

**Default Ergative**

by

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Submitted to the Department of Linguistics and Philosophy  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Linguistics

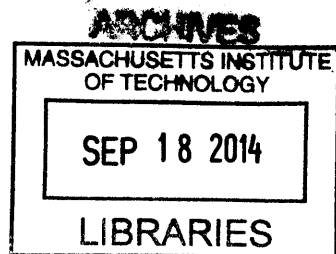
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### **Abstract**

In this thesis, I propose the hypothesis that ergative Case in certain languages may be assigned to a DP which would be otherwise Case-less within a certain domain. In this sense, ergative Case appears to be a default. At the same time, I argue that ergative Case may be assigned by *any phase head* to the *highest* Case-less DP within its Spell-Out domain (= henceforth *phase head Case*) – it is not just a default. This gives rise to the impression that assignment of ergative Case is a default, though it is in fact structurally determined.

One of the crucial consequences of this approach is that ergative Case can be aligned with grammatical relations more flexibly than in previous approaches. Ergative may look like an ‘alignment’ because in the majority of sentences the subject in a transitive sentence is aligned with ergative Case. I argue that appearances are deceiving, and that if we look carefully at the full range of instances in which ergative is found, a different generalization emerges. I demonstrate that what is called ergative may constitute phase head Case in certain languages. There is no a priori reason to posit a correlation between ergative Case and grammatical relations – a DP receiving ergative Case could be either subject or object.

In this thesis, I investigate (split) ergativity in Mayan languages (mainly Kaqchikel, Chol, Q’anjob’al and Ixil) as a testing ground for the plausibility of the hypothesis that phase head Case exists, and is the correct analysis of certain phenomena generally analyzed as instances of ergative alignment. I also explore possible avenues in which we can expand the scope of our analysis. For this purpose, I discuss languages outside Mayan (i.e., Chukchee, Tagalog and Kurmanji) with an eye towards the extension of the default ergative analysis to these languages. I focus on the cross-linguistically attested syncretism between ergative and oblique case, and suggest that ergative may also be assigned to an otherwise Case-less DP in these languages in parallel with Mayan languages.

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## List of Abbreviations

<b>ABS</b>	absolute
<b>ACC</b>	accusative
<b>AF</b>	agent focus
<b>AOR</b>	orist
<b>AP</b>	antipassive
<b>APPL</b>	applicative
<b>ASP</b>	aspect
<b>AUX</b>	auxiliary
<b>CAUS</b>	causative
<b>CL</b>	clitic
<b>COP</b>	copula
<b>DAT</b>	dative
<b>DEP</b>	dependent clause suffix
<b>DET</b>	determiner
<b>DIR</b>	directional
<b>DM</b>	dependent marker
<b>DTV</b>	derived transitive
<b>DUR</b>	durative
<b>EP</b>	epenthesis

**ERG** ergative  
**EXT** existential  
**FEM** feminine  
**FOC** focus  
**GEN** genitive  
**HABT** habitual  
**HON** honorific  
**IMP** imperative  
**IMPF** imperfective  
**INDF** indefinite  
**INF** infinitive  
**INST** instrumental  
**IRR** irrealis  
**ITV** intransitive status suffix  
**LOC** locative  
**MASC** masculine  
**NEG** negative  
**NML** nominal  
**NOML** nominalizing suffix  
**NOM** nominative  
**OBL** oblique

**PART** participle

**PAS** passive

**PRFV** perfective

**POS** positional

**P(L)** plural

**PREP** preposition

**PROG** progressive

**PRES** present

**PST** past

**RN** relational noun

**RTV** root transitive suffix

**S(G)** singular

**SUF** suffix

**TV** transitive status suffix

# Chapter 1

## Overview

### 1.1 Scope of the study

#### Default ergative: A new perspective

In this thesis, I propose the hypothesis that ergative Case in certain languages may be assigned to a DP which would be otherwise Case-less within a certain domain.<sup>1</sup> In this sense, ergative Case appears to be a default. At the same time, I argue that ergative Case may be assigned by *any* phase head if there is a Case-less DP within its Spell-Out domain – it is not just a default. This gives rise to the impression that assignment of ergative Case is a default, though it is in fact structurally determined. I call this type of ergative Case *phase head Case*, which is defined as in (1).

(1) PHASE HEAD CASE (= ERGATIVE CASE) ASSIGNMENT

Ergative Case may be assigned by a phase head to *the highest* Case-less DP within the Spell-Out domain of a phase when it triggers Spell-Out.

As shown by Bittner and Hale (1996a,b) among many others, ergative languages do not form a homogeneous group. I therefore do not argue that all instances of Case or agreement that we might label ‘ergative’ represent phase head Case – merely that what is called ergative may constitute phase head Case in certain languages. In particular, I investigate (split) ergativity in Mayan languages as a testing ground for the

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<sup>1</sup>Throughout the thesis, I will use “Case” for abstract Case and “case” for overt morphological case marking.

plausibility of the hypothesis that phase head Case exists, and is the correct analysis of certain phenomena generally analyzed as instances of ergative alignment.

One of the crucial consequences of this approach is that ergative Case can be aligned with grammatical relations more flexibly than in previous approaches. Ergative may look like an ‘alignment’ because in the majority of sentences the subject in a transitive sentence is aligned with ergative Case. I argue that appearances are *deceiving*, and that if we look carefully at the full range of instances in which ergative is found, a different generalization emerges. There is no *a priori* reason to posit a correlation between ergative Case and grammatical relations – a DP receiving ergative Case could be either subject or object.

Chapter 2 provides background information on the Mayan languages I focus on in the thesis: Kaqchikel, Chol and Q’anjob’al. This chapter introduces the model of *phase head Case assignment*. Adopting the *Mayan Absolutive Parameter* (Coon et al., 2011, to appear), I demonstrate that the phase head Case analysis can correctly capture (in)transitive clauses as well as other related constructions of the languages. I also pursue the consequence of this analysis: *the unification of set A markers (= ergative and genitive)* in Mayan under the rubric of phase head Case. For this purpose, I discuss the syntax of DPs, namely possessive constructions and functional elements called *relational nouns* that occur with or without prepositions, and suggest that the genitive found in these constructions can also be analyzed as an instance of phase head Case.

### Parameterizing split ergativity in Mayan

In chapter 3, I explore issues related to split ergativity through the lens of several Mayan languages. In particular, I address a puzzle about the alignment between ergative/absolutive Case and grammatical relations in Mayan languages. Mayan languages display a prototypical ergative alignment through head-marking: both the intransitive subject and the transitive object are cross-referenced by the absolutive agreement morpheme, whereas the transitive subject is cross-referenced by the ergative agreement morpheme. These morphemes are marked on a predicate. This is seen in the Kaqchikel examples of (2).

- (2) a. yin x-e-in-tz’ët                    rje’.  
I PRFV-Abs3P-ERG 1s-see they  
‘I saw them.’

- b. rje' x-e-wär  
 they PRFV-ABS3P-sleep  
 'They slept.'

As in many other ergative languages, many Mayan languages exhibit aspect-based split ergativity – in the perfective aspect, they show an ergative alignment, whereas they display an accusative alignment pattern in the non-perfective aspect. I focus on contrastive alignments found in the nominative-accusative side of the ergative split of Kaqchikel, Chol and Q'anjob'al. As shown by the accusative alignment pattern of Kaqchikel in (3), the intransitive subject and the transitive subject alike are cross-referenced by the *absolute* morpheme on the progressive predicate *ajin*. On the other hand, the object of a transitive verb is cross-referenced by the *ergative* morpheme.

NOM-ACC PATTERN IN KAQCHIKEL

- (3) a. y-in-ajin che [ki-k'ul-ik ak'wal-a'].  
 IMPF-ABS1s-PROG PREP ERG3p-meet-NOML child-Pl  
 'I am meeting children.'
- b. y-in-ajin che [atin-ik].  
 IMPF-ABS1s-PROG PREP bathe-NOML  
 'I am bathing.'

Strikingly, Kaqchikel appears to exhibit a cross-linguistically rare alignment pattern in the progressive – the ergative morpheme, which is normally limited to (transitive) subjects, is associated with the *object* of a transitive verb.

In contrast, other ergative split languages within Mayan such as Chol and Q'anjob'al display a very different alignment pattern in their nominative-accusative side. The examples from Chol and Q'anjob'al in (4) and (5) show that both the intransitive subject and the transitive subject are cross-referenced by the ergative morpheme, while the absolute morpheme cross-references the transitive object.

NOM-ACC PATTERN IN CHOL

- (4) a. Choñkol [i-jats'-oñ].  
 PROG ERG3s-hit-Abs1s  
 'She's hitting me.'
- b. Choñkol [i-majl-el].  
 PROG ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

NOM-ACC PATTERN IN Q'ANJOB'AL

- (5) a. lanan-ø [hach w-il-on-i].  
 PROG-Abs3s Abs2s ERG1s-see-DM-Itv  
 'I am seeing you'
- b. lanan-ø [ha-way-i].  
 PROG-Abs3s ERG2s-sleep-Itv  
 'You are sleeping.'

(Mateo Pedro, 2009)

The Chol/Q'anjob'al-type alignment pattern of the split side has been the subject of several prominent investigations (Larsen and Norman, 1979; Larsen, 1981; Bricker, 1981; Mateo Pedro, 2009; Coon, 2010a, 2013a,b, etc.). By contrast, the Kaqchikel-type alignment of the split side has received little attention (see England 1983b for relevant discussion). The contrastive alignment patterns in these three languages are summarized as *the alignment puzzle in Mayan*.

THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN

- (6) KAQCHIKEL-TYPE

	S	O
Intransitive	ABS	-
Transitive	ABS	ERG



## (7) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

As I claim building on Laka (2006) and Coon (2010a, 2013a), these languages have a (nearly) identical biclausal structure for non-perfective clauses. In particular, I show that all of the bracketed forms in the above examples are nominalized clauses. The ergative in the examples could then be taken as genitive. Given that ergative is homophonous with genitive across Mayan, the alignment of all subjects with ergative/genitive in Chol/Q'anjob'al receives a natural account, as discussed by Coon (2010a, 2013a). For example, the sentence in (4-b) can be translated as "Her going is taking place" if the verb is a nominalized form with the genitive just like gerunds in English.

However, the equation of ergative with genitive alone *does not explain* the contrastive alignment between Kaqchikel and Chol/Q'anjob'al. In particular, it is not immediately clear why the ergative/genitive is aligned with the transitive object, not with the subject, in Kaqchikel, despite the fact that all of these languages involve nominalized clauses to form non-perfective sentences.

I argue, combined with the phase head ergative Case analysis, that the contrastive alignment patterns follow from a single parametric difference between Kaqchikel and Chol/Q'anjob'al. To be precise, I propose that an unaccusative requirement holds for nominalization in Kaqchikel, whereas the requirement does not obligatorily apply to nominalized verbs in Chol and Q'anjob'al – the requirement that a nominalized verb have an unaccusative structure, and hence cannot have an external argument. Under this analysis, the object receives ergative Case in progressive sentences of Kaqchikel because the object is a nominal that would be otherwise Case-less. On the other hand, subjects receive ergative Case in non-perfective sentences of Chol and Q'anjob'al because they would be otherwise Case-less. The proposed ergative assignment model can thus capture the flexible nature of ergative alignment attested in Mayan languages – both subject and object can be aligned with ergative Case.

Furthermore, chapter 3 demonstrates that alignment patterns in the nominative-accusative side of ergative splits in other selected Mayan languages receive either a Kaqchikel-type or a Chol/Q'anjob'al-type

analysis. I suggest that alignment patterns of the split side in Mayan are determined by the presence or absence of the unaccusative requirement on nominalization. The survey of various Mayan languages thus provides further support for the *causal* relation between the presence or absence of the unaccusative requirement and the type of alignment found in the split side of these languages. I also provide an account of certain typological gaps in the alignment of the split side in Mayan.

### Default ergative outside split ergativity

In addition to Mayan ergative splits, chapter 4 investigates the interaction between Case alignment and a certain type of voice constructions called *instrumental voice* in Ixil (Mayan) (Dayley, 1981a; Ayres, 1983, 1991; Yasugi, 2012). In particular, I discuss the unexpected emergence of the ergative in intransitive clauses (= *surprising ergative*) in Ixil. This occurs when an instrumental phrase is fronted to a clause-initial position, as shown in (8-b).

(8) IXIL: SURPRISING ERGATIVE

- a. kat ja'-in ta'n iqvil.  
PRFV climb-ABS1s PREP rope  
'I climbed with a rope.'
  
- b. iqvil kat in-ja'-e-b'e.  
rope PRFV ERG1s-climb-EP-INST  
'With a rope I climbed.'

(Ayres, 1991, :159-160)

I show that a fronted instrumental phrase blocks the assignment of absolutive Case to the intransitive subject due to *defective intervention* (Chomsky 2000). I claim that the intransitive subject receives phase head ergative Case because it would be otherwise Case-less. This particular analysis of Ixil places it on a par with familiar languages exhibiting nominative-accusative agreement/Case systems in which defective intervention effects have been attested in various unrelated constructions.

## Default ergative beyond Mayan

Chapter 5 summarizes the major claims of the thesis. In this chapter, I also explore possible avenues in which we can expand the scope of our analysis. For this purpose, I discuss languages outside Mayan (i.e., Chukchee, Tagalog and Kurmanji) with an eye towards the extension of the default ergative analysis to these languages. I focus on the cross-linguistically attested syncretism between ergative and oblique case (Dixon, 1979; Trask, 1979, *inter alia*). Trask (1979) notes the following universal property (or tendency) found in ergative languages.

### (9) CASE SYNCRETISM IN ERGATIVE LANGUAGES

In case-marking languages, the ergative case is often identical with another case, most often the genitive or instrumental, sometimes the locative or dative.

(Trask, 1979, :385)

With the view that the case subject to syncretism is grouped as ergative, I point out that an intriguing alternation arises in the languages to be discussed – the ergative is assigned to the transitive subject in one domain of their grammar, whereas it is assigned to the object in another. Extending our analysis to Chukchee, Tagalog and Kurmanji, I suggest that ergative may also be assigned to an otherwise Case-less DP in these languages. This analysis thus places them on a par with Mayan languages discussed in the thesis. The consequence of the analysis is that in languages in which ergative is identical with another case (i.e., oblique case) as stated in (9), the syncretism receives a natural account because the syncretic case is assigned by the same mechanism, namely phase head ergative Case assignment.

## 1.2 A note on Kaqchikel

Kaqchikel is a member of the K'ichean branch of Mayan languages. The Mayan language family comprises approximately thirty languages spoken in Belize, Guatemala and Mexico (and by populations in the United States and elsewhere). The number of Kaqchikel speakers is estimated at about a half million (England, 2003; Brown et al., 2006; Maxwell and Hill, 2006). Several regional variants of Kaqchikel have been iden-

tified (Lewis, 2009, cf. Maxwell and Hill 2006). Unless otherwise noted, the K'aqchikel data in this thesis come from my original fieldwork with native K'aqchikel speakers residing in Patzún, Guatemala. The data were obtained through elicitation sessions.

The main K'aqchikel-speaking areas in Guatemala are the forty-four municipalities in the departments of Guatemala, Sacatepéquez, Chimaltenango, Sololá and Suchitepéquez. K'aqchikel speakers share some degree of intelligibility with its branchmates such as Tz'utujil and K'ichee' (Brown et al., 2006). As England (2003) notes, all of the Mayan languages show signs of language loss. Despite its relatively large number of speakers, K'aqchikel faces language loss as well, since its speakers are under strong pressure to shift to Spanish in order to participate in Ladino (non-indigenous) society (Garzon et al., 1998). While there are a growing number of bilingual speakers of Spanish and K'aqchikel, children in some communities are not learning K'aqchikel from their parents and are shifting to Spanish. In the face of this situation, language revitalization activities are underway in some K'aqchikel communities as part of the "Maya movement" (Garzon et al., 1998; England, 2003).

## Chapter 2

# Default ergative

### 2.1 Ergativity

#### 2.1.1 Morphological ergativity

One of the striking aspects of languages is that they display different types of alignment. In other words, languages are not uniform with respect to how intransitive subjects, transitive subjects and direct objects are aligned with case marking and/or agreement. This diversity has presented numerous challenges for language universality as well as linguistic typology. This thesis addresses a type of alignment called *ergative alignment* (sometimes called *ergative-absolutive*).

A language with ergative alignment (henceforth ergative language) exhibits the following property: an intransitive subject and a transitive/direct object form a natural class, to the exclusion of a transitive subject (see Comrie, 1978; Dixon, 1979, 1994; Manning, 1996; Aldridge, 2008; McGregor, 2009; Polinsky, 2013, in press; Deal, to appear, etc.). This alignment contrasts sharply with what is called *accusative alignment* (sometimes called *nominative-accusative*). In languages with accusative alignment, both intransitive subjects and transitive subjects are treated uniformly, whereas a transitive object is treated differently. The ergative and accusative alignments can be illustrated as below. Following Dixon (1979, 1994), I use the following notations: S=intransitive subject, A=transitive subject, O=direct object (see Comrie 1978 for discussion of other (im)possible types of alignment).

(1) ERGATIVE-ACCUSATIVE ALIGNMENT

A≠S=O

(2) NOMINATIVE-ACCUSATIVE ALIGNMENT

A=S≠O

There are several ways in which these alignments are expressed morphologically in language. Some languages are *dependent marking*, encoding alignment via morphological case-marking on nominals, while others are *head-marking*, expressing alignment via agreement on predicates (Nichols, 1986). The examples in (3) show dependent-marking ergative alignment in Warlpiri. The direct object and the intransitive subject are marked with (unmarked) absolutive case (- $\emptyset$ ). On the other hand, the transitive subject is marked with ergative case (-*ngku*).

(3) WARLPIRI

a. Ngarrka-*ngku* ka wawirri- $\emptyset$  panti-mi.  
man-ERG AUX kangaroo-Abs spear-NONPAST  
'The man is spearing the kangaroo.'

b. Kurdu- $\emptyset$  kapi wanti-mi.  
child-Abs AUX fall-NONPAST  
'The child will fall.'

(Hale, 1983)

Ergative alignment through head-marking is shown in the Kaqchikel examples in (4).<sup>1</sup> The absolutive agreement (-*e*) morpheme cross-references the intransitive subject and the direct object, whereas the ergative agreement morpheme (-*in*) cross-references the transitive subject.

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<sup>1</sup>The thesis will use the following phonetic conventions for the consonants of Kaqchikel (and some other Mayan languages): x = a voiceless alveopalatal fricative, j = a voiceless glottal fricative, tz = a voiceless alveolar affricate, ch = a voiceless alveopalatal affricate, q = a uvular stop, y = a palatal approximant, and apostrophe = a glottal stop (see also Brown et al., 2006; Henderson, 2012). There is also a tense-lax distinction in the vowels of Kaqchikel. Lax vowels are represented with a diaeresis. I refer the reader to references cited in the text for detailed discussion of phonetic conventions of other (Mayan) languages.

(4) KAQCHIKEL

- a. yin x-e-in-tz'ët rje'.  
I PRFV-ABS3P-ERG1s-see they  
'I saw them.'
- b. rje' x-e-wär  
they PRFV-ABS3P-sleep  
'They slept.'

In head-marking languages like Kaqchikel, nominals do not bear morphological case, in contrast to dependent-marking languages like Warlpiri.

As in ergative alignment, accusative alignment is morphologically expressed via either dependent-marking or head-marking. In dependent-marking languages with accusative alignment, all subjects are marked with nominative case, while the direct object is marked with accusative case. This is shown by Japanese in (5).

(5) JAPANESE

- a. Taroo-ga ringo-o tabe-ta.  
Taro-NOM apple-Acc eat-Pst  
'Taro ate an apple.'
- b. Taroo-ga k-i-ta  
Taro-NOM come-EP-Pst  
'Taro came.'

The examples of Palauan in (6) show accusative alignment through agreement (= head-marking): *-ng* for all subjects and *-ii* for the direct object.

(6) PALAUAN

- a. Ng merael a chais er a beluu.  
3Sg.[S] go DET news PREP DET area  
'A rumor is going around.'

- b. Ng mo kol-ii a bobai *pro*.  
 3SG.[A] AUX.FUT eat.PF-3SG.[O] DET papaya  
 'He is going to eat (up) the papaya.'

(Nuger, 2010, cited in Polinsky in press)

It is estimated that ergativity is observed in about a quarter of world's languages (Dixon, 1994). Ergative alignment is found in many languages and language families including Basque, Burushaski, Caucasian, Tibeto-Burman, Austronesian, (indigenous) Australian, Eskimo-Aleut, Chukotko-Kamchatkan, Mayan, Carib etc. (see Dixon, 1994; Comrie et al., 1996). Among these language groups, the main focus of this thesis will be Mayan languages. We will sketch basic properties of Mayan languages in §2.1.3.

### 2.1.2 Syntactic ergativity

It is well-known that some, but not all, morphologically ergative languages exhibit a restriction on A-bar extraction of ergative subject (= a subject in a transitive clause).<sup>2</sup> In other words, not only the morphology of these languages, but also the syntax of these languages treats the ergative subject differently from the intransitive subject and the transitive object. This is called *syntactic ergativity* (see Polinsky in press, 2013 for a recent overview and analysis of syntactic ergativity).

Some Mayan languages are syntactically ergative. For example, Kaqchikel exhibits a ban on ergative extraction. Consider the baseline transitive sentence in (7). Since both the subject and the object are third person (and there is no morphological case marked on nouns), the sentence is ambiguous, as indicated by the translations. The ergative subject cannot be *wh*-questioned, as shown by the unambiguous interpretation in (8). The sentence is only grammatical with an object extraction interpretation.

- (7) x-ø-u-tz'ët ri achi.  
 PRFV-ABS3s-ERG3s-see DET man  
 'He saw the man. or The man saw him.'

(Ajsivinac and Henderson, 2011)

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<sup>2</sup>However, this restriction is not limited to ergative languages. For example, several non-ergative Austronesian languages prevent the transitive subject from being A-bar extracted: e.g., Malagasy, Philippine languages and languages of Indonesia etc. (Polinsky, in press)



- (8) Achike x- $\emptyset$ -u-tz'ët ri achi?  
 who PRFV-Abs3s-ERG3s-see DET man  
 'Who did the man see?'  
 \*'Who saw the man?'

(Ajsivinac and Henderson, 2011)

However, there is a way of circumventing the ban on ergative extraction in Kaqchikel, as in other syntactically ergative languages.<sup>3</sup> This is done via detransitivization of the verb. In addition, the verb must be suffixed by special verbal morphology (e.g., -o in example (9)).

- (9) Achike x- $\emptyset$ -tz'et-o ri achi?  
 who PRFV-Abs3s-see-AF DET man  
 'Who saw the man?'  
 \*'Who did the man see?'

(Ajsivinac and Henderson, 2011)

The verb is (morphologically) intransitive – it lacks an overt ergative morpheme and only bears a null absolutive morpheme.<sup>4</sup> The suffix -o is attached to the verb. The sentence is only grammatical with subject extraction interpretation. This circumventing strategy is known as *Agent Focus* in Kaqchikel and other Mayan languages (see Aissen, 1999, 2011; Ajsivinac and Henderson, 2011; Coon et al., 2011; Dayley, 1981a; Erlewine, 2013; Larsen and Norman, 1979; Norcliffe, 2009; Stiebels, 2006; Tada, 1993, etc. for many different analyses of Agent Focus in Mayan).

In the discussion that follows, I will focus on morphological ergativity (see Bittner and Hale, 1996a; Manning, 1996; Aldridge, 2004, 2008; Polinsky, 2013, and references cited therein for analyses of syntactic ergativity in other languages).

<sup>3</sup>The circumventing strategy that syntactically ergative languages often use is resumption: e.g., Tongan (Otsuka, 2006). Other syntactically ergative languages employ antipassivization to allow ergative subject to be extracted: e.g., Chukchee (Polinsky, 2011, 2013). The ergative subject is changed into the absolutive subject in antipassives since antipassivization is a subtype of detransitivization.

<sup>4</sup>Unlike in antipassives, the object in (9) is not demoted to oblique argument or omitted. In this respect, (9) is still syntactically transitive.

### 2.1.3 Mayan basics

The Mayan languages are a large language family spoken throughout Mesoamerica. The language family consists of about thirty languages. While there is dispute over subgrouping (Campbell and Kaufman, 1985), Mayan languages are typically divided into five groups according to Campbell and Kaufman (1985), as illustrated in (10).<sup>5</sup>

(10) CLASSIFICATION OF MAYAN LANGUAGES

- a. Huastecan: Wastek and Chicomuceltec
- b. Yukatekan: Yukatek, Lakantun; Mopan, Itza'
- c. Greater Tzeltalan:
  - (i) Cholan: Chol, Chontal; Ch'orti'. Cholti'
  - (ii) Tzeltalan: Tzeltal, Tzotzil
- d. Greater Q'anjob'alan:
  - (i) Q'anjob'alan: Q'anjob'al, Akatek, Jakalteq (also known as Popti'); Mocho (or Motocintlec)
  - (ii) Chujean: Chuj, Tojolabal
- e. K'ichean-Mamean
  - (i) K'ichean: Q'eqchi'; Uspantek; Poqomchi', Poqomam; K'ichee', Kaqchikel, Tz'utujil, Sakapultek, Sipakapense
  - (ii) Mamean: Teco, Mam; Awakatek, Ixil

(based on Campbell and Kaufman 1985 and Coon 2010a, 2013a)

In this thesis, I will mainly discuss Kaqchikel, Q'anjob'al and Chol. Kaqchikel is a member of the K'ichean branch of Mayan languages, spoken in the central highlands of Guatemala by about half a million people (England, 2003; Maxwell and Hill, 2006). Unless otherwise noted, the data of Kaqchikel in this thesis come from my fieldwork on the Patzún dialect spoken in the Chimaltenango department of Guatemala (see Brown et al. 2006 and García Matzar and Rodríguez Guaján 1997, for example, for detailed grammatical

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<sup>5</sup>The language names are drawn from Coon (2010a, 2013a), who adopts the spelling conventions proposed by native speaker linguists (see also Mateo Toledo 2003 and Shklovsky 2012).

descriptions on (other dialects of) Kaqchikel).

Q'anjob'al belongs to a member of the Q'anjob'alan branch, spoken in the western highlands of Guatemala by about 100,000 speakers (Mateo Toledo, 2008). I will cite Q'anjob'al data mostly from Mateo Toledo's work (Mateo Toledo, 2003, 2008) and Mateo-Pedro's work (Mateo Pedro, 2009, etc.). Data in these works come from Santa Eulalia in the Huehuetenango department of Guatemala.

Chol, a member of the Cholan branch, is spoken in Chiapas, Mexico by about 150,000 people (Coon, 2010a; Vázquez Álvarez, 2011). Most of the Chol examples cited in the thesis are drawn from Coon's work (Coon, 2010a, 2013a), which studies the Tila dialect.

As shown by the Kaqchikel examples in §2.1.1, Mayan languages are head-marking ergative languages. Grammatical relations are cross-referenced, with ergative alignment, by agreement morphemes that appear on the predicate. The ergative and absolutive morphemes are called *set A* and *set B*, respectively, in Mayan linguistics. Set A markers cross-reference transitive subjects and possessors (see below), whereas set B markers cross-reference intransitive subjects and transitive objects. All pronominal arguments in Mayan languages, including subjects, objects and possessors, may be pro-dropped. Mayan languages have prevo-calic and preconsonantal allomorphs of ergative (set A) morphemes and some absolutive (set B) morphemes. The ergative and absolutive morphemes of Kaqchikel, Q'anjob'al and Chol are summarized in Table 2.1-2.3

Table 2.1: Ergative and absolutive morphemes of Kaqchikel

Ergative		Absolutive	Person & number
V-initial	C-initial		
w-	(i)n-	i(n)-	1 person singular
aw-	a-	a(t)-	2 person singular
r-	ru-/u-	ø-	3 person singular
q-	qa-	oj-	1 person plural
iw-	i-	ix-	2 person plural
k-	ki-	e-	3 person plural

(Imanishi and Mateo Pedro, 2013)

Q'anjob'al not only has morphemes for first person dual, but distinguishes between first person plural exclusive and first person inclusive, as seen in Table 2.2.<sup>6</sup>

<sup>6</sup>*hon* and *heq* behave like free-standing clitics (see Mateo Toledo 2008 for discussion). Mateo Toledo (2008) also analyzes *heb'* (for third person plural) as an independent pronoun.

Table 2.2: Ergative and absolutive morphemes of Q'anjob'al

Ergative		Absolutive	Person & number
V-initial	C-initial		
w-	hin-	-in	1 person singular
h-	ha	-ach	2 person singular
y-	ø~s-	-ø	3 person singular
j-	ko-	-on	1 person plural (dual)
j- ... hon	ko- ... hon	-on ... hon	1 person plural (exclusive)
j- ... heq	ko- ... heq	-on ... heq	1 person plural (inclusive)
hey-	he-	-ex	2 person plural
y- ... heb'	ø~s ... heb'	-ø... heb'	3 person plural

(based on Mateo Pedro 2009 and Pye et al. 2013)

As in Q'anjob'al, Chol distinguishes between first person plural inclusive and first person plural exclusive. Unlike in Q'anjob'al, however, the same morpheme *-la* is used for first person plural inclusive and second person plural in Chol (Coon, 2010a, 2013a). The morpheme *lajoñ* and its contracted form *loñ* are used for first person plural exclusive. These morphemes can be employed as either prefixes or suffixes. For third person plural, Chol uses the suffix *-ob* (see Coon 2010a for detailed discussion).

Table 2.3: Ergative and absolutive morphemes of Chol

Ergative		Absolutive	Person & number
V-initial	C-initial		
k-	k-/j-	-oñ	1 person singular
aw-	a-	-ety	2 person singular
iy-/y-	i-	ø-	3 person singular

(based on Coon 2010a, 2013a)

The examples given in (11), (12) and (13) illustrate (in)transitive sentences in Kaqchikel, Q'anjob'al and Chol, respectively.

(11) KAQCHIKEL

- a. y'in x-e-in-tz'ët                      rje'.  
 I PRFV-ABS3P-ERG1s-see they  
 'I saw them.'

- b. rje' x-e-wär  
they PRFV-Abs3P-sleep  
'They slept.'

(12) Q'ANJOB'AL

- a. max-ach w-il-a'  
PRFV-Abs2s ERG1s-see-RTV  
'I saw you.'

- b. max-ach way-i  
PRFV-Abs2s sleep-ITV  
'You slept.'

(Mateo Pedro, 2009)

(13) CHOL

- a. Tyi a-k'el-e-yoñ  
PRFV ERG2s-watch-TV-Abs1s  
'You watched me.'

- b. Tyi ts'äm-i-yoñ  
PRFV bathe-ITV-Abs1s  
'I bathed.'

(Coon, 2010a, : 48)

The word order of most Mayan languages is predicate-initial in pragmatically neutral contexts (England, 1991; Aissen, 1992). In declarative clauses, grammatically encoded arguments follow predicates. The elements functioning as predicates include verbs, adjectives and predicative nouns. The basic word order of sentences in Chol is V(O)S as shown by the verbal predicate in (14), although all six possible word orders of subject, object, and verb are attested in marked contexts such as topic and focus constructions (see Coon 2010a,b for detailed discussion).

(14) CHOL

- a. Tyi i-choñ-o ja'as jiñi wiñik.  
PRFV ERG3-sell-TV banana DET man  
'The man sold bananas.'
- b. Ta-x lajm-i jiñi x-ñek.  
PRFV-already die-IRV DET CL-ñek  
'The *xñek* (= a mythological figure in Chol narratives) already died.'

(Coon, 2010a, : 27-28)

The pragmatically neutral word order in Q'anjob'al is VS(O), as seen in (15) (see Mateo Toledo 2008, Mateo Pedro 2010 and the references cited therein for discussion on other possible word orders in Q'anjob'al).

(15) Q'ANJOB'AL

- a. max-ø s-man ix unin an pajich.  
PRFV-Abs3s ERG3s-buy CL child CL tomato  
'The girl bought the tomato.'
- b. max-ø way ix unin.  
PRFV-Abs3s sleep CL child  
'The girl slept.'

(Mateo Pedro, 2010, : 32 )

Unlike Chol and Q'anjob'al, the variety of Kaqchikel mainly discussed in this thesis (= the Patzún dialect) displays SV(O) order in discourse-neutral sentences, as seen in (16).<sup>7 8</sup>

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<sup>7</sup>As England (1991) writes, "Kaqchikel is the language of the K'ichean branch that is perhaps the most insistent on SVO order today" (England, 1991, : 472).

<sup>8</sup>Clemens (2013) finds that verb-initial word order (with rising intonation) in simple sentences is understood as a polar question. Clemens also observes that the Patzún dialect of Kaqchikel allows VOS order as well as SVO order for transitive sentences in embedded contexts.

(16) KAQCHIKEL

- a. Ri a Juan x-ø-u-sech                      jun sik'iwuj.  
DET CL Juan PRFV-Abs3s-ERG3s-lose INDF book  
'Juan lost a book.'
- b. R-ixjayil nu-xb'al                      x-ø-pe.  
ERG3s-wife ERG1s-brother PRFV-Abs3s-come  
'My brother's wife came.'

Other dialects of Kaqchikel exhibit V(O)S order in pragmatically neutral clauses (e.g., García Matzar and Rodríguez Guaján, 1997; Patal Majtzul, 2007, cf. England 1991), as shown in (17).

(17) KAQCHIKEL

- a. x-ø-u-sik'                      ri ab'äj ri achi.  
PRFV-Abs3s-ERG3s-catch DET stone DET man  
'The man picked up the stone.'
- b. x-ø-apon                      ri achi.  
PRFV-Abs3s-arrive DET man  
'The man arrived.'

(Patal Majtzul, 2007, : 48-49)

Despite the interesting nature of word order variation in Mayan languages, I will not attempt to provide an analysis for it in this thesis (see Clemens and Polinsky in press for a recent overview of analyses of word order in Mayan and Austronesian languages).

Transitive verbs in Mayan languages can be divided into two types: *root transitives* and *derived transitives* (or *non-root transitives*) (e.g., Dayley, 1981a). Root transitives are monosyllabic (or CVC) as can be seen in the above examples. On the other hand, derived transitives are longer or appear with special suffixes or derivational suffixes such as causative and applicative suffixes. The example in (18) of Q'anjob'al carries the suffix *-le*. Example in (19) shows the derived transitive with the causative suffix *tzene*.

## Q'ANJOB'AL

- (18) max- $\emptyset$  s-q'an-le-j heb' ha-b'i.  
PRFV-ABS3s ERG3s-word-DTV-Tv PL ERG2s-name  
'They asked your name.'

(Mateo Toledo, 2008, : 55)

- (19) ch-ach hin-way-tzene-j yekal.  
IMPF-ABS2s ERG1s-sleep-CAUS-Tv tomorrow  
'I will make you sleep tomorrow.'

(Mateo Pedro, 2009, : 49)

Many Mayan languages display *status suffixes* found on the verb. The function of these suffixes is to indicate the (in)transitivity of the verb. In Q'anjob'al, for example, the root transitive verb is suffixed by *V'* (= vowel + glottal stop), whereas the intransitive verb has the suffix *-i*, as can be seen in (12). In contrast, derived transitives bear a distinct status suffix (i.e., *-j*), as shown in (18) and (19). The status suffix for root transitives is dropped in non-final position, while the one for derived transitives is never dropped (Mateo Toledo, 2008). The intransitive status suffix *-i* only appears in final position (Mateo Pedro, 2009). In other words, status suffixes in Q'anjob'al only appear in final position, setting aside derived transitives.

Derived transitives in Kaqchikel are suffixed by the transitive status suffix *-j*, as shown by the example in (20).

## KAQCHIKEL

- (20) röj x-e-qa-q'ete-j ri ak'wal-a'.  
we PRFV-ABS3P-ERG1P-hug-Tv DET child-PL  
'We hugged the children.'

The status suffixes in Kaqchikel distinguish between root vs. derived transitives within a limited context, unlike in Q'anjob'al. Root transitives bear the status suffix *-a'* only in the imperative as seen in (21), distinguished from derived transitives in (22).



KAQCHIKEL

- (21) t-ø-a-chap-a'.  
IMP-ABS3s-ERG2s-handle-Tv  
'Grab it!'

(Henderson, 2012, : 21)

- (22) t-ø-a-sipa-j                      chi w-e'.  
IMP-ABS3s-ERG2s-give-Tv PREP ERG1s-RN  
'Give it to me.'

(Henderson, 2012, : 21)

Set A markers also cross-reference possessors. In other words, ergative and genitive are homophonous across Mayan languages. As seen in (23) and (24), the same set A markers (i.e., *ru-* and *r-*) are used for possessors and ergative/transitive subjects.

KAQCHIKEL: POSSESSORS

- (23) ri ru-tz'i' r-ixjayil ri a Juan  
DET ERG3s-dog ERG3s-wife DET Cl Juan  
'Juan's wife's dog'

KAQCHIKEL: TRANSITIVE SUBJECTS

- (24) a. x-øj-ru-q'ete-j.  
PRFV-ABS1P-ERG3s-hug-Tv  
'S/he hugged us.'
- b. x-ø-r-oyoj.  
PRFV-ABS3s-ERG3s-call  
'S/he called him/her.'

(Patal Majtzul, 2007, :30)

Set B markers (or absolutive morphemes) appear adjacent to a noun in nominal predicates as shown in (25) and (26), besides being attached to a verb.

