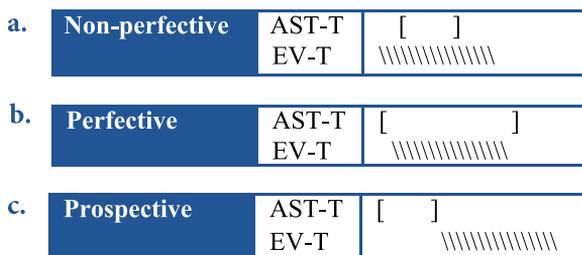
The “neo-Reichenbachian” framework, developed based on work by Reichenbach (specifically Reichenbach 1947) is commonly used in analyses that examine tense and aspect (Reichenbach 1947; Smith 1991; Klein 1994, 1995; Bohnemeyer 2002; Demirdache & Uribe-Extebarria 2000; Cover & Tonhauser 2015, among others). It can be applied to languages with grammaticalized tense and aspect or those with temporal and aspectual reference (Cover & Tonhauser 2015). I adopt this framework for the analysis of the tense and aspect system of Chuj presented here. Below, I will briefly introduce concepts that pertain to this paper (for a more detailed look at this framework, see the aforementioned works).

There are three time intervals in the neo-Reichenbachian framework that describe temporal and aspectual relationships: the *event time*, the *utterance time*, and finally, the *assertion time* (Klein 1994, 1995; Demirdache &

Uribe-Extebarria 2000; among others). The event time (EV-T) temporally situates the event that took place (for stative predicates, this is the time in which the state holds). The utterance time (UT-T) refers to the time at which the clause in question was uttered; oftentimes, this is the present moment (Smith 1991) and I assume this to be the case here. Lastly, the assertion time (AST-T) is “the time for which an assertion is made” (Klein 1995: 687).

The various ways in which these time-intervals can be ordered conveys the different tenses and aspects that exist in the world’s languages. The temporal reference of a clause is described by the ordering of its utterance time and its event time (Demirdache & Uribe-Extebarria 2000). For example, for an utterance to give rise to a past tense reading, the event time must precede the utterance time; for the present tense the event time and the utterance time must overlap; and for a clause to give rise to the future tense reading, the utterance time must precede the event time (Cover & Tonhauer 2015). The aspectual reference of a clause is described by the relationship between its assertion time and its event time (Demirdache & Uribe-Extebarria 2000). Figure 2 below illustrates the non-perfective,² the perfective, and the prospective aspects. The brackets represent the time focused on by the assertion time and the slashes indicate the event time.

Figure 2
Representations of the non-perfective, perfective, and prospective aspects



Adapted from Demirdache & Uribe-Extebarria 2000 and from Coon 2010.

As this paper is predominantly concerned with the perfective aspect, the most important difference to note is between the perfective and the non-perfective aspects. When the perfective aspect is used, it is the entire event that is being referred to, without emphasis on any particular part of the event. Thus, the perfective does not make explicit reference to the time internal to an event (Comrie 1976). In contrast, the non-perfective does make reference to the time internal to an event as it focuses on a particular

portion of the event; it can be described as “viewing a situation from within” (Comrie 1976: 24). Furthermore, the non-perfective aspects make no assertion about the endpoint of the event (Comrie 1976). These concepts are discussed further in relation to Chuj in section 4.

2.3. Predicates

As in Mayan languages more generally, predicates in Chuj may be divided into eventive verbal predicates and stative non-verbal predicates (Grinevald & Peake 2012). Recall that verbal predicates must appear with a TAM marker, seen in (1) with the imperfective which appears in bold. Verbal predicates also appear with a stem-final status suffix when no other material follows the verb stem; in (1), the verb *way* ‘sleep’ appears with the intransitive status suffix *-i*.

- (1) **Tz-ach** te way-i³
 IPFV-B2 very sleep-ITV
 ‘You sleep a lot.’

Non-verbal predicates (NVP) can be almost any lexical item, for example *pena’ay* ‘to be sick’ in (2) or *k’ayb’um* ‘teacher’ in (3). NVPs are semantically stative predicates - as such, they have no internal structure and are ungrammatical when they appear with a TAM marker (see section 3.3). The translations below indicate that these states may hold in the past or in the present; a future reading is also possible when the speaker is certain that the state will hold in the future timeframe being discussed. Otherwise if the speaker is not certain, the NVP can be expressed with future temporal reference by adding a degree of doubt, for example, with *tekan* ‘perhaps’. Below, the predicates appear in bold.

- (2) A waj Xun **pena’ay** winh
 PART CLF Juan be.sick CLF
 ‘Juan was/is/will be sick.’

- (3) A ix⁴ Malin **k’ayb’um** ix.
 PV CLF Maria teacher CLF
 ‘Maria was/is/will be a teacher.’

3. Environments that lack TAM markers

As noted above, I propose that there is an additional TAM marker that exists in Chuj, written here as \emptyset . This TAM marker is phonologically null;

therefore, it is not immediately obvious where and when it occurs. There are three environments in which no overt TAM marker surfaces in Chuj: (i) TAM-less eventive verbal matrix clauses, (ii) non-verbal predicates, and (iii) non-finite embedded clauses. Despite the fact that all three environments surface without a TAM marker, I argue that only in eventive verbal matrix clauses is there an underlying, phonologically null TAM marker. All three of these environments are investigated in this section, beginning with TAM-less verbal predicates.

3.1. TAM-less verbal predicates

As shown in Figure 1, verbal predicates occur with one of a series of initial TAM markers. However, there are some cases where no TAM marker surfaces, as in (4b).

- (4) a. *ix*-ach-b'ey-i
 RP.PFV-B2-walk-ITV
 'I walked [today].'
- b. \emptyset -b'ey-ach⁵
 DP.PFV walk-B2
 'I walked [yesterday or before].'

The utterance in (4b) is an instance of an eventive verbal predicate and not a non-finite embedded clause or a non-verbal predicate. It is not a non-finite embedded clause because (4b) surfaces with an absolutive marker; non-finite embedded clauses surface with an ergative marker (Mateo-Toledo 2011). Furthermore, (4b) is an independent clause whereas non-finite embedded clauses are dependent (Mateo-Toledo 2011). Additionally, (4b) is not an NVP as (4a) shows that the verb *b'ey* can surface with the intransitive verbal status suffix *-i*; in (4b) the verbal status is dropped as the verb is no longer in the stem-final position. These distinctions are important to note as I argue that it is only in eventive verbal predicates that the phonologically null marker appears. I propose that there are five TAM markers in Chuj, summarized in Table 2 below. Support for a null marker in verbal eventive clauses comes from Mateo-Toledo (2011) on Q'anjob'al, discussed more in section 3.3. Note that the meaning of *ix* has been changed in Table 2. I discuss the proposed features of *ix* and \emptyset further in section 4.

Table 2
Updated TAM Markers in Chuj

TAM	Meaning
tz-	Imperfective
lan	Progressive
ol-	Prospective
ix-	Recent past perfective
∅	Distant past perfective

3.2 Non-finite embedded clauses

According to Mateo-Toledo (2011) on the closely-related Q'anjob'al, non-finite embedded clauses can be distinguished by the absence of TAM marking and their inability to act as independent clauses. Other characteristics of non-finite embedded clauses include the appearance of a Set A marker on embedded intransitives (in lieu of a Set B marker in finite verbal clauses), as well as the presence of the suffix *-an* in embedded intransitives (Mateo-Toledo 2011). In (5a) below, a Chuj example of a non-finite embedded transitive clause appears in brackets. As in Q'anjob'al, the stem appears with the suffix *-an*. In (5b), we observe that the embedded clause cannot appear as an independent clause. Finally, in (5c), it is not possible for TAM marking to appear in a non-finite embedded clause.

- (5) a. **ix**-k-ajl-ej [k-al-an kastiya].
 RP.PFV-A1P-try-DTV A1P-speak-SUB Spanish
 'We tried to speak Spanish [earlier today].'
- b. ***K**-al-an kastiya.
 A1P-speak-SUB Spanish
 Intended: 'We tried to speak Spanish.'
- c. **ix**-k-ajl-ej *[ix k-al-an kastiya].
 RP.PFV-A1P-try-DTV RP.PFV A1P-speak-SUB Spanish
 'We tried to speak Spanish [earlier today].'