Q'ANJOB'AL

- (25) Kuywom hach.  
student Abs2s  
'You are a student.'

(Coon et al., 2011)

KAQCHIKEL

- (26) At tijoxel  
Abs2s student  
'You are a student.'

Furthermore, one of the striking variations across Mayan languages is the position of absolutive morphemes in predicates. As has been noted by Bricker (1977), Robertson (1980), Tada (1993) and Coon et al. (2011, to appear), Mayan languages can be divided into two classes, depending on the position of absolutive morphemes: *high* vs. *low* absolutive languages. This is illustrated in (27).

- (27) HIGH VS. LOW ABSOLUTIVE LANGUAGES IN MAYAN
- a. *High absolutive* languages: Asp-Abs-ERG-V
  - b. *Low absolutive* languages: Asp-ERG-V-Abs

In high absolutive languages, absolutive morphemes always precede both an ergative morpheme and a verb. On the other hand, absolutive morphemes in low absolutive languages follow the ergative morpheme and the verb. As can be seen from the above examples, Kaqchikel and Q'anjob'al are high absolutive languages, whereas Chol is a low absolutive language.<sup>9</sup> The high vs. low absolutive dichotomy will play a crucial role in the discussion that follows.

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<sup>9</sup>There is further division when we consider non-verbal predicates. For example, the absolutive morpheme in Q'eqchi' is "high" in verbal predicates, whereas it is "low" in non-verbal predicates such as copular sentences (Berinstein, 1985; DeChicchis, 1989) - the absolutive morpheme follows a predicative noun. Q'anjob'al also displays the same behavior (Coon et al., 2011).

## 2.2 Proposal

### 2.2.1 How ergative has been treated

The literature on ergativity is extremely rich. I will not attempt to provide an exhaustive overview of analyses of ergativity in this thesis (see Aldridge, 2008; Coon and Adar, 2013; Deal, to appear, for an extensive review of previous analyses). Instead, I will review several previous approaches that bear on the core part of my analysis.

#### **ERG=structural Case**

One set of analyses of ergative Case proposes that ergative Case is assigned by a particular functional head via syntactic operations, and hence is treated in parallel with structural Case (i.e., nominative/accusative Case). Among these analyses, there are roughly two approaches to formulate ergative Case assignment. One approach suggests that ergative Case is assigned by a "high" functional head: e.g., I/T/AGR-S (Levin and Massam, 1985; Bobaljik, 1992, 1993; Chomsky, 1993). In this approach, ergative Case is equated with nominative Case in accusative languages. In another approach, ergative Case is argued to be assigned by a "low" functional head: e.g.,  $\nu$ /AGR-O (Murasugi, 1992; Ura, 2000, 2001). This approach associates ergative Case with accusative Case in accusative languages.

In a theory developed by Bittner and Hale (1996a,b), ergative Case and accusative Case are treated the same way under the rubric of *marked structural Case*, in opposition to absolutive Case and nominative Case that they group as *unmarked Case*. Bittner and Hale propose that marked structural Case is assigned under the configuration they call *Case-binding*. *Case-binding* demands the presence of another DP (= Case-competitor) within a particular domain (see Bittner and Hale 1996a,b for detailed discussion). The morphological realization of marked structural Case is parameterized, depending on the type of an assigner (or a governor to use their term): ergative Case is assigned by I, whereas accusative Case is assigned by V. In contrast, unmarked Case (i.e., nominative/absolutive case) is assigned by C.

### **ERG=inherent/oblique Case**

Unlike the approaches sketched above, there is a line of analysis which analyzes ergative as inherent Case, distinctly from nominative or accusative Case. Inherent Case is  $\theta$ -related and assigned to a DP along with a particular  $\theta$ -role (Chomsky, 1986), just like instrumental or locative Case.

Woolford (1997) is one of the earliest proponents of this analysis (see also Mahajan, 1989, etc. for its precursors). Woolford argues based on Nez Perce that ergative Case is assigned to the transitive subject in association with an agent  $\theta$ -role. She treats inherent ergative Case in parallel with inherent dative Case in dative subject constructions, where dative Case is most often associated with an experiencer (though she is careful to note that the correlation between inherent Case and a  $\theta$ -role is not always absolute).

Developing Woolford (1997), other works such as Aldridge (2004, 2008), Anand and Nevins (2006), Massam (2006), Woolford (2006), Legate (2008) and Coon (2010a, 2013a) propose that ergative Case is inherently assigned by  $v$  to the external argument.

Other approaches have analyzed ergative as oblique Case. For example, Hale (1974) proposes that ergative sentences are derived via passivization in Warlpiri (see also Comrie, 1978, among many others for passive-based analyses of ergative sentences in various groups of languages). Under this analysis, ergative subjects are treated as agentive obliques like a *by*-phrase in the English passive. Bok-Bennema (1991) also presents an oblique analysis of ergative in Dyirbal. Johns (1992) argues that ergative Case in Inuktitut is genitive, based on a nominalization analysis of transitive sentences in the language. More recently, Polinsky (2013) proposes an analysis in which ergative subjects in some languages are headed by a null preposition. She derives syntactic ergativity and particularly the ban on A-bar extraction of the ergative subject from the PP status of ergative subjects.

### **ERG=morphological case**

Marantz (1991) advances a morphological analysis of ergativity. He suggests that (morphological) case and agreement are realized at a post-syntactic component, namely *Morphological Structure*, in order to satisfy the morphological requirements of particular languages. Related to this, he does not assume *the Case Filter* (Chomsky, 1981)– nominals are not licensed by Case. Under Marantz's system, nominal arguments are licensed by (extended) projection and independent principles governing the distribution of PRO and *pro*.

Marantz introduces (i) the notion of *dependent case*, which groups ergative and accusative together, just as marked case in Bittner and Hale (1996a,b) (see above), and (ii) *the disjunctive case hierarchy* as shown in (28).

(28) lexically governed case >dependent case >unmarked case >default case

According to the hierarchy, the case assignment algorithm first assigns lexically governed case (e.g., oblique and quirky cases), if any, in the local domain of V+I complex (= clause). Next, the algorithm checks whether it can assign dependent case. Crucially, the presence of ergative/accusative case *depends* on the presence of a distinct DP without lexical case – two DPs are distinct from each other if they are not part of a chain. If there are two distinct DPs in a clause and one of them is not assigned lexical case, dependent case is assigned. Under this analysis, the parameterizable directionality of dependent case assignment determines the output of dependent case: ergative vs. accusative. If dependent case is assigned “upwards” to the subject of V+I complex, it is realized as ergative. On the other hand, if dependent case is assigned “downwards” to the object of V+I complex, it is accusative.

Subsequently, unmarked case including nominative, absolutive (both of which are also known as *obligatory cases*) and genitive is assigned to the other DP in the same clause. In an ergative language, it is the object that receives unmarked case, which is realized as absolutive case. On the other hand, the subject receives unmarked case (= nominative) in an accusative language. Default case is assigned to a DP which has not been covered by the previous case assignment algorithms.

Marantz’s theory correctly explains the dependency of ergative/accusative on another distinct DP – these cases cannot occur in intransitive clauses.<sup>10</sup> In addition, this analysis can capture the cross-linguistic tendency for ergative/accusative case to be unable to cooccur with lexical case like dative case (see Deal to appear, for example, for counterexamples to this). More recently, Baker and Vinokurova (2010) update Marantz’s theory under phase theory and propose that a Marantz-type case assignment model coexists with an Agree-based Case assignment model (Chomsky, 2000). Specifically, they argue based on Sakha that accusative and dative cases are assigned by the Marantz-type model, whereas the Agree model is responsible for nominative and genitive cases.

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<sup>10</sup>In some languages such as Georgian, the unergative (or agentive) subject, but not the unaccusative subject, is marked with ergative case: a *Split-S system* (Dixon, 1994; Mithun, 1991).

## 2.2.2 The design of default ergative

### New perspectives

#### Flexibility of ergative assignment

As we have seen in the preceding section, analyses of ergativity have diverged on the question of how ergative and absolutive are assigned/licensed in syntax or morphology. Despite the conflicting views, however, what many of these analyses seem to have in common is that ergative Case is assigned by or connected to a certain (functional) head, or associated with a particular  $\theta$ -assigning head.

This thesis will explore another logical possibility. Specifically, I propose the hypothesis that ergative Case may be assigned to a DP which would be otherwise Case-less within a certain domain. In this sense, ergative Case appears to be a default. At the same time, I will argue that ergative Case may be assigned by *any* phase head if there is a Case-less DP within its Spell-Out domain – it is not just a default. This gives rise to the impression that assignment of ergative Case is a default, though it is in fact structurally determined. I will call this type of ergative Case *phase head Case*

Crucially, if this analysis is correct, ergative Case is not associated with a particular  $\theta$ -role. Furthermore, the present analysis does not presuppose a strict one-to-one correlation between a functional head and ergative Case as argued by some of the previous approaches reviewed above: e.g., T/I = ergative or  $v$  = ergative. There *is* a structural relation between a functional head and ergative Case in our analysis, but it is *weaker*.

As shown by Bittner and Hale (1996a,b) among many others, ergative languages do not form a homogeneous group. I will therefore not argue that all instances of Case or agreement that we might label ‘ergative’ represent phase head Case – merely that what is called ergative may constitute phase head Case in certain languages. In particular, I will investigate (split) ergativity in Mayan languages as a testing ground for the hypothesis that phase head Case exists, and is the correct analysis of certain phenomena generally analyzed as instances of ergative alignment. In chapter 5, I will examine the consequences of this hypothesis for ergative languages outside the Mayan family.

One of the crucial consequences of this approach is that ergative Case can be aligned with grammatical relations more flexibly than in previous approaches. Ergative may look like an ‘alignment’ because in the majority of sentences the subject in a transitive sentence is aligned with ergative Case. I will argue that

appearances are *deceiving*, and that if we look carefully at the full range of instances in which ergative is found, a different generalization emerges. There is no *a priori* reason to posit a correlation between ergative Case and grammatical relations – a DP receiving ergative Case could be either subject or object. I will demonstrate that this “flexibility” of ergative will account for an alignment puzzle found in ergative splits of Mayan languages as well as other puzzles introduced in chapter 1.

### Unification of set A markers

Another consequence concerns the unification of set A markers under the rubric of phase head ergative Case. As mentioned in §2.1.2, ergative and genitive morphemes (for possessor agreement) in Mayan languages are homophonous and classified as set A markers in opposition to set B markers (= absolutive morphemes). As shown by the Kaqchikel example in (29), possessor agreement is marked by set A markers (= genitive) on the possessed nouns. The alternation between two allomorphs (i.e., *ru-* and *r-*) is phonological: the latter is used in a prevocalic position, whereas the former appears in a preconsonantal position.

#### KAQCHIKEL

- (29) *ri ru-tz'i' r-ixjayil ri a Juan*  
 DET ERG3s-dog ERG3s-wife DET CL Juan  
 ‘Juan’s wife’s dog.’

The same set A markers are used as ergative in transitive sentences like (30).

#### KAQCHIKEL

- (30) a. *x-øj-ru-q'ete-j.*  
 PRFV-ABS1P-ERG3s-hug-TV  
 ‘S/he hugged us.’
- b. *x-ø-r-oyoj.*  
 PRFV-ABS3S-ERG3s-call  
 ‘S/he called him/her.’

(Patal Majtzul, 2007, :30)

In addition, a class of functional elements called *relational nouns* in the Mayan literature bears set A markers, cross-referencing a complement noun. Relational nouns as a class are analyzed as nouns (as their name suggests) in Mayan linguistics, with their set A markers taken to be genitive morphemes. To illustrate relational nouns, I will use Kaqchikel examples again. Some relational nouns are also used as plain nouns as seen in (31) and (32): *-ichin* 'one's' and *-i* 'oneself'. The relational nouns formed with set A markers thus behave as possessed nouns. In the examples below, pronominal possessors are dropped.

KAQCHIKEL

- (31) w-ichin  
ERG1s-one's  
'mine'

(Brown et al., 2006, :156 *glosses are mine*)

- (32) w-i'  
ERG1s-oneself  
'myself'

Other relational nouns function like prepositions in that they denote a comitative or causal notion, as shown in (33).<sup>11</sup> Here too, they carry set A markers cross-referencing their complement nouns. In this sense, they behave like inflected prepositions found in languages like Irish (McCloskey and Hale, 1984) and Welsh (Borsley et al., 2007).

KAQCHIKEL

- (33) a. r-ik'in  
ERG3s-with  
'with him/her/it'

---

<sup>11</sup>Some relational nouns like *-oma* and *-ichin* can link clauses as well as noun phrases (Brown et al., 2006).



- b. **aw-oma**  
 ERG2s-because  
 'because of you, for you'

(Brown et al., 2006, :156)

Other relational nouns functioning like prepositions must themselves be preceded by prepositions such as *pa(n)* and *chi*. Examples illustrating this type of relational nouns are given in (34) (see García Matzar and Rodríguez Guaján 1997, Brown et al. 2006 and Patal Majtzul 2007 for more details about relational nouns in Kaqchikel).

KAQCHIKEL

- (34) a. pa ru-wi'  
 PREP ERG3s-on.top.of/above  
 'on top of/above it'
- b. chi ki-kojol  
 PREP ERG3P-among  
 'among them'
- c. chi r-e  
 PREP ERG3s-to/for  
 'to/for him/her/it'
- d. pa ki-k'exel  
 PREP ERG3P-instead.of  
 'instead of them'

(Patal Majtzul, 2007, :47)

It was shown that a possessor (or a complement noun) is cross-referenced by a set A marker (= genitive) in both possessed nouns and relational nouns, just as a transitive subject is cross-referenced by a set A marker (= ergative).<sup>12</sup> If one were to explain these two types of set A markers in structural terms by positing

<sup>12</sup>Nevertheless, there is a difference between possessed nouns and relational nouns. As Mateo Toledo (2008) discusses for Q'anjob'al, for example, modifiers such as classifiers and adjectives cannot cooccur with relational nouns, but can occur with possessive nouns.

different heads for ergative and genitive (e.g., *v* for ergative and *D* for genitive in the sense of Abney (1987)), this analysis would have to stipulate that they are *accidentally* spelled-out as identical forms (i.e., set A markers).

By contrast, I will suggest that possessors receive genitive (or set A) as phase head Case just as the transitive subject (and other grammatical relations) receives ergative (or set A) as phase head Case.<sup>13</sup> In this way, we can capture the syncretism of ergative and genitive in Mayan languages. To be precise, they are spelled out the same way because they are assigned by the same mechanism (= phase head Case assignment to be developed in the next subsection). To unify set A markers under the rubric of phase head Case, therefore, I will refer to all types of set A markers (i.e., ergative and genitive) as ergative (Case) in the discussion that follows (see §2.3.4 for discussion on the morphological status of set A markers as well as set B markers). Below I will proceed to lay out the basic architecture of phase head Case assignment.

#### **Default ergative = Phase head Case**

As a first step, I assume that all DPs require abstract Case in order to be licensed, following Vergnaud (1976/2006), Rouveret and Vergnaud (1980), a property of grammar also known as *the Case Filter* (Chomsky, 1981, cf. Marantz 1991). The effect of *the Case Filter* is exemplified by the contrast in (35).

- (35) a. destroy the city
- b. destruction \*(of) the city

To the extent that the complement noun of a verb is Case-licensed, whereas the complement of a noun is not (Chomsky, 1981), one can see from (35) that DPs require Case.<sup>14</sup> In anomalous cases like (35-b), *of-insertion* must take place to license *the city* (Chomsky, 1970) – the preposition *of* assigns oblique Case to its complement noun (Chomsky, 1981).

With this as background, *what is phase head Case?* An answer I will provide in this thesis is that ergative

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<sup>13</sup>In the chapters to follow, I will show that not only transitive subject but intransitive subject and object of a transitive verb receive ergative (or genitive) Case in certain situations of Mayan.

<sup>14</sup>More generally, only the [-N] categories (i.e., verbs and prepositions) assign Case in English (Chomsky, 1981, :49).

Case, or what has been perceived as ergative Case, in some languages is actually a type of Case which is assigned by a phase head to a DP that would be otherwise Case-less, like the Case provided by the insertion of *of*. Therefore, phase head Case is equivalent with ergative Case in the following discussion.

Before proceeding to elaborate on this idea, we need to address the following questions: (i) *When does phase head Case assignment take place?* (ii) *Is every Case-less DP eligible for phase head Case?* A crucial element in my answer to these questions will be phase theory (Chomsky, 2001, *seq.*), which proposes that particular syntactic elements built in the narrow syntax (in a bottom-up manner) are sent to the interfaces, namely PF and LF, via the process called Spell-Out. I will assume with Chomsky that Spell-Out takes place each time a (strong) phase is constructed. Spell-Out applies to a Spell-Out domain, which is defined as a phase minus a phase head and its specifier (= the complement of a phase head) (Chomsky, 2001). I will assume that CPs, *v*Ps and DPs are phases. I adopt the view that a *v*P is a (strong) phase just when it contains a transitive verb (Chomsky, 2001, cf. Legate 2003).<sup>15</sup>

With this background, I define phase head Case assignment as in (36).

(36) PHASE HEAD CASE (= ERGATIVE CASE) ASSIGNMENT

Ergative Case may be assigned by a phase head to *the highest* Case-less DP within the Spell-Out domain of a phase when it triggers Spell-Out.

The structural description of (36) restricts the range of Case-less DPs that qualify for phase head Case. I take it for granted that the structural relation among DPs is determined on the basis of c-command. In addition, Spell-Out defines the timing of phase head Case assignment.

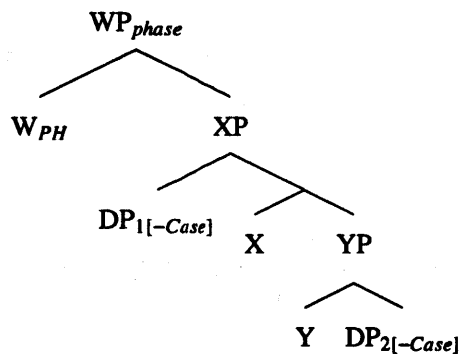
Although the way ergative is assigned in (36) is similar to some of the previous analyses reviewed earlier in which a certain functional head assigns ergative, (36) differs crucially from them in that any head may assign ergative as long as it is a phase head. Furthermore, ergative assignment in (36) functions like a last-resort strategy in the sense that it only takes place when there is a Case-less DP at the time of Spell-Out. This amounts to saying that a phase head is allowed not to assign its (ergative) Case when phase head Case assignment need not take place, contrary to *the Inverse Case Filter* (Bošković, 2002), which requires that

<sup>15</sup>To be more precise, Chomsky (2001) proposes that transitive and unergative *v*Ps are strong phases, whereas unaccusative and passive *v*Ps are weak phases. I will suggest below that unergative verb phrases in (at least) Mayan languages to be discussed are weak phases, departing from Chomsky. In what follows, a phase with no specification is equivalent to a strong phase in discussing the type of a *v*P, unless otherwise noted.

Case assigners assign their Case. The proposed model of phase head Case assignment also comes close to the hypothesis advocated by Preminger (2011, in press) that the grammar's attempt to probe (which would be followed by agreement and Case assignment if the attempt succeeded) is allowed to fail. What is crucial under Preminger's theory is that the grammar's attempt must be initiated, regardless of whether it succeeds or fails. Applying Preminger's logic to our analysis, a phase head is allowed not to assign its (ergative) Case, if we suppose that it attempts to assign its Case even when the structural description in (36) is not met (e.g., there is no Case-less DP).

To see how phase head Case assignment works, consider the structure in (37). Suppose that W is a phase head and that both DP<sub>1</sub> and DP<sub>2</sub> have not been assigned Case.

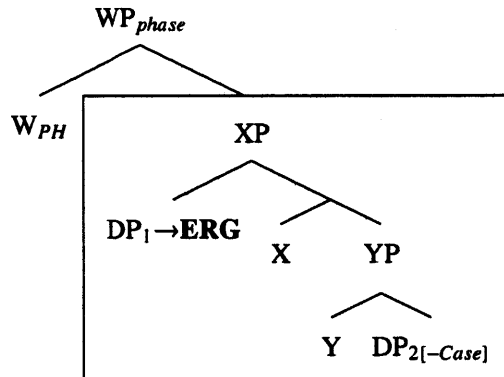
(37)



Since WP is a phase, it triggers Spell-Out. At this point of a derivation, neither DP<sub>1</sub> nor DP<sub>2</sub> has Case, assuming that none of the heads (= X and Y) is a Case-assigner. The phase head W now invokes ergative Case assignment as there are Case-less DPs within its Spell-Out domain. As stated in (36), DP<sub>1</sub> receives ergative Case from the phase head W as it is the highest Case-less DP within a Spell-Out domain of the phase.<sup>16</sup>

<sup>16</sup> Kahnemuyipour (2004) proposes a similar algorithm for "default" stress assignment in Persian (see also Kratzer and Selkirk 2007 for its modified (universal) model). Kahnemuyipour (2004) argues that the *highest* constituent within the Spell-Out domain receives phrase stress. I thank Norvin Richards for bringing this work to my attention.

(38) *Phase head Case assignment*



What about DP<sub>2</sub>? Although it could have received Case earlier in the derivation, we have considered cases in which it remains Case-less in (38). There are several ways in which DP<sub>2</sub> can receive Case. For example, if X has the ability to assign Case, DP<sub>2</sub> can receive Case from it via Agree (Chomsky, 2000). If X is not a Case-assigning head, DP<sub>2</sub> can still receive Case from a head that will be introduced in the next phase. As noted above, we follow Chomsky (2001) in that certain domains are grouped as “chunks” (= phase). Chomsky further hypothesizes that earlier phases are frozen and hence elements in these domains can be no longer accessed for syntactic operations like Agree (= *the Phase Impenetrability Condition*). However, we depart from Chomsky’s phase theory in this respect and suggest that the syntax can examine elements in earlier domains/phases as argued by Fox and Pesetsky (2005). DP<sub>2</sub> in (38) can thus receive Case from a head that will be introduced later in the derivation (see below for more discussion). Alternatively, DP<sub>2</sub> can be Case-licensed via (pseudo-)incorporation (Baker, 1988a; Massam, 2001) or antipassivization. We will observe all of these possibilities in the chapters to follow.

It is important to stress that ergative Case assignment in (36) takes place in the syntactic domain, not in the morphology. Therefore, ergative Case assignment is *syntactic* under the present analysis. This contrasts with *morphological* default case as discussed by Schütze (1997, 2001) (see also Marantz 1991). A DP that does not need structural Case, Schütze maintains, is assigned morphological case in the morphology via *Late Insertion* (Halle and Marantz, 1993) just for the purpose of ‘Spell-Out’ (= PF). For example, accusative case on pronouns appearing in left-dislocated or appositive positions in English is an example of morphological default case.

(39) a. Me/\*I, I like beans.

b. The best athlete, her/\*she, should win.

Schütze (2001)

Crucially, this type of default case does not rescue a Case-less DP for the sake of the Case Filter (see also Pesetsky 2013 for relevant discussion). The accusative case cannot be assigned to a DP in a Case-less position in order to avoid a violation of the Case Filter – e.g., the complement of a raising verb as in (40).

(40) \*It seems him/he to be tired.

Schütze (2001)

I suppose that the difference between English (and perhaps other languages) and the Mayan languages to be discussed in the thesis boils down to the ability of a phase head: whether a phase head can invoke Case assignment as a last-resort strategy. There is no Case available in English which could be assigned by a phase head to a DP that would otherwise violate the Case Filter.<sup>17</sup>

As will become clear, syntactic ergative Case (= phase head Case) is *in complementary distribution with structural Case*. Thus, ergative looks like a default in the sense relevant to the Case Filter (see also Collins 1993 (= Ewe), McCloskey 1985 (= Irish), van Urk 2013 (= Dinka and other African languages), Erlewine et al. 2014 (= Austronesian languages) for proposals of syntactic “last-resort” Case).

To summarize, under the present theory, ergative Case in certain languages is manifestation of phase head Case, which is assigned to the highest Case-less DP at the time of Spell-Out. In other words, a DP qualifies as a bearer of ergative Case so long as it meets the condition, irrespective of whether it is subject or object.

### 2.2.3 The absolutive Case parameter

In this subsection, I will turn to the discussion of absolutive Case assignment in Mayan. In particular, I develop a non-uniform analysis of absolutive Case assignment, following Legate (2002, 2008), Aldridge

<sup>17</sup>It appears, however, that there is a default strategy in the syntax to license an otherwise Case-less DP in the limited domain of English. That is, English makes use of *of*-insertion to Case-license a Case-less DP in the nominal structure.

(2004, 2008) and Coon et al. (2011, to appear). To be precise, absolutive Case in some languages is uniformly assigned by Infl (=nominative), whereas absolutive Case in other languages is assigned by Voice (= accusative) in transitive sentences and by Infl (= nominative) in intransitive sentences.<sup>18</sup> I will provide independent evidence for the non-uniform analysis of absolutive Case assignment (= *split absolutive assignment*) based on the interaction between finiteness and the (un)availability of absolutive Case.

### Split absolutive assignment

Following the view that the locus of absolutive assignment can vary both *across* languages and *within* a given language (Legate, 2002, 2008; Aldridge, 2004, 2008; Coon et al., 2011), I take the high vs low absolutive dichotomy in Mayan a step further to suggest a parameter for absolutive Case assignment within Mayan. In particular, I adopt and develop the *Mayan Absolutive Parameter* (Coon et al., 2011, to appear). In high absolutive languages, finite Infl assigns absolutive Case uniformly in intransitive and transitive clauses. On the other hand, in low absolutive languages, absolutive Case is assigned by finite Infl in intransitive clauses and by Voice in transitive clauses. This is summarized as *the Absolutive Case Parameter* below.<sup>19 20</sup>

(41) THE ABSOLUTIVE CASE PARAMETER

	High ABS languages	Low ABS languages
ABSTRANSITIVE	Infl <sub>finite</sub>	Voice
ABSINTRANSITIVE	Infl <sub>finite</sub>	Infl <sub>finite</sub>

Under (41), the assignment of absolutive Case is *non-uniform* both across languages (i.e., high vs. low absolutive languages) and within languages (i.e, transitive vs. intransitive sentences in low absolutive languages).<sup>21</sup>

<sup>18</sup>Legate (2008) recently proposes a new view that there is no absolutive Case in the syntax. She argues that absolutive Case is a *morphological default*: a cover term for case that does not have a dedicated morphological form. In her analysis, "absolutive" Case is assigned by either T (=nominative) or v (=accusative) in the syntax just as in familiar languages like English. In the morphology, however, nominative/accusative Case is realized as the null default in many ergative languages. Legate claims that this conflation of nominative and accusative into the default morphological case is the source of absolutive Case.

<sup>19</sup>In what follows, I will simply write Infl for finite Infl. When I say there is no Infl, I intend to mean that there is no *finite* Infl.

<sup>20</sup>There is simply a notational difference between (41) and the *Mayan Absolutive Parameter* (Coon et al., 2011, to appear). Voice in (41) corresponds to v in the latter.

<sup>21</sup>One might ask why there are no languages in which absolutive Case is always assigned by Voice. One possible explanation for this gap is that the subject in unergatives cannot receive Case if Voice is an absolutive assigner in intransitives, assuming that

In high absolutive languages, absolutive corresponds to *nominative* in accusative languages for both the intransitive subject and the transitive object since it is assigned by Infl. In other words, a transitive *vP/VoiceP* as well as an intransitive *vP/VoiceP* has no ability to assign Case, unlike accusative languages such as English.<sup>22</sup> In this sense, a transitive *v* or Voice in high absolutive languages does not reflect Burzio's generalization (Burzio, 1986) because it assigns an external  $\theta$ -role to the subject without assigning Case to the object (see Bobaljik and Branigan 2006 for a similar discussion on Chukchee).

In low absolutive languages, on the other hand, absolutive can be taken as either as *accusative* (assigned by Voice) in transitive clauses or as *nominative* (assigned by Infl) in intransitive clauses. In this respect, low absolutive languages pattern with accusative languages like English to a larger extent than high absolutive languages in that the object receives Case from Voice (or *v* in a more familiar term), while the intransitive subject receives Case from Infl. The only difference between low absolutive languages and English under the present analysis is the availability of phase head Case assignment for the transitive subject (see §2.3.2 for more discussion on the parallelism between low absolutive languages like Chol and accusative languages like English).

One immediate question is why the Case-assigning ability of Infl should vary with the transitivity of a verb in a low absolutive language. I suggest that Infl in transitive sentences of low absolutive languages *does* have the ability to assign Case as in high absolutive languages, but it need not do so because a lower head, namely Voice, assigns Case to the object. For this purpose, I do not assume the Inverse Case Filter (Bošković, 2002, etc.), which states that Case assigners must assign their Case. Thus, Infl in transitive sentences is allowed not to assign its Case. This gives rise to a situation in which Voice assigns absolutive Case to the object. The derivation of a transitive clause in low absolutive languages is illustrated below (see §2.3 for detailed discussion on the structure of transitives). We will discuss how the subject receives ergative Case in §2.3. The Case-assigning ability of Infl is notated as [+Case] simply for expository purpose.

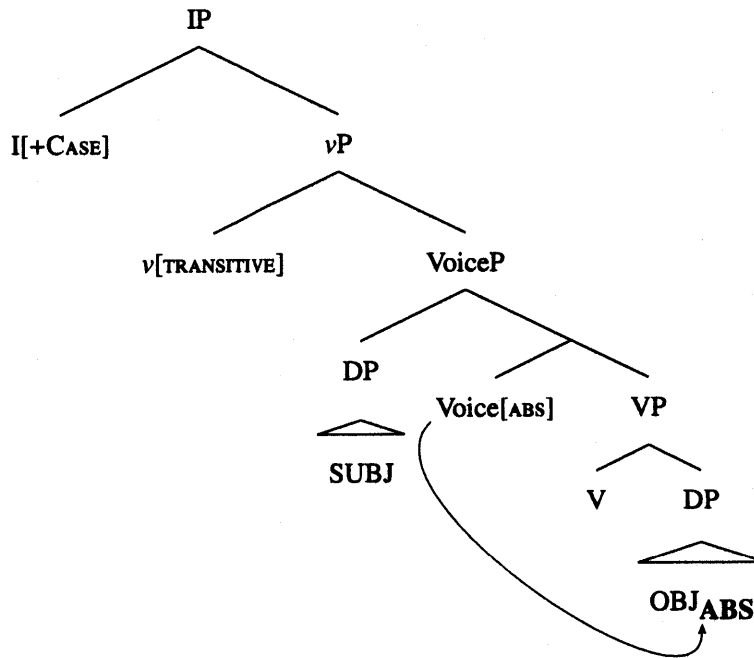
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the unergative subject appears in a higher position than Voice (see §2.3 for details about the structure of unergatives). Voice cannot probe and assign Case to the subject since the latter is not c-commanded by the former. For this purpose, we do not assume "upward" Agree (or Case assignment) (Baker, 2008) or *Cyclic Agree* (Béjar and Rezac, 2009). I thank Norvin Richards (p.c.) for helpful discussion on this issue.

<sup>22</sup>It has been suggested by previous works such as Bok-Bennema (1991) that the inability of a transitive verb to assign Case is a defining character of ergative languages in opposition to accusative languages. However, as we will see, a transitive verb in some ergative languages assigns Case just as in accusative languages (see also Aldridge 2004, 2008; Legate 2008).

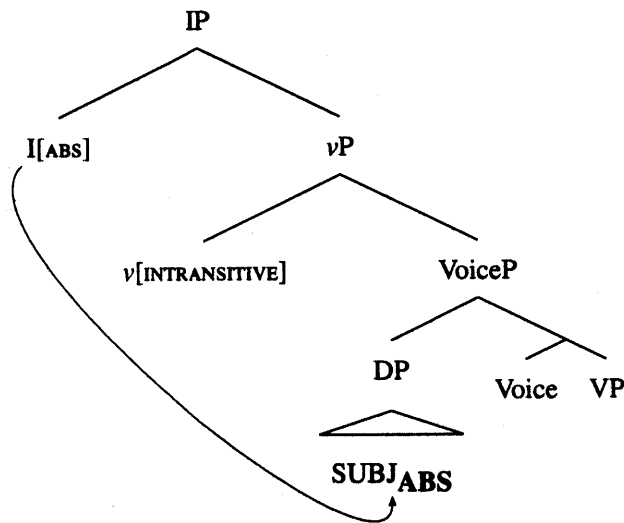


(42)



In intransitive clauses of low absolutive languages, there is no Case-assigning Voice just as in accusative languages, and hence Infl assigns absolutive Case to the subject. This is illustrated below (see §2.3 for the analysis of intransitives).

(43)



### Correlation between finiteness and absolutive Case

Evidence for the Absolutive Case Parameter in (41) comes from the interaction between finiteness and the presence vs. absence of absolutive Case, as first pointed out by Legate (2002, 2008) for Warlpiri (see also Aldridge 2004, 2008 for discussion of Austronesian languages). If (finite) Infl is the locus of absolutive Case in both intransitive and transitive clauses of high absolutive languages and intransitive clauses of low absolutive languages, the prediction is that absolutive Case disappears in contexts like non-finite clauses where Infl is also absent. On the other hand, if Voice assigns absolutive Case in transitive sentences of low absolutive languages, absolutive Case would be expected to remain in non-finite transitive clauses of these languages. We will show below that this sharp contrast holds between high and low absolutive languages (see Coon et al. 2011, to appear for the same point). Let us now suppose that there is a one-to-one correspondence between absolutive/ergative morphemes and absolutive/ergative Case: the presence of an absolutive or ergative morpheme implies the presence of absolutive or ergative Case, respectively, and vice versa (see §2.3.4 for discussion).

Kaqchikel, a high absolutive language, confirms the prediction stated above that absolutive Case is absent in non-finite clauses of high absolutive languages. As we will observe in great detail in chapter 3, non-perfective sentences such as the progressive involve non-finite clauses that undergo nominalization. In the examples below, the bracketed forms are non-finite clauses.

(44) KAQCHIKEL

- a. y-in-ajin            che [ki-k'ul-ik            ak'wal-a'].  
IMPF-ABS 1S-PROG PREP ERG3P-meet-NOML child-PL  
'I am meeting children.'
- b. y-in-ajin            che [atin-ik].  
IMPF-ABS 1S-PROG PREP bathe-NOML  
'I am bathing.'

What is crucial to our discussion is that no absolutive morpheme appears inside the non-finite clauses in (44-a) (= transitive) and (44-b) (=intransitive), while the ergative morpheme appears in (44-a). The absence of absolutive morphemes in non-finite clauses of Kaqchikel is compatible with our prediction that

absolutive Case disappears altogether when Infl is missing in high absolutive languages. Interestingly, the ergative morpheme in (44-a) cross-references the transitive object *ak'wal-a'*, not the subject as one might expect. We will return to this issue in chapter 3.

In contrast, low absolutive languages display a very different distribution of the absolutive in non-finite clauses. If Voice assigns absolutive Case in transitive clauses of low absolutive languages, absolutive Case is expected to remain in non-finite clauses, unlike in high absolutive languages. This is because the absence of Infl does not imply the absence of *v* or Voice. For intransitive sentences, since Infl is an assigner of absolutive Case, absolutive Case should disappear in non-finite clauses in parallel to high absolutive languages. Chol, a low absolutive language, confirms this prediction, as shown by the following examples.

(45) CHOL

a. Choñkol [i-jats'-oñ].  
PROG ERG3s-hit-ABS1s  
'She's hitting me.'

b. Choñkol [i-majl-el].  
PROG ERG3s-go-NOML  
'She's going.'

(Coon, 2013a, : 13)

As in Kaqchikel, non-perfective sentences in Chol involve non-finite clauses that are nominalized, as argued by Coon (2010a, 2013a). The bracketed expressions are non-finite clauses. In the non-finite clause of the intransitive in (45-b), the absolutive morpheme is absent as expected, since Infl is an absolutive assigner. On the other hand, the non-finite clause of the transitive in (45-a) retains the absolutive morpheme. This sharp contrast between (45-a) and (45-b) follows from the claim that Voice assigns absolutive Case in transitive clauses of low absolutive languages (see §2.3 for more discussion on non-finite clauses).

To summarize, the correlation between non-finite clauses and the presence/absence of absolutive Case provides strong support for the Absolutive Case Parameter in (41). In the next subsection, I will demonstrate how (in)transitive sentences in ergative languages can be derived by the interaction of phase head Case assignment in (36) and the Absolutive Case Parameter in (41).

## 2.3 Default view of ergative constructions

In this subsection, I will demonstrate how (in)transitive sentences in Mayan can be derived by the phase head Case analysis and the Absolutive Case Parameter proposed above: high absolutive languages (§2.3.1), low absolutive languages (§2.3.2) and nominal constructions (§2.3.3). In §2.3.4, we will propose that absolutive/ergative agreement morphemes are morphologically realized  $\phi$ -features of a DP which receives absolutive/ergative Case. We will assume that absolutive/ergative Case is null in head-marking languages like Mayan. Although default-like properties of the ergative are not so obvious in typical transitive clauses, this subsection will lay the foundation for the analyses of "unusual" ergative to be developed in chapter 3-5.

### 2.3.1 High absolutive languages

Let us first address *high absolutive* languages. Kaqchikel and Q'anjob'al fall into this type of languages, as seen in the following examples.

(46) KAQCHIKEL

a. yin x-e-in-tz'ët rje'.  
I PRFV-ABS3P-ERG1s-see they  
'I saw them.'

b. rje' x-e-wär.  
they PRFV-ABS3P-sleep  
'They slept.'

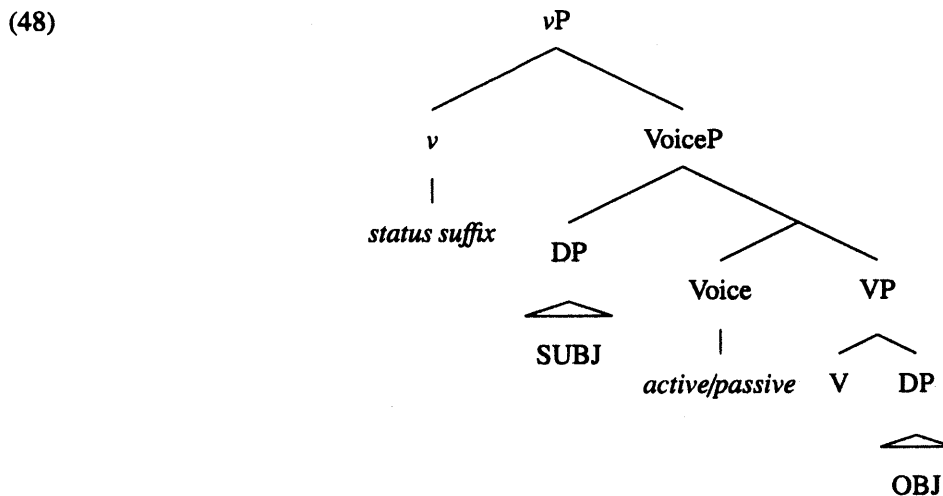
(47) Q'ANJOB'AL

a. max-ach w-il-a'.  
PRFV-ABS2s ERG1s-see-RTV  
'I saw you.'

- b. **max-ach** way-i.  
 PRFV-Abs2s sleep-Itv  
 'You slept.'

(Mateo Pedro, 2009)

We adopt the underlying structure of transitive clauses as in (48) for Mayan languages (cf. Aissen, 1992; Coon, 2010b).<sup>23</sup> Following Hale and Keyser (1993), Chomsky (1995) and Kratzer (1996) among others, I assume that transitive subjects are generated externally to a lexical VP and specifically in Spec-VoiceP (see also Coon et al. 2011 cf. Harley, 2013).<sup>24</sup> Both external and internal arguments receive their  $\theta$ -roles within the verbal projection.



I take Voice to be the locus of voice morphology such as the active or (anti)passive voice morpheme. In addition, I suggest that  $v$  is realized as the status suffix, following Coon et al. (2011). As noted in §2.1.3,

<sup>23</sup>Aissen (1992) proposes that subject is generated in a right-specifier position of VP to derive a verb-initial order in Mayan languages. Coon (2010b) argues that predicate/ $v$ P fronting (combined with object movement) derives VOS/VSO word order in Chol. I do not attempt to provide an analysis of word order variation in Mayan languages in this thesis. For most part, we will thus remain neutral about the derivation of verb-initial order in the languages we discuss. See the aforementioned works for analyses of predicate-initial order in Mayan, and Aldridge (2004) for Seediq, Chung (2005, 2006) for some Austronesian and Mayan languages, Massam (2000) for Niuean and Clemens and Polinsky (in press) for an extensive overview of analyses of verb-initial word orders.

<sup>24</sup>The exact labels of the projections within a verbal domain are irrelevant – VP, VoiceP and  $v$ P are all extended projections of a verb in the sense of Grimshaw (1991). What is crucial to our discussion is that the highest projection of the domain (here  $v$ P) constitutes a phase (see below for discussion).

many Mayan languages like Q'anjob'al make a productive use of status suffixes indicating the (in)transitivity of a predicate: *V'* (= transitive) and *-i* (= intransitive) in (47).

The hierarchical structure proposed in (48) is supported by the following passive example of Q'anjob'al. In (49), the passive morpheme *-lay* is followed by the intransitive status suffix *-i*. The suffix only occurs in a phrase-final position.

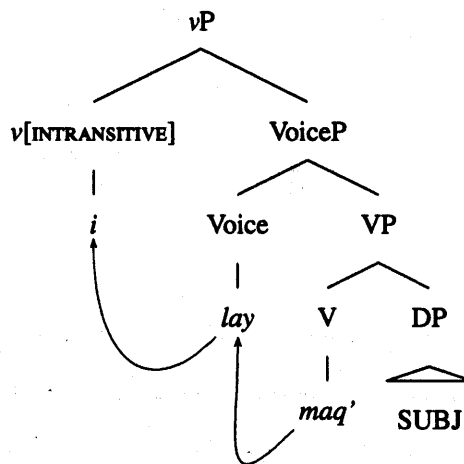
Q'ANJOB'AL

- (49) Max-ach maq'-lay-i.  
 PRFV-Abs2s hit-Pas-Itv  
 'You were hit.'

(p.c. Pedro Mateo Pedro)

Following the Mirror Principle (Baker, 1985) in that morpheme order should mirror syntactic structure, I suggest that the morpheme ordering in (49) supports the structure in (48) – the verb first merges with Voice (= passive) and subsequently with *v* (= status suffix). In what follows, I will assume that *V* undergoes successive-cyclic head movement to *v* to derive surface morpheme order. The structure for (49) can be illustrated as below. (I omit the suppressed underlying subject from the structure.)

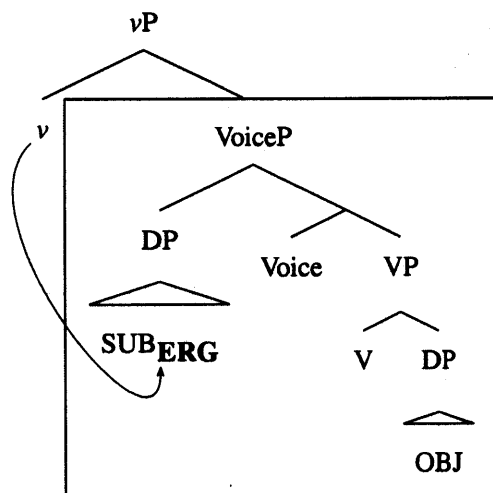
- (50) *The structure for (49)*



Building on Anderson (1976), I will also assume the structural prominence of the ergative subject over the absolutive object in ergative languages – the former asymmetrically c-commands the latter. Anderson (1976) and other subsequent works (see also Bobaljik 1992, Manning 1996, Aldridge 2004, Polinsky 2013 and references cited therein) have demonstrated that ergative subjects in various languages retain certain subject properties just as nominative subjects do, on the basis of syntactic diagnostics such as reflexive/anaphora binding, equi-NP deletion and conjunction reduction (see the appendix for subject properties of ergative subjects in Mayan). I will suppose that these subject properties of the ergative subject arise from its initial merge position (cf. Ura 2000): Spec-VoiceP in transitives and unergatives or the complement of V in unaccusatives (see below).

At the point of a derivation of transitives in (48), neither the subject nor the object receives any Case since Infl is the only Case assigner in high absolutive languages. Assuming that a transitive *v*P constitutes a phase and triggers Spell-Out (Chomsky, 2001), the highest Case-less DP within the Spell-Out domain, namely the subject, receives phase head ergative Case from *v*, according to (36).

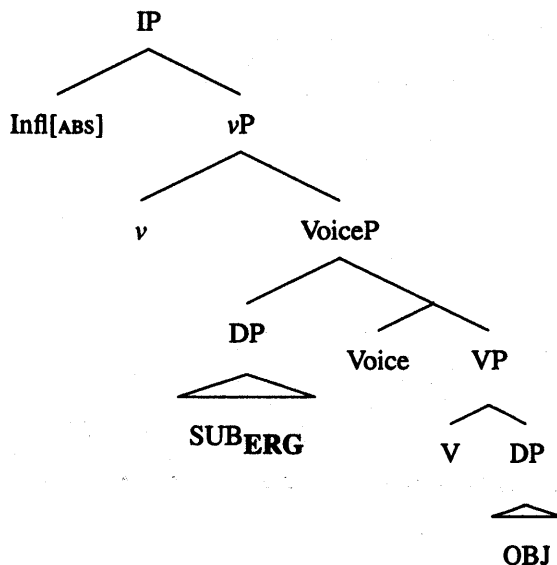
(51) *v*P triggers Spell-Out



What about Case for the object? When Infl is introduced, it can assign absolutive Case to a Case-less DP, namely the object, on the assumption that Infl can still probe elements in the prior phase *à la* Fox and Pesetsky (2005). However, the subject intervenes between Infl and the object, and could potentially

trigger a defective intervention effect in the sense of Chomsky (2000). Defective intervention is a phenomenon where Agree between a probe and its goal DP is blocked by other DP whose features are checked by some other element. The DP blocking Agree (= inactive DP) structurally intervenes between the probe and the goal DP. The subject thus serves as an inactive intervener as it receives ergative Case.

(52) *The subject is an intervener*



I suggest that the subject raises to Spec-IP to satisfy an EPP feature on Infl, as shown in (53). As a result, the subject is not an intervener for the probing of the object by Infl.<sup>25</sup> The subject movement thus *feeds* the assignment of absolutive Case to the object.<sup>26</sup> This feeding strategy is modeled after Anand and Nevins (2006). They propose an EPP-driven movement of the ergative subject, which allows (nominative/absolutive) Case assignment to the object in Hindi.<sup>27</sup>

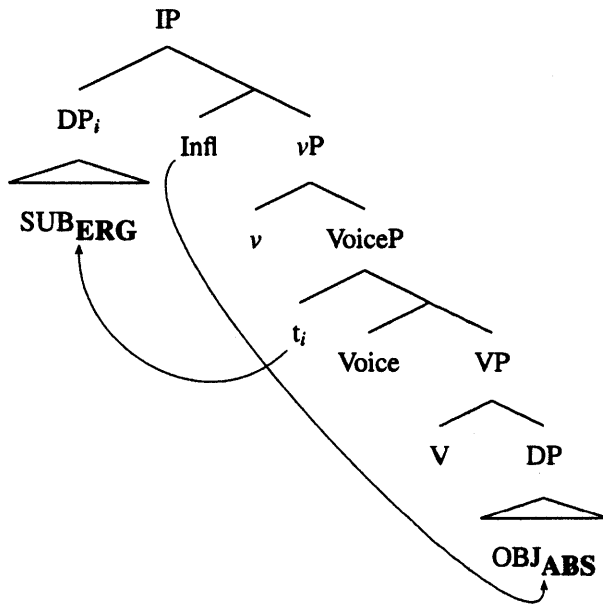
<sup>25</sup>I assume that the head of a movement chain, but not the chain *per se* (or the trace), is relevant to intervention. I thank Sabine Iatridou (p.c.) for discussion.

<sup>26</sup>In order to derive verb-initial word order of some (high absolutive) Mayan languages such as Q'anjob'al, I assume, without further argument, that the verb raises to C or a functional head between C and Infl. See the aforementioned works for various analyses of verb-initial languages.

<sup>27</sup>See also Woolford (2007) for an OT-analysis of why nominative or absolutive Case assignment to the object is possible across the ergative subject in Hindi.



(53) *The subject movement feeds absolutive Case assignment*



As Anand and Nevins (2006) point out, the movement of the ergative subject followed by a successful Agree relation between Infl and the object resembles the cliticization of dative interveners in Romance languages discussed in Anagnostopoulou (2003). As shown by the French examples below, the dative argument *à Marie* blocks the matrix T from entering into an Agree relation with the subject *Jean* in (54-a). However, once the dative argument cliticizes onto the matrix verb as in (54-b), the matrix T can enter into an Agree relation with the subject, which subsequently undergoes movement. In this sense, cliticization of the dative intervener feeds an Agree relation between T and the subject (see also Preminger, 2009, for relevant discussion).

FRENCH

- (54) a. \**Jean<sub>i</sub> semble à Marie [t<sub>i</sub> avoir du talent].*  
*Jean seems to Marie have.INF of talent*  
 'Jean seems to Marie to have talent.'

- b. Jean<sub>i</sub> lui<sub>j</sub>-semble t<sub>j</sub> [t<sub>i</sub> avoir du talent]  
 Jean her.DAT-seems have.INF of talent  
 'Jean seems to Marie to have talent.'

(Anagnostopoulou, 2003)

For our discussion, the movement of the ergative subject to Spec-IP in (53) parallels the cliticization of a dative intervener in French.

The phase head Case assignment proposed in (36), which is triggered at the time of Spell-Out of a phase, correctly assigns ergative Case to the subject, not to the object. If ergative Case assignment took place at the end of the entire derivation, the subject would wrongly receive absolutive Case from Infl and the object would be assigned default ergative Case prior to the end of the derivation. In addition, if ergative Case assignment were not limited to the highest Case-less DP, the object as well as the subject would wrongly receive ergative when *v*P triggers Spell-Out.

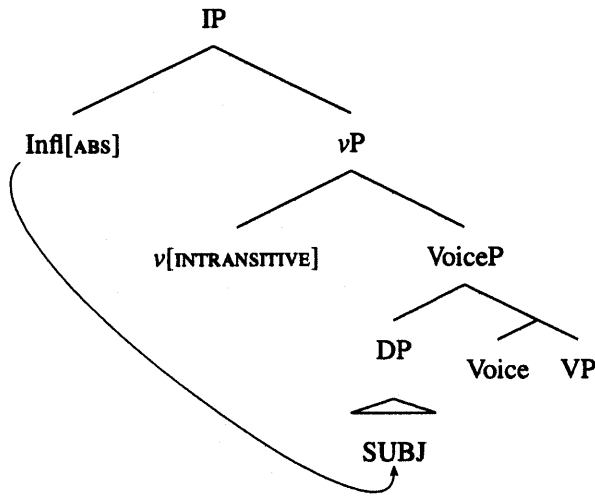
The derivation of an intransitive clause is simpler. I assume that unergative subjects are generated in the same position as transitive subjects (i.e., Spec-VoiceP in our analysis) following Hale and Keyser (1993). Regarding unaccusative subjects, let us assume that they are generated as a complement to V (see the appendix for discussion on the unergative vs. unaccusative distinction in some Mayan languages).

I conjecture that all intransitive *v*Ps including unaccusative, passive and unergative verb phrases in (at least) Mayan languages we discuss are weak phases (departing from Chomsky 2001), and hence do not trigger Spell-Out.<sup>28</sup> As a result, phase head Case assignment does not take place in the structure below. When Infl is introduced, it assigns absolutive Case to the subject.

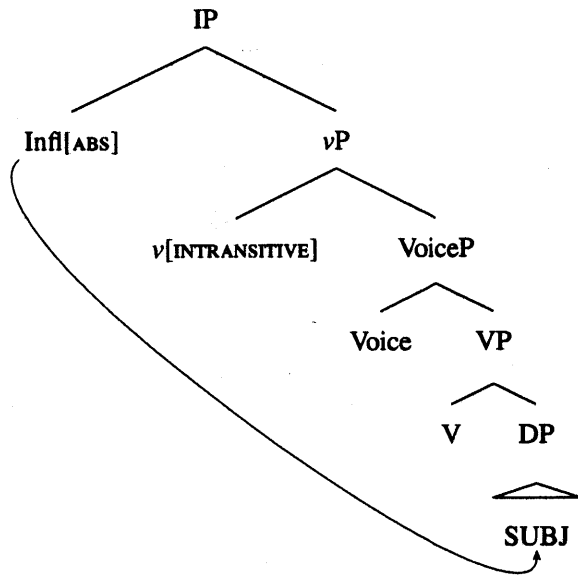
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<sup>28</sup>Chomsky (2001) argues that unaccusative and passive *v*Ps are weak phases, while transitive and unergative *v*P are strong phases.

(55) Intransitive clauses (=unergative)



(56) Intransitive clauses (=unaccusative)



These derivations correctly capture the fact that only absolutive Case is present in intransitive sentences.

Consider the passives in high absolutive languages as shown in (57) and (58). In the passive sentences, only a (null) absolutive morpheme appears unlike in the active counterparts. In addition, the passive suffix (i.e., *-lay* in Q'anjob'al and *-x* in Kaqchikel) is attached to the verb. The suffix *-lay* of Q'anjob'al is most productive and attached to all types of verbs (Mateo Toledo, 2008). The suffix *-x* of Kaqchikel only appears

with derived transitives. We will return to Kaqchikel passives in chapter 3.

#### Q'ANJOB'AL

- (57) a. Max- $\emptyset$  s-k'och cham winaq ixim nal.  
PRFV-Abs3s ERG3s-shell CL man CL corn  
'The old man shelled the corn.'
- b. Max- $\emptyset$  k'och-lay ixim nal (y-uj cham winaq).  
PRFV-Abs3s shell-PAS CL corn ERG3s-RN CL man  
'The corn was shelled by the old man.'

(Mateo Toledo, 2008, :70)

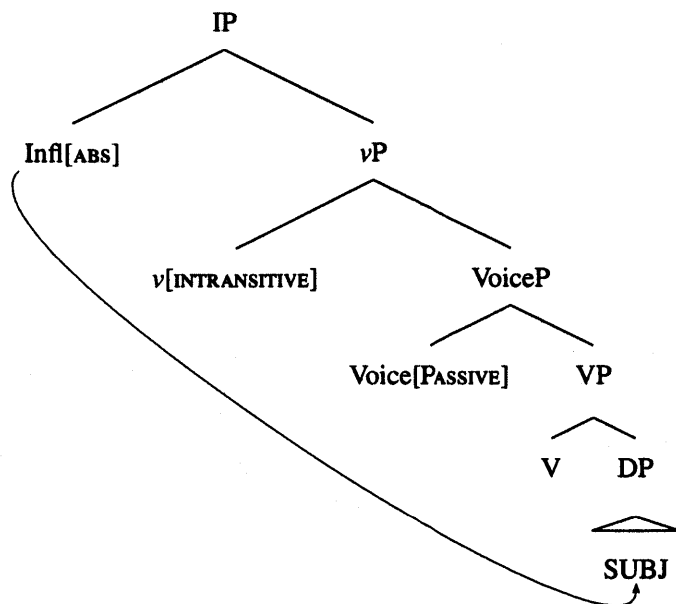
#### KAQCHIKEL

- (58) a. röj x-e-qa-q'ete-j ri ak'wal-a'.  
we PRFV-Abs3P-ERG1P-hug-TV DET child-Pl  
'We hugged the children.'
- b. ri ak'wal-a' x-e-q'ete-x.  
DET child-Pl PRFV-Abs3P-hug-PAS  
'The children were hugged.'

Since Infl is the only Case assigner (of absolutive Case) in high absolutive languages, passivization does not affect the Case-assigning ability of a verb (or Voice). The function of passivization is simply to demote an external argument to an oblique argument expressed with a relational noun as in (57-b) or suppress it as in (58-b). As seen in (57-b) where the relational noun bears an ergative morpheme, the demoted external argument receives ergative Case within a relational noun (= DP). In §2.3.3, I will suggest that this is also an instance of phase head Case.

I propose that Infl assigns absolutive Case to the (derived) subject (or the deep object) in passives just as in active sentences. The derivation is illustrated in (59). In (59), I omit a demoted external argument and leave the derived subject in its original position. In contrast, I assume that the subject raises to Spec-IP presumably to satisfy an EPP requirement of Infl in Kaqchikel.

(59) *Passives*



Furthermore, I propose that  $vP$  in passives is intransitive and does not trigger Spell-Out. Thus, no ergative assignment takes place. As we saw above, the following example of Q'anjob'al supports the view that a passive  $vP$  is intransitive. In (60), the intransitive status suffix (i.e., *-i*) appears adjacent to the passive morpheme.

Q'ANJOB'AL

- (60) Max-ach maq'-lay-i.  
PRFV-ABS2s hit-PAS-ITV  
'You were hit.'

(p.c. Pedro Mateo Pedro)

In the passives of high absolutive languages, absolutive Case assignment proceeds the same way as in the actives: Infl assigns absolutive Case to the derived subject/deep object. The only difference between the passives and the actives is that phase head Case assignment does not take place at a  $vP$ -level in the former since a passive  $vP$  is not a strong phase.<sup>29</sup>

<sup>29</sup>To be more precise, in addition, an external argument is demoted (or suppressed) in the passives.

### 2.3.2 Low absolutive languages

Turning to low absolutive languages, we assume the same structures for transitive and intransitive clauses as in high absolutive languages. In low absolutive languages like Chol, we proposed that Voice assigns absolutive Case to the object in transitive sentences such as (61), building on Coon et al. (2011, to appear) and Coon (2013a). We observed that this is supported by the presence of the absolutive morpheme in non-finite clauses.

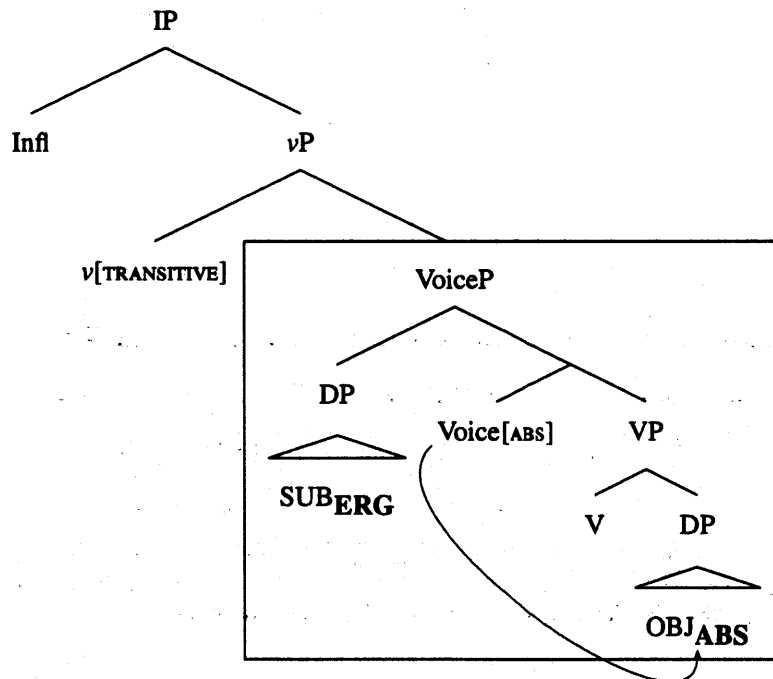
CHOL

- (61) Tyi a-k'el-e-yoñ  
 PRFV ERG2s-watch-Tv-Abs1s  
 'You watched me.'

(Coon, 2010a, : 48)

In the structure below, when transitive  $\nu$ P triggers Spell-Out, the subject is the only Case-less DP since the object receives absolutive Case from Voice. Thus the subject receives phase head ergative Case.

- (62) *Transitive clauses*



On the other hand, Infl assigns absolutive Case in intransitive clauses of low absolutive languages such as (63) (see also Coon et al. 2011; Coon 2013a).<sup>30</sup> The derivation for the unaccusative as in (63) is identical with the one for the unaccusative in high absolutive languages illustrated in (56) as Infl is an absolutive Case assigner in both cases.

CHOL

- (63) Tyi majl-i-yoñ.  
 PRFV GO-ITV-ABS1s  
 'I went.'

(Coon, 2010a, : 64)

Since intransitive *v*P does not trigger Spell-Out, and thus phase head Case assignment does not take place, the subject remains Case-less until it receives absolutive Case from Infl.

Chol has a *Split-S system* (Coon 2010a, 2013a and referenced cited therein). In languages with a Split-S system, intransitive subjects behave differently (Dixon, 1994; Mithun, 1991, etc.). As we saw in (63), unaccusative subjects behave like transitive objects in that they are cross-referenced by the absolutive morpheme. On other other hand, some unergative subjects in Chol pattern with transitive subjects in that they are cross-referenced by the ergative morpheme, not with an absolutive morpheme, as seen in (64).

- (64) Tyi k-chàl-e soñ.  
 PRFV ERG1s-do-DTV dance  
 'I danced.'

(Coon, 2010a, : 64)

As discussed by Coon (2010a, 2013a) in great detail, these unergatives are not simple verbs, but nouns selected by the light verb *-chàl*. The sentence like (64) thus takes the form of a transitive sentence. Following Coon (2010a, 2013a) in that the subject in (64) occupies the transitive subject position, namely Spec-*v*P (= Spec-Voice in our analysis), the derivation proceeds in the same way as in the transitive sentence of (61) –

<sup>30</sup>Coon (2010a) proposes that both intransitive(= unaccusative) subjects and transitive objects (= *all internal arguments*) receive absolutive Case from *v*. Coon (2013a) updates her analysis and suggests that only transitive objects receive absolutive Case from *v*, whereas intransitive (= unaccusative) subjects are Case-licensed by Infl, following Legate (2008) and Coon et al. (2011).

Voice assigns absolutive Case to the object *soñ* 'dance', and the subject receives ergative Case from transitive *v* when it triggers Spell-Out.<sup>31</sup>

Let us turn to the passives of low absolutive languages and particularly Chol as shown in (65).<sup>32</sup>

- (65) a. Tyi i-kuch-u-yoñ.  
PRFV ERG3s-carry-TV-ABS1s  
'He carried me.'
- b. Tyi kujch-i-yoñ.  
PRFV carry.PAS-IRV-ABS1s  
'I was carried.'

(Coon, 2010a, :194)

The passive form in (65-b) only carries the absolutive morpheme, while the active form carries both the ergative morpheme and the absolutive morpheme. In the passive, the vowel of the verb is lengthened and aspirated (orthographically represented as *Vj*) (see Coon 2010a for details on the passives of Chol).

As illustrated in (66), I propose that Infl assigns absolutive Case to the derived subject/deep object in the passives – the Case-assigning ability of Voice is suppressed by passivization. Here again, I omit the demoted external argument.

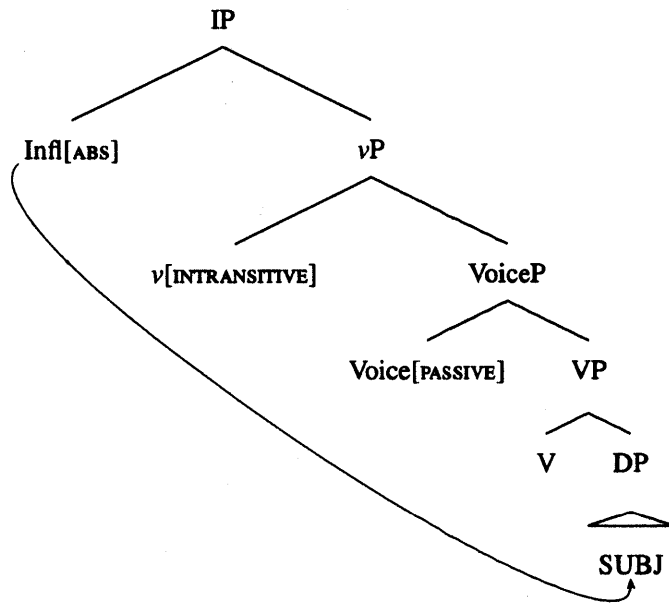
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<sup>31</sup>In addition, there is a class of intransitives which appear in either unaccusative (as in (63)) or unergative (as in (64)) constructions: they are called "ambivalents" (Vázquez Álvarez, 2002). These include *ts'äm* 'bathe', *wäy* 'sleep' and *uch* 'eat' etc. (Coon, 2010a, 2013a). For unaccusative sides of these ambivalents, I suggest that they are derived the same way as in unaccusative verbs like *majl* 'go' in (63): Infl assigns absolutive Case to the internal argument (= the unaccusative subject).

<sup>32</sup>Most passives in Chol do not allow *by*-phrases (p.c. Jessica Coon). As Coon writes, "the appearance of *by*-phrases with passives is restricted based on person and animacy" (Coon, 2010a, 196). For example, in clauses with two third person arguments, the passive form must be used when the patient outranks the agent in animacy. See Zavala (2007) and Coon (2010a) for a detailed discussion of the person-animacy restriction in Chol passives.



(66) *Passives*



As in high absolutive languages, I suggest that a passive *vP* in Chol is intransitive and does not constitute a phase. This is supported by the intransitive status suffix on the passivized verb (i.e., *-i*) in (65-b). Thus ergative assignment does not take place.

Consideration of non-perfective sentences lends support to the claim that Infl, but not Voice, assigns absolutive Case in the passives. As we will discuss in chapter 3, non-perfective sentences of Chol consist of a non-verbal aspectual marker and a nominalized clause. As shown in (67), the non-perfective sentence is formed by the non-verbal aspectual marker *choñkol* and the bracketed nominalized verb. The bracketed form is non-finite.

- (67) Choñkol [i-kuch ñeñè jīñi x-ñixik].  
PROG ERG3s-carry baby DET CL-woman  
'The woman is carrying a baby.'

(Coon, 2010a, :194)

If our analysis is correct, we would expect that absolutive Case is absent in the passive form of a non-perfective sentence because the non-finite clause lacks Infl. This is confirmed by the following passive

counterpart of (67).

- (68) Choñkol [i-kujch-el ñeñe].  
PROG ERG3s-carry.PAS-NOML baby  
'The baby is being carried.'

(Coon, 2010a, :194)

Crucially, no absolutive morpheme appears on the verb. This contrasts sharply with the passive form of a perfective sentence as in (65-b), where the absolutive morpheme appears. The lack of the absolutive morpheme (and hence absolutive Case) in the passive form in (68) is thus compatible with the present analysis that Infl assigns absolutive Case in the passives. We will argue in chapter 3 that phase head ergative Case is assigned to the subject in (68).

### 2.3.3 Phase head Case in the syntax of DPs: Possessed nouns and relational nouns

As noted in §2.2.2, a possessor (or a complement noun) is cross-referenced by a set A marker (= genitive) in both possessed nouns and relational nouns – this set A marker is homophonous with a set A marker for the transitive subject. In this subsection, I will suggest that set A markers for these nouns are analyzed as phase head Case in parallel with phase head Case for the transitive subject.

The set A marker for third person singular *r(u)*- is used as genitive in possessive constructions as in (69).

KAQCHIKEL

- (69) ri ru-tz'i' r-ixjayil ri a Juan  
DET ERG3s-dog ERG3s-wife DET CL Juan  
'Juan's wife's dog'

The same set A markers are used as ergative in transitive sentences like (70).

KAQCHIKEL

- (70) a. x-*oj-ru-q'*ete-j.  
PRFV-ABS1P-ERG3s-hug-TV  
'S/he hugged us.'

- b. x-ø-r-oyoj.  
 PRFV-ABS3s-ERG3s-call  
 'S/he called him/her.'

(Patal Majtzul, 2007, :30)

Some of the examples illustrating relational nouns are repeated below. The relational nouns bear ergative morphemes cross-referencing their complement nouns just like possessed nouns above. Some of them behave like nouns in (71), whereas others function as prepositions in (72) and (73).

KAQCHIKEL

- (71) w-i'  
 ERG1s-oneself  
 'myself'

- (72) r-ik'in  
 ERG3s-with  
 'with him/her/it'

(Brown et al., 2006, :156)

- (73) pa ru-wi'  
 PREP ERG3s-on.top.of/above  
 'on top of/above it'

(Patal Majtzul, 2007, :47)

As briefly mentioned in §2.2.2, I suggest that set A markers (= genitive) in possessed nouns and relational nouns also be analyzed as phase head ergative Case in parallel with the ergative for the transitive subject outlined in the previous sections. To make this analysis possible, I propose that DP is a phase and triggers Spell-Out just like (transitive)  $\nu$ P and CP. I assume that both possessed nouns and relational nouns form DPs.

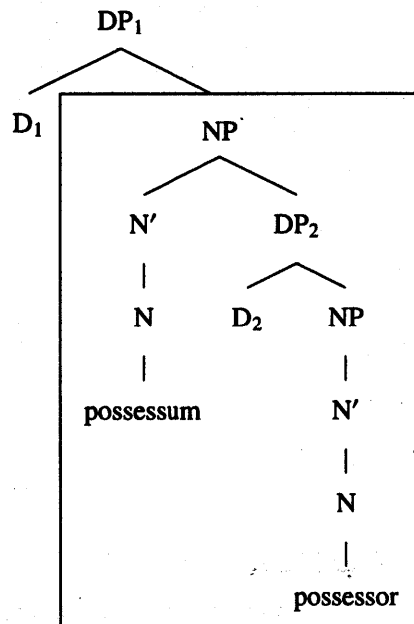
Consider a simple possessive construction as in (74). One of the characteristics of Mayan DPs is that a possessum is followed by its possessor.

KAQCHIKEL

- (74) r-ixjayil ri a Juan  
 ERG3s-wife DET CL Juan  
 'Juan's wife'

There are roughly two lines of analysis which seek to capture the postnominal order of a possessor in Mayan. First, Coon (2010b) proposes that a possessor starts out as a left-specifier of a possessed noun and a nominal projection containing the possessed noun undergoes movement to precede the possessor, giving rise to the correct surface word order in Chol (see Coon 2010b for more details). For ease of illustration, I follow the second type of analysis by Aissen (1992, 1996), for whom a possessor is generated as a right-specifier of a possessed noun (NP) (contra Kayne 1994) in Mayan.<sup>33</sup> This captures word order in possessive constructions. The structure for (74) is shown in (75).

- (75)



<sup>33</sup>Based on the survey of some Mayan languages, Aissen (1992, 1996) proposes that specifiers of lexical projections are right-specifiers, whereas specifiers of functional categories appear to the left of the functional heads. Possessors in her analysis and ours occupy a right-specifier position of the possessor NP. Aissen also analyzes the subject as being generated in a right-specifier of VP (= a lexical projection), thereby capturing the Mayan verb-initial word order in pragmatically neutral clauses. In contrast, we have assumed in §2.3 that the subject appears in a left-specifier of VoiceP. This is still compatible with Aissen's proposal if Voice is assumed to be a functional head.

The possessor DP (= DP<sub>2</sub>) occupies a right-specifier position of the NP headed by a possessum. When the head of possessum DP (= DP<sub>1</sub>) triggers Spell-Out, the possessor DP (= DP<sub>2</sub>) counts as the highest Case-less DP.<sup>34</sup> As a result, it receives phase head ergative Case.

I suggest that the same analysis extends to relational nouns as in (71). For relational nouns functioning like prepositions as in (72), it seems plausible to posit a silent preposition preceding the relational noun since cases like (73) can be taken to overtly manifest the silent preposition. Thus I analyze the relational nouns preceded by the (silent) preposition as possessed nouns in that their complement nouns occupy a right-specifier position just like possessors and receive ergative Case from D, as illustrated in (75). Relational nouns can be then considered as a subclass of possessive constructions just as has been echoed in Mayan linguistics.

Under the present analysis, possessors and complement nouns of relational nouns receive set A markers, commonly analyzed as *genitive*, as *phase head ergative Case* just as in the case of transitive subjects. In this sense, the homophony of two types of set A markers, namely ergative (for transitive subject) and genitive, is not accidental, but rather expected because both of them are assigned by the same mechanism: i.e., phase head Case assignment. This analysis thus promises to shed a new light on one of the long-standing issues in Mayan linguistics: the conflation of ergative and genitive into set A markers. Two types of set A markers are analyzed as the realization of the same type of Case, namely phase head ergative Case.

#### 2.3.4 Morphological realization of $\phi$ -features in head-marking languages

In discussing Case assignment in Mayan languages above, we have treated them as if they were case-marking languages. As reviewed in §2.1.2, Mayan languages are characterized as having a head-marking system (Nichols, 1986) due to the fact that a predicate or nominal bears agreement morphemes cross-referencing grammatical relations.

The issue that we have not addressed yet is the nature of ergative and absolutive agreement morphemes. In this subsection, I will propose that these morphemes are the morphological realization of the  $\phi$ -features of a goal DP which receives absolutive/ergative Case (see also Aissen 1992; Shklovsky 2012 etc.), and that they are realized on a Case assigning head or a phase head (see below for details).

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<sup>34</sup>Given that only a (Case-less) DP, but not an NP, can be the target of phase head ergative Case (as defined in (36)), the possessum NP does not receive ergative Case when D<sub>1</sub> triggers Spell-Out.

- (76) Absolutive/ergative agreement morphemes in Mayan are morphologically realized  $\phi$ -features of a DP which receives absolutive/ergative Case.

I will suppose that  $\phi$ -agreement (on a probe/head) is a precondition for Case assignment to a goal DP in the syntactic process of *Agree* (Chomsky 2000, 2001 etc.), and that absolutive/ergative Case is morphologically null in Mayan.<sup>35</sup> In this sense, absolutive/ergative agreement morphemes in Mayan languages can be treated on a par with  $\phi$ -agreement in well-studied languages like English. Therefore, there is a one-to-one correspondence between absolutive/ergative Case and absolutive/ergative morphemes: absolutive and ergative morphemes appear iff absolutive and ergative Case, respectively, are assigned.

Following Halle and Marantz (1993) in that morphemes can individually specify their prefixal vs. suffixal status (see also Barragan 2003 and Harley 2010 for relevant discussion), we will assume that ergative and absolutive agreement morphemes in Mayan are prefixal and suffixal, respectively.

### Absolutive agreement

I propose that absolutive agreement morphemes are morphologically realized  $\phi$ -features of a goal DP which receives absolutive Case, and that these morphemes are realized on a Case assigning head.<sup>36</sup>

(77) REALIZATION OF ABSOLUTIVE AGREEMENT MORPHEMES

Absolutive agreement morphemes (i.e., set B) are realized on a Case-assigning head.