Non-finite embedded clauses cannot function as independent VP clauses, a context in which TAM morphology is required, as in (5b) (see Figure 1).

Furthermore, when an overt TAM marker is inserted in the embedded clause, the utterance is rendered ungrammatical, seen in (5c). Therefore, a phonologically null TAM marker is implausible in embedded non-finite clauses.

3.3. Non-verbal predicates

Recall from section 2.3 that NVPs are semantically stative predicates, often nominal or adjectival predicates; note that there is no overt copula. A range of lexical items can fit into this category, including nouns, adjectives, positionals, directionals, and verbs. As discussed in section 2.3, NVPs have no internal structure and thus, the use of a TAM marker results in an ungrammatical reading. Example (3) is repeated here for convenience in (6a).

- (6) a. A ix Malin k'ayb'um ix.
 PV CLF Maria teacher CLF
 'Maria was/is/will be a teacher.'
- b. *A ix Malin ix k'ayb'um ix.
 PV CLF Maria RP.PFV teacher CLF
 Intended: 'Maria was a teacher.'

A phonologically null TAM marker is incompatible with NVPs. If it were possible, we would expect a grammatical judgment with an overt TAM marker, which we observe in (6b) is not the case. Further support comes from work done on Q'anjob'al. In Mateo-Toledo (2007), a phonologically null TAM marker with NVPs is posited for Q'anjob'al. However, in Mateo-Toledo (2011), it is argued that this is not possible for several reasons, two of which apply to Chuj. First, positing a phonologically null TAM marker cannot explain why NVPs are ungrammatical with overt TAM markers (Mateo-Toledo 2011); I also argue this to be the case for Chuj. Second, verbal matrix clauses that lack a covert TAM marker are given a past interpretation in Q'anjob'al (Mateo-Toledo 2011), analogous to the Chuj utterance above in (4b). Lastly, Mateo-Toledo (2011) points out that if another underlying null marker is posited for NVPs there would then be two null TAM markers with two different interpretations; on this matter, he concludes "there is no obvious reason for why a null aspect should not be subject to the restrictions that apply to other aspect markers" (p. 2). Following this analysis for Q'anjob'al, I propose that in Chuj there is no underlying marker with NVPs.

In this section, three environments in which no overt TAM marker surfaces have been examined in order to show that only one of these environments, eventive verbal matrix clauses with no overt TAM marker,

has an underlying, phonologically null TAM marker. We know that these are indeed matrix clauses for several reasons: (i) they appear with Set B marking, following the normal ergative-absolutive person-marking pattern for eventive verbal predicates; (ii) they function as independent clauses; (iii) they are temporally restricted; and (iv) they appear with a verbal status suffix marker. Therefore, these are neither instances of non-verbal predicates nor non-finite embedded clauses. Rather these eventive verbal matrix clauses only appear superficially TAM-less; underlying, they take a phonologically null TAM marker.

4. Analysis: Chuj morphologically encodes tense

In this paper, it is argued that two TAM markers in Chuj, *ix* and the null marker posited in section 3—labeled \emptyset —encode both tense and aspect features. In this section, evidence is provided for the claim that *ix* encodes both a recent past tense feature and a perfective aspect feature and that \emptyset encodes both a distant past tense feature and a perfective aspect feature. In section 4.3, a tensed structure is suggested for verbal predicate constructions and a tenseless structure for non-verbal predicates. Before examining data, additional background information on concepts relating to tense and aspect are presented, which were introduced in section 2.2.

I would like to briefly discuss Temporal Distance Oppositions (TDOs), which relate to tense. TDOs occur when a language has a grammaticalized tense system that distinguishes more specific notions of time in relation to the utterance time. These distinctions are inapplicable to the present, and are more common in the past than in the future (Comrie 1985). TDOs are established along “cut-off” points, for example, different past tenses may be restricted to a certain timeframe, be it ‘last year’, ‘last month’, ‘today’, ‘tomorrow’, etc. If a tense appears outside its restricted timeframe, it results in an ungrammatical utterance. The most frequent cut-off point cross-linguistically is between ‘today’ and ‘yesterday’, also known as *hodiernal* and *pre-hodiernal* (Comrie 1985). Below, I discuss this hodiernal/pre-hodiernal split in relation to the tense system that I posit for Chuj.