The underlying assumption is that  $\phi$ -agreement morphemes appearing on a Case-assigning head are spelled-out as absolutive morphemes (= set B). With the Absolutive Case Parameter defended in §2.2.3, it follows that an absolutive agreement morpheme is realized uniformly on Infl in high absolutive languages, whereas

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<sup>35</sup>Unlike Chomsky, Bobaljik (2008) proposes that  $\phi$  agreement on a predicate is determined at a post-syntactic component (i.e., morphology). In particular, (post-syntactic) morphological case, not syntactic/abstract Case, determines the accessibility of a nominal for controlling agreement.

<sup>36</sup>Woolford (2000), Coon (2010a, 2013a) and Preminger (2011) propose that absolutive agreement morphemes in Jacaltec, Chol, Kaqchikel, respectively, are derived via clitic-doubling of arguments cross-referencing the morphemes. In order to enforce a fully rich  $\phi$ -property of absolutive morphemes, Preminger (2011) posits *the coarseness property of clitic-doubling*, which requires that the full set of  $\phi$ -features of a DP undergoing clitic-doubling be reflected because clitic-doubling is a type of pronominalization. Although the clitic vs. agreement (affix) distinction of ergative/absolutive morphemes is a nontrivial issue and one could develop a clitic(-doubling) analysis of these morphemes, the choice between clitics and agreement affixes would not affect the arguments in the thesis (see Bennett and Henderson 2014 for a clitic analysis of absolutive morphemes of Kaqchikel, on the basis of their prosodic properties. ). We will briefly discuss this issue in the appendix.

it is realized on Voice in transitive clauses and on Infl in intransitive clauses of low absolutive languages.<sup>37</sup>

Let us first address high absolutive languages such as Kaqchikel and Q'anjob'al. As repeated in the following examples, the absolutive agreement morpheme precedes the ergative agreement morpheme (in transitive sentences) as well as the verbal stem in high absolutive languages.

#### KAQCHIKEL

- (78) a. yin x-e-in-tz'ët rje'.  
I PRFV-ABS3P-ERG1s-see they  
'I saw them.'
- b. rje' x-e-wär  
they PRFV-ABS3P-sleep  
'They slept.'

#### Q'ANJOB'AL

- (79) a. max-ach w-il-a'.  
PRFV-Abs2s ERG1s-see-Rtv  
'I saw you.'
- b. max-ach way-i  
PRFV-Abs2s sleep-Itv  
'You slept.'

(Mateo Pedro, 2009)

To the extent that Infl assigns absolutive Case in both transitive and intransitive sentences of these languages, the constantly high position of the absolutive morpheme, which I take to be a suffixal position of Infl, follows from our proposal that the morpheme is realized on an assigner of absolutive Case. This morpheme realizes the  $\phi$ -features (i.e., person and number) of the DP which receives absolutive Case.

Turning to low absolutive languages like Chol, recall that the assigner of absolutive Case varies with the

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<sup>37</sup>As mentioned earlier, some high absolutive languages such as Q'anjob'al and Q'eqchi' display different behaviors in non-verbal predicates. In these languages, for instance, the absolutive morpheme appears in 'low' position in contexts like copular constructions: i.e., the morpheme follows the predicative noun. I do not attempt to provide an account of the different behaviors of absolutive morphemes of these languages.

transitivity of a sentence: it is assigned by Voice in transitive clauses, while Infl assigns absolutive Case in intransitive clauses. We expect that each of these heads hosts an absolutive agreement morpheme according to our proposal. The transitive clause as in (80) conforms to this prediction.

CHOL

- (80) Tyi a-k'el-e-yoñ.  
PRFV ERG2s-watch-TV-Abs1s  
'You watched me.'

(Coon, 2010a, : 48)

The absolutive morpheme *yoñ* is in a low position, which I take to be a suffixal position of Voice.<sup>38</sup>

However, the intransitive clause as seen in (81) contradicts the prediction that the absolutive morpheme is realized on Infl.

- (81) Tyi ts'am-i-yoñ  
PRFV bathe-1rv-Abs1s  
'I bathed.'

(Coon, 2010a, : 48)

As shown by (81), the absolutive morpheme is unexpectedly in a low position as in the transitive clause in (80). This appears to pose a syntax-morphology mismatch.

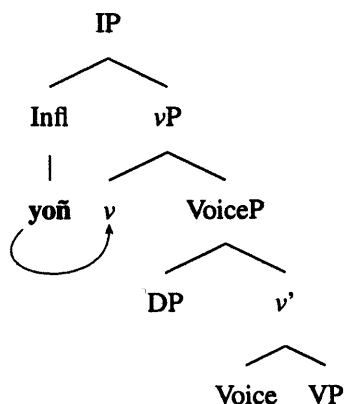
To capture the unexpectedly low position of the absolutive morpheme in intransitive sentences of low absolutive languages, I suggest that the absolutive morpheme originally appears on Infl (as expected by our analysis) and undergoes lowering under linear adjacency as illustrated in (82) – a linearly adjacent head that can serve as a host of the morpheme is *v*. This is reminiscent of *affix hopping* in English (Chomsky, 1957).

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<sup>38</sup>I have suggested in §2.3.1 that V undergoes successive-cyclic head movement to *v*. I assume that when a Case-assigner undergoes head movement to form a cluster (e.g., Voice in the V-Voice-*v* cluster) or is part of the derived cluster (e.g., *v* in the cluster), an agreement morpheme is realized (either as a prefix or as a suffix) on the cluster itself.



(82) *The absolutive morpheme lowers to v under adjacency*



I conjecture that Infl, especially the perfective morpheme in (81), cannot host a (bound) morpheme in low absolutive languages for language-particular reasons just as Infl in English cannot.<sup>39</sup> I take it that lowering need not take place in transitive clauses because the absolutive morpheme is originally suffixed to Voice, its assigning head.

In §2.2.3, I argued that Case assignment in low absolutive languages works exactly like English except that the former has phase head ergative assignment: the object receives absolutive Case from Voice in low absolutive languages just as it receives accusative Case in English, while the intransitive subject receives absolutive Case from Infl the same way it receives nominative Case in English. Now low absolutive languages more closely resemble English because Infl in both of these languages triggers affix lowering under our analysis.<sup>40</sup>

### Ergative agreement

The difference between absolutive Case and ergative Case under the present analysis is that the latter is assigned by any phase head, whereas the former has a particular assigner, depending on languages and/or

<sup>39</sup>While the perfective morpheme *tyi* of Chol cannot host a second-position clitic, its allomorphs can (Coon, 2013a, : 38). I set aside this issue from our discussion.

<sup>40</sup>Tzotzil (Tseltalan) has two series of absolutive morphemes: prefix (encoding only person) and suffix (encoding both person and number) forms (Aissen, 1987; Grinevald and Peake, 2012). According to Aissen (1987), the prefixal absolutive morpheme is used when there is an aspect prefix. Otherwise, the suffixal form is used (with an exception). The two series are also used together to mark plurality of an absolutive argument. I do not attempt to account for the different positions of the absolutive morphemes in Tzotzil (see Woolford 2011 for a syntax-PF analysis of it).

the transitivity of a clause. As I will show below, this difference has a consequence on the realization of two sets of agreement morphemes in Mayan.

By capitalizing on the way ergative Case is assigned by a phase head, I suggest that an ergative agreement morpheme is realized on a phase head as stated in (83).

(83) REALIZATION OF ERGATIVE AGREEMENT MORPHEMES

Ergative agreement morphemes are realized on a phase head.

As in absolutive agreement morphemes, the underlying assumption here is that  $\phi$ -agreement morphemes appearing on a phase head are spelled-out as ergative morphemes (= set A). Given that we assume transitive  $v$ , C and D are phase heads, it follows that ergative morphemes are realized on each of the phase heads.

With this at hand, the ergative morpheme in transitive sentences is realized on  $v$  as ergative Case in these sentences is assigned by it. Likewise, the ergative morpheme in possessive constructions and relational nouns is realized on D because ergative Case in these instances is assigned by it.

This analysis can capture a salient fact about an ergative agreement morpheme across Mayan. That is, its position is invariant, unlike its absolutive counterpart: it is always preverbal in transitive sentences of both high and low absolutive languages (see also Grinevald and Peake 2012). Similarly, the ergative morpheme is always prenominal in nominal domains such as possessive constructions and relational nouns. The preverbal position of the ergative morpheme can be seen in high absolutive languages like Kaqchikel in (78-a) and Q'anjoba'l in (79-a), and low absolutive languages like Chol in (80). The prenominal position of the morpheme can be seen in all the examples discussed in §2.3.2. Some of them are repeated below.

KAQCHIKEL

(84) ri ru-tz'i' r-ixjayil ri a Juan  
DET ERG3s-dog ERG3s-wife DET CL Juan  
'Juan's wife's dog.'

(85) a. r-ik'in  
ERG3s-with  
'with him/her/it'

- b. aw-oma  
ERG2s-because  
'because of you, for you'

(Brown et al., 2006, :156)

Their invariant positions across Mayan languages follow from our analysis that these ergative morphemes are realized on phase heads (i.e., *v* and D).

## 2.4 Conclusion

In this chapter, I have proposed a model of phase head ergative Case assignment. Under this model, a Case-less DP is assigned ergative Case by a phase head in the syntax as a rescue strategy. In other words, there is no a priori reason to posit a correlation between ergative Case and grammatical relations, unlike the common view of ergative in which ergative may look like an 'alignment' because the subject in a transitive sentence is mostly aligned with ergative Case. I have also suggested that ergative and genitive known as set A markers in Mayan be uniformly treated as the realization of phase head ergative Case. This can explain the syncretism of ergative and genitive across the language family. Developing the high vs. low absolutive distinction, I have defended the *Absolutive Case Parameter* for Mayan languages, following the *Mayan Absolutive Parameter* (Coon et al., 2011, to appear). This allows for "split" absolutive assignment both across languages and within a language. In the next chapter, I will argue that this "flexible" view of ergative can account for an alignment puzzle found in ergative splits of Mayan languages. This will further demonstrate that appearances of ergative (e.g., ergative = transitive subject) are deceiving, and that phase head ergative Case is assigned to an otherwise Case-less DP.



# Appendix

## 2.A Subject properties of ergative

It has been observed since Anderson (1976) that the ergative subject in a wide range of languages displays certain subject properties just as a nominative subject does. I will show below that ergative subjects in Mayan languages retain subject properties.

First, ergative subjects can antecede reflexives, as shown in (86) and (87). Reflexives in Mayan languages take the form of relational nouns – their structure is thus identical with possessed nouns in that they bear an ergative agreement morpheme cross-referenced by their complement noun (see §2.3.3).

KAQCHIKEL

- (86) rja' x-ø-u-tz'ët                      r-i'  
s/he PRFV-Abs3s-ERG3s-see ERG3s-self  
"S/he saw herself/himself."

K'ICHEE'

- (87) x-ø-u-kamsa-j                      r-iib'      lee achih.  
PRFV-Abs3s-ERG3s-kill-suffix ERG3s-self DET man  
'The man killed himself.'

(Larsen and Norman, 1979, :349)

Furthermore, all subjects can be controlled PROs, regardless of whether they are ergative or absolutive. As will be discussed in great depth in chapter 3, certain embedding verbs like *chäp* 'begin' in Kaqchikel are control-like predicates and take a non-finite (nominalized) clause as their complement. As shown in (88),

both ergative (= transitive) and absolutive (= intransitive) subjects are controlled PROs in the embedded clauses, assuming for the moment that PRO subject appears inside the bracketed clauses (see chapter 3 for a precise analysis of these clause types).

**KAQCHIKEL**

- (88) a. röj; x-ø-qa-chäp [PRO<sub>i</sub> ki-k'ul-ik rje'].  
 we PRFV-Abs3s-ERG1P-begin ERG3P-meet-NOML they  
 'We began to meet them.'
- b. rat; x-ø-a-chäp [PRO<sub>i</sub> atin-ik]  
 you PRFV-Abs3s-ERG2s-begin bathe-NOML  
 'You began to bathe.'

Likewise, the examples of Chol given in (89) provide further evidence that the ergative subject as well as the absolutive subject can serve as a controlled PRO.

**CHOL**

- (89) a. Aj-Juan y-om [i-jap kajpej PRO<sub>ERG</sub>].  
 DET-Juan ERG3s-want ERG3s-drink coffee  
 'Juan wants to drink coffee.'
- b. Aj-Juan y-om [wäy-el PRO<sub>ABS</sub>].  
 DET-Juan ERG3s-want sleep-NOML  
 'Juan wants to sleep.'

(Coon, 2010a, :114)

This is in parallel with accusative languages like English, as seen below.

- (90) a. John wants to laugh.  
 b. John wants to stop the violence.

(Anderson, 1976)

In addition, both ergative and absolutive subjects serve as addressees of imperatives or hortatives. The following examples of Kaqchikel illustrate this.

#### KAQCHIKEL

- (91) a. K-in-a-q'ete-j.  
SBJV-Abs1s-ERG2s-hug-Tv  
'(You) hug me!'
- b. K-ix-ok.  
SBJV-Abs2P-come.in  
'Y'all come in!'

(Brown et al., 2006, :171)

To summarize, I have shown that ergative subjects in Mayan display subject properties in parallel with absolutive subjects on the basis of reflexive binding, control and imperatives/hortatives. Ergative subjects in Mayan thus behave the same way as subjects in accusative languages do, as has been observed in other ergative languages (Anderson 1976; Bobaljik 1992, Manning 1996, Aldridge 2004, Polinsky 2013 and references cited therein).

## 2.B A note on the unaccusative vs. unergative distinction in Mayan

Coon (2013a) observes that some unergative subjects in Chol behave like transitive subjects. The unergative sentence in Chol involves the light verb *cha`l*, which takes a nominal stem like *k'ay* as its complement as shown in (92). Coon argues that the unergative subject receives a  $\theta$ -role from a VP-external functional projection like  $\nu$ P (VoiceP in her system) and is generated in a specifier position of this projection just like the transitive subject.

CHOL

- (92) Tyi k-cha`l-e k'ay.  
PRFV ERG1s-do-DTV song  
'I sang.'

(Coon, 2013a, :89)

To illustrate the parallel behavior between the unergative subject and the transitive subject, Coon draws intriguing evidence from possessor extraction facts. She shows that extraction out of internal arguments (= unaccusative subject/transitive object) is possible, whereas extraction is impossible out of external arguments (=transitive subject/unergative subject) (see also Coon, 2009, for detailed discussion). This is shown in (93).

CHOL

- (93) a. Maxki; tyi chäm-i [i-wakax t<sub>i</sub>]?  
who PRFV die-ITV ERG3s-cow  
'Whose cow died?'
- b. Maxki; tyi aw-il-ä [i-chich t<sub>i</sub>]?  
who PRFV ERG2s-see-DTV ERG3s-old.sister  
'Whose older sister did you see?'
- c. \*Maxki; tyi i-jats'-ä-yety [i-chich t<sub>i</sub>]?  
who PRFV ERG3s-hit-TV-Abs2s ERG3s-old.sister  
'Whose older sister hit you?'
- d. \*Maxki; tyi i-cha`l-e soñ [i-chich t<sub>i</sub>]?  
who PRFV ERG3s-do-DTV dance ERG3s-old.sister  
'Whose older sister danced?'

(Coon, 2013a, :89-90)

The same extraction asymmetry has also been observed in Tzotzil (Aissen, 1996). In this respect, the unergative subject forms a natural class with the transitive subject. This provides evidence for the structure



proposed in §2.3.3 where both unergative and transitive subjects are generated in Spec-*v*P.

On the other hand, there does not seem to be a clear-cut distinction between unaccusative and unergative subjects in Kaqchikel. Unlike Chol, unergative clauses in Kaqchikel do not use a light verb.

- (94) Ru-te' r-ixjayil ri a Juan x-ø-xajo'.  
 ERG3s-mother ERG3s-wife DET CL Juan PRFV-Abs3s-dance  
 'Juan's wife's mother danced.'

Let us consider whether the unaccusative vs. unergative distinction interacts with extraction. Possessor extraction in Kaqchikel must involve pied-piping of a possessum, in conformity with the Left Branch Condition (Ross, 1967), as seen in (186).

- (95) a. [Achoj r-ixjayil]; x-ø-sach t<sub>i</sub>?  
 whose ERG3s-wife PRFV-Abs3s-disappear  
 'Whose wife disappeared?'  
 b. \*Achoj; x-ø-sach [r-ixjayil t<sub>i</sub>]?  
 whose PRFV-Abs3s-disappear ERG3s-wife

Because of this independent constraint, it seems difficult to construct an example in which a possessor *wh* is extracted out of the subject/object. Once another possessor is added, however, it becomes possible to construct a subextraction test. As (96-b) shows, *achoj* cannot be subextracted out of the transitive subject. Instead, the whole subject must be pied-piped as in (96-a).

- (96) a. [Achoj ru-tz'i' r-ixjayil]; x-a-b'a-o' t<sub>i</sub> rat ?  
 whose ERG3s-dog ERG3s-wife PRFV-Abs2s-bite-AF you  
 'Whose wife's dog bit you?'  
 b. ?\*[Achoj r-ixjayil]; x-a-r-b'a rat [ru-tz'i' t<sub>i</sub>]?  
 whose ERG3s-wife PRFV-Abs2s-ERG3s-bite you ERG3s-dog

In contrast, possessor extraction out of the object is possible as shown in (97-b). The whole pied-piping of the object is also possible in (97-a).

- (97) a. [Achoj ru-tz'i' r-ixjayil]<sub>i</sub> x-ø-a-che'y t<sub>i</sub> rat?  
 whose ERG3s-dog ERG3s-wife PRFV-Abs3s-ERG2s-hit you  
 'Whose wife's dog did you hit?'
- b. [Achoj r-ixjayil]<sub>i</sub> x-ø-a-ch'ey [ru-tz'i' t<sub>i</sub>] rat?  
 whose ERG3s-wife PRFV-Abs3s-ERG2s-hit ERG3s-dog you

Strikingly, extraction is possible out of both the unaccusative subject in (98) and the unergative subject in (99), unlike Chol.

- (98) [Achoj r-ixjayil]<sub>i</sub> x-ø-tzaq [ru-nupq'a t<sub>i</sub>]?  
 whose ERG3s-wife PRFV-Abs3s-fall ERG3s-ring  
 'Whose wife's ring fell?'
- (99) [Achoj r-ixjayil]<sub>i</sub> x-ø-xajo' [ru-te t<sub>i</sub>]?  
 whose ERG3s-wife PRFV-Abs3s-dance ERG3s-mother  
 'Whose wife's mother danced?'

The two intransitive subjects thus behave on a par with the internal argument (= transitive object) in terms of extraction. We leave the issue of intransitive subjects in Kaqchikel for future research (see Imanishi, 2013, for an alternative locality-based analysis). For convenience, nevertheless, we will assume different positions for two types of intransitive subjects in Kaqchikel throughout the thesis.

## 2.C A note on the distinction between clitic vs. agreement affix

This section discusses the question of whether ergative agreement morphemes (= set A) and absolutive agreement morphemes (= set B) in Mayan are clitics or agreement affixes.

First, set A and set B markers in Mayan languages generally appear to behave like clitics. One of the salient properties of clitics is that they are generally insensitive to the lexical category of their phonological host. For example, the possessive 's in English, which has been analyzed as a clitic (Zwicky and Pullum, 1983), can be attached to various lexical items such as nouns in *John's brother*, verbs in *the boy who I saw's mother* and prepositions as in *the boy I talked to's sister*, though in structural terms the clitic attachment in all these cases targets the maximal projection of nominals like NP (Klavans, 1985).

With this property of clitics in mind, recall that set A markers in Mayan can be attached to a verb or noun, as they cross-reference transitive subjects (i.e., ergative) and possessors (i.e., genitive). Likewise, besides being attached to a verb, set B markers can be attached to an aspect marker as we have seen above. Moreover, they appear adjacent to a noun in nominal predicates as in (100) and (101).

Q'ANJOB'AL

- (100) Kuywom **hach**.  
student Abs2s  
'You are a student.'

(Coon et al., 2011)

KAQCHIKEL

- (101) At tijoxel  
Abs2s student  
'You are a student.'

One could then take these instances to suggest that set A and set B markers are not selective about their host in the same way that the possessive 's in English is. Under this test these markers in Mayan may be analyzed as clitics.

On the other hand, consider one of the morphophonological diagnostics of Zwicky and Pullum (1983), which categorizes as affixes those items that show context-sensitive allomorphy. Under this criterion, set A and some set B markers would be affixes since their shape is determined by the position where they appear: whether they are in a prevocal or preconsonantal position.

This suggests that it is unclear whether there are clear-cut diagnostics for the distinction between clitics and affixes. This may be reflected by the diachronic tendency for clitics to become affixes (Givón, 1971; Klavans, 1985). As shown in a survey article of clitics by Van Riemsdijk (1999), the classic tests by Zwicky (1977) often fail to disambiguate between clitics and affixes in many languages. For instance, clitics tend to be part of the phonological word. Phonological processes such as liaison in French apply to subject clitics, whereas corresponding full subjects are not subject to the process (Kayne, 1975). However, Van Riemsdijk (1999) points out, drawing on Nespor and Vogel (1986), that some clitics do not belong to the phonological

word. He shows that the intervocalic voicing rule of *s* in Italian applies within a word, but it never applies to the clitic-verb sequence.

- (102) a. *resistenza* [z]/\*[s]  
          resistance  
      b. *lo sapevo* \*[z]/[s]  
          it I-knew

(Van Riemsdijk 1999: 9)

He provides further evidence that clitics and affixes are not clearly distinguished from each other under Zwicky's tests (see also Nevins (2011) for a recent syntactic analysis, which argues against Zwicky and Pullum (1983)'s test mentioned above about the presence/absence of context-sensitive allomorphy). Van Riemsdijk then concludes that 'either we accept the criteria proposed by Zwicky and conclude that some clitics are affixal in nature and some are syntactically independent morphemes, or we reject the notion that Zwicky's criteria determine the status of clitics, either individually or collectively' (Van Riemsdijk 1999: 12) (see also Klavans (1985) for relevant discussion).

Considering the unresolved issues of distinguishing between clitics and affixes, therefore, I leave aside the task of providing (morpho)phonological or syntactic evidence for the clitic or agreement affix status of set A and set B markers in Mayan, as it will take us beyond the scope of the thesis.

## Chapter 3

# Parameterizing split ergativity in Mayan

### 3.1 Introduction

In this chapter, I will address a puzzle about the alignment between ergative/absolute Case and grammatical relations in Mayan languages. As we observed in the previous chapters, Mayan languages display a prototypical ergative alignment through head-marking – both the intransitive subject and the transitive object are cross-referenced by the absolutive agreement morpheme, whereas the transitive subject is cross-referenced by the ergative agreement morpheme. As in many other ergative languages, many Mayan languages exhibit aspect-based split ergativity – in the perfective aspect, they show an ergative alignment, whereas they display an accusative alignment pattern in the non-perfective aspect.

In this chapter, we will focus on alignments in the nominative-accusative side of the ergative split of Kaqchikel, Chol and Q'anjob'al. As shown by the accusative alignment pattern of Kaqchikel in (1), the intransitive subject and the transitive subject alike are cross-referenced by the *absolutive* morpheme on the progressive predicate *ajin*. On the other hand, the object of a transitive verb is cross-referenced by the *ergative* morpheme.

#### NOM-ACC PATTERN IN KAQCHIKEL

- (1) a. *y-in-ajin che [ki-k'ul-ik ak'wal-a']*.  
IMPF-ABS1s-PROG PREP ERG3p-meet-NOML child-PL  
'I am meeting children.'

- b. y-In-ajin che [atin-ik].  
 IMPF-Abs1s-PROG PREP bathe-NOML  
 'I am bathing.'

Strikingly, Kaqchikel appears to exhibit a cross-linguistically rare alignment pattern in the progressive – the ergative morpheme, which is normally limited to (transitive) subjects, is associated with the *object* of a transitive verb.

In contrast, other ergative split languages within Mayan such as Chol and Q'anjob'al display a very different alignment pattern in their nominative-accusative side. The examples from Chol and Q'anjob'al in (2) and (3) show that both the intransitive subject and the transitive subject are cross-referenced by the ergative morpheme, while the absolutive morpheme cross-references the transitive object.

**NOM-ACC PATTERN IN CHOL**

- (2) a. Choñkol [i-jats'-oñ].  
 PROG ERG3s-hit-Abs1s  
 'She's hitting me.'
- b. Choñkol [i-majl-el].  
 PROG ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

**NOM-ACC PATTERN IN Q'ANJOB'AL**

- (3) a. lanan-∅ [hach w-il-on-i].  
 PROG-A3s Abs2s ERG1s-see-DM-ITV  
 'I am seeing you'
- b. lanan-∅ [ha-way-i].  
 PROG-Abs3s ERG2s-sleep-ITV  
 'You are sleeping.'

(Mateo Pedro, 2009)

The Chol/Q'anjob'al-type alignment pattern of the split side has been the subject of several prominent investigations (Larsen and Norman, 1979; Larsen, 1981; Bricker, 1981; Mateo Pedro, 2009; Coon, 2010a, 2013a,b, etc.). By contrast, the Kaqchikel-type alignment of the split side has received little attention (see England 1983b for relevant discussion). The contrastive alignment patterns in these three languages are summarized as *the alignment puzzle in Mayan*.

THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN

(4) KAQCHIKEL-TYPE

	S	O
Intransitive	ABS	-
Transitive	ABS	ERG

(5) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

As I will claim building on Laka (2006) and Coon (2010a, 2013a), these languages have a (nearly) identical biclausal structure for non-perfective clauses. In particular, it will be shown that all of the bracketed forms in the above examples are nominalized clauses. The ergative in the examples could then be taken as genitive. Given that ergative is homophonous with genitive across Mayan, the alignment of all subjects with ergative/genitive (i.e., set A markers) in Chol/Q'anjob'al receives a natural account, as discussed by Coon (2010a, 2013a). For example, the sentence in (2-b) can be translated as "*Her* going is taking place" if the verb is a nominalized form with the genitive just like gerunds in English. However, the equation of ergative with genitive alone does not explain the contrastive alignment between Kaqchikel and Chol/Q'anjob'al. In particular, it is not immediately clear why the ergative/genitive is aligned with the transitive object, not with the subject, in Kaqchikel, although it has the same structure for its non-perfective clauses as Chol and Q'anjob'al.

The purpose of this chapter is to explain the variation of ergative/absolutive alignment by applying the

phase head ergative Case analysis developed in chapter 2 to ergative splits. With the ergative assignment model, I will argue that the contrastive alignment patterns follow from a single parametric difference between Kaqchikel and Chol/Q'anjob'al. To be precise, I will propose that an unaccusative requirement holds for nominalization in Kaqchikel, whereas the requirement does not obligatorily apply to nominalized verbs in Chol and Q'anjob'al – the requirement that a nominalized verb have an unaccusative structure, and hence cannot have an external argument. Under this analysis, the object receives ergative Case in progressive sentences of Kaqchikel because the object is a nominal that would be otherwise Case-less. On the other hand, subjects receive ergative Case in non-perfective sentences of Chol and Q'anjob'al for the same reason as in Kaqchikel. The proposed ergative assignment model can thus capture the flexible nature of ergative alignment attested in Mayan languages – both subject and object can be aligned with ergative Case.

The chapter is organized as follows. In §3.2, I will present an overview of split ergativity and discuss nominalization found in non-perfective sentences of Kaqchikel, Chol and Q'anjob'al. §3.3 will provide an account of the alignment puzzle. In §3.4, I will point out that the alignment patterns found in Kaqchikel and Chol/Q'anjob'al are widely attested in other Mayan languages, and suggest that the analyses developed in §3.3 extend to these languages.

## **3.2 Split ergativity and nominalization**

### **3.2.1 Overview of split ergativity**

As often noted, it is rare that ergative languages are consistently “ergative” throughout grammar (Anderson, 1976; Comrie, 1978; Moravcsik, 1978). Many ergative languages display *split ergativity*. In other words, a language exhibits an ergative-absolutive alignment system in one portion of the grammar, and a nominative-accusative (or “non-ergative”) alignment system in another (Silverstein, 1976; Comrie, 1978; Dixon, 1979, 1994; Tsunoda, 1981; Salanova, 2007; Coon, 2013b, etc.).<sup>1</sup> The ergative split is conditioned mainly by four factors as shown in (6).

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<sup>1</sup>Conventionally, split ergativity is discussed for morphologically ergative languages rather than syntactically ergative languages, as Coon (2013b) correctly puts. We will follow this convention and focus on morphological (split) ergativity.



(6) COMMON TYPES OF SPLIT ERGATIVITY (DIXON, 1979, 1994; Tsunoda, 1981)

- a. Tense, aspect, mood (TAM) splits
- b. NP splits (or person splits)
- c. Verb splits
- d. Clause type splits

Some languages can involve combination of two or three types of the ergative splits in (6). The main focus of this chapter is the first type: TAM splits. Before proceeding, we will briefly introduce the other types below.

In NP splits or person splits, nominal type triggers the split. For instance, subjects of transitive clauses receive ergative marking only when they are 3rd-person pronouns or common nouns. This type of ergative splits is observed in Dyirbal (Pama-Nyungan), Mocho' (Mayan), Halkomelem (Salish) etc. (Silverstein, 1976; Dixon, 1979, 1994; Wiltschko, 2006; Coon, 2013b, among others). In verb splits, an ergative pattern arises with certain groups of verbs (e.g., action/volitional verbs). This type of split is also known as a *Split-S system* (Dixon, 1994; Mithun, 1991). Languages like Avar (Caucasian), Tibetan (Tibeto-Burman), Tongan/Samoan (Polynesian), Warrungu (Pama-Nyungan), Basque (isolate) display verb splits (Tsunoda, 1981, and references cited therein).<sup>2</sup> In languages with clause type splits, an ergative pattern is found in main clauses, while a non-ergative pattern is found in subordinate clauses, or vice versa. This type of split is largely related to TAM splits and NP splits. These languages include Pāri (Nilotic) and some Mayan languages etc. (Dixon, 1979, 1994, see below).

The TAM ergative split system is conditioned by tense, aspect or mood of a sentence. A number of ergative languages around the world display TAM splits. These include Hindi/Kurmanji/Punjabi (Indo-Aryan), Basque, Tongan, Samoan, Georgian (Kartvelian), Warrungu and Adyghe (Caucasian) etc. (Tsunoda, 1981, and references cited therein) and many Mayan languages (see below). As Salanova (2007) and Coon (2013b) point out, the splits characterized as TAM splits can be reduced to aspectually conditioned splits. This is largely because the distinction between tense and aspect is blurred in many cases. Moreover, the conclusion reached in (Salanova, 2007, :47) is suggestive: “in no case known to us are splits based unequivocally on

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<sup>2</sup>Tsunoda (1981) proposes a unified account of verb splits and TAM splits under the condition he calls *the effectiveness condition (EF-CON)*.

tense (i.e., situating the proposition with respect to utterance time) or mood" (see Coon 2013b for more detailed discussion).

A well-known tendency found in languages with TAM splits is that an ergative system is found in the perfective aspect, whereas an accusative (or non-ergative) system is found in the imperfective aspect. The examples of Hindi below illustrate a typical TAM split pattern. In the perfective, Hindi displays an ergative alignment pattern as in (7) – the absolutive is unmarked as in many ergative languages.<sup>3</sup> On the other hand, the sentence in the imperfective is non-ergative as seen in (8). Both the subject and the object bear unmarked absolutive case, and thus the distinction between the two is neutralized.

#### HINDI

- (7) Lataa-ji-ne kai gaane gaa-ye.  
 Lataa.FEM-HON-ERG many song.MASC.PL(Abs) sing-PRFV.MASC.PL  
 'Lataa-ji sang several songs.'

- (8) Lataa-ji gaane gaa-tii hĒ/thī̃.  
 Lataa.FEM-HON song.MASC(Abs) sing-HAB.FEM be.PRES.PL/be.PST.FEM.PL  
 'Lataa-ji sings/used to sing songs.'

(Bhatt, 2007, see also Coon 2013b)

Let us turn to ergative splits in Mayan. As mentioned above, a number of Mayan languages display aspect-based split ergativity (Lengyel, 1978; Larsen and Norman, 1979; Larsen, 1981; Bricker, 1981; England, 1983b,a; Yasugi, 1995; Mateo Pedro, 2009, 2011; Coon, 2010a, 2013a, among others). A word is in order regarding terms for aspectual oppositions in the languages we discuss.<sup>4</sup> Following Coon (2010a, 2013a) (and slightly departing from Comrie 1976), I will use the opposition between *perfective* and *non-perfective* for the often-used opposition between *perfective* and *imperfective* (Comrie, 1976). In other words, non-perfective in our terms corresponds to *imperfective* in Comrie's system.

The non-perfective aspect is further divided into *imperfective* and *progressive*. The range of inter-

<sup>3</sup>The object may also be marked with the preposition *-ko*. The preposition is analyzed as a differential object marker, which is determined by the specificity/definiteness and animacy of the object (Aissen, 2003, etc.). The same preposition is used for indirect objects (Aissen, 2003).

<sup>4</sup>I thank Sabine Iatridou for helpful discussion.

pretations encompassed by the imperfective aspect differs, depending on the language. In Kaqchikel and Q'anjob'al, the imperfective denotes both habitual and progressive meanings (Brown et al., 2006; Mateo Toledo, 2008), as shown in Table 3.1.<sup>5</sup> Both languages also have dedicated progressive markers: *ajin* in Kaqchikel and *lanan* in Q'anjob'al.

Table 3.1: Aspectual oppositions in Kaqchikel and Q'anjob'al

	Perfective	Non-perfective	
		Imperfective (habitual, progressive)	Progressive
Kaqchikel	<i>x-</i>	<i>y/n-</i>	<i>ajin</i>
Q'anjob'al	<i>max-</i>	<i>ch(i)-</i>	<i>lanan</i>

Evidence that imperfective markers such as the one in Kaqchikel (i.e., *y/n-*) is not simply a present tense (or non-past) marker comes from examples in which a past imperfective interpretation can be expressed by *y/n-* (see Mateo Toledo 2008, :51 for details about aspectual markers in Q'anjob'al). For instance, the imperfective marker *n-* is used in the past tense and denotes a past imperfective interpretation, as shown by the narrative in (9).

KAQCHIKEL: PAST IMPERFECTIVE

- (9) Ojer ojer kan k'o jun ti umül. Jun q'ij nimaq'a' n-ø-i-b'iyin pa juyu'.  
 before before very EXT INDF little rabbit. INDF day morning IMPF-ABS3s-EP-walk PREP mountain  
 'Long, long ago there was a little rabbit. Early one morning he is walking in the country.'

(Brown et al., 2006, : 167)

In addition, the imperfective marker in Kaqchikel is used in future tense, as seen in (10).

KAQCHIKEL: FUTURE

- (10) Chwa'q y-oj-b'e pa ru-chi' choy.  
 tomorrow IMPF-ABS1P-go PREP ERG3s-frame lake  
 'Tomorrow we are going to the lakeshore.'

(Brown et al., 2006, : 167)

<sup>5</sup>The alternation between *y-* and *n-* in Kaqchikel is governed by the presence or absence of an overt absolutive morpheme. The imperfective marker *n-* is used when a null absolutive morpheme (= ø) appears: i.e., when the morpheme cross-references third person singular. The imperfective marker *y-* is used elsewhere.

The imperfective marker also expresses progressive and habitual interpretations, as illustrated in (11) and (12).

**KAQCHIKEL: PROGRESSIVE**

- (11) N-∅-in-sik'ij                      ri    nu-wuj.  
 IMPF-ABS3s-ERG1s-read DET ERG1s-book  
 'I'm reading my book.'

(Brown et al., 2006, : 167)

**KAQCHIKEL: HABITUAL**

- (12) Q'ij q'ij y-in-atin                      jukumaj.  
 day day IMPF-ABS1s-bathe early  
 'Daily I bathe early.'

(Brown et al., 2006, : 167)

In contrast, the imperfective in Chol expresses habitual and continuous nonprogressive readings, excluding the progressive (Coon, 2010a, 2013a), as illustrated in Table 3.2 (see the references for discussion of aspectual markers in Chol).

Table 3.2: Aspectual oppositions in Chol

Perfective	Non-perfective	
	Imperfective (habitual, continuous nonprogressive)	
<i>tyi/ tsa`</i>	<i>mi/muk'</i>	<i>choñkol</i>

With this background, one can state the following tendency of split ergativity in Mayan languages and other ergative languages (Dixon, 1994; Coon, 2013b, etc.): it is likely that the ergative system is observed in the left side of the directionality scale below, while the non-ergative system is on the right side of the scale.

- (13) perfective >> imperfective >> progressive

In the perfective aspect, they exhibit an ergative pattern, whereas they display a non-ergative pattern and particularly an accusative pattern in the non-perfective aspect (= imperfective and/or progressive). The

accusative side of the split can be seen in Kaqchikel, Chol and Q'anjob'al, as repeated below.

NOM-ACC PATTERN IN KAQCHIKEL

- (14) a. y-in-ajin che [ki-k'ul-ik ak'wal-a'].  
IMPF-ABS1s-PROG PREP ERG3p-meet-NOML child-PL  
'I am meeting children.'
- b. y-in-ajin che [atin-ik].  
IMPF-ABS1s-PROG PREP bathe-NOML  
'I am bathing.'

NOM-ACC PATTERN IN Q'ANJOB'AL

- (15) a. lanan-∅ [hach w-il-on-i].  
PROG-ABS3s ABS2s ERG1s-see-DM-ITV  
'I am seeing you'
- b. lanan-∅ [ha-way-i].  
PROG-ABS3s ERG2s-sleep-ITV  
'You are sleeping.'

(Mateo Pedro, 2009)

NOM-ACC PATTERN IN CHOL (= PROGRESSIVE)

- (16) a. Choñkol [i-jats'-oñ].  
PROG ERG3s-hit-ABS1s  
'She's hitting me.'
- b. Choñkol [i-majl-el].  
PROG ERG3s-go-NOML  
'She's going.'

(Coon, 2013a, :11)

NOM-ACC PATTERN IN CHOL (= IMPERFECTIVE)

- (17) a. Mi [i-k'el-**oñ**                    jiñi x-ixik].  
      IMPF ERG3s-watch-ABS1s DET CL-woman  
      'The woman watches me.'
- b. Mi [i-ts'äm-el                    jiñi x-ixik].  
      IMPF ERG3s-bathe-NOML DET CL-woman  
      'The woman bathes.'

(Coon, 2010a, :54)

Although the splits in these languages correlate with the opposition between perfective and non-perfective aspects, there is a difference between Chol and Kaqchikel/Q'anjob'al regarding where aspect-based ergative splits arise. Chol sets a cutting point between the perfective and the imperfective/progressive (= non-perfective) in the scale of (13). In other words, Chol displays an accusative pattern in both the imperfective (i.e., habitual and continuous non-progressive readings) in (17) and the progressive in (16), but remains ergative in the perfective. On the other hand, Kaqchikel and Q'anjob'al set a cutting point between the perfective/imperfective and the progressive: the accusative pattern arises only in the progressive aspect expressed by *ajin* (= Kaqchikel) and *lanan* (= Q'anjob'al).

Aside from the difference in alignments between Kaqchikel and Chol/Q'anjob'al (i.e., the alignment puzzle), all subjects are cross-referenced by the same morpheme, while the transitive object is cross-referenced by a different morpheme: i.e., a nominative-accusative alignment pattern. The type of alignments found in the nominative-accusative side of Chol and Q'anjob'al has been the focus of much work on split ergativity, and particularly has been called *extended-ergative* (Dixon, 1979, 1994) in the sense that the ergative, which is normally limited to the transitive subject, extends to the intransitive subject (see the references above). In contrast, much less attention has been paid to the Kaqchikel-type alignment in which the ergative is limited to the transitive object. Thus, the split becomes obvious in intransitive sentences of Chol and Q'anjob'al, whereas it is visible in transitive sentences of Kaqchikel. In the sections that follow, I will provide an account of why this sharp difference in alignments of accusative patterns arises.

### 3.2.2 Biclausal analysis

We observed that many of the ergative splits found in Mayan languages are conditioned by aspect. Kaqchikel, Chol and Q'anjob'al, our targeted languages, fall into this category. We will suggest below that the structure of the nominative-accusative system in these languages is biclausal, as proposed by Coon (2010a, 2013a), who in turn adopts a biclausal analysis of the ergative split in Basque (Laka, 2006).

Recent studies have suggested that the nominative-accusative system of the split most often involves a biclausal structure. Laka (2006) provides such an analysis for Basque, an ergative language. Basque shows an accusative alignment pattern in progressive sentences. Example (18) illustrates a canonical ergative sentence of Basque, whereas example (19) is a progressive sentence with an accusative alignment system.

#### BASQUE

- (18) emakume-a-k ogi-ak ja-n d-it-u.  
woman-DET-ERG bread-DET.PL eat-PRFV 3ABS-PL-have3ERG  
'The woman has eaten (the) breads.'

(Laka, 2006, :177)

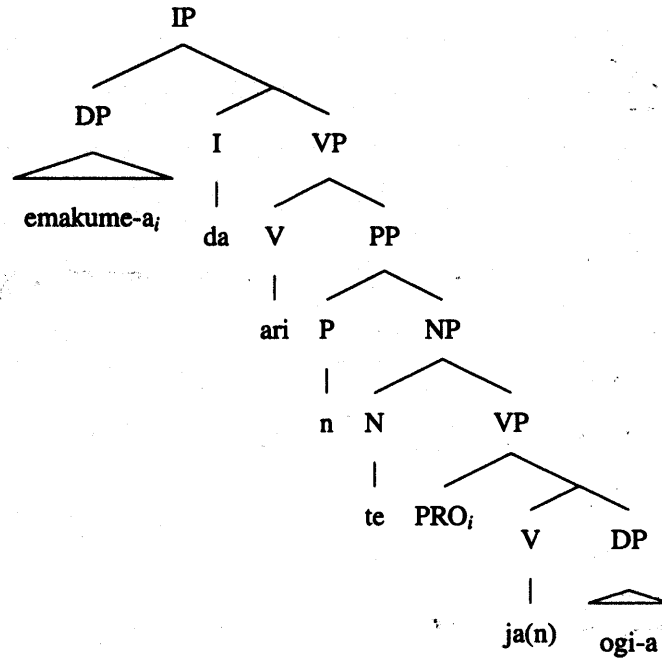
- (19) emakume-a ogi-a ja-te-n ari da.  
woman-DET bread-DET eat-NOML-Loc engaged is  
'The woman is (engaged in) eating the bread.'

(Laka, 2006, :174)

In (18), the subject bears ergative case, and the object is zero-marked (i.e., absolutive). In contrast, the subject in (19) does not bear ergative case and instead is marked with (zero) absolutive case.

Laka (2006) argues that the matrix verb *ari* 'to be engaged' in (19) acts as a main predicate – *ari* takes a locative PP (headed by *-n*) as its complement, which in turn subcategorizes for a nominalized clause. The sentence like (19) thus is taken as forming a biclausal structure, as shown in (20) (word order irrelevant).

(20)



Laka analyzes *ari* as an unaccusative verb, which assigns a theme  $\theta$ -role and absolutive case to its sole argument, the subject *emakume*. Under this analysis, therefore, the emergence of the accusative system in Basque follows straightforwardly from the intransitive nature of the main verb *ari* – intransitive (unaccusative) verbs can never assign ergative case.

Developing Laka's analysis of the ergative split in Basque, Coon (2010a, 2013a) proposes that the nominative-accusative system of the ergative split in Chol, repeated below, also contains two clauses (see also Larsen and Norman, 1979; Bricker, 1981; Larsen, 1981; Mateo Pedro, 2009). Under her analysis, non-perfective sentences such as (21) consist of a main predicate and a nominalized clause. The bracketed forms below are nominalized clauses. The non-perfective aspect marker *choñkol*, she claims, takes as its complement a nominalized clause.

#### NOM-ACC PATTERN IN CHOL

- (21) a. *Choñkol* [i-jats'-oñ].  
PROG ERG3s-hit-ABS1s  
'She's hitting me.'



- b. Choñkol [i-majl-el].  
 PROG ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

Coon analyzes the aspect marker as a one-place predicate (=unaccusative verb) just like *ari* in Basque, and suggests that it agrees with its complement (i.e., a nominalized verb) and assigns absolutive Case to it. Given that an absolutive agreement morpheme for a third person singular is null across Mayan, the examples in (21) can be illustrated as in (22), where a null absolutive morpheme (=  $\emptyset$ ) is added – a nominalized clause is always third person singular.

- (22) a. Choñkol- $\emptyset$  [i-jats'-oñ].  
 PROG-Abs3s ERG3s-hit-Abs1s  
 'She's hitting me.'
- b. Choñkol- $\emptyset$  [i-majl-el].  
 PROG-Abs3s ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

All subjects in the nominative-accusative system of the split in Chol as in (22) receive ergative Case because they are structurally *possessors* within nominalized verbs – ergative is homophonous with genitive in Mayan languages. Under Coon's analysis, the split between perfective clauses and non-perfective clauses is simply *structural*, and thus need not call for a special rule to explain the different alignments of grammatical relations in the ergative system and the accusative system. In other words, throughout the grammar of Chol, intransitive subjects and transitive objects are assigned absolutive (= set B), while transitive subjects and possessors receive ergative/possessor (= set A). The structural difference comes about when non-perfective clauses are expressed by the aspectual predicate *choñkol*, which embeds a nominalized form (see below for more details about Chol).

We will adopt the Laka/Coon-style biclausal analysis for the nominative-accusative side of ergative splits

in other Mayan languages. The structure we will argue for is given in (23): NVP stands for a non-verbal aspectual predicate.

*Biclausal structure of non-perfective clauses in Mayan*

(23) [ NVP ... [ vP<sub>NOMNL</sub> ] ]

We will thus take it that the split found in Mayan results simply from structural differences, as suggested by Coon. This raises an important question of why the alignment puzzle arises although Kaqchikel and Chol/Q'anjob'al make use of an identical (biclausal) structure for their non-perfective sentences. This will be addressed in §3.3. In the next subsection, we will discuss nominalization found in non-perfective clauses of Kaqchikel, Chol and Q'anjob'al.

### 3.2.3 Nominalization

In this subsection, I will present arguments for the claim that embedded clauses in the structure of (23) behave on a par with nominals: i.e., derived nominals. In particular, I will provide a detailed analysis of Kaqchikel nominalized verbs found in progressive sentences and embedded clauses triggering an ergative split. Although some grammars of Kaqchikel have reported the existence of nominalized forms in the language (e.g., García Matzar, 2007), little attention has been paid to the actual nominal properties of these forms from a syntactic point of view. In contrast, Chol and Q'anjob'al have been the subject of recent studies on nominalization and split ergativity (Coon, 2010a, 2013a; Mateo Pedro, 2009, and the references cited therein).

#### Kaqchikel

We will demonstrate below that aspectless (= non-finite) clauses found in the nominative-accusative side of the ergative split in Kaqchikel are nominalized verbs (or derived nominals).<sup>6</sup> In particular, nominalized verbs formed with *-ik* and *-oj* as shown below will be discussed.<sup>7</sup> One of the salient differences between

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<sup>6</sup>Although not only non-finite-clauses but finite clauses may appear in the complement position of the progressive marker *ajin* (and the embedding verb *chüp* 'begin'), we will focus on nominalized forms without an aspectual marker throughout the thesis.

<sup>7</sup>All transitive verbs may be suffixed by *-ik*, whereas intransitive verbs only in certain dialects may be nominalized with *-ik* (Brown et al., 2006). The intransitives that resist *-ik* appear to be suffixed by *Vn*, though further research is necessary on this (see

the two nominalizing suffixes is that the ergative morpheme can be prefixed to the nominalized verb formed with *-ik*, whereas it cannot be attached to the nominalized form with *-oj*.<sup>8</sup> We will discuss more differences between the two forms in §3.3.2.

(24) y-in-ajin che [ki-k'ul-ik ak'wal-a'].  
 IMPF-ABS1s-PROG PREP ERG3p-meet-NOML child-PL  
 'I am meeting children.'

(25) rōj y-ōj-ajin che [chōy-ōj che'].  
 we IMPF-ABS1p-PROG PREP cut-NOML tree  
 'We are cutting trees.'

We will also show that derived nominals in the language display verbal properties, suggesting that they are mixed categories of nouns and verbs, whose existence has been pointed out by many authors such as Chomsky (1970), Abney (1987), Grimshaw (1990), Borsley and Kornfilt (2000), Alexiadou (2001), Carnie (2011) among many others for a wide variety of languages.

### Nominal properties of derived nominals

Derived nominals generally obtain nominal properties, as their name suggests. For instance, consider derived nominals in English below. The nominal *destruction* can be preceded by the determiner *the* or the possessive *John's* in parallel with regular nouns like *car*. This suggests that derived nominals behave like nominals.

(26) the destruction of the city

(27) John's destruction of the city

(28) the/John's car

---

Imanishi and Mateo Pedro 2013 for relevant discussion). The other nominalizing suffix *-oj* may be suffixed to both transitive and intransitive verbs.

<sup>8</sup>We will observe below that some nominalized forms with *-ik* does not bear the ergative morpheme.

Derived nominals formed with *-ik* and *-oj* in Kaqchikel exhibit a number of nominal behaviors. First, they can be preceded by the determiner *ri*, as shown in (29) and (30). The determiner *ri* precedes a noun, as shown in (31).

(29) **ri ru-choy-ik ri che' pa wo'o' ch'uti ramaj k'ayew**  
 DET E3s-cut-NOML DET tree PREP five minute difficult  
 'Cutting the tree(s) in five minutes is difficult.'

(30) **ri choy-oj che' pa wo'o' ch'uti ramaj k'ayew**  
 DET cut-NOML tree PREP five minute difficult  
 'Cutting trees in five minutes is difficult.'

(31) **Chekonojel x-e-ki-q'ete-j ri ak'wal-a'.**  
 everyone PRFV-Abs3p-ERG3p-hug-Tv DET child-Pl  
 'Everyone hugged the children.'

As shown by (32), the determiner cannot precede the finite verb.

(32) **\*ri x-ø-in-choy che' pa wo'o' ch'uti ramaj.**  
 DET PRFV-Abs3s-ERG1s-cut trees PREP five minute  
 '(intended) I cut trees in five minutes.'

Second, derived nominals can be preceded by modifiers such as numeral quantifiers as seen in (33) and (34) in parallel with the regular noun in (35).

(33) **k'iy ru-choy-ik che' y-a-r-kosir-saj**  
 lots.of ERG3s-cut-NOML tree IMPF-Abs2s-ERG3s-tire-CAUS  
 'Lots of cutting trees is tiring.'

(34) **k'iy choy-oj che' y-a-r-kosir-saj**  
 lots.of cut-NOML tree IMPF-Abs2s-ERG3s-tire-CAUS  
 'Lots of cutting trees is tiring.'

- (35) **k'iy** **che'** **x-e-tzaq**  
 lots.of tree PRFV-A3p-fall  
 'Lots of trees fell.'

Other types of modifiers such as adjectives can modify derived nominals as seen in (36): e.g., *peligroso* from Spanish.<sup>9</sup> The same adjective modifies regular nouns as in (37).

- (36) **ri** **y-a-tiker** **n-ø-a-b'en** **peligroso** **choy-øj/(??ru-)choy-ik** **che'** **k'ayew.**  
 DET IMPF-Abs2s-can IMPF-Abs3s-ERG2s-do dangerous cut-NOML/(ERG3s-)cut-NOML tree difficult  
 'That you can do dangerous cutting trees is difficult.'

- (37) **peligroso** **samaj**  
 dangerous work  
 'dangerous work'

Third, prepositions can embed derived nominals formed with *-ik* and *-øj*. This is shown by (38) and (39) with *pa* (= an all-purpose preposition). Regular nouns can be embedded under the preposition as in (40).

- (38) **rja'** **x-ø-b'e** **pa** **ru-choy-ik** **awen**  
 he PRFV-Abs3s-go PREP ERG3s-cut-NOML corn.plant  
 'He went to cut corn.'

- (39) **rja'** **x-ø-b'e** **pa** **choy-øj** **awen**  
 he PRFV-Abs3s-go PREP cut-NOML corn.plant  
 'He went to cut corn.'

- (40) **x-a-loq'-on** **pa** **tortilleria.**  
 PRFV-Abs2s-shop-AP PREP tortilla.store  
 'You shopped at the/a tortilla store.'

As seen in (41), the preposition cannot precede the finite verb *x-ø-in-choy*.

- (41) **\*x-i-b'e** **pa** **x-ø-in-choy** **awen.**  
 PRFV-Abs1s-go PREP PRFV-Abs3s-ERG1s-cut corn.plant  
 '(intended) I went to cut corn.'

<sup>9</sup>For reasons unknown to me, the nominalized form with *-ik* is degraded with the ergative morpheme (i.e., *ru-*) in (36).

Other prepositions which combine with *relational nouns* can also precede derived nominals. For instance, the relational noun *-e* is preceded by the preposition *chi*. When *-e* takes a third person singular object as its complement, it bears an ergative morpheme cross-referencing the object, giving rise to *r-e*. When *r-e* combines with *chi*, *chi + re* is contracted to *che*. This form results from the deletion of the vowel of *chi* and the initial consonant of *r-e* as part of grammaticalization, according to England (2003). To the extent that Kaqchikel is a *pro*-drop language, the form in (42) can be then taken as involving the drop of the object pronoun *rje* '(s)he/it'.

- (42)    *che*  
           to.him/her/it  
           'to him/her/it'

(England, 2003, :737)

Other contracted forms of *chi* occurring with the relational noun *-e*, which inflects for first person singular (= *w-e*) and second person singular (= *aw-e*), are given below.

- (43)    a.    *chi + w-e* → *chwe* 'to me'  
           b.    *chi + aw-e* → *chawe* 'to you(sg.)'

(England, 2003, :737)

As we have seen elsewhere, derived nominals formed with *-ik* and *-oj* can be embedded by the grammaticalized form of *chi + r-e* in the progressive sentences. The relevant examples are repeated below. Since a nominalized form is always third person singular, the form of the preposition (i.e., *che*) receives a natural account.

- (44)    a.    *röj y-øj-ajin            che [choy-øj che']*.  
           we IMPF-ABS1P-PROG PREP cut-NOML tree  
           'We are cutting trees.'

- b. rōj y-*oj*-*ajin* che [ru-*choy*-*ik* che'].  
 we IMPF-Abs1P-PROG PREP ERG3s-cut-NOML tree  
 'We are cutting tree(s).'

Another piece of evidence for the nominal status of derived nominals comes from their compatibility with the occupational prefix *aj*-. The prefix *aj*- is attached to a noun root, denoting the occupational title of the noun. For example, noun roots like *tz'ib'* "letter/writing" and *q'ij* "sun/day" denote a writer and a daykeeper/a Mayan ritual specialist, respectively, when these nouns are prefixed by *aj*. This is shown below.

- (45) **aj-tz'ib'**  
 AJ-letter/writing  
 'a writer'

- (46) **aj-q'ij**  
 AJ-sun/day  
 'a daykeeper or a Mayan ritual specialist'

(Brown et al., 2006, :152)

Interestingly, a derived nominal formed with *-oj* can also be prefixed by *aj*, referring to someone who performs the act denoted by the nominalized verb as an occupation, just like *-er* in *tree cutter* in English. This can be demonstrated by *choy-*oj* che'* "cutting trees". When this nominalized form is prefixed by *aj*, it denotes someone who cuts trees or a tree-cutter.

- (47) **aj-choy-*oj* che'**  
 AJ-cut-NOML tree  
 'tree-cutter'

The derived nominal with *-oj* refers to a more general occupation in the absence of the object: e.g., *a cutter* in (48).

- (48) **la aj-choy-*oj* la jab'el n- $\emptyset$ -samaj**  
 that AJ-cut-NOML that well IMPF-Abs3s-work  
 'That cutter works well.'

On the other hand, derived nominals formed with *-ik* cannot be combined with *aj* as seen below.

- (49) \**aj-ru-choy-ik*      *che'*  
AJ-ERG3s-cut-NOML tree  
'(intended)tree-cutter'

This might be due to the fact that the nominalized form *choy-ik* is already prefixed by the ergative agreement morpheme *ru-*. A verbal/nominal stem presumably cannot tolerate double prefixation in Kaqchikel.<sup>10</sup> As we saw earlier, in contrast, nominalized forms with *-oj* cannot bear an ergative agreement morpheme (see §3.3 for detailed discussion on this issue). However, I leave open the issue about the incompatibility of *ik* nominalization with the occupational prefix *aj*.

To summarize, we have observed that derived nominals formed with *-ik* and *-oj* display nominal properties because they are (partially) compatible with the following grammatical elements: a determiner, adjectives, prepositions, and an occupational prefix.

### Verbal properties of derived nominals

It has been cross-linguistically observed that some types of (derived) nominals maintain verbal properties alongside nominal properties – mixed categories of nouns and verbs (Chomsky, 1970; Abney, 1987; Grimshaw, 1990; Borsley and Kornfilt, 2000; Alexiadou, 2001; Carnie, 2011, etc.). One such example is English gerunds. As shown below, gerunds can cooccur with adverbs, unlike derived nominals (see Abney, 1987; Alexiadou, 2001; Alexiadou et al., 2007, among many others for detailed discussion on verbal/nominal properties of English gerunds).

- (50) a. Pat disapproved of my *quietly* leaving the room before anyone noticed.  
b. The *\*carefully/careful* restoration of the painting took six months.

(Alexiadou et al., 2007, : 482 *slightly modified*)

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<sup>10</sup>The prefix *aj-* is historically a gender marker for masculine, whereas *x-* is for feminine (I thank Jessica Coon and Joseph DeChicchis for pointing this out to me). Jessica Coon also informed me that gender markers in Mayan are generally incompatible with set A (= ergative and genitive) markers.



As discussed by Fu et al. (2001), certain kinds of deverbal nominalization (or process nominals) in English can combine (marginally) with postnominal adverbs, in contrast to Chomsky (1970) (cf. (50-b)).<sup>11</sup>

- (51) a. Kim's explanation of the problem to the tenants *thoroughly* (did not prevent a riot).  
 b. The occurrence of the accident *suddenly* (disqualified her).

(Fu et al., 2001, : 549)

Derived nominals in Greek can also cooccur with adverbs as shown in (52).

- (52) i katastrofi tis polis *olosheros*  
 the destruction the city-GEN completely  
 'the destruction of the city completely'

(Alexiadou, 2001, :46)

Given that adverbs are standardly assumed to modify VPs rather than NPs, the compatibility of gerunds in English and derived nominals in English and Greek with adverbs strongly suggests that these nominals maintain verbal properties.

Like English gerunds and Greek derived nominals, derived nominals in Kaqchikel behave like verbs in several respects. First, manner adverbs like *aninäq* 'quickly' may occur with a derived nominal as shown in (53) and (54).

- (53) ru-pax-ik ri läq *aninäq* k'ayew  
 ERG3s-break-NOML DET plate quickly difficult  
 'Breaking the plate quickly is difficult.'
- (54) Ri choy-oj che' *aninäq* k'ayew  
 DET cut-NOML tree quicky difficult  
 'Cutting trees quickly is difficult.'

The adverb *aninäq* normally modifies verbs as seen in (55), but not nouns in (56) and (57).

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<sup>11</sup>I thank David Pesetsky (p.c.) for bringing this work to my attention.

(55) Ri a Juan **aninäq** x-ø-u-paxij ri läq.  
 DET CL Juan quickly PRFV-ABS3s-ERG3s-break DET plate  
 'Juan broke the plate quickly.'

(56) \*aninäq tzi  
 quickly word  
 '(intended)quick word'

(57) \*aninäq samaj  
 quickly work  
 '(intended)quick work'

Furthermore, as already shown above, derived nominals can occur with time adverbs as seen in (58) and (59).

(58) ri choy-*oj* che' **pa wo'o' ch'uti ramaj** k'ayew  
 DET cut-NOML tree PREP five minute difficult  
 'Cutting trees in five minutes is difficult.'

(59) ri ru-choy-*ik* ri che' **pa wo'o' ch'uti ramaj** k'ayew  
 DET ERG3s-cut-NOML DET tree PREP five minute difficult  
 'Cutting the tree(s) in five minutes is difficult.'

The compatibility with different kinds of adverbs strongly suggests that nominalized verbs formed with *-ik* and *-oj* retain some degree of verbal nature after they undergo nominalization.

Furthermore, certain cases of derived nominals in Kaqchikel manifest voice morphology such as passive and antipassive morphemes. Example (60) shows the nominalized form bearing the passive morpheme (i.e., *-x*) (see §3.3 for details on these types of nominalization).

(60) röj y-*oj*-ajin che ki-q'ete-*x-ik* ri ak'wal-a'.  
 we IMPF-ABS 1P-PROG PREP ERG3P-hug-PAS-NOML DET child-PL  
 'We are hugging the children.'

As shown in (61), the nominalized verb is suffixed by the antipassive morpheme (i.e., *-n*).<sup>12</sup>

<sup>12</sup>In the dialect of Kaqchikel discussed by García Matzar and Rodríguez Guaján (1997), the vowel of the nominalizing suffix is tensed, unlike in the dialect of my consultants.

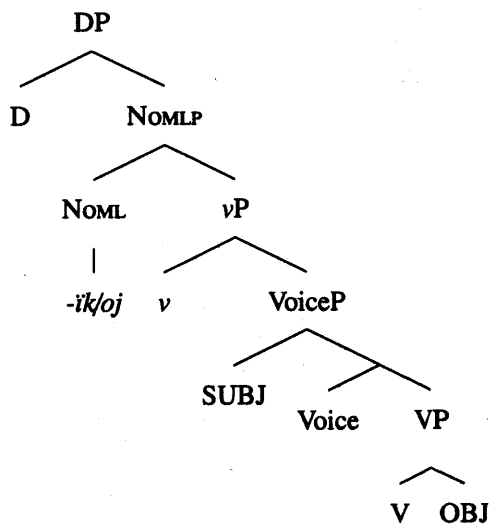
- (61) x-ø-u-chäp [q'et-e-n-ik] r-ichin ri ak'wal  
 PRFV-Abs3s-ERG3s-begin hug-Bv-AP-NOML ERG3s-RN DET child  
 'He began to hug the child.'

(García Matzar and Rodríguez Guaján, 1997, :457)

To the extent that voice morphology is one of the defining verbal properties and particularly associated with *vP*/layered VP (Hale and Keyser, 1993; Chomsky, 1995, etc.) or VoiceP (Kratzer, 1996; Baker and Vinokurova, 2009; Harley, 2013, etc.), this can be taken as additional evidence that derived nominals remain verbal to some extent.

Summarizing, I provided evidence that derived nominals formed with *-ik* and *-oj* display verbal properties. Based on the nominal and verbal properties observed above, I propose the structure in (62) for nominalized transitive verbs in Kaqchikel

- (62) *The structure for a nominalized transitive in Kaqchikel*



A verb phrase, which is assumed to project its arguments as in canonical *vP* (Grimshaw, 1990), is dominated by NOMLP headed by a nominalizing suffix (i.e., *-ik* and *-oj*). NOMLP is dominated by DP. I suggest that nominal properties of derived nominals are associated with a DP or NOMLP layer, while verbal properties are attributed to the presence of *vP* or VoiceP.

In this structure, a nominalized clause does not contain (finite) IP or TP. This is compatible with the lack

of an aspect/tense marker within a nominalized clause. Furthermore, derived nominals cannot occur with negation. Negation in Kaqchikel is usually formed by two particles: *ma(n)* and *ta* (also used as an irrealis particle) (Brown et al., 2006). The particle *ma(n)* precedes a lexical item to be negated (e.g., V, N, Adj, Adv etc.), whereas *ta* follows the negated word as in (63).

- (63) **ma(n)** x- $\emptyset$ -in-choy                    **ta** che'.  
 NEG PRFV-ABS3s-ERG1s-cut NEG tree  
 'I did not cut trees.'

As seen in (64) and (65), negation cannot appear inside the nominalized clause. The nominalized verbs formed with *-ik* and *-oj* occur in the subject position in (64) and (65).

- (64) \*[ri **ma(n)** ru-choy-ik            **ta** che'] k'ayew.  
 DET NEG ERG3s-cut-NOML NEG tree difficult  
 'Not cutting trees is difficult.'

- (65) \*[ri **ma(n)** choy-*oj* **ta** che'] k'ayew.  
 DET NEG cut-NOML NEG tree difficult  
 'Not cutting trees is difficult.'

The ungrammaticality of (64) and (65) follows if we assume with Aissen (1992) that only clauses with an Infl element can host negation (in several Mayan languages).<sup>13</sup> This is consistent with the proposed structure in (62).

The absence of IP or TP within derived nominals might be incompatible with the fact that temporal adverbs can occur in derived nominals as we observed above. However, the presence of temporal adverbs in nominals does not necessarily imply an IP/TP layer. For instance, a temporal adverb may appear with a simple referential noun as in *yesterday's show*. It would be difficult to posit IP/TP within such a referential noun. I thus conclude, following Alexiadou (2001), that a temporal adverb may be related to event properties denoted by the nominal, not structural positions encoded by temporal layers (= IP/TP) in nominal structure.

<sup>13</sup>This analysis may not hold for English bare VPs as shown below, as pointed out to me by David Pesetsky (p.c.). The non-finite clause co-occurs with negation. I leave this issue for further research.

- (i) I saw Bill not take the money.

We will elaborate on the structure of nominalized verbs in §3.3.1.

### Chol

Coon (2010a, 2013a) observes that aspectless clauses found in the nominative-accusative side of the ergative split in Chol, repeated below as (66), undergo nominalization, thereby displaying nominal properties.

- (66) a. Choñkol-ø [i-jats'-oñ].  
PROG-Abs3s ERG3s-hit-Abs1s  
'She's hitting me.'
- b. Choñkol-ø [i-majl-el].  
PROG-Abs3s ERG3s-go-NOML  
'She's going.'

(Coon, 2013a, :11)

As mentioned in §3.2.2, Coon analyzes non-perfective aspect markers such as the progressive marker *choñkol* as one-place predicates taking the aspectless clause as their complement. It is relevant to note that *choñkol* embeds a situation-denoting nominal (e.g., *k'iñijel* "party" ) in (67). The same nominal appears in clearly nominal contexts as in (68).

- (67) Choñkol k'iñijel tyi aw-otyoty.  
PROG party PREP ERG2s-house  
'There's a party going on at your house.'

(Coon, 2010a, :97)

- (68) Jalaki tyi ujty-i jiñi k'iñijel.  
when PRFV finish-ITV DER party  
'When did the party end?'

(Coon, 2010a, :97)

This supports the view that *choñkol* acts as a main predicate which subcategorizes for a nominal. Below I sketch out Coon's analysis of aspectless clauses as in (66).

Root transitive verbs found in aspectless (embedded) clauses of Chol do not bear an overt suffix (see

(66-a)), but can optionally appear with the suffix *e`* (glossed as *DEP* for “dependent (embedded) clause suffix”) as in (69).<sup>14</sup>

- (69) Chofikol [k-mel-(e`)      jifi waj].  
PROG    ERG1s-make-DEF DET tortilla  
‘I’m making the tortillas.’

(Coon, 2010a, :115)

Derived (or non-root) transitives occur with the overt suffix *-Vñ* when they appear in aspectless (embedded) clauses. A transitive verb clearly derived via applicative is shown in (70). Coon glosses the suffix *-Vñ* as “derived transitive nominal” (*D.NML*).<sup>15</sup>

- (70) Mi k-mel-b-eñ                      i-waj      alob.  
IMPF ERG1s-make-APPL-D.NML ERG3s-tortilla child  
‘I make the child his tortillas.’

(Coon, 2010a, :34)

Other derived transitives which do not show overt derivational morphology such as applicative also appear with the suffix *-Vñ*, as seen in (71).

- (71) Mi k-xujch’-iñ                      tyak’iñ.  
IMPF ERG1s-thief-D.NML money  
‘I steal money.’

(Coon, 2010a, :34)

Intransitive verbs found in aspectless (embedded) clauses occur with the suffix *el*, which is glossed as *NML* for “nominal”.

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<sup>14</sup>Coon notes that the suffix *e`* is only possible with third person objects (i.e., in the absence of an overt absolutive morpheme).

<sup>15</sup>Since Coon argues that both (root/derived) transitive and intransitive verbs are nominalized in aspectless clauses, the suffixes such as *-Vñ* and *el* are analyzed as nominalizers. We will follow this in the discussion that follows.

- (72) Mi i-wejl-el aj-loro.  
 IMPF ERG3s-fly-NML CL-parrot  
 'The parrot flies.'

(Coon, 2010a, :36)

To summarize, there are two overt nominalizing suffixes in Chol under Coon's analysis: *-Vñ* (= derived transitives) and *-el* (= intransitives) (see Coon 2010a, 2013a for more details and discussion on other types of nominalized forms in Chol).

To demonstrate that aspectless (embedded) clauses found in the non-perfective aspects are nominals, Coon provides several pieces of evidence.<sup>16</sup> First, as shown in (73), a nominalized form can be possessed, which is signaled by the ergative (or genitive) morpheme cross-referencing a null second person pronoun. An ergative morpheme is found in all of the aspectless nominalized clauses seen above, and its presence is *obligatory*. Example (73) further shows that nominalized forms can appear in argument positions such as a subject position just like regular nominals.

- (73) Mach uts'aty [a-jats'-oñ].  
 NEG good ERG2s-hit-Abs1s  
 'Your hitting me isn't good.'

(Coon, 2013a, :141)

Similarly, nominalized forms can appear in the theme position of a ditransitive verb as seen in (74).

- (74) Tyi y-äk-e-yoñ [k-mek'-ety].  
 PRFV ERG3s-give-APPL-Abs1s ERG1s-hug-Abs2s  
 'She made/let me hug you.'

(Coon, 2013a, :141)

As can be seen in (75), a regular nominal appears in the theme position of the same ditransitive verb as in (74).

<sup>16</sup>Unlike in Kaqchikel, nominalized forms in Chol cannot co-occur with determiners, adjectives, prepositions or an occupational prefix. See the appendix for discussion.

- (75) Tyi y-äk-e-yoñ [k-waj].  
 PRFV ERG3s-give-APPL-Abs1s ERG1s-tortilla  
 'She gave me my tortilla.'

(Coon, 2013a, :141)

Furthermore, nominalized forms can not only be possessed as in all the cases observed above, but trigger possessor agreement in (76) – one nominalized form (i.e., *k-wuts' jiñi pisil*) is embedded under the other nominalized form (i.e., *y-ujty-el*), which is in turn embedded under the progressive marker.

- (76) Choñkol [y<sub>i</sub>-ujty-el [k-wuts' jiñi pisil]<sub>i</sub> ]  
 PROG ERG3s-finish-NOML ERG1s-wash DET clothes  
 'I'm finishing washing the clothes.'

(Coon, 2013a, :141)

To summarize, it has been shown (i) that nominalized forms can appear in argument positions and (ii) that they can both trigger and host possessor agreement. These properties support the claim that aspectless clauses found in nonperfective aspects of Chol are derived nominals.

### Q'anjob'al

It has been argued that aspectless clauses found in the nominative-accusative system of Q'anjob'al, repeated below as (77), are nominalized (Mateo Toledo, 2003; Mateo Pedro, 2009), just like aspectless clauses in Kaqchikel and Chol. I will show some nominal behaviors of aspectless clauses in Q'anjob'al, discussed by Mateo Toledo (2003) and Coon (2010a, 2013a).

#### NOM-ACC PATTERN IN Q'ANJOB'AL

- (77) a. lanan-ø [hach w-il-on-i].  
 PROG-Abs3s Abs2s ERG1s-see-DM-ITV  
 'I am seeing you'



- b. lanan- $\emptyset$  [ha-way-i].  
 PROG-Abs3s ERG2s-sleep-Irv  
 'You are sleeping.'

(Mateo Pedro, 2009)

As seen in (77), both intransitive and transitive verbs in the aspectless clause are suffixed by *-i* (Mateo Pedro, 2009). Recall from chapter 2 that *-i* is a status suffix for intransitive verbs and dropped in non-final position (Mateo Toledo, 2008). Unlike intransitives, transitives occur with the suffix *-on* in addition to *-i* as shown in (77-a). The suffix *-on* is glossed as *DM* for "dependent marker", following Mateo Toledo (2008) and Mateo Pedro (2009) (see §3.3 for details on this suffix).

Mateo Toledo (2003) proposes an analysis in which the nominative-accusative side of the split as in (77) involves subordination of nonfinite clauses (see the reference for details on nonfinite clauses in Q'anjob'al). In other words, the progressive marker *lanan* embeds the aspectless/nonfinite clause, as in the case of Kaqchikel and Chol.

While Mateo Toledo (2003) does not explicitly argue that nonfinite clauses found in the accusative alignment pattern undergo nominalization, Mateo Pedro (2009) proposes that they are indeed nominalized by considering a wide range of ergative split patterns across Mayan. Mateo Pedro also claims that (transitive) verbs in Q'anjob'al must undergo intransitivization prior to nominalization (see §3.3 and Coon et al. 2011 for a different analysis).<sup>17</sup> It follows then that the transitive verb in (77-a) occurs with the intransitive status suffix *-i*.<sup>18</sup> The gist of Mateo Pedro's analysis is that the split between the ergative alignment system and the accusative alignment system in Q'anjob'al is by no means exotic, and can be derived straightforwardly from a nominal alignment pattern exactly like in Chol and Kaqchikel (see also Larsen and Norman, 1979; Larsen, 1981; Bricker, 1981, etc): ergative morphemes within nonfinite clauses are actually possessors.

Although neither Mateo Toledo (2003) nor Mateo Pedro (2009) provides explicit evidence that nonfinite clauses as in (77) are derived nominals, certain cases of nonfinite clauses which would be compatible with a nominalization analysis can be found in Mateo Toledo (2003), as Coon (2010a, 2013a) points out. For example, Mateo Toledo (2003) observes that a non-finite clause can be fronted to a clause-initial focus

<sup>17</sup>Mateo Pedro and Imanishi (2012) and Imanishi and Mateo Pedro (2013) extend the same analysis to nominalization in Kaqchikel.

<sup>18</sup>Unlike in Kaqchikel and Chol, it appears that Q'anjob'al does not display any overt nominalizing suffixes.

position as shown in (78-a). In contrast, the finite clause in (78-b) cannot be fronted. Mateo Toledo (2003) suggests that the aspectual marker in (78-b) is null. That (78-b) is a finite clause unlike (78-a) is evidenced by the presence of the absolutive morpheme: i.e., a canonical alignment pattern in intransitive clauses.

- (78) a. [A ha-b'ey] k'ojank'ulal.  
 Foc ERG2s-walk slow  
 'It's how you walk that's slow.'
- b. \*[A hach b'ey-i] k'ojank'ulal.  
 Foc Abs2s walk-Itv slow

(Mateo Toledo, 2003, :10)

The clause-initial focus position can host a nominal as seen in (79).