4.1. The past tense features of \emptyset and *ix*

In this section, I present data in support of my argument that *ix* and \emptyset are portmanteau TAM morphemes. First, the tense features of these markers will be examined, where it is argued that *ix* is a recent past, or hodiernal, tense marker and \emptyset is a distant past, or pre-hodiernal, tense marker. In section

4.2, I posit that both of these morphemes additionally encode the perfective aspect. I start with evidence for the phonologically null marker.

- (7) a. \emptyset -ko-chel-ach ewi.
 DP.PFV-B1P-HUG-B2 yesterday
 'We hugged you yesterday.'
- b. * \emptyset -ko-chel-ach k'inib'al tik
 DP.PFV-B2-B1P-hug morning DEM
 Intended: 'We hugged you this morning.'
- c. * \emptyset -ko-chel-ach k'ik'an
 DP.PFV-A1P-hug-B2S tomorrow
 Intended: 'We will hug you tomorrow.'

The sentences in (7) illustrate that \emptyset conveys pre-hodiernal, or distant past temporal reference. The ungrammatical sentences in (7b-c) indicate that \emptyset is incompatible with both the recent past and the future, respectively, as indicated by the temporal adverbials that appear in the sentences. In contrast, the sentence in (7a) is restricted to the distant past by *ewi* 'tomorrow' and is grammatical, indicating that \emptyset encodes the distant past.

Ix is the hodiernal counterpart to \emptyset as it can only appear in utterances that have past temporal reference and that are constrained to 'today'.⁶ The contrast between (8a) and (8b) exemplifies this. The utterance in (8a) is temporally restricted to yesterday through *ewi*, the event time precedes the utterance time (the present moment), and is judged ungrammatical, indicating that *ix* is not acceptable in a distant past timeframe. However in (8b), the utterance is temporally restricted to 'this morning', the event time precedes the utterance time (the present moment) and is judged grammatical; therefore, *ix* is a hodiernal, or recent past, marker. Again, an utterance with future temporal reference in (8c) is provided to show that *ix* does not encode the future.

- (8) a. **Ix*-ach-ko-chel ewi⁷
 RP.PFV-B2-A1-hug yesterday
 Intended: 'We hugged you yesterday.'
- b. *Ix*-ach-ko-chel k'inb'al tik
 RP.PFV-B2-A1-hug morning DEM
 'We hugged you this morning.'

- c. ***ix**-ach-ko-chel k'ik'an
 RP.PFV-B2-A1-hug tomorrow
 Intended: 'We will hug you tomorrow.'

4.2. The perfective aspect features of \emptyset and *ix*

Recall that the perfective aspect describes an entire event with no emphasis placed on a specific portion of the event. I argue that both \emptyset and *ix* encode the perfective aspect; they are the same in this respect and only differ with regard to their tense features.

The first evidence supporting my claim that these two morphemes encode the perfective aspect comes from utterances that took place in the past. Below, in (9a), we see an event that has occurred in the past – evident by the temporal adverb in the utterance – but a different TAM marker appears, the imperfective *tz*.

- (9) a. Junab'i **tz**-in-lolo-n-i y-et ix hin-nun
 Last.year IPFV-B1-speak-SUB-ITV A3-with CLF A1-mom
 'Last year, I talked with my mom.'
- b. Junab'i \emptyset -lolo-n-in y-et ix hin-nun
 Last.year DP.PFV speak-SUB-B1 A3-with CLF A1-mom
 'Last year, I talked with my mom [once].'
- c. K'inib'al tik **ix**-in-lolo-n-i y-et ix hin-nun
 Morning this RP.PFV-B1-speak-SUB-ITV A3-with CLF
 A1-mom
 'This morning, I talked with my mom.'