- (79) [A te na] max-∅ s-tayne-j naq unin.  
 Foc CL house PRFV-ERG3s ERG3s-take.care-Tv CL child  
 'It was the house that the child took care of.'

(Mateo Toledo, 2008, :79)

The ability of the nonfinite clause to move to the focus position thus suggests, as Coon (2010a, 2013a) points out, that it behaves like a noun.

Likewise, the translations given by Mateo Toledo (2003) suggest that the non-finite clause (appearing with the ergative morpheme) found in a clause-initial (focus) negation position as in (80-a) is treated as nominals (or gerunds in English) in opposition to the finite clauses in (80-b): (80-b) is ill-formed presumably because the finite clauses appear in focus positions as in (78-b). Here I adopt the English translations given by (Coon, 2013a, :179).

- (80) a. [Manaq ha-b'ey] k'ojank'ulal, [a ha-low-i].  
 NEG ERG2s-walk slow Foc ERG2s-eat-Itv  
 'It's not your walking that's slow, but your eating.'

- b. \*Manaq hach b'ey-i k'ojank'ulal, a hach low-i.  
 NEG Abs2s walk-Irv slow Foc Abs2s eat-Irv  
 intended: 'It wasn't how you walked that was slow, but how you ate.'

(Mateo Toledo, 2003, :11)

As indicated by (81), a nominal can appear in the clause-initial (focus) negation position.

- (81) [Manaq jun-oq k'exan q'anej] ch-ø-y-al heb' cham.  
 NEG INDF-IRR different word IMPF-ABS3s-ERG3s-say PL CL  
 'It is not some deviated word that they say.'

(Mateo Toledo, 2008, :79)

Furthermore, there is independent evidence suggesting that the aspectual marker *lanan* found in the non-perfective clauses of Q'anjob'al takes a nominal as its complement. In the example of (82), *lanan* functions as a class of verbal roots called *positional*, which is suffixed by *-an* (see Mateo Toledo 2008 for a detailed description of positionals in Q'anjob'al).<sup>19</sup> As seen in (82), *lanan* cooccurs with the nominal *kamixhej* "shirt" in contexts outside of the non-perfective aspect.

- (82) Lan-an-'ay an [DP kamixhej] (s)-sat tx'otx'.  
 extended-Pos-Dir CLF shirt ERG3-on.top.of ground  
 'The shirt is thrown (extended) on the ground.'

(Pascual 2007 cited in Coon 2010a, 2013a)

In summary, the properties of nonfinite clauses and the aspectual marker *lanan* found in the nominative-accusative side of the split in Q'anjob'al suggest that the non-finite clauses can be analyzed as derived nominals exactly as in the case of Kaqchikel and Chol.

### Interim summary

We have observed that the nominative-accusative side of the ergative split in Kaqchikel, Chol and Q'anjob'al plausibly involves a biclausal structure, which consists of a non-verbal predicate (i.e., a non-perfective

<sup>19</sup>As Coon writes, positionals "generally refer to physical state, shape, configuration, or surface quality" (Coon, 2010a, : 30). Progressive aspectual markers in many Mayan languages are derived from positionals as well as other verbal stems (Law et al., 2006; Coon, 2010a, 2013a).

aspectual marker) and a nonfinite clause, as discussed by Coon (2010a, 2013a). The nonfinite clause in these languages has been shown to undergo nominalization. The structure of non-perfective clauses in three languages can thus be illustrated as follows, setting aside the presence of a preposition (i.e., *che*) in Kaqchikel (see §3.3 for relevant discussion).

(83) [ NVP ... [ vP<sub>NOMNL</sub> ] ]

In this biclausal analysis, the spread of ergative Case to all subjects (i.e., extended ergative) in the accusative alignment of Chol and Q'anjob'al, repeated below, seems to receive a natural account. To be precise, since the nonfinite clause is nominalized, the ergative in the split can be analyzed as *genitive*. For example, the Chol example in (84-a) can be translated as "Her hitting me is taking place".

CHOL

- (84) a. Choñkol- $\emptyset$  [i-jats'-oñ].  
 PROG-Abs3s ERG3s-hit-Abs1s  
 'She's hitting me.'
- b. Choñkol- $\emptyset$  [i-majl-el].  
 PROG-Abs3s ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

Q'ANJOB'AL

- (85) a. Ianan- $\emptyset$  [hach w-il-on-i].  
 PROG-Abs3s Abs2s ERG1s-see-DM-ITV  
 'I am seeing you'
- b. Ianan- $\emptyset$  [ha-way-i].  
 PROG-Abs3s ERG2s-sleep-ITV  
 'You are sleeping.'

(Mateo Pedro, 2009)

However, consideration of Kaqchikel raises a nontrivial question: *why* the alignment puzzle arises between Kaqchikel and Chol/Q'anjob'al, despite the fact that all of these languages involve embedded nominalized clauses to form non-perfective sentences. As repeated below, it is the ergative/genitive that is aligned with the transitive object in the nominative-accusative system of Kaqchikel.

**KAQCHIKEL**

- (86) a. y-in-ajin che [ki-k'ul-ik ak'wal-a'].  
 IMPF-ABS 1s-PROG PREP ERG3p-meet-NOML child-PL  
 'I am meeting children.'
- b. y-in-ajin che [atin-ik].  
 IMPF-ABS 1s-PROG PREP bathe-NOML  
 'I am bathing.'

Therefore, the equation of ergative with genitive alone will not explain the contrastive ergative alignment between Kaqchikel and Chol/Q'anjob'al.

### 3.3 Explaining the alignment puzzle

The main purpose of this section is to explain why the alignment puzzle, repeated below, arises although both Kaqchikel and Chol/Q'anjob'al possess a (nearly) identical biclausal structure for non-perfective clauses, as observed in the preceding section.

**THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN**

(87) **KAQCHIKEL-TYPE**

	S	O
Intransitive	ABS	-
Transitive	ABS	ERG

(88) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

With the ergative assignment model introduced in chapter 2, I will argue that the contrastive alignment results from the presence or absence of a particular requirement on a nominalized clause, a part of a biclausal non-perfective sentence in Kaqchikel and Chol/Q'anjob'al. Under this analysis, all subjects in Chol and Q'anjob'al receive ergative Case because they would be otherwise Case-less when a relevant phase triggers Spell-Out. In contrast, it is the transitive object in Kaqchikel that would be Case-less if ergative Case assignment did not take place at the timing of Spell-Out of a relevant phase.

### 3.3.1 Kaqchikel: ERG=OBJ

Kaqchikel exhibits a cross-linguistically rare alignment pattern in the nominative-accusative system found in the progressives and in the complement position of certain embedding verbs – *the object* of a transitive verb is aligned with an ergative or genitive agreement morpheme. I will claim that this alignment pattern follows from a particular requirement on nominalization in Kaqchikel. The requirement that I propose is that nominalized verbs in Kaqchikel must lack an external argument. Alexiadou (2001) also makes a similar claim for nominalizations of Greek and various Indo-European languages. To be precise, Alexiadou proposes that the type of  $\nu$  found in nominalized verbs (and particularly process nominals but not result nominals) generally has an unaccusative structure in which an external argument is absent. For example, the nominalization of a transitive verb does not contain the external argument (= *tus varvarus*) within the nominal, as seen in the Greek example of (89). The external argument must be introduced by a preposition (= *apo*). The nominalized form only includes the genitive-marked internal argument (= *tis polis*).<sup>20</sup>

<sup>20</sup>This contrasts with English nominalizations where an external argument may be genitive-marked as well as introduced by *by*, whereas an internal argument is introduced by *of*: e.g., *Rome's destruction of the city* and *the destruction of the city by Rome*. The internal argument may also be genitive-marked (= *passive nominals*): *the city's destruction*.

## GREEK

- (89) i katastrofi tis polis apo tus varvarus mesa se tris meres  
the destruction the city-GEN by the barbarians within three days  
'The destruction of the city by the barbarians within three days'

(Alexiadou, 2001, : 76)

Developing Alexiadou's analysis, I suggest that nominalized verbs in (at least) a subset of Mayan languages including Kaqchikel are subject to the requirement stated as *the Unaccusative Requirement on Nominalization* in (90).<sup>21</sup> I further propose that this requirement is parameterizable. The requirement holds for nominalizations of Kaqchikel, whereas it does not obligatorily apply to nominalizations of Chol and Q'anjob'al. I will discuss Chol and Q'anjob'al in §3.3.3.

- (90) THE UNACCUSATIVE REQUIREMENT ON NOMINALIZATION

Nominalized verbs must lack an external argument.

There is evidence that nominalizations of Kaqchikel lack an external argument as in Greek. As shown in (91), the nominalization of transitive verbs excludes the external argument (= *Juan*) and only contains the internal argument (= *ri tinamit*). The external argument is introduced in the relative clause modifying the nominalized form. The literal translation of (91) is *the burning of the city that Juan did was scary*.

## KAQCHIKEL

- (91) ri ru-k'at-ik ri tinamit [ri x-ø-b'en ri a Juan] x-ø-xib'i-n.  
DET ERG3s-burn-NOML DET city DET PRFV-ABS3s-do DET CL Juan PRFV-ABS3s-scary-AP  
'Juan's burning of the city was scary.'

Furthermore, when there is only one argument in the nominalized form of transitive verbs as seen in (92), the argument must be interpreted as the internal (or theme/patient) argument, but not the external argument.

---

<sup>21</sup>Mateo Pedro (2009) argues that nominalization in Q'anjob'al and other Mayan languages requires the intransitivization of a verb, though I will propose a different analysis of Q'anjob'al in §3.3.3.

KAQCHIKEL

- (92) ru-k'at-ik ri a Juan x-ø-xib'i-n.  
 ERG3s-burn-NOML DET CL Juan PRFV-Abs3s-scare-AP  
 'Juan's burning was scary.' = Juan was burned. (\*Juan burned something.)

These examples are thus consistent with the claim that nominalized clauses in Kaqchikel must lack an external argument.

Given that unaccusativity implies intransitivity, the unaccusative requirement in (90) forces nominalized transitive verbs of Kaqchikel to be intransitive. There are several ways by which transitive verbs are intransitivized. In particular, I will show below that a subset of nominalized nonfinite clauses embedded by the predicates such as *ajin* undergo passivization in order to satisfy the unaccusative requirement.

Furthermore, as will be demonstrated in §3.3.2, some types of nominalizations in Kaqchikel display different ways of intransitivization such as antipassivization and (pseudo-)incorporation. Although antipassive forms generally lack or demote an internal argument to an oblique argument, I will suggest that nominalized verbs of Kaqchikel that are intransitivized via antipassivization must lack its external argument (in addition to its internal argument) due to the unaccusative requirement in (90). I will use "intransitivization" or "be intransitivized" to describe the process by which transitive verbal phrases obtain an unaccusative structure in nominalization to meet the unaccusative requirement.

According to the unaccusative requirement in (90), nominalized forms of transitive and unergative verbs must have an unaccusative structure, and thus cannot have an external argument inside a nominalized clause, given that only a transitive or unergative *v* projects an external argument (see chapter 2 for discussion).<sup>22</sup> The external argument of these verbs must thus appear outside the nominalized clause. Furthermore, nominalized verbs are unable to assign Case to the object. The consequences of these two properties caused by the unaccusative requirement are two-fold. First, the subject is generated as the argument of embedding predicates (e.g., *ajin*) in the matrix clause. Second, the object receives ergative Case because it would be otherwise the highest *Case-less* DP within the nominalized clause when a relevant phase triggers Spell-Out.

<sup>22</sup>I assume with Alexiadou (2001) that transitive and unergative *v*'s of nominalized forms are still capable of manner modification, thereby licensing manner adverbs as observed in the previous section, although they have an unaccusative structure. Alexiadou suggests that the type of *v* found in nominalization is "deficient only with respect to its role of introducing an external argument" (Alexiadou, 2001, : 112). She proposes that the ability of manner modification is associated with the semantic content of *v*, but not its transitivity property.



As will be demonstrated below, these two factors will explain the alignment pattern found in the accusative side of the ergative split of Kaqchikel.

### Passivization

Our main purpose here is to demonstrate that a subset of nominalized (transitive) verbs found in the accusative alignment as in (93-a) are passivized.

- (93) a. y-in-ajin che [ki-k'ul-ik ak'wal-a'].  
IMPF-ABS 1s-PROG PREP ERG3p-meet.PAS-NOML child-PL  
'I am meeting children.'
- b. y-in-ajin che [atin-ik].  
IMPF-ABS 1s-PROG PREP bathe-NOML  
'I am bathing.'

We will also discuss embedding verbs like *chäp* 'begin', which take a nominalized clause as their complement, as seen in (94).

- (94) a. röj x-ø-qa-chäp [ki-k'ul-ik rje'].  
we PRFV-ABS3s-ERG1p-begin ERG3p-meet.PAS-NOML they  
'We began to meet them.'
- b. rat x-ø-a-chäp [atin-ik].  
you PRFV-ABS3s-ERG2s-begin bathe-NOML  
'You began to bathe.'

Before proceeding, a word is in order regarding the Case-assigning ability of a nominalized verb. As proposed in chapter 2, Infl assigns absolutive Case (i.e., the Absolutive Case Parameter or the Mayan Absolutive Parameter by Coon et al. 2011, to appear) in high absolutive languages like Kaqchikel. This was supported by the correlation between non-finite clauses and the absence of absolutive Case or an absolutive morpheme in Kaqchikel. As can be seen in (93) and (94), there is no absolutive morpheme within the non-finite clauses. This is consistent with the proposal that there is no Case-assigner in the verbal domain of

Kaqchikel in the first place. It might be then irrelevant whether a nominalized verb is passivized. However, as will be discussed in §3.3.3, Q'anjob'al, a high absolutive language, has an independent absolutive Case assigner in its nominalized clause despite the fact that a canonical absolutive Case assigner in the language is Infl as in Kaqchikel. For this reason, we will rule out the possibility that a nominalized clause in Kaqchikel is able to assign Case.

Recall that transitive verbs in Kaqchikel can be divided roughly into root transitives (i.e., monosyllabic or CVC) and derived transitives (-j), like other Mayan languages. Many of root transitives including *k'ul* 'meet' in the above examples do not display passive morphology: there is no change in a verbal form, as shown in (95) and (96). The presence or absence of an ergative morpheme is the sole indicator of active vs. passive voice of these root transitives.

- (95) a. x- $\emptyset$ -in-k'ul                      oxi' ak'wal-a'.  
 PRFV-Abs3s-ERG1s-meet three child-Pl  
 'I met three children.'
- b. Oxi' ak'wal-a' x-e-k'ul                      r-oma                      ri Ana.  
 three child-Pl PRFV-Abs3P-meet.Pas ERG3s-because.of DET Ana  
 'Three children were met by Ana.'
- (96) a. x-e-qa-to'.  
 PRFV-Abs3P-ERG1P-help  
 'We helped them.'
- b. x-e-to'.  
 PRFV-Abs3P-help.Pas  
 'They were helped.'

(Brown et al., 2006, :178)

It is thus not immediately clear whether nominalization of verbs in Kaqchikel involves passivization.

However, an overt trace of passivization can be found in other types of root transitives. Consider root transitives containing a lax vowel. They tense the vowel when they are turned into passive forms, as seen in (97) and (98).

- (97) a. röj x-e-qa-tik k'iy k'otz'i'j pa jardin.  
 we PRFV-Abs3P-ERG1P-plant many flower PREP garden  
 'We planted many flowers in the garden.'
- b. k'iy k'otz'i'j x-e-tik pa jardin.  
 many flower PRFV-Abs3P-plant.PAS PREP garden  
 'Many flowers were planted in the garden.'
- (98) a. röj n-ø-qa-tik sopa pa b'ojoy.  
 we IMPF-Abs3s-ERG1P-stir soup PREP pod  
 'We stir soup in the pod.'
- b. sopa x-ø-tuk pa b'ojoy.  
 soup PRFV-Abs3s-stir.PAS PREP pod  
 'Soup was stirred in the pod.'

These verbs thus enable us to discern whether passivization is involved in nominalization. When root transitives with a lax vowel are nominalized in the complement position of a progressive aspectual marker or an embedding verb like *chäp* 'begin', the vowel of these verbs is tensed as seen in (99) and (100).

- (99) a. röj x-ø-qa-chäp ru-tik-ik jun k'otz'i'j.  
 we PRFV-Abs3s-ERG1P-begin ERG3s-plant.PAS-NOML one flower  
 'We began to plant one flower.'
- b. y-øj-ajin che ru-tik-ik jun k'otz'i'j.  
 IMPF-Abs1P-PROG PREP ERG3s-plant.PAS-NOML one flower  
 'We are planting one flower.'
- (100) a. rje' x-ø-ki-chäp ru-tuk-ik sopa.  
 they PRFV-Abs3s-ERG3P-begin ERG3s-stir.PAS-NOML soup  
 'They began to stir soup.'
- b. rje' y-e-ajin che ru-tuk-ik sopa.  
 they IMPF-Abs3P-PROG PREP ERG3s-stir.PAS-NOML soup  
 'They are stirring soup.'

These clearly show that the embedded verbs in (99) and (100) are passivized forms.

Furthermore, derived transitives whose ending is *-j* clearly display passivization. When they are passivized, the final *-j* is replaced by the passivizing suffix *-x* as shown in (101).

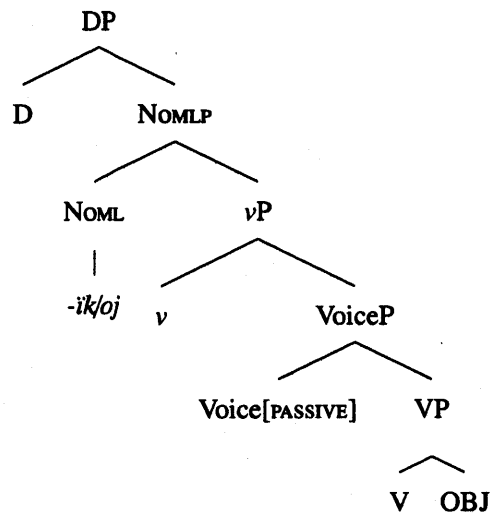
- (101) a. röj x-e-qa-q'ete-j                      ri ak'wal-a'.  
 we PRFV-Abs3P-ERG1P-hug-TV DET child-PL  
 'We hugged the children.'
- b. ri ak'wal-a' x-e-q'ete-x.  
 DET child-PL PRFV-Abs3P-hug-PAS  
 'The children were hugged.'

As in the case of root transitives containing a lax vowel, derived transitives can be employed as diagnostics for whether nominalized verbs involve passivization. Crucially, derived transitives display the passive morpheme *-x* when they are nominalized by *-ik*, as shown in (102).

- (102) a. röj x-ø-qa-chäp                      ki-q'ete-x-ik                      ri ak'wal-a'.  
 we PRFV-Abs3s-ERG1P-begin ERG3P-hug-PAS-NOML DET child-PL  
 'We began to hug the children.'
- b. röj y-øj-ajin                      che ki-q'ete-x-ik                      ri ak'wal-a'.  
 we IMPF-Abs1P-PROG PREP ERG3P-hug-PAS-NOML DET child-PL  
 'We are hugging the children.'

It now becomes clear that at least a subset of nominalized transitive verbs found in the accusative alignment of Kaqchikel undergo passivization to satisfy the unaccusative requirement on nominalization. Based on evidence from transitive verbs overtly displaying passivization, I propose that the nominalization of root transitives which do not show any overt passivization like *k'ul* 'meet' also involves passivization. Let us return to the structure for a nominalized transitive verb proposed in §3.2.3. The amended structure is shown in (103).

(103)



In order to derive correct surface morpheme ordering, we assume that a verb undergoes successive-cyclic head movement to Nom:  $V \rightarrow \text{Voice} \rightarrow v \rightarrow \text{NomL}$ . I will suppose that a nominalized verb (= DP) constitutes a phase (see also chapter 2). Furthermore, the subject (or agent) *is not projected* inside the nominalized clause due to the unaccusative requirement. As I will argue below, the subject is base-generated as the argument of embedding predicates such as *ajin* and *chäp* in the matrix clause.

Given that there is no Infl in the nominalized clause and nominalized transitives are passivized, it can be argued that there is no Case assigner for the object. Crucially, the present analysis reveals that what appears to be object inside the nominalized clause is actually *passive subject*. The nominalized clause such as the one in (102-a) and (102-b) could thus be literally translated as “the children’s being hugged”. Under this analysis, the alignment found in the accusative side of the ergative split in Kaqchikel should not come as a surprise. Rather, it comes closer to the accusative side of the ergative split in Chol and Q’anjob’al, repeated below.

CHOL

- (104) a. Choñkol- $\emptyset$  [i-jats’-oñ].  
PROG-ABS3s ERG3s-hit-ABS1s  
‘She’s hitting me.’

- b. Chofkol- $\emptyset$  [i-majl-el].  
 PROG-Abs3s ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

Q'ANJOB'AL

- (105) a. lanan- $\emptyset$  [hach w-il-on-i].  
 PROG-Abs3s Abs2s ERG1s-see-DM-ITV  
 'I am seeing you'
- b. lanan- $\emptyset$  [ha-way-i].  
 PROG-Abs3s ERG2s-sleep-ITV  
 'You are sleeping.'

(Mateo Pedro, 2009)

For example, the nominalized clauses (= the bracketed forms) in Chol could be interpreted as “*her* hitting me” and “*her* going”. In both Kaqchikel and Chol/Q'anjob'al, what is cross-referenced by the ergative morpheme in the nominalized clause is *thematic subject*. The only difference between Kaqchikel and Chol/Q'anjob'al is that the subject in the former is derived (and thus notional object). Nevertheless, I will use 'object' to refer to the thematic subject (or notional object) in the nominalized clause of Kaqchikel solely for the purpose of presentation.

**Derivation of the progressive**

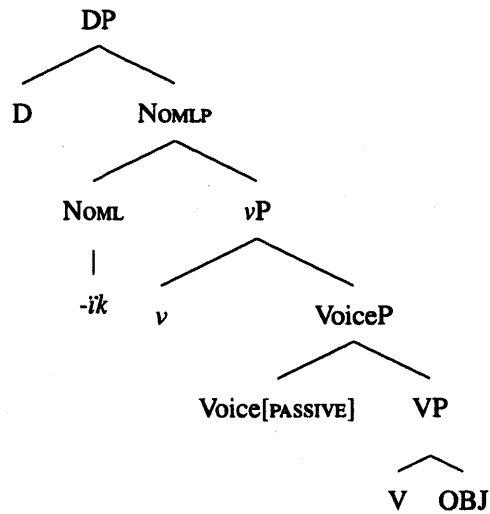
Below I will explicate the derivation of progressive sentences formed with *ajin*. Based on the analysis above that a subset of nominalized transitive verbs are passivized, I will suggest that the object receives ergative Case because it is the highest Case-less DP within the nominalized clause.

Let us first address transitive progressive clauses such as the one in (106).

- (106) ri ixöq n- $\emptyset$ -ajin [che ki-k'ul-ik ak'wal-a']  
 DET woman IMPF-Abs3s-PROG PREP ERG3P-meet.PAS-NOML child-PL  
 'The woman is meeting children.'

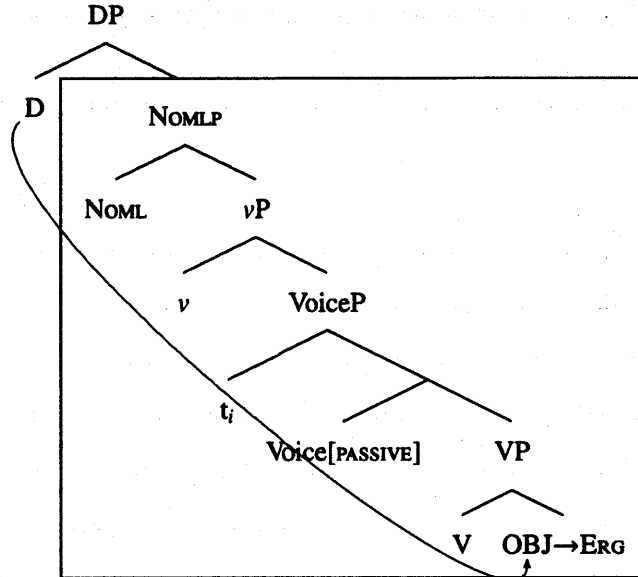
The derivation inside a nominalized clause is illustrated as in (107).

(107)



Given that a nominalized *vP* is intransitive due to passivization and hence not a (strong) phase, the *vP* does not trigger Spell-Out. Subsequently, *D* is merged with *NOMLP* and completes a nominalized clause. The *DP* triggers Spell-Out as it is a phase. The Spell-Out domain of the *DP* only contains a single Case-less *DP*, namely the object. Since the verb undergoes passivization, the subject is not projected inside the nominalized clause. We will return to discussion of the subject immediately below. The object thus receives ergative Case from phase head *D* at Spell-Out, as shown in (108). As mentioned above, there would be otherwise no Case-assigner inside the nominalized clause.

(108)



As noted in §3.2.3, the form *che*, glossed as “preposition” in (106), is decomposed into the preposition *chi* + the relational noun *-e*, which is prefixed by the ergative morpheme (=third person singular) *r-* (England, 2003). The bracketed nominalized clause in (106) with a non-contracted form of *chi* can be illustrated below.

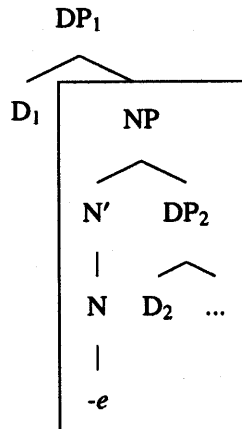
(109) *The non-contracted form of chi (= the preposition) + -e (= the relational noun) of (106)*

*chi + r-e + ki-k'ul-ik ak'wal-a'*

In chapter 2, I suggested that relational nouns can be analyzed as possessed nouns in that a complement noun occupies a right-specifier of a relational noun just like a possessor. The complement noun of the relational noun *-e* in (106) is the nominalized clause *ki-k'ul-ik ak'wal-a'* ‘meeting children’. Adopting the analysis developed in chapter 2, the nominalized clause thus occupies a right-specifier (= DP<sub>2</sub>) of the relational noun as illustrated in (110). The nominalized clause receives phase head ergative Case when the relational noun (= DP<sub>1</sub>) triggers Spell-Out (see chapter 2 for more details).



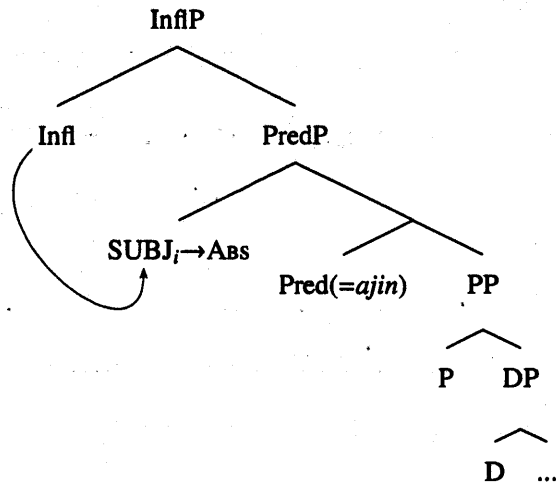
(110)



The relational noun then merges with the preposition *chi*. I assume that *chi* Case-licenses the relational noun, though it does not show any overt ergative or absolutive morpheme. Although I have no strong arguments for the following proposal, I conjecture that this licensing is done via (pseudo-)incorporation under adjacency (see below for more details about (pseudo-)incorporation). The sequence *chi + r-e* is contracted to *che*. For ease of illustration, we will take *che* to be a grammaticalized preposition found with a third person singular complement noun. We place a nominalized clause in the complement position of the preposition.

It was mentioned earlier that the subject does not originate inside the nominalized clause due to the unaccusative requirement. I suggest that the subject is base-generated as the argument of *ajin* in the matrix clause. I analyze *ajin* as a one-place (= intransitive) predicate. To be precise, the subject in progressive sentences occupy Spec-PredP, which is headed by *ajin*. I also propose that the matrix Infl assigns absolutive Case to the subject, as illustrated in (111). As a result, we obtain the correct alignment of transitive sentences in the nominative-accusative side of the Kaqchikel ergative split: i.e., subject = ABS and object = ERG.

(111)



If the subject is generated as the argument of *ajin*, the former should receive a  $\theta$ -role from the latter: *ajin* acts just as a control predicate. At first blush, the literal meaning of *ajin* (= *realizarse* 'to come true') provided by Macario et al. (1998) seems incompatible with this. One might then analyze the specifier of *ajin* as a non-thematic position just like raising predicates. However, there is independent evidence that the subject of *ajin* is contentful. For instance, *ajin* can occur with regular nominals as well as nominalized verbs. As seen in (112), the object in the progressive is the nominal *b'ix* 'song'.

- (112) *y-in-ajin che jun b'ix.*  
 IMPF-ABS1s-PROG PREP INDF song  
 'I am singing a song. (lit. I'm engaged in a song)'

It is unlikely that the subject in (112) receives a  $\theta$ -role from the noun *b'ix*. It is more reasonable to analyze *ajin* in (112) as assigning some sort of a  $\theta$ -role to the subject. The literal interpretation of the sentence in (112) suggests that the subject is agentive (see §3.3.3 for a similar construction in Chol). Extending this analysis to progressive sentences such as (106), I assume that *ajin* assigns a  $\theta$ -role to its argument, though I do not attempt to elaborate on its exact meaning.<sup>23</sup>

Turning to intransitive sentences as in (113), the absence of the ergative morpheme follows from the present analysis.

<sup>23</sup>As suggested by Jessica Coon (p.c.), the function of *ajin* may be to mark the subject as being in the process of the event denoted by the nominalized verb.

- (113) y-in-ajin che [atin-ik].  
 IMPF-ABS1S-PROG PREP bathe-NOML  
 'I am bathing.'

Since a base verb of nominalization is (unergative) intransitive, there is no DP inside the nominalized clause. As proposed earlier, the nominalized verb cannot license an external argument due to the unaccusative requirement. The external argument is thus generated in the matrix clause, as illustrated above. The subject receives absolutive Case from Infl in the matrix clause. As a consequence, there is no nominal that requires phase head ergative Case within the nominalized clause. Therefore, ergative Case cannot be assigned.<sup>24</sup>

### Further support for a Case-licensing preposition

It was suggested above that the preposition *chi* Case-licenses its complement noun (i.e., the relational noun *r-e*). Evidence for this comes from its interaction with *ajin*.

There are two DPs which need to be Case-licensed as well as the object DP in the progressive sentences such as the one in (114): the subject and the relational noun (i.e., *r-e*) of the contracted form *che*.

<sup>24</sup>While the unergative may be nominalized as in (113), the unaccusative seems to resist nominalization in progressives as well as in the complement position of *cháp* 'begin'. As shown in (ii), the unaccusative *uk'lun* 'to arrive' is not nominalized and appears as a finite verb when it is embedded by *ajin*. Other unaccusatives such as motion verbs (e.g., *surur* 'to roll' and *jilil* 'to slide') behave on a par with *uk'lun*. This may be taken as an unaccusative vs. unergative distinction in Kaqchikel, though I do not attempt to provide an account of why the distinction arises. In the appendix, I observe that Kaqchikel does not distinguish the two types of intransitive verbs in terms of extraction.

- (ii) ri ak'wal-a' y-e-ajin y-e-uk'lun.  
 DET child-Pl IMPF-ABS3P-PROG IMPF-ABS3P-arrive  
 'The children is arriving.'

As pointed out to me by Jessica Coon (p.c.), English displays a similar restriction in *engage in* constructions. An unaccusative verb resists nominalization by *-ing* (= gerunds) when it is preceded by *engage in*. As seen in (ii), the unaccusative (and the passive) are degraded with *engage*, though these forms are still understandable. The verb *engage* requires a more volitional or agentive interpretation. Coon (2010a, 2013a) also observes that a similar fact holds for certain constructions called *B-constructions* in Chol (see below). I leave this issue for further research.

- (iii) a. ?I was engaged in falling.  
 b. ?I was engaged in being attacked.

(Coon, 2010a, : 104)

- (114) ri ixöq n-ø-ajin [che ki-k'ul-ik ak'wal-a']  
 DET woman IMPF-ABS3S-PROG PREP ERG3P-meet-NOML child-PL  
 'The woman is meeting children.'

As shown above, the subject is generated in Spec-PredP headed by *ajin*. The subject then receives absolutive Case from Infl since it is the closest goal DP of Infl, as illustrated in (111). Since the non-verbal predicate *ajin* is a one-place predicate, the subject saturates it. There is no other Case-licenser for the relational noun *r-e*. The presence of the preposition *chi* thus follows if it is required to Case-license the relational noun, as argued above.

If *ajin* is intransitive and the function of *chi* is to Case-license its complement noun, we predict that no preposition appears when there is only one DP in the sentence. In this situation, Infl can assign absolutive Case to the sole DP. This prediction is borne out in impersonal constructions such as the one below.<sup>25</sup>

- (115) n-ø-ajin jun nimaq'ij.  
 IMPF-ABS3S-PROG INDF celebration/festival  
 'One is/they are celebrating a festival.'

(Macario et al., 1998, *glosses and translation mine*)

Here *ajin* takes only one nominal argument (i.e., *nimaq'ij* 'celebration'): the literal meaning of the sentence would be *A festival is taking place*. Strikingly, there is no preposition in the sentence. This can be taken as suggesting that the sole argument *nimaq'ij* can receive absolutive Case from Infl since there is no competing DP, unlike in progressive sentences. Example (115) thus supports the view that the preposition *chi* has a Case-licensing ability.

To summarize, it has been shown that the object of a transitive verb in the progressive receives ergative Case because it would be otherwise Case-less within the Spell-Out domain of the nominalized DP. The subject is base-generated in Spec-PredP headed by *ajin* due to the unaccusative requirement on nominalized verbs, and receives absolutive Case from Infl in the matrix clause. A nominalized clause also receives ergative Case within the DP headed by the relational noun *-e*.

<sup>25</sup>The sentence in (115) is a predicate-initial order unlike in my consultants' dialect of Kaqchikel. I assume without further argument that in the dialect of Kaqchikel reported in Macario et al. (1998), the predicate head (i.e., *ajin*) undergoes head movement to a higher position (e.g., I or C).

- (116) a. **All subjects = ABSOLUTIVE**
- b. **The object of a nominalized transitive verb = ERGATIVE**
- c. **Nominalized clause in object position of a relational noun (i.e., -e) = ERGATIVE**

### Derivation of *begin*-sentences

As shown in (117), the embedding verb *chäp* takes a nominalized verb as its complement just as the non-verbal aspectual predicate *ajin* does.

- (117) a. röj x-ø-qa-chäp [ki-k'ul-ik rje'].  
 we PRFV-Abs3s-ERG1P-begin ERG3P-meet.PAS-NOML they  
 'We began to meet them.'
- b. rat x-ø-a-chäp [atin-ik]  
 you PRFV-Abs3s-ERG2s-begin bathe-NOML  
 'You began to bathe.'

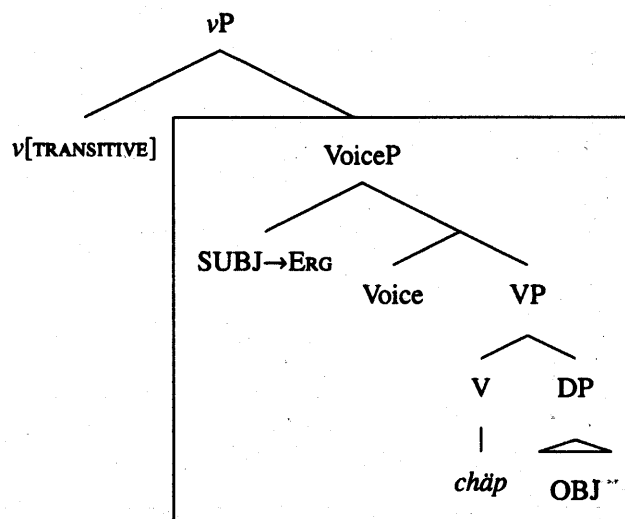
The alignment found in *begin*-sentences is slightly different from the one in progressive sentences. Not only the transitive object but also the subject of *chäp* are assigned ergative Case. In other words, the ergative extends to all grammatical relations except a nominalized clause (see below) in *begin*-sentences.

Adopting the analysis made above, the derivation inside a nominalized clause proceeds the same way as in the case of the progressive with *ajin*. In other words, the object of a transitive verb in (117-a) receives ergative Case when a D triggers Spell-Out because it is the only Case-less DP in the Spell-Out domain of the DP, as illustrated in (108). The subject is not projected inside the nominalized clause due to the unaccusative requirement, as argued for progressives, but appears as the argument of *begin* in the matrix clause.

The difference between *ajin* and *chäp* is that the former is intransitive, whereas the latter is transitive. Given that a transitive *vP* constitutes a phase, the subject receives ergative Case, not absolutive Case, at the timing of Spell-Out in the following way. At the point of derivation illustrated in (118), the subject is

generated in Spec-VoiceP. There are two Case-less DPs within the Spell-Out domain of the transitive  $\nu$ P: the subject and the object (= the nominalized clause). Since the subject is the highest Case-less DP within the Spell-Out domain of a  $\nu$ P, it receives phase head ergative Case from  $\nu$ .