The above examples all discuss events that have occurred in the past, and as such, can be examined for differences in aspectual reference. Examples (9a-b) are restricted to the past via the temporal adverbial *junab'i* 'last year'. For (9a), the consultant had the intuition that the speaker's talking to her/his mom happened on a habitual basis, and is still ongoing in the present year. The fact that the event time ("talking with my mom") is judged to be ongoing suggests that only a portion of the event is being examined in (9a), indicating that *tz* is a non-perfective marker (and indeed, this confirmed by Domingo Pascual 2007 and Buenrostro 2013). However, in (9b), the consultant explained that the speaker only spoke to his/her mother once last year. Therefore, the entire event time ("talking with my mom") is focused on in this utterance, which indicates that \emptyset is a perfective marker. Lastly, in (9c),

the utterance is restricted by the temporal adverbial *k'inib'al tik* 'this morning', which falls within the proposed timeframe of *ix*. The event, " talking with my mom " is discussed as an entire event, without emphasis on a particular part of the event which indicates that *ix* encodes perfective aspectual reference.

Punctual events provide further support for the perfective aspect feature of *ix* and \emptyset . A punctual event describes a situation that occurs momentarily and thus has no internal duration (Comrie 1985). Punctual events can be semelfactive, meaning that the event only occurs once (Comrie 1985). For example, imagine your friend Mary just sneezed once and only once. There is no point in the course of that one sneeze that we could plausibly say " Mary is currently sneezing ".⁸ The event happens too quickly to have a beginning, middle, and end. The perfective aspect can appear with an event that has no internal timeline as it references the entire event, indicated by the fact that the whole event time is contained within the assertion time (see Figure 2). Therefore, the perfective is expected with punctuals, as seen in Chuj in (10). As the non-perfective selects a portion of an event to focus on, an internal structure of the event in question is implied; therefore, the non-perfective is incompatible with punctual events.

- (10) a. A las nueve *ix*-in-at'is-wi
 [At nine o'clock_{SP}] RP.PFV-B1-sneeze-ITV
 'At nine o'clock, I sneezed [today].'
- b. Ewi a las nueve \emptyset at'is-wi-in
 Yesterday [at nine o'clock_{SP}] DP.PFV sneeze-ITV-B1
 'Yesterday at nine o'clock, I sneezed.'

As stated above, because non-perfective aspects indicate internal time structure of an event, they cannot be used with semelfactive punctual events. In (10a-b) above, the event time of sneezing is depicted as an entire event. Therefore, *ix* and \emptyset encode the perfective aspect as first, the utterances in (9) demonstrated that when compared to the imperfective marker, *ix* and \emptyset make reference to the event in its entirety and second, (10) shows they are not non-perfective aspects as they can describe a semelfactive punctual event.

4.3. Structural analysis

In this section, I have proposed that *ix* and \emptyset are portmanteau morphemes that encode both tense and aspect. I presented evidence that \emptyset and *ix* encode tense by examining their temporal restrictions. Both are restricted to the past; specifically, \emptyset is a distant past or pre-hodiernal marker as it only

appears in contexts that have occurred either ‘yesterday’ or ‘before yesterday’ while *ix* is a recent past or hodiernal tense marker as it only appears in contexts that have occurred ‘today’. I also examined different past contexts as well as semelfactive punctual events as evidence that *ix* and \emptyset both encode the perfective aspect.

Recall from section 2.3 that there are two types of predicates in Chuj, verbal predicates and non-verbal predicates. I argue that there are two different syntactic structures for each of these predicate types. Verbal predicates project an INFL head and TAM markers, covert and overt, appear under the Spec,INFL; therefore, verbal predicates are tensed structures (see Aissen 1992). NVPs, on the other hand, do not project an INFL head, making these structures tenseless. In the next section, I briefly discuss the ongoing debate on tenselessness and how Chuj fits in.

5. Tenselessness

Tenselessness has been addressed via several languages: for example, Chinese (Lin 2010, 2014), Gikstan (Jóhannsdóttir and Matthewson 2007), Guaraní (Tonhauser 2011), St’át’imcets (Matthewson 2006) and Mayan languages, most notably Yucatec (Bohnenmeyer 2002). It remains an unresolved topic. In Section 5.1, I briefly discuss what has been previously argued for the Mayan language family. In 5.2, I examine Bohnemeyer’s (2002) argument for Yucatec as a tenseless language and compare it to my tensed analysis for Chuj. Finally, in 5.3, I suggest Chuj as an interesting case-study for the questions raised in Matthewson (2006) and the debate on tenselessness.