(118)



The subject moves to Spec-IP for the EPP requirement of Infl, thereby feeding the subsequent absolutive Case assignment to the object, as discussed in chapter 2. After this subject movement, Infl assigns absolutive Case to the object, namely the nominalized clause. (Recall that Kaqchikel is a high absolutive language in which Infl is an assigner of absolutive Case.)

The same analysis extends to the intransitive sentence in (117-b) except in that no ergative Case assignment takes place within the nominalized clause. This is because there is no DP in the nominalized clause – ergative Case cannot be assigned. This captures the lack of an ergative morpheme inside the nominalized clause.

As summarized in (119), rare Case alignment patterns arise in *begin*-sentences. In particular, not only the object of a nominalized transitive verb but also all subjects receive ergative Case, unlike in progressive sentences in which all subjects receive absolutive Case. This is because *chäp* is transitive (unlike *ajin*) and constitutes a phase – phase head ergative Case is assigned to the subject at the time of Spell-Out.

(119) a. All subjects = ERGATIVE

b. **The object of a nominalized transitive verb = ERGATIVE**

c. **Nominalized clause in object position of *chäp* = ABSOLUTE**

### **Other approaches**

We are now in a position to point out how the alignment patterns found in the nominative-accusative side of the split in Kaqchikel present challenges for other analyses of ergative Case introduced in chapter 2. First, there is a line of analysis which treats ergative Case as inherent Case (Mahajan, 1989; Woolford, 1997, 2006; Aldridge, 2004, 2008; Anand and Nevins, 2006; Massam, 2006; Legate, 2008; Coon, 2010a, 2013a, etc.): i.e., an inherent analysis. This type of analysis presupposes that ergative Case is assigned (by  $\nu$ ) to external argument along with an agent  $\theta$ -role. Crucially, the alignment of ergative Case with the transitive object in the nominative-accusative system of Kaqchikel is a nontrivial problem for the inherent analysis because the association between an agent  $\theta$ -role and ergative Case is broken here – ergative Case is now associated with a theme or patient  $\theta$ -role borne by the object (see also Comrie 1978 and Deal 2010 for a similar point in other ergative languages). A similar problem arises if ergative Case in the split side of Kaqchikel is assumed to be assigned inherently by D since it can be taken as genitive or possessive appearing in the nominalized clause, as argued above. Here again, the association between a possessor  $\theta$ -role and genitive Case does not hold. The  $\theta$ -role of the Case-assignee of D can be of any type (e.g., possessor, theme or patient).

Another family of approaches to ergativity (Levin and Massam, 1985; Bobaljik, 1992, 1993; Campana, 1992; Murasugi, 1992; Chomsky, 1993; Bittner and Hale, 1996b,a; Ura, 2000, 2001, etc.) posits functional heads that are responsible for assignment of ergative and absolutive Case (see chapter 2 for details): i.e., a structural analysis. If one were to maintain a structural analysis for ergative Case in the progressive of Kaqchikel, a plausible candidate for its assigner would be D as a  $\nu$ P containing the object is nominalized as shown in (108). This could capture the intuition that the ergative (or set A marker) in the nominalized clause is the genitive, assuming that D assigns genitive Case (Abney, 1987). However, the structural analysis would have to explain why Case assigned by D (= genitive) in the nominalized clause is identical with Case

assigned to the transitive subject (= ergative). Under this analysis, the homophony between ergative and genitive is *accidental*. In contrast, the present analysis can capture the homophony because both ergative and genitive are assigned by a phase head under the same mechanism, and are unified under the rubric of phase head ergative Case.

An analysis proposed by Marantz (1991) opens up another logical possibility. Marantz suggests that ergative case is assigned in the presence of a case-competitor at a post-syntactic component (i.e., Morphological Structure) – the presence of the ergative *depends* on the presence of another nominal which is not assigned case yet. In this sense, ergative case is categorized as *dependent case*. Under this system, ergative case is assigned upwards to a “higher” DP, normally the transitive subject (see chapter 2 for more details). This view of the ergative does not extend easily to the alignment pattern in progressive sentences of Kaqchikel. As shown in (108), this analysis would have to stipulate that ergative case is assigned “exceptionally downwards” to a lower DP in the progressive of Kaqchikel since the object, but not the subject, receives ergative Case.

One could also argue that the ergative in Kaqchikel should be taken as a type of unmarked case such as genitive in the sense of Marantz (1991). As reviewed in chapter 2, unmarked case in the disjunctive hierarchy of Marantz’s theory is assigned to a DP which has not been assigned lexical or dependent case according to the hierarchy. This comes close to the last-resort idea of phase head Case in our analysis in that phase head ergative Case and unmarked case alike are assigned to a DP which has not been covered by the previous Case/case assignment algorithm. However, as in the structural analysis above, this analysis would also have to stipulate an ad-hoc rule such that dependent ergative case and unmarked genitive case are homophonous in Mayán.

### **Interim summary**

Our main goal of this subsection was to explain a striking alignment pattern in the nominative-accusative side of the ergative split and embedding contexts in Kaqchikel: the ergative is aligned with the transitive object. We have demonstrated that (a subset of) nominalization found in progressive sentences and *begin*-sentences involves passivization of a transitive verb to satisfy the unaccusative requirement. Combining this with the phase head ergative Case analysis, we have argued that the object of a nominalized transitive



verb receives ergative Case because they would be otherwise Case-less. Moreover, we have pointed out that upon closer inspection, the striking alignment in the accusative side of Kaqchikel is *only apparent*. In other words, what appears to be aligned with ergative Case is derived (or thematic) subject due to passivization of nominalized verbs. Viewed in this way, Kaqchikel comes closer to Chol and Q'anjob'al, in which all subjects are cross-referenced by the ergative morpheme in the split side.

### 3.3.2 Predictions of phase head ergative Case – Kaqchikel

In this subsection, we will test predictions of the analysis developed in the preceding section. If the present analysis is correct, we can predict that ergative Case cannot be assigned when the transitive object is Case-licensed independently of phase head Case assignment. We will demonstrate below that this prediction is borne out in different types of nominalization in Kaqchikel.

#### Antipassivization

We will show that the lack of ergative Case within a subtype of nominalized clauses in Kaqchikel is compatible with our analysis. Consider the example in (120).<sup>26</sup>

- (120) x-ø-u-chäp                      [q'et-e-n-ik]              r-ichin    ri    ak'wal  
 PRFV-ABS3S-ERG3S-begin    hug-BV-AP-NOML    ERG3S-RN    DET    child  
 'He began to hug the child.'

(García Matzar and Rodríguez Guaján, 1997, :457)

The nominalized verb is formed with *-ik* just as in the case of nominalizations examined in the preceding section. However, the nominalized transitive verb does not bear an ergative morpheme cross-referencing the object *ri ak'wal* 'the child'. Crucially, the nominalized verb carries the antipassive morpheme *-n* in addition to the nominalizing suffix. I have suggested in §3.3.1 that nominalized verbs in Kaqchikel must be intransitive due to the unaccusative requirement. As the example in (120) shows, some types of nominalizations of Kaqchikel satisfy this requirement via antipassivization, not passivization.

In antipassive constructions, a transitive verb is detransitivized as in passives. Unlike in passiviza-

<sup>26</sup>My Kaqchikel consultants do not accept nominalized patterns as in (120). This is presumably because of dialectal differences. I leave this issue for further research.

tion, however, the object/patient, but not the subject, undergoes demotion in antipassivization. Cross-linguistically, the object/patient is either demoted to an oblique complement or suppressed in antipassive constructions (Polinsky, 2011). Consider the following example from Chukchee.

- (121) a. ʔaaček-a kimitʔ-ən ne-nlʔetet-ən  
 youth-ERG load-ABS 3p.SUBJ-carry-AOR.3s.OBJ  
 'The young men carried away the/a load.'
- b. ʔaaček-ət ine-nlʔetet-gʔe-t kimitʔ-e  
 youth-ABS AP-carry-AOR.3s.SUBJ-PL load-INST  
 'The young men carried away the/a load.'

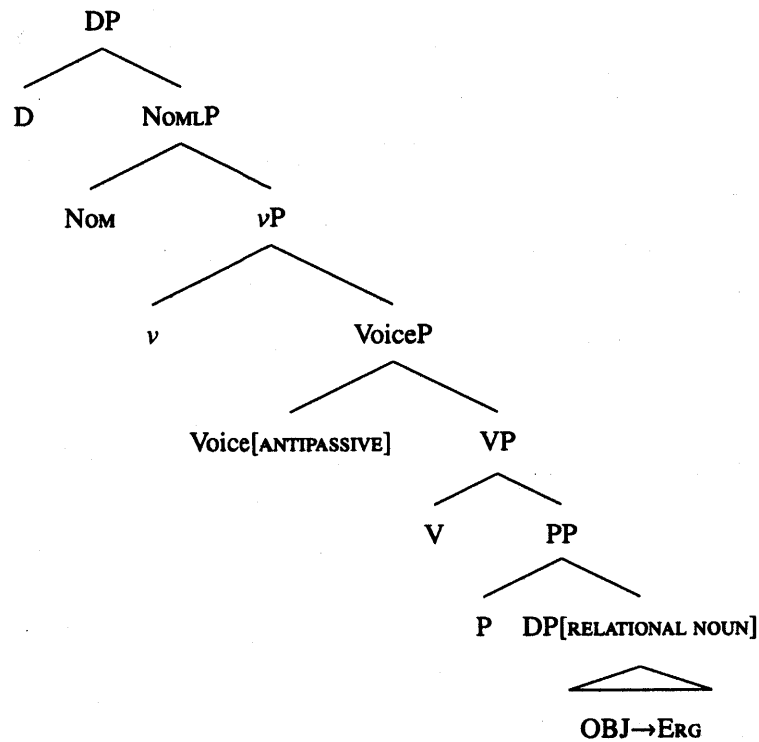
(Kozinsky et al., 1988, :652)

In (121-a), the transitive verb agrees with both the ergative subject and the absolutive object. In contrast, the verb in (121-b) is prefixed by the antipassive morpheme *ine*. The object in (121-b) is now marked with the oblique case (i.e., instrumental), and the sentence is rendered intransitive. The verb agrees only with the absolutive subject.

Returning to (120), the object is introduced by the relational noun *-ichin* just as the antipassive object in Chukchee is introduced by the oblique case – the object in (120) is demoted to the oblique argument. I assume that the relational noun is selected by a silent preposition, which Case-licenses the noun, as suggested for relational nouns functioning like prepositions in chapter 2.

Unlike in passivization, however, the object in (120) receives ergative Case from the relational noun *-ichin*: *ichin* thus bears the ergative morpheme *r-*, which cross-references the object *ri ak'wal* 'the child'. The derivation within the nominalized clause is illustrated in (122).

(122)



The external argument (or subject) is not licensed within the nominalized clause due to the unaccusative requirement. That is, the nominalized verb in (120) lacks not only its internal argument but its external argument. I suggest that the subject is base-generated in the external argument position of *chäp*, as discussed in the preceding subsection. As a result, there is no Case-less DP within the nominalized clause. Therefore, ergative Case cannot be assigned in the nominalization formed with an antipassive morpheme – an ergative morpheme does not appear on the nominalized verb.

To summarize, the type of nominalization we examined above involves antipassivization. Since antipassivization is a mirror image of passivization (Silverstein, 1972; Polinsky, 2011), we obtain the opposite result concerning ergative. Unlike in passive nominalization, antipassive nominalization does not display the ergative morpheme because there is no Case-less DP which must receive ergative Case within a nominalized clause. This is consistent with the default view of ergative Case.

### (Pseudo-)incorporation

It will be argued below that another type of nominalization lends further support to the phase head Case analysis of the ergative by confirming the prediction that ergative Case cannot be assigned when a transitive object is Case-licensed independently. The nominalization we will examine below does not involve valence-changing operations like passivization or antipassivization, but exhibits a special Case-licensing attested in many (ergative) languages: *(pseudo-)incorporation*.

Recall that nominalized clauses formed with *-oj* can appear in the complement position of the non-verbal aspectual marker *ajin* and the embedding verb *chäp*, as shown in (123) and (124) (see §3.2.3 for evidence for nominal properties of *-oj* nominalization). The *-oj* nominalization corresponds to the phenomenon called *incorporating antipassive* found in several Mayan languages (Dayley, 1981a).

(123) röj y-*oj*-ajin            che [choy-*oj* che'].  
we IMPF-ABS1p-PROG PREP cut-NOML tree  
'We are cutting trees.'

(124) x- $\emptyset$ -qa-chäp            [choy-*oj* che'].  
PRFV-ABS3s-ERG1p-begin cut-NOML tree  
'We began to cut tree(s).'

Crucially, nominalized verbs formed with *-oj* cannot carry an ergative morpheme even when it is followed by its object, unlike nominalized verbs formed with *ik*.<sup>27</sup> The addition of an ergative morpheme results in ungrammaticality, as seen in (125): neither singular nor plural agreement is possible.<sup>28</sup>

(125) \*x- $\emptyset$ -qa-chäp            ru/ki-choy-*oj*            che'.  
PRFV-ABS3s-ERG1p-begin ERG3s/ERG3p-cut-NOML tree  
'We began to cut tree(s).'

The *-oj* nominalization appearing with the object is not productive, while a form without the object is more productive and used as an infinitival form of a verb. A nominalized form with *-oj* expresses a habitual

<sup>27</sup>A similar type of nominalization can be found in other Mayan languages such as Tz'utujil (Dayley, 1985) and K'ichee' (Larsen, 1988; Can Pixabaj, 2009).

<sup>28</sup>In Kaqchikel, number agreement and especially plural agreement may be optional for inanimate nouns.

interpretation, as shown in (126).

- (126) a. choy-*oj* che'  
cut-NOML tree  
'tree-cutting'
- b. ch'äj-*oj* läq  
wash-NOML dish  
'dish-washing'
- c. b'an-*oj* wäy  
make-NOML tortilla  
'tortilla-making'
- d. tik-*oj* awän  
grow/plant-NOML corn  
'corn-growing'

As indicated by the translations of the examples in (126), these nominalized forms function like incorporated (or compounding) words in English.

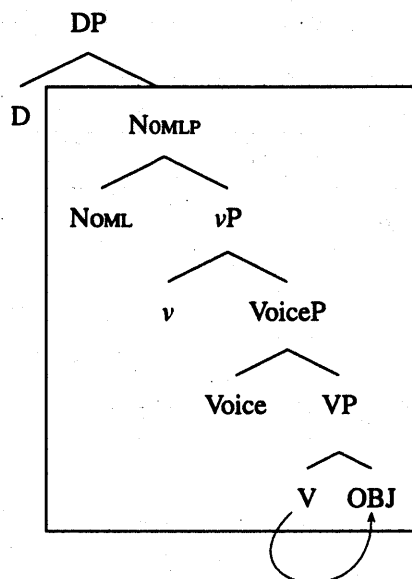
Although García Matzar and Rodríguez Guaján (1997) and García Matzar (2007) assert that nominalized verbs suffixed by *-oj* remain 'transitive', no evidence is provided for the transitivity of these verbs. Unlike in the type of nominalization observed in the preceding section, furthermore, the nominalized form with *-oj* does not display any valency-changing suffixes such as an antipassive morpheme. We cannot thus reduce the absence of an ergative morpheme or ergative Case to an extra Case-assigning element like a relational noun found in the antipassive nominalization.

I argue that the *-oj* nominalization involves (pseudo-)incorporation of the object. The object in this type of nominalization is (pseudo-)incorporated into the verb in the sense of Baker (1988a) and Massam (2001). Following these authors, we adopt the view that a nominal does not require Case-licensing when it is (pseudo-)incorporated into a verb: the process of (pseudo-)incorporation Case-licenses the object. We abstract away from discussion on the specific analysis of (pseudo-)incorporation.

If the objects in (123) and (124) are incorporated into the nominalized verbs, the absence of the ergative

morpheme or ergative Case follows from the present analysis. The object in this type of nominalization does not need phase head ergative Case because it is Case-licensed via (pseudo-)incorporation. This is illustrated in (127).

(127)



Given that the verb-noun unit derived via incorporation functions as an intransitive predicate in various languages (Mithun, 1984), the nominalization formed with *-oj* can be analyzed as satisfying the unaccusative requirement in Kaqchikel. If this is correct, the subject is not generated inside the nominalized clause, on the premise that the nominalized verb in Kaqchikel does not license an external argument. The subject is base-generated as the argument of *ajin* or *chäp*, as has been suggested in the preceding sections. As a result, there is no Case-less DP inside the nominalized clause. Therefore, ergative Case may not be assigned: no ergative morpheme appears on a nominalized verb.

However, the verb and the incorporated object are separate phonological words in Kaqchikel, unlike in typical instances of incorporation. As shown by the following examples of Mohawk, for example, the object is morphophonologically incorporated to the verb as in (128-b). Baker (1988a) argues that this is derived via head movement of N to V.

- (128) a. Yao-wir-a?a ye-nuhwe?-s ne ka-nuhs-a?  
 PRE-baby-SUF 3Fs/3N-like-ASP the PRE-house-SUF  
 'The baby likes the house.'

- b. Yao-wir-aʔa ye-nuhs-nuhweʔ-s  
 PRE-baby-SUF 3Fs/3N-house-like-ASP  
 'The baby house-likes.'

(Baker, 1988a, :81-82)

I suggest that (pseudo-)incorporation in Kaqchikel can be analyzed just as a case of *composition by juxtaposition* (Mithun, 1984) (see Massam 2001 for a similar analysis of pseudo-incorporation in Niuean).<sup>29</sup> According to Mithun (1984), this type of incorporation has the following property: "The V and N remain separate words phonologically; but as in all compounding, the N loses its syntactic status as an argument of the sentence" (Mithun, 1984, :849). That is, the object in the *oj* nominalization of Kaqchikel is (pseudo-)incorporated into the verb under adjacency (see Coon 2013a for similar discussion of incorporating antipassives in Chol).

Evidence for the (pseudo-)incorporation analysis of the *oj* nominalization comes from a set of restrictions on the object. It has been observed in several languages with a productive use of incorporation that only a bare or non-specific/non-referential noun can be (pseudo-)incorporated (Massam, 2001, etc.). As it turns out, the same observation holds for the *oj* nominalization in Kaqchikel (see Dayley 1981a for similar observations about incorporating antipassive in other Mayan languages). Notice that the objects in (123) and (124) are both bare and non-specific/referential.

As shown in (129), the definite object preceded by the determiner *ri* (hence non-bare) cannot occur inside the nominalized clause formed with *-oj*.

- (129) \*x-ø-qa-chäp ri choy-*oj* ri che'.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML DET tree  
 '(intended)We began to cut the tree(s).'

Other non-bare objects such as the ones modified by quantifiers or numerals cannot appear. This is seen in (130) and (131). Example (130) may also be ruled out because it is definite.

<sup>29</sup>One of the peculiar properties of pseudo-incorporation in Niuean is that the incorporated material can be phrasal: e.g., nouns modified by adjectives (Massam, 2001).

(130) \*x-ø-qa-chäp ri choy-øj nojel ri che'.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML all DET tree  
 '(intended)We began to cut all of the tree(s).'

(131) \*x-ø-qa-chäp ri choy-øj oxi' che'.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML three tree  
 '(intended)We began to cut three tree(s).'

The objects modified by the demonstrative and the adjective are impossible, as seen in (132) and (133).

(132) \*x-ø-qa-chäp ri choy-øj re che' re.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML this tree this  
 '(intended)We began to cut this tree.'

(133) \*x-ø-qa-chäp ri choy-øj taq che'.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML little tree  
 '(intended)We began to cut little tree(s).'

As shown in (134), the possessed object cannot occur.

(134) \*x-ø-qa-chäp ri choy-øj a-che'.  
 PRFV-Abs3s-ERG1p-begin DET cut-NOML E2s-tree  
 '(intended)We began to cut your tree(s).'

These non-bare/specific/referential objects can occur with a nominalized verb formed with *ik*.

Furthermore, the object cannot be *wh*-extracted out of the nominalized verb formed with *-øj*, as can be seen in (135).

(135) \*Achike<sub>i</sub> x-ø-a-chäp (ri) choy-øj t<sub>i</sub>?  
 what PRFV-Abs3s-ERG2s-begin DET cut-NOML  
 '(intended)What did you begin to cut?'

This follows from the (pseudo-)incorporation analysis of the *øj* nominalization. As stated by Mithun (1984) above, the object and the verb behave like compounding in composition by juxtaposition that I have argued is a case of (pseudo-)incorporation in Kaqchikel. If the *øj* nominalization constitutes a compounding form



via (pseudo-)incorporation, we expect that no element can be extracted out of it – extraction may not apply to a compounding word.

In contrast, a nominalized verb formed with *ik* allows *wh*-extraction as shown in (136).

- (136) Achike; x- $\emptyset$ -a-chäp                      ru-ch'ey-ik      t<sub>i</sub>?  
 what PRFV-Abs3s-ERG3s-begin ERG3s-hit-NOML  
 'What did you begin to hit?'

To the extent that this type of nominalization does not involve (pseudo-)incorporation, nothing blocks extraction of the object in (136).

We have shown that lack of ergative Case and an ergative morpheme in the *oj* nominalization can be explained by a (pseudo-)incorporation analysis. The object of a nominalized verb formed with *-oj* is Case-licensed by the verb under adjacency via (pseudo-)incorporation. As a result, a nominalized clause does not contain any Case-less DP. Therefore, ergative Case cannot be assigned.

### 3.3.3 Chol and Q'anjob'al: ERG = SUBJ

Recall that the accusative side of ergative splits in Chol and Q'anjob'al contrasts sharply with its counterpart of Kaqchikel. As shown in (137) and (138), all subjects in non-perfective sentences are assigned ergative Case and cross-referenced by the ergative agreement morpheme. On the other hand, the transitive object is assigned absolutive Case and cross-referenced by the absolutive agreement morpheme.

#### NOM-ACC PATTERN IN CHOL

- (137) a. Choñkol- $\emptyset$  [i-jats'-oñ].  
 PROG-Abs3s ERG3s-hit-Abs1s  
 'She's hitting me.'
- b. Choñkol- $\emptyset$  [i-majl-el].  
 PROG-Abs3s ERG3s-go-NOML  
 'She's going.'

(Coon, 2013a, :11)

NOM-ACC PATTERN IN Q'ANJOB'AL

- (138) a. *lanan-∅ [hach w-il-on-i].*  
 PROG-Abs3s Abs2s ERG1s-see-DM-ITV  
 'I am seeing you'
- b. *lanan-∅ [ha-way-i].*  
 PROG-Abs3s ERG2s-sleep-ITV  
 'You are sleeping.'

(Mateo Pedro, 2009)

The alignment between Case and grammatical relations in the accusative side of Chol and Q'anjob'al is completely the opposite of what is found in the accusative side of Kaqchikel, as shown by the alignment puzzle below. Although we have demonstrated in the preceding section that the object bearing ergative Case in Kaqchikel is actually derived subject (= thematic subject) due to passivization of the nominalized verb, the difference in alignment between Kaqchikel and Chol/Q'anjob'al still calls for an explanation. In other words, it remains to be seen why Kaqchikel marks the derived subject (or notional object) with ergative, whereas Chol and Q'anjob'al mark all subjects with ergative.

THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN

- (139) KAQCHIKEL-TYPE

	S	O
Intransitive	ABS	-
Transitive	ABS	ERG

- (140) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

This contrastive alignment is puzzling because as observed in §3.2, non-perfective sentences of both Kaqchikel and Chol/Q'anjob'al are formed by a biclausal structure consisting of a non-verbal predicate and a nominalized verb.

This alignment puzzle is even more surprising given the fact that both Q'anjob'al and Kaqchikel are grouped as high absolutive languages to the exclusion of Chol (= a low absolutive language). The structural position of an absolutive morpheme in verbal predicates of Q'anjob'al and Kaqchikel is constantly high, whereas the one in Chol is low. This variation has been one of the most important constants in the study of Mayan languages (Bricker, 1977, etc.), and appears to have a strong influence on other syntactic patterns such as Agent Focus (Tada, 1993; Coon et al., 2011, to appear). However, this cannot be the source of variation regarding the alignment patterns in the accusative side of these languages.

I argue that the alignment puzzle results from a different property of nominalization involved in the accusative side of these languages. Unlike in Kaqchikel, I suggest that a nominalized verb in Chol and Q'anjob'al need not satisfy the unaccusative requirement, as stated in (141). This does not exclude the possibility that nominalized verbs of these languages have an unaccusative structure as in Kaqchikel counterparts. We will observe that certain forms of nominalization in these languages meet the requirement.

(141) NOMINALIZATION IN CHOL AND Q'ANJOB'AL

A nominalized verb *need not* satisfy the unaccusative requirement.

The consequence of the lack of the unaccusative requirement (in most instances of nominalizations) is two-fold. First, nominalized verbs may assign absolutive Case to the object in Chol and Q'anjob'al. Second, the subject (or external argument) may be generated inside the nominalized clause as the nominalized verb does not have an unaccusative structure. The subject of unaccusatives (= internal argument) may be generated inside the nominalized clause, irrespective of whether the unaccusative requirement holds. Since the subject is the only Case-less DP within the nominalized clause under this analysis, ergative Case is assigned to all subjects in the accusative side of these languages.

There is converging evidence that nominalized clauses of Chol and Q'anjob'al may contain an external argument. As seen in the Chol example of (142), the nominalized clause, which appears in the subject position, contains both the external argument (= second person singular) and the internal argument (= first

person singular).

#### CHOL

- (142) Mach uts'aty [a-jats'-oñ].  
NEG good ERG2s-hit-Abs1s  
'Your hitting me isn't good.'

(Coon, 2013a, :141)

Likewise, the nominalized clause of Q'anjob'al appearing in the subject position can express an external argument, as shown in (143). The ergative morpheme in (143) (= *h-*) cross-references the external argument of the nominalized verb. The internal argument is null (=  $\emptyset$ ) since it is third person singular.

#### Q'ANJOB'AL

- (143) [h-il-on]  $\emptyset$  kawal watx'.  
ERG2s-see-DM Abs3s intensifier good  
'Your seeing him/her/it is very good.'

(p.c. Pedro Mateo Pedro)

These examples contrast sharply with the nominalized clause of Kaqchikel, where an external argument is consistently absent, as repeated below. Unlike the Q'anjob'al example in (143), the ergative morpheme in (144) cross-references the internal argument: it *cannot* refer to the external argument as indicated.

#### KAQCHIKEL

- (144) [ru-k'at-ik ri a Juan] x- $\emptyset$ -xib'i-n.  
ERG3s-burn-NOML DET CL Juan PRFV-Abs3s-scare-AP  
'Juan's burning was scary.' = Juan was burned. (\*Juan burned something.)

I have argued that the lack of the external argument in Kaqchikel nominalizations is caused by the unaccusative requirement. In contrast, the presence of the external argument in the nominalized clause of Chol and Q'anjob'al can be taken as suggesting that the unaccusative requirement is not obligatory in these lan-

guages: the nominalized verb may thus project its external argument. Below I will provide an analysis of the split side of Chol and Q'anjob'al.

### Chol

First, I argue that a nominalized verb on the accusative side of the Chol ergative split assigns absolutive Case since there is no unaccusative requirement. One of the salient differences between Kaqchikel and Chol is that a verbal domain has an absolutive Case assigner in the latter, whereas there is no Case assigner in the verbal domain of the former (see also Coon 2013a and Coon et al. to appear for relevant discussion). In chapter 2, I expressed this difference as a result of the Absolutive Case Parameter, repeated below, building on the *Mayan Absolutive Parameter* (Coon et al., 2011; Coon, 2013a).

(145) THE ABSOLUTIVE CASE PARAMETER

	High Abs languages	Low Abs languages
ABS <sub>transitive</sub>	Infl	Voice
ABS <sub>intransitive</sub>	Infl	Infl

In low absolutive languages like Chol, Voice is an absolutive Case assigner in transitive sentences, whereas Infl assigns absolutive Case in intransitive sentences. I showed that this is supported by the interaction between non-finite clauses and the presence or absence of absolutive Case.

As has been shown above, the bracketed forms in non-perfective sentences of Chol such as the one in (146) (= a NOM-Acc pattern) are non-finite clauses which undergo nominalization.

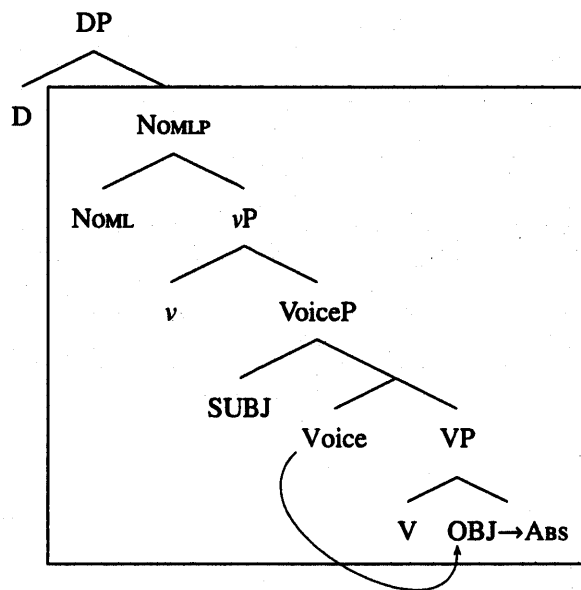
- (146) a. Choñkol-∅ [k-jats'-ety].  
 PROG-ABS3s ERG1s-hit-ABS2s  
 'I'm hitting you.'
- b. Choñkol-∅ [k-majl-el].  
 PROG-ABS3s ERG1s-go-NOML  
 'I'm going.'

(Coon, 2013a, :13 null morphemes added)

The contrast between the transitive in (146-a) and the intransitive in (146-b) regarding the presence or absence of the absolutive morpheme follows from our proposal that absolutive Case is assigned by Voice in transitives, whereas it is assigned by Infl in intransitives.

Following Coon (2010a, 2013a) in that nominalization targets a verbal projection in Chol (just like in Kaqchikel), it can be now argued that the nominalized transitive verb in (146-a) has Voice, which assigns absolutive Case to the object, as illustrated in (147).<sup>30</sup> In (147), I assume the same structure for nominalization as in Kaqchikel, departing from the structure proposed by Coon.<sup>31</sup>

(147)



Turning to the subjects in (146), they can be generated within the nominalized clause because the nominalized verb may remain 'transitive' - the nominalized verb need not have an unaccusative structure, unlike in Kaqchikel. The subject receives ergative Case when D (or *v* in the case of transitive verbs) triggers Spell-Out. The subject would be the only Case-less DP within the Spell-Out domain of a DP (or *vP*).

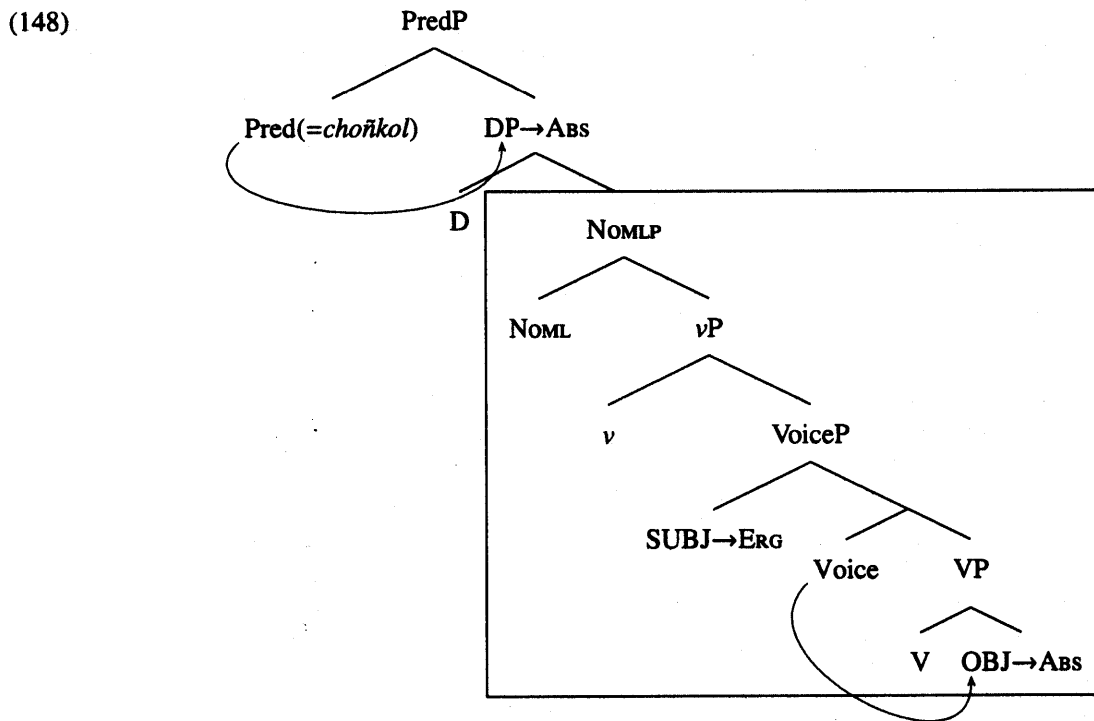
I follow Coon (2010a, 2013a) in that *choñkol* takes a nominalized clause as its complement and assigns

<sup>30</sup>In Coon's analysis, transitive *v*, which is optionally realized by the suffix *e* in root transitives (when no overt absolutive morphology is present), assigns absolutive Case to the object in a nominalized clause.

<sup>31</sup>Coon posits a layered nominal projection for nominalized verbs in which there is a control relation between the subject and PRO: the subject appears in a high position of the nominal projection (i.e., Spec-PossP) and PRO occupies a Spec-*vP* because *v* requires subject under Coon's analysis. She argues for the highly articulated projection of a nominal domain in order to capture the parallelism between DP and CP in terms of word order (see Coon 2010a, 2013a for details.). While I assume the structure in (147) for consistency with the analysis of Kaqchikel, nothing hinges on this choice.

absolutive Case to it.<sup>32</sup> Since a nominalized clause is third person singular, the absolutive morpheme is always null as indicated in (146). This is confirmed by the example in (146) with first person subjects – *choñkol* bears the null absolutive morpheme, irrespective of the person and number of the subject. This analysis can capture the fact that a preposition does not appear in non-perfective clauses of Chol like the ones in (146), in contrast to Kaqchikel. I have argued that the function of the preposition *chi* found in the progressive sentences of Kaqchikel is to Case-license its complement (= the relational noun *-e*). The absence of a preposition in Chol follows if *choñkol* Case-licenses its complement (= a nominalized clause).

The rest of the derivation of a nominalized transitive like (146-a) is illustrated in (148).



The derivation for a nominalized intransitive clause as in (146-b) is identical with (148) except that there is no absolutive Case assigner within the nominalized clause because Infl assigns absolutive Case in intransitive sentences. The subject receives ergative Case when D triggers Spell-Out.

To summarize, it has been shown that the alignment in the accusative side of Chol (= non-perfective clauses) can be explained by arguing that the unaccusative requirement is not obligatory in Chol, unlike in

<sup>32</sup>I also assume the same analysis for the non-verbal, aspectual marker *mi* in imperfective sentences of Chol.

Kaqchikel. This derives two results. First, the subject can be generated inside the nominalized verbal phrase (i.e., Spec-VoiceP) because it may be transitive or unergative *v* which projects an external argument. Second, a nominalized transitive verb in Chol may assign absolutive Case to its object. The subject is thus the only Case-less DP within a nominalized clause, and hence receives ergative Case at the time of Spell-Out of a DP (or transitive *v*P).

Before moving to Q'anjob'al, let us briefly discuss another type of nominalization in Chol. In addition to the non-perfective forms discussed above, Chol has another type of non-perfective forms called *raising constructions* (Robertson, 1980) or *B-Constructions* (Coon, 2010a, 2013a). In these non-perfective forms, non-verbal aspectual markers may appear with an overt absolutive morpheme agreeing with the subject and with the preposition *tyi* as shown in (149), unlike the non-perfective sentences such as the ones in (146). The form in (149) resembles the progressive sentence of Kaqchikel discussed in the previous sections: the Kaqchikel counterpart also appears with a preposition (= *che*), and the aspectual marker *ajin* displays an overt absolutive morpheme covarying with the subject.

- (149) Muk'-ety tyi juch' waj.  
 IMPF-ABS2 PREP grind corn  
 'You grind corn.'

(Coon, 2010a, : 99)

This appears to suggest that the subject undergoes raising to the matrix clause. Despite its appearances, however, Coon (2010a, 2013a) argues that the subject in B-constructions does not undergo raising but is base-generated as the (internal) argument of a non-verbal aspectual marker and receives a  $\theta$ -role from it. This is compatible with our analysis of the non-perfective forms and *begin*-sentences in Kaqchikel.

Furthermore, Coon suggests that the object in constructions like (149) is incorporated to the verb (i.e., *incorporating antipassive* (Dayley, 1981a)): e.g., the object may not be definite. In this respect, these constructions come close to the *oj* nominalization of Kaqchikel discussed in §3.3.2.<sup>33</sup> To the extent that incorporation involves intransitivization of the verb in various languages (Mithun, 1984), the nominalized form *juch' waj* can be analyzed as satisfying the unaccusative requirement, although this requirement is not

<sup>33</sup>According to Jessica Coon (p.c.), the cognate suffix *-aj* appears in nominalized forms of derived transitives (e.g., causatives) like those in (149).



obligatory in Chol. The form in (149) thus suggests that Chol may exhibit instances of nominalization to which the unaccusative requirement is applicable as in Kaqchikel. If this is correct, the subject cannot be generated inside the nominalized clause, but instead appears as the argument of the non-verbal predicate *muk'* in the matrix clause. This explains why *muk'* carries the overt absolutive morpheme agreeing with the subject.

### Q'anjob'al

Q'anjob'al exhibits the same alignment between Case and grammatical relations as Chol in non-perfective sentences. The examples of Q'anjob'al are repeated below. Both intransitive and transitive subjects are assigned ergative Case and cross-referenced by the ergative agreement morpheme. The transitive object receives absolutive Case and controls the absolutive agreement morpheme.

#### NOM-ACC PATTERN IN Q'ANJOB'AL

- (150) a. lanan- $\emptyset$  [hach w-il-on-i].  
 PROG-ABS3s ABS2s ERG1s-see-DM-ITV  
 'I am seeing you'
- b. lanan- $\emptyset$  [ha-way-i].  
 PROG-ABS3s ERG2s-sleep-ITV  
 'You are sleeping.'

(Mateo Pedro, 2009)

I will suggest below that the analysis developed for Chol extends to Q'anjob'al by arguing that the unaccusative requirement on nominalization is not obligatory in Q'anjob'al. This causes two properties: (i) the subject can be generated inside a nominalized clause and (ii) a nominalized transitive verb, which is selected by *lanan*, assigns absolutive Case to the object.

First, let us begin with a nominalized verb. It was noted earlier that Kaqchikel and Q'anjob'al are both high absolutive languages. This means that Infl is an absolutive Case assigner in transitive and intransitive sentences of these languages. This seems to conflict with the idea that a nominalized transitive verb in (150-a) assigns absolutive Case – the nominalized verb, which does not contain Infl, should be unable to

assign Case. We saw earlier that the non-finite clauses of Kaqchikel lack an absolutive agreement morpheme altogether.

Unlike in Kaqchikel, I suggest, building on Coon et al. (2011, to appear), that the non-finite clause of Q'anjob'al has an independent absolutive Case assigner, namely the suffix *-on* in (150-a). An important fact about the suffix *-on* is that a transitive verb cannot be nominalized and embedded under the non-verbal predicate *lanan* without *-on*, as shown by the contrast below.

- (151) a. \*lanan [hach hin-laq'-a'].  
          PROG ABS2s ERG1s-hug-TV  
          intended: 'I am hugging you.'
- b. lanan [hach hin-laq'-on-i].  
          PROG ABS2s ERG1s-hug-DM-ITV  
          'I am hugging you.'

(Coon et al., 2011, :16)

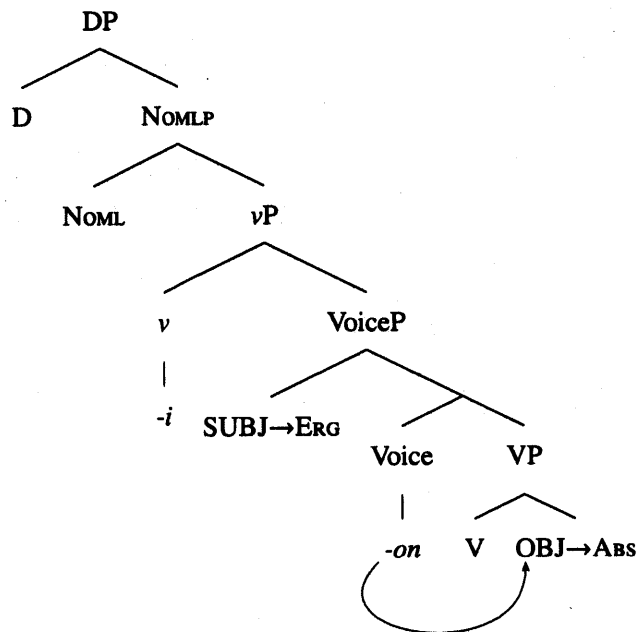
Given that *-on* does not appear in a nominalized intransitive, the contrast in (151) suggests that *-on* correlates with the presence of the object. Coon et al. take this to argue that the suffix assigns absolutive Case to the object.<sup>34</sup> I propose the structure in (152) for a nominalized transitive as in (150-a), incorporating their insight that *-on* heads VoiceP.<sup>35</sup>

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<sup>34</sup>The suffix *-on* also appears in so-called Agent Focus (AF) constructions – extraction of the transitive/ergative subject (e.g., clefts, relativization and *wh* extraction) requires that a verb be suffixed by *-on* and lose an ergative agreement morpheme. Coon et al. (2011) propose a unified analysis of non-finite clauses (as in (150-a)) and AF constructions on the basis of the claim that *-on* assigns absolutive Case to the object (see the reference for details).

<sup>35</sup>Mateo Toledo (2008) notes that the suffix *-on* resembles the historical antipassive morpheme in Mayan.

(152)



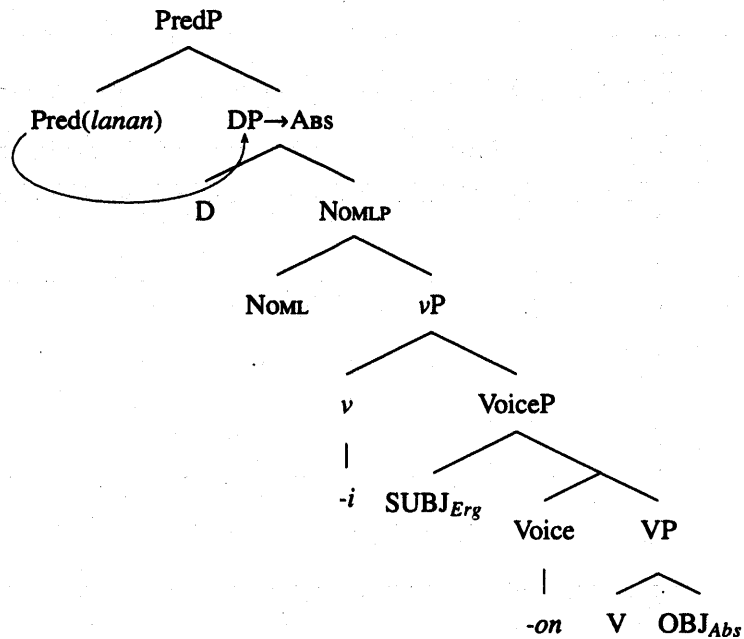
As in the case of Chol, the nominalized transitive verb of Q'anjob'al behaves as transitive in that it can Case-license its object. This is possible because the nominalized verb in Q'anjob'al need not satisfy the unaccusative requirement, unlike in Kaqchikel.<sup>36</sup>

Since the nominalized verb need not have an unaccusative structure, the subject can be generated inside the nominalized DP (i.e., Spec-VoiceP). The subject then receives ergative Case when phase head D (or transitive *v*) triggers Spell-Out as it is the highest Case-less DP. The intransitive sentence as in (150-b) is derived the same way except that there is no object. The Case-assigning suffix *-on* thus does not appear.

I suggest that the non-verbal, aspectual marker *lanan* takes a nominalized clause as its complement and assigns absolutive Case to it in parallel with *choñkol* in Chol. This is illustrated in (153).

<sup>36</sup>Although the nominalized verb is suffixed by the intransitive status suffix *-i*, I assume that the verb is syntactically transitive in terms of Case-assigning ability, whereas it is morphologically intransitive (see Aissen 1992, Coon et al. to appear and the references cited therein for similar discussion of an AF verbal form suffixed by the same morphology (= *-on*) and the intransitive status suffix.).

(153)



As in Chol, this analysis can also explain the fact that a preposition does not appear in non-perfective clauses of Q'anjob'al, in contrast to Kaqchikel: the nominalized clause does not require a Case-licensing preposition. The Case-assigning ability of *lanan* can be supported by the fact that it does not bear any overt agreement morpheme, regardless of the person and number of the subject as seen in (150). Thus, *lanan* can be taken as bearing a null absolutive morpheme cross-referencing the nominalized clause (= third person singular), as indicated in the examples of (150).

Under this analysis, Q'anjob'al differs from Kaqchikel in that it has a special assigner of absolutive Case within a nominalized clause. Without *-on*, Q'anjob'al would not be able to assign absolutive Case to the object as in Kaqchikel because both are high absolutive languages. This difference arises because the unaccusative requirement on nominalization is not obligatory in Q'anjob'al like Chol, in contrast to Kaqchikel. The subject can be generated within a nominalized clause. All subjects in the non-perfective clauses of these languages receive ergative Case since they would be otherwise Case-less in the nominalized clause.

Before closing this section, consider the example in (154), which appears to contradict the observation made above. A non-finite (nominalized) clause with the intransitive status suffix (= *i*) occurs in subject position. As opposed to the observation that subjects are assigned ergative Case and cross-referenced by the

ergative morpheme, the ergative morpheme cross-references *the object* in (154). In this respect, Q'anjob'al behaves like Kaqchikel.

- (154) [h-el-lay-i] kawal watx'.  
 ERG2s-see-LAY-ITV very good  
 'Seeing you is very good.'

(p.c. Pedro Mateo Pedro)

I suggest that the phase head ergative Case analysis can capture the seemingly unpredicted alignment in (154).

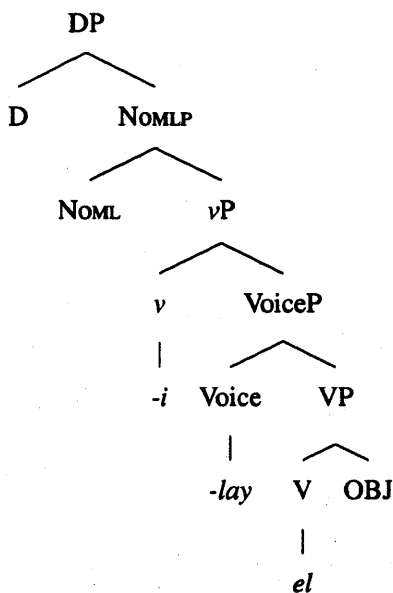
Notice that the non-finite clause in (154) bears a different suffix than *-on*: i.e., *-lay*. As shown by the example in (155), the suffix *-lay* is a passive morpheme and likely a candidate for Voice head.

- (155) max-ach maq'-lay y-uj.  
 PRFV-ABS2s hit-PAS ERG3s-RN  
 'You were hit by him/her.'

(Mateo Pedro, 2009, :53)

I assign the structure in (156) to the non-finite clause in (154). The pronominal object is dropped in (154).

- (156)



What is crucial about (156) is that the passive morpheme, not the suffix *-on*, occupies Voice. In other words, the form of nominalization in (154) is intransitive. This instance of nominalization can be taken as satisfying the unaccusative requirement, although it is not obligatory in Q'anjob'al. This situation is in parallel with the incorporating nominalization of Chol, where the unaccusative requirement applies. I propose that *-lay* does not assign absolutive Case to the object, unlike *-on* in (152) (see chapter 2 for passives in Q'anjob'al). Since the nominalized verb is intransitized by the passivizing suffix and is subject to the unaccusative requirement, the subject is not generated inside the verbal projection. Thus, the only Case-less DP within the nominalized clause is the object. It then receives ergative Case when phase head D triggers Spell-Out.

Example (154) suggests that Q'anjob'al exhibits a mixture of different alignment patterns: a Chol-type (i.e., ERG = SUBJ) and a Kaqchikel-type (i.e., ERG = OBJ). The nominalized verbs in Q'anjob'al may be either transitive (like Chol) or intransitive (like Kaqchikel). Although the unaccusative requirement is not obligatory for nominalization of Q'anjob'al, this does not preclude the intransitivizing process of nominalized verbs.

### 3.3.4 Interim Summary

I have addressed the alignment puzzle found in Kaqchikel and Chol/Q'anjob'al. They display a sharply contrastive alignment pattern in non-perfective sentences, as repeated below.

#### THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN

(157) KAQCHIKEL-TYPE

	S	O
Intransitive	ABS	-
Transitive	ABS	ERG

(158) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

This contrast is unexpected given that these languages have been shown to have a (nearly) identical biclausal structure for non-perfective sentences: a non-verbal aspectual predicate takes a nominalized clause as its complement.

I have argued that this flexible alignment of Case and especially ergative Case with a grammatical relation across languages can be explained by the phase head ergative Case analysis. For this analysis to go through, I have proposed that there is a single parametric difference between Kaqchikel and Chol/Q'anjob'al: whether a nominalized verb must have an unaccusative structure. Crucially, the difference regarding the unaccusative requirement and the type of alignment patterns are *causally connected*. This is summarized as below.

(159) SUMMARY OF A NOM-ACC ALIGNMENT IN NON-PERFECTIVE CLAUSES

	The unaccusative requirement on nominalization	Alignment patterns
Kaqchikel	+	S/A=Abs, O=Erg
Chol/Q'anjob'al	-	S/A=ERG, O=ABS

The unaccusative requirement in Kaqchikel derives two properties. First, the external argument (or subject) is not generated inside the nominalized clause, because the nominalized verb must display an unaccusative structure. Second, the nominalized verb does not assign Case to its object because it is unaccusative (and passivized in the case of transitive verbs) as well as a high absolutive language. In the progressive of Kaqchikel, the subject is base-generated as the argument of *ajin* in the matrix clause and receives absolutive Case from the matrix Infl. Since a nominalized verb of Kaqchikel does not assign absolutive Case, the object receives ergative Case: otherwise it would be Case-less. I have pointed out that upon closer inspection, what appears to be aligned with ergative Case is derived (or thematic) subject due to passivization of nominalized verbs.

By contrast, the unaccusative requirement on nominalization is not obligatory in Chol and Q'anjob'al. As a result, all subjects in non-perfective sentences may be generated inside the nominalized clause and receive ergative Case from phase head D (or transitive  $\nu$ ), while the transitive object receives absolutive Case from a nominalized verb.

Alongside non-perfective sentences, I have shown that embedding verbs like *chäp* 'begin' in Kaqchikel

display the rare alignment: the subject of *chäp* and the transitive object alike receive ergative Case. It has been demonstrated that this alignment can be captured by the unaccusative requirement on nominalization as in progressive sentences.

Furthermore, the default view of the ergative is supported by other types of Kaqchikel nominalizations. I have analyzed them as employing other strategies such as antipassivization and (pseudo-)incorporation to satisfy the unaccusative requirement. I have demonstrated that in these cases, ergative Case cannot be assigned to the transitive object because it is independently Case-licensed. This is thus consistent with the view that ergative Case is only assigned when necessary.

### 3.4 Generalizing alignment patterns

In this section, I will show that the nominative-accusative side of ergative splits in other selected Mayan languages receives either a Kaqchikel-type or a Chol/Q'anjob'al-type analysis. I will suggest that the alignment patterns of the split side in Mayan are determined by the presence or absence of the unaccusative requirement on nominalization.

As shown by the examples of Kaqchikel below, the fact that a non-verbal aspectual marker bears an overt absolutive morpheme which covaries with the subject reflects the unaccusative requirement on nominalization. In other words, since the subject cannot be generated inside the nominalized clause, it is base-generated as the argument of the non-verbal predicate.

#### KAQCHIKEL

- (160) a. *y-in-ajin che [ki-k'ul-ik ak'wal-a']*.  
 IMPF-ABS1s-PROG PREP ERG3p-meet.PAS-NOML child-PL  
 'I am meeting children.'
- b. *y-in-ajin che [atin-ik]*.  
 IMPF-ABS1s-PROG PREP bathe-NOML  
 'I am bathing.'

As demonstrated in §3.3.1, a subset of transitive verbs in Kaqchikel exhibit intransitivizing suffixes such as passive and antipassive morphemes.



In contrast, when the unaccusative requirement is not obligatory as in Chol and Q'anjob'al, the subject can be generated inside the nominalized clause. As a result, a non-verbal predicate always bears a null absolutive morpheme, irrespective of the subject, as seen in the examples of Chol and Q'anjob'al. As has been argued in the previous sections, the non-verbal predicate agrees with the nominalized clause (= third person singular). This is illustrated by the examples of Chol below.

CHOL

- (161) a. Choñkol-∅ [k-jats'-ety].  
 PROG-Abs3s ERG1s-hit-Abs2s  
 'I'm hitting you.'
- b. Choñkol-∅ [k-majl-el].  
 PROG-Abs3s ERG1s-go-NOML  
 'I'm going.'

(Coon, 2013a, :13)

I will employ the presence or absence of an overt absolutive morpheme on an aspectual marker as the diagnostics for the presence or absence of the unaccusative requirement on nominalization in accusative patterns of other Mayan languages, and provide further support for the causal relation between the unaccusative requirement and the type of alignment of the split side. The languages to be investigated below show aspect-based split ergativity like Kaqchikel and Chol/Q'anjob'al. I will assume that their nominative-accusative side forms a biclausal structure consisting of a non-verbal aspectual predicate and a non-finite nominalized clause, as proposed for Kaqchikel and Chol/Q'anjob'al in §3.3.

### 3.4.1 Chol/Q'anjob'al-type

Let us first address the Chol/Q'anjob'al-type alignment in the accusative side of several Mayan languages. In this type of alignment, non-verbal aspectual markers always bear a null absolutive morpheme. I take this to suggest that the unaccusative requirement is not obligatory in these languages. As a result, the subject can be generated inside a nominalized clause and receives ergative Case within the clause because it is

the highest Case-less DP. Since the unaccusative requirement does not obligatorily apply to nominalization of the languages, the object can receive absolutive Case from a Case-assigner inside a nominalized clause because the nominalized verbal phrase may be transitive.

Two Q'anjob'alan languages, Chuj and Jakalteq, belong to this group. As in the Mayan languages investigated so far, they display a nominative-accusative pattern in non-perfective sentences. As in Chol and Q'anjob'al, the aspectual markers (*van* in Chuj and *lanan* in Jakalteq) bear a null absolutive morpheme, as shown by the examples in (1) and in (2).

#### CHUJ

- (162) a. *van-∅ in-vay-i.*  
 PROG-Abs3s ERG1s-sleep-ITV  
 'I sleep.'
- b. *van-∅ ach-in-mak'-an-i.*  
 PROG-Abs3s Abs2s-ERG1s-hit-EMBEDDER-ITV.  
 'I am hitting you.'

(Robertson, 1980, :378)

#### JAKALTEK

- (163) a. *lanan-∅ ha-way-i.*  
 PROG-Abs3s ERG2s-sleep-ITV  
 'You are sleeping.'
- b. *lanan-∅ ach-in-ch'ah-n-i.*  
 'PROG-Abs3s Abs2s-ERG1s-wash-EMBEDDER-ITV  
 'I am washing you.'

(Robertson, 1980, :379)

Robertson (1980) proposes that non-perfective sentences of these languages form complementation constructions in which an aspectual marker takes a nominalized clause as its complement, a precursor of the biclausal analysis adopted by Laka (2006) and Coon (2010a, 2013a).

Chuj and Jakaltek pattern with Q'anjob'al in that they manifest the overt suffixes *-an* and *-n* only in nominalized transitives (Robertson, 1980) – the counterpart of Q'anjob'al is *-on* (i.e., dependent marker).<sup>37</sup> I assume that these suffixes assign absolutive Case to the object just as in Q'anjob'al (see §3.3.3).<sup>38</sup> Since Chuj and Jakaltek as well as Q'anjob'al are high absolutive languages, there would be otherwise no Case assigners inside a nominalized clause – recall that (finite) Infl is an absolutive Case assigner in high absolutive languages.

Ixil (Mamean) also displays the Chol/Q'anjob'al-type alignment for its accusative pattern found in non-perfective aspects, as seen in (164). The aspectual marker *n(i)* does not bear an overt absolutive morpheme.<sup>39</sup>

Ixil

- (164) a. *n(i)-∅ un-wat-e'*.  
 ASP-Abs3s ERG1s-sleep-NOML  
 'I am sleeping./I habitually sleep.'
- b. *n(i)-∅ un-q'os-ax*.  
 ASP-Abs3s ERG1s-hit-Abs2s  
 'I am hitting you.'
- c. *n(i)-∅ un-q'os-∅-e'*.  
 ASP-Abs3s ERG1s-hit-Abs3s-NOML  
 'I am hitting it/him/her.'

(Lengyel, 1978, :81)

The (clause-final) suffix *-e'* marks nominalization of a non-finite clause (Ayres, 1981; Mateo Pedro, 2009, cf. Lengyel 1978).<sup>40</sup>

Unlike in Q'anjob'al/Chuj/Jakaltek, the nominalized transitive verb in Ixil does not show an overt suffix.

<sup>37</sup>Like *-on* in Q'anjob'al, these suffixes also appear in AF constructions – extraction of the ergative subject (Robertson, 1980, :195).

<sup>38</sup>In fact, Ordóñez (1995) proposes that the suffix *-n(i)* found in non-finite clauses and AF constructions in Jakaltek assigns Case to the object.

<sup>39</sup>The null absolutive morpheme for third person singular is added, assuming that the aspectual marker assigns absolutive Case to its complement (i.e., a nominalized clause) as in Chol and Q'anjob'al.

<sup>40</sup>The nominalizing suffix appears when there is no overt absolutive morpheme either because the absolutive is third person singular (= (164-c)) or because there is no absolutive (= (164-a)). The suffix is absent elsewhere.

As I will argue in detail in chapter 4, I suggest that Voice assigns absolutive Case to the object since Ixil is a low absolutive language like Chol – recall that Voice is an absolutive Case assigner in transitive clauses of low absolutive languages.

Yucatec (Yucatecan) shows the Chol/Q'anjob'al-type alignment for its accusative pattern found in non-perfective aspects. This is shown in (165). The aspectual (or durative) marker does not carry an overt absolutive morpheme.<sup>41</sup>

YUCATEC

- (165) a. *táan-∅ in-k'uch-ul.*  
 DUR.-Abs3s ERG1s-arrive-IMPF  
 'I am arriving.'
- b. *táan-∅ uy-il-ik-en.*  
 DUR.-Abs3s ERG3s-see-IMPF-Abs1s  
 'He is seeing me.'

(Bricker, 1981, :83)

In Yucatec, the suffixes *-ul* (or *Vl*) and *ik* are attached to intransitives and transitives, respectively, in the nominative-accusative side of the language.<sup>42</sup> Bricker (1981) suggests that *Vl* suffix is a nominal suffix (or a nominalizing suffix in our sense), though she notes that it is not immediately obvious whether *-ik* suffix for transitives can be analyzed the same way.<sup>43</sup> Given that Yucatec is a low absolutive language as in Chol and Ixil, I suggest that Voice assigns an absolutive Case to the object.

To summarize, I have shown that Chuj, Jakaltek, Ixil and Yucatec display the same alignment patterns in the accusative side of their ergative splits as Chol and Q'anjob'al. In these languages, all subjects receive ergative Case, while the transitive object receives absolutive Case. The absence of an overt absolutive morpheme on an aspectual predicate of non-perfective sentences has been taken as suggesting that the unaccusative requirement is not obligatory in these languages. As a result, the subject can be generated within

<sup>41</sup>Like in Ixil, the null absolutive morpheme for third person singular is added to the aspectual markers.

<sup>42</sup>All types of transitives bear *-ik*, while root intransitives carry *Vl* and derived intransitives do not bear an overt suffix (Armstrong, 2009).

<sup>43</sup>In addition, she proposes, as in Robertson (1980), that several aspects of Yucatec such as non-perfective aspects are formed by complementation constructions in which an aspectual marker (e.g., *táan*) embeds a (nominalized) clause.

a nominalized clause and receives ergative Case within the clause because it is the highest Case-less DP.

In addition, it was suggested that the object receives absolutive Case from either a special suffix in high absolutive languages (= Chuj and Jakalteq) as in Q'anjob'al or Voice in low absolutive languages (= Ixil and Yucatec) as in Chol. The presence of a special suffix in high absolutive languages, but not in low absolutive languages, is consistent with the claim that the former group of languages does not have a Case-assigner within a non-finite clause or a verbal domain, whereas the latter group has Voice as a Case-assigner (i.e., the Absolutive Case Parameter). The fact that Case assignment is possible in the nominalized clause of these languages also follows from the absence of the unaccusative requirement on nominalization: the verb may be transitive. The alignment pattern found in these languages can be illustrated as below: A = transitive subject, S = intransitive subject, O = transitive object (Dixon, 1979, 1994).

(166) CHOL/Q'ANJOB'AL-TYPE ALIGNMENT: CHUJ, JAKALTEK, IXIL AND YUCATEC

- a. A (= ERG) O (= ABS)
- b. S (= ERG)

### 3.4.2 Kaqchikel-type

We will turn to the Kaqchikel-type alignment in the accusative side of other Mayan languages. In this type of alignment, non-verbal aspectual markers bears either overt or null absolutive morphemes, covarying with the subject, unlike in Chol/Q'anjob'al-type languages. We take this to suggest that the unaccusative requirement on nominalization is obligatory in these languages. Since the nominalized verb must have an unaccusative structure and hence cannot license an external argument, the subject is base-generated as the argument of the non-verbal predicate in the matrix clause (i.e., Spec-PredP) and receives absolutive Case from Infl. Another consequence of the unaccusative requirement is that the object is assigned ergative Case within a nominalized clause since it is the highest Case-less DP. In this type of languages, the object would be otherwise unable to receive Case because the nominalized verb is unaccusative (and hence intransitive).

Three K'ichean languages, Tz'utujil, K'ichee' and Q'eqchi', display the Kaqchikel-type alignment in accusative patterns found in non-perfective sentences. As shown by the examples of Tz'utujil in (7), the aspectual marker *tajin* carries the overt absolutive morpheme cross-referenced by the subject, just as *ajin* in

Kaqchikel does. Furthermore, a preposition precedes a non-finite (nominalized) clause in the non-perfective sentences of Tz'utujil, K'ichee' and Q'eqchi' as in Kaqchikel (e.g., *chi*). Following the analysis made for Kaqchikel in §3.3, I assume that the preposition takes an (overt or covert) relational noun as its complement and Case-licenses it (see §3.3.1 for details).

Tz'UTUJIL

- (167) a. N-in-tajin        chi b'ijneem.  
 IMPF-ABS1s-PROG PREP to-walk  
 'I am walking (lit. I am in the act of walking).'
- b. N-in-tajin        ch a-tz'ijtiik.  
 IMPF-ABS1s-PROG PREP ERG2s-being.seen  
 'I am looking at you.'

(Dayley, 1985, :394)

The transitive object in (167-b) cross-references the ergative morpheme on the (nominalized) verb *tz'ijtiik*. Crucially, the infix *j* on the nominalized verb in (11-b) is a passivizing morpheme for root transitives (Dayley, 1981b): the verb does not assign Case. The overt realization of the passive morpheme is thus compatible with the unaccusative requirement on nominalization. Furthermore, the transitive verbs of Tz'utujil are not Case-assigners in the first place because it is a high absolutive language – only Infl is an (absolutive) Case assigner.<sup>44</sup> I thus suggest that the object receives ergative Case as in Kaqchikel.

As shown in (168), a Cunén dialect of K'ichee' can be classified as a Kaqchikel-type language in terms of alignments in the non-perfective aspect. The aspectual marker *thiin* carries the overt absolutive morpheme controlled by the subject.

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<sup>44</sup>Dayley (1985) calls a non-finite clause as in (11-b) a *passive infinitive*, as suggested by his translation.

CUNÉN K'ICHEE'<sup>45</sup>

- (168) a. **k-in-thiin**      **chi** **wr-aam**.  
 HABT-ABS1s-PROG PREP sleep-NOML  
 'I am sleeping.'
- b. **k-in-thiin**      **ch-r-eeq-x-ik**.  
 HABT-ABS1s-PROG PREP-ERG3s-carry-PAS-AFF  
 'I am carrying it.'

(Robertson, 1980, :191)

As in Kaqchikel and Tz'utujil, K'ichee' is a high absolutive language and thus its verb does not assign Case to the object. In addition, the verb in (168-b) overtly manifests the passivizing suffix *-x*, thereby supporting the claim that the unaccusative requirement is obligatory.

Much the same observation extends to Q'eqchi' in (169). Although the transitive verb in (170) does not bear a passive morpheme, it does not assign Case to the object because Q'eqchi' is also a high absolutive language.

Q'EQCHI'<sup>46</sup>

- (169) **Yoo-qu in**      **chi** **alinac**.  
 PROG-ASP ABS1s PREP run(NOML)  
 'I am running.'
- (170) **Yoo-k in**      **chi aa-sak'-b'al**.  
 PROG-ASP ABS1s PREP ERG2s-hit-NOML  
 'I am hitting you.'

(Berinstein, 1985, :272)

(Xol Choc, 2007)

<sup>45</sup>According to Larsen (1988), the suffix *-ik* is a (phrase-final) status suffix for intransitives. It is thus attached to the passivized verb.

<sup>46</sup>Q'eqchi' has two nominalizing suffixes for transitive verbs: *-bal* is suffixed to root stems (CV(C)), while *-(n)quill* is suffixed to stems that are more than one syllable (Berinstein, 1985, :267). For intransitives, the nominalizing suffix *-c* is used (Berinstein, 1985, :259).

The only difference between Q'eqchi' and Kaqchikel/Tz'utujil/K'ichee' is the position of the progressive marker *yoo*. It precedes a Tense/Aspect/Mood (TAM) marker *qu* or *k*, whereas the counterparts in the other languages follow the TAM marker as seen above.

I speculate that the TAM marker *qu* or *k* in Q'eqchi' triggers head movement of *yoo*. This supposition seems to be supported by other clauses formed with the same TAM marker. Berinstein (1985) refers to sentences occurring with *qu* or (*a*)*k* as *tense-less clauses* – they are non-future or future. Crucially, a verb in tense-less clauses always precedes the TAM marker as shown in (171), (172) and (173). In contrast, a verb normally follows a TAM marker in other types of clauses, as in (174). I take this contrast to suggest that the verbs undergo head movement to the TAM marker in (171), (172) and (173).

- (171) cuan-q in.  
 exist-asp Abs1s  
 'I will be (in a place).'

(Berinstein, 1985, :35)

- (172) Arin cuan-qu in.  
 here exist-asp Abs1s  
 'Here I am.'

(Berinstein, 1985, :35)

- (173) x-bok-ak-in-eb  
 ERG3s-call-asp-Abs1s-3PL  
 'that they call me'

(Berinstein, 1998, :214)

- (174) x-at-ka-ch'aj.  
 PRFV-Abs2s-Abs1P-wash  
 'We washed you.'

(Berinstein, 1985, :23)

Therefore, I suggest that the "high" position of the progressive marker *yoo* in (169) and (170) results from head movement to the TAM marker the same way as other verbs in (171), (172) and (173) do.

Awakatek (Mamean) displays the Kaqchikel-type alignment in its non-perfective sentences as seen in



(10). The aspectual predicate *tzaan* bears the overt absolutive morpheme cross-referencing the subject.

AWAKATEK

- (175) a. na-ch-in-tzaan t-a'n waat-l.  
HABT-AFF-ABS1s-PROG ERG3s-PREP sleep-NOML  
'I am sleeping.'
- b. na-ch-in-tzaan t-a'n a-mak-l-e'n.  
HABT-AFF-ABS1s-PROG ERG3s-PREP ERG2s-touch-PAS-AFF  
'I am touching you.'

(Robertson, 1980, :190)

The transitive in (175-b) displays the overt passive morpheme *-l* in accordance with the unaccusative requirement.

Tojolabal (Q'anjob'alan) exhibits the same alignment pattern in the non-perfective aspect, and shows the overt passive morpheme in nominalization of transitives as shown in (12).

TOJOLABAL

- (176) a. wan-on way-el.  
PROG-ABS1s sleep-NOML  
'I am sleeping.'
- b. wan-on s-mil-h-el.  
PROG-ABS1s ERG3s-kill-PAS-NOML  
'I am killing him.'

(Robertson, 1980, :189)

However, Tojolabal differs from the other languages in an interesting way – it lacks a preposition in the relevant construction. This causes a problem because I have argued that the function of a preposition in non-perfective sentences is to Case-license a relational noun, which in turn takes a nominalized clause as its complement. If there is no preposition or a relational noun in (176), the question arises of how the nominalized clauses (or a relational noun) is Case-licensed. I speculate that the sentences like (176) contain

a silent preposition, which Case-licenses the nominalized clauses, although further research is necessary on this issue.

To summarize, I have shown that Tz'utujil, K'ichee', Q'eqchi', Awakatek and Tojolabal display the same alignment patterns in the accusative side of their ergative splits as Kaqchikel. The alignment patterns are summarized below.

(177) KAQCHIKEL-TYPE ALIGNMENT: TZ'UTUJIL, K'ICHEE', Q'EQCHI', AWAKATEK AND TOJOLABAL

- a. A (= ABS) O (= ERG)
- b. S (= ABS)

In languages with this type of alignment, the object receives ergative Case since it would be otherwise the only Case-less DP within a nominalized clause. It was suggested that a verb cannot assign Case to the object because of the unaccusative requirement – in addition verbs of some languages are not Case-assigners in the first place since they are high absolutive languages. Furthermore, the external argument (or subject) in this type of alignment pattern cannot be generated inside the nominalized clause due to the unaccusative requirement: an unaccusative structure cannot license an external argument. The subject thus appears as the argument of the non-verbal aspectual predicate in the matrix clause, and receives absolutive Case from Infl. The subject is cross-referenced by the overt absolutive morpheme on the aspectual predicate.

### 3.4.3 Summary

To summarize the results of the previous sections, I have demonstrated that alignment patterns in the nominative-accusative side of ergative splits in several Mayan languages can be classified as either a Kaqchikel-type or a Chol/Q'anjob'al-type. The typology is summarized as in (178).<sup>47</sup> As seen in (178), the dichotomy is irrelevant to the high vs. low absolutive distinction in Mayan languages. I have argued that the difference between the two types of alignment follows from whether the unaccusative requirement on nominalization is obligatory. The survey of various Mayan languages thus has provided further support for the causal relation between the presence or absence of the unaccusative requirement and the type of

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<sup>47</sup>I limit my discussion to non-perfective sentences involving non-finite nominalized forms in these languages. Some of the languages listed here have non-perfective forms consisting of a non-verbal predicate and a finite (embedded) clause, as in Kaqchikel. These finite forms display a different alignment pattern than non-finite forms – they are canonical ergative alignment.

alignment found in the split side of these languages.

(178) SUMMARY OF A NOM-ACC ALIGNMENT IN NON-PERFECTIVE CLAUSES

	The unaccusative requirement on nominalization	Alignment patterns
Kaqchikel <i>HighA</i>	+	S/A=ABS, O=Erg
Tz'utujil <i>HighA</i>	+	S/A=ABS, O=Erg
K'ichee' <i>HighA</i>	+	S/A=ABS, O=Erg
Q'eqchi' <i>HighA</i>	+	S/A=ABS, O=Erg
Awakatek <i>HighA</i>	+	S/A=ABS, O=Erg
Tojolabal <i>LowA</i>	+	S/A=ABS, O=Erg
Chol <i>LowA</i>	-	S/A=ERG, O=Abs
Q'anjob'al <i>HighA</i>	-	S/A=ERG, O=Abs
Chuj <i>HighA</i>	-	S/A=ERG, O=Abs
Jakaltek <i>HighA</i>	-	S/A=ERG, O=Abs
Ixil <i>LowA</i>	-	S/A=ERG, O=Abs
Yucatec <i>LowA</i>	-	S/A=ERG, O=Abs

In languages in which the unaccusative requirement on nominalization holds, the nominalized verb must be intransitivized via strategies such as passivization, and hence does not assign Case to its object. As a result, the object is assigned ergative Case. Since some of the languages are also high absolutive languages, verbs do not assign Case in the first place. Another consequence of the unaccusative requirement concerns subject. I have proposed, following Alexiadou (2001), that the nominalized verb cannot license an external argument because it must have an unaccusative structure. The subject is thus base-generated as the argument of the non-verbal predicate in the matrix clause, and receives absolutive Case from the matrix Infl. This accounts for the fact that the non-verbal aspectual predicate in Kaqchikel-type languages carries the overt absolutive morpheme covarying with the subject.

On the other hand, when the unaccusative requirement is not obligatory as in Chol/Q'anjob'al-type languages, the nominalized verb may assign absolutive Case to its object either (i) because the language in question is a low absolutive language or (ii) because the verb obtains Case-assigning ability via a special

suffix: (i) = Chol, Ixil, Yucatec, (ii) = Q'anjob'al, Chuj, Jakaltek. Since the languages in (ii) are high absolutive languages, verbs would be unable to assign Case without the help of a special suffix – recall that Infl is an only Case assigner in high absolutive languages. Since the nominalized verb in these languages need not have an unaccusative structure, the subject can be generated inside the nominalized clause. As a result, the subject receives ergative Case within the nominalized clause since it would be otherwise Caseless. This captures the absence of the overt absolutive morpheme on the non-verbal aspectual predicate of these languages. The non-verbal predicate agrees with its complement, namely the nominalized clause (= third person singular), and thus its morpheme is always null.

### 3.4.4 Explaining typological gaps

The present analysis promises to account for some typological gaps in the alignment of Mayan non-ergative patterns found in situations like non-perfective sentences. The following alignment is absent in the languages investigated above: all grammatically-encoded arguments are cross-referenced by the absolutive morpheme, as illustrated in (179). The alignment pattern is simply *neutralized* in (179).<sup>48</sup>

(179) IMPOSSIBLE ALIGNMENT #1 IN NON-ERGATIVE PATTERNS OF MAYAN LANGUAGES

- a. A (= ABS) O (= ABS)
- b. S (= ABS)

The absence of this alignment follows from our analysis