5.1. Tense in the Mayan linguistics literature

As mentioned before, the TAM markers in Mayan languages are traditionally analyzed as aspect. Bohnemeyer (2002) on Yucatec argues that the TAM markers have no anaphoric time reference — in other words, there is no semantic notion of tense bundled into these markers. Bohnemeyer’s analysis of these markers could seem troublesome for my analysis of Chuj, however I argue that Yucatec’s TAM markers are akin to non-verbal predicates and to the progressive *lan* in Chuj (see Coon and Carolan to appear) and are therefore structurally different from the TAM markers of Chuj.

There are other accounts of Mayan languages that do embrace the idea of TAM markers encoding both tense and aspect. Q’eqchi has two markers that are parallel to what I have posited for Chuj. For example, the morpheme

x- encodes both perfective aspect as well as recent past tense (Stewart 1990). Similarly, it has been suggested that the *tyi* marker in Chol bundles both perfective and past tense features (Coon 2013).

5.2. Structural differences in Yucatec and Chuj

In this section, I examine the TAM system of Yucatec as put forth by Bohnemeyer (2002) and show that this analysis is not applicable to Chuj. Bohnemeyer states that the temporal markers in Yucatec are only aspectual. This could be a source of contention for what I have proposed for Chuj; however, I believe this difference in analysis can be explained by looking at the structural differences of clauses with TAM markers in Chuj and Yucatec.

Bohnemeyer divides the temporal, or Aspect-Mood (AM), markers of Yucatec into two categories: bound prefixes and unbound stative predicates. The bound prefix category consists of the imperfective and the perfective aspects. There are three subcategories in the unbound stative predicates: aspectual AM predicates, modal AM predicates, and distance AM predicates. These markers function as the main clausal predicate and are semantically stative. The markers in the distance AM predicates category appear “tense-like”, for example *sáam*, is a “recent past” marker. However, Bohnemeyer states that these describe the pre- and post-states of an event and do not encode tense features. Therefore, I suggest that these are not tried-and-true aspect markers, but rather a class of semantic statives that give information about the state of the event.

- (11) **Sáam** im xok-Ø le periyòodiko-o'
 REC A1 read-B3 DET newspaper-D2
 'I /read/had read/will have read/ the paper a while ago.'
 (Bohnemeyer, 2002: 9, glosses adapted)

Bohnemeyer states that these markers do not make use of a reference time to locate an event in time. He does admit that these markers appear tense-like due to the fact that they behave similarly to Temporal Distance Oppositions, which appear in some tense systems cross-linguistically (section 4). Recall that aspect describes the time internal to an event, unlike tense, which relates an event to a reference point. Bohnemeyer argues that the distance AM predicates are aspect markers because they do not order or relate an event to a reference point; they describe the distance of the event from the Utterance Time. This explains why past as well as future readings are possible in (11). I suggest that these predicates in Yucatec are structurally and semantically equivalent to NVPs in Chuj. I believe that they lack an INFL projection and

that the AM predicates function as the main clausal predicate. The other aspect category in Yucatec, the bound suffixes, are likely equivalent to the eventive verbal predicate structure I have described for Chuj in section 4.3.

5.3. *Chuj and tenselessness*

The notion of tenseless languages is a controversial topic. There are two general sides of the debate: those that argue that superficially tenseless languages lack a grammaticalized category of tense, and those that argue that these “superficially” tenseless languages do have a tense system; analyses vary according to the language (see Bohnemeyer 2002; Jóhannsdóttir & Matthewson 2007; Lin 2010, 2014; Matthewson 2006; Ritter & Wiltschko 2004; Tonhauser 2011). The end of Matthewson (2006) considers the possibility of re-analyzing previously “tenseless” languages as having a null tense head, thus being tensed. Chuj is relevant to this discussion as it presents both tensed structures (verbal predicates) and tenseless structures (NVPs). However, due to space, this is not discussed at length here.

6. Summary and conclusion

This paper has shown that a tense category is present in Chuj Mayan, despite the traditional analysis of Mayan languages as being primarily aspectual. I argued this via two portmanteau morphemes, *ix* and \emptyset . I also posited that eventive verbal predicates project INFL while non-verbal predicates do not and are therefore tenseless. Additionally, I examined previous accounts of tenselessness and how these might apply to Chuj. Specifically, I looked at Bohnemeyer’s (2002) argument for the Aspect-Mood markers of Yucatec, in which he states that the temporal markers are aspect-only. I argued that his analysis is inapplicable to Chuj. Briefly, I mentioned that Chuj could prove an interesting case-study for Matthewson’s (2006) contemplation on the possibility of re-analyzing “tenseless” languages as tensed.

I would like to continue my investigation of tense in Mayan. First, as this paper is based off of findings from one speaker, I would like to corroborate the data by working with a larger number of native Chuj speakers. Second, I would also like to apply this tensed analysis presented here for Chuj to Q’anjob’al. These languages are closely related and there is already evidence for a parallel system in Q’anjob’al, (see Mateo-Toledo 2013). In Q’anjob’al, there are two perfective markers, *max* and \emptyset . According to Mateo-Toledo (2011; 2013), there are no semantic differences between these markers

and speakers may easily alternate between the two. However, following my analysis for Chuj, there could be a tense system present which would restrict the presence of these markers to a certain timeframe; likely \emptyset encodes the distant past and *max* encodes the recent past in addition to their perfective aspect features.

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— NOTES

1. I use the term agreement markers loosely. There is ongoing discussion as to whether these markers are affixes or clitics (see Grinevald & Peake 2012).
2. For the purposes of this paper, the imperfective and the progressive aspects are collectively referred to as “non-perfective” aspects where they can be generalized. For further discussion of viewpoint aspects, see Smith (1991) and Klein (1994).
3. Unless otherwise noted, all data are from my elicitation notes. Abbreviations in glosses are as follows: A — Set A (ergative); B — Set B (absolutive); CLF — nominal classifier; DPPFV — distant past perfective; DTV — detransitivizer; DET — determiner; EXT — existential; IPFV — imperfective; ITV — intransitive verb suffix; P — plural; PREP — preposition; PROSP — prospective; PV — pre-verbal topic/focus marker; RP.PFV — recent past perfective; [SP] — material in brackets is a borrowing from Spanish; SUB — subordinating suffix. Chuj is written in a Spanish-based practical orthography, see Domingo Pascual (2007).
4. The morpheme *ix* that appears here is a female classifier and is not to be confused with the homophonous *ix* that encodes tense and aspect which is a focus of this paper. For more information on classifiers in Chuj, see Bielig (2015).
5. The absolutive marker appears low in utterances with \emptyset ; a high absolutive marker results in an ungrammatical sentence according to the language consultant. I suggest that the low appearance of the absolutive in these constructions may be due to a lack of utterance-initial phonological material to which the person marker may affix.
6. An anonymous reviewer suggested that *ix* could be a resultative or perfect marker. However, Chuj has the morpheme *-nak*, which is likely the perfect. This is not discussed here due to space.
7. In a recent elicitation session, the language consultant judged this sentence grammatical after much hesitation. Given that the overwhelming majority of times that the speaker has judged this, and other similar sentences, as ungrammatical, I leave it as such. I hope to corroborate this data in the future with more Chuj speakers.

8. The sentence “I entered the room just as Mary was sneezing” was suggested by an anonymous reviewer as a counter-example to this point. My intuition for this sentence is that Mary is either on the brink of sneezing or is in the middle of a sneezing fit as I entered the room, neither of which seem to be a valid counter-argument the idea that the perfective typically appears with semelfactive punctuals cross-linguistically.

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— APPENDIX

Table 3
Person Markers in Chuj*

	Set A (ergative)		Set B (absolutive)
Person	_V	_C	_V/C
1st singular	w-	hin-	hin-
2nd singular	h-	ha-	hach-
3rd singular	y-	s-	∅
1st plural	k-	ko-	honh-
2nd plural	hey-	he-	hex
3rd plural	y...heb'	s...heb'	∅...-eb

Adapted from Domingo-Pascual (2007: 136-137).

* Initial *h* is omitted when the marker does not appear word-initially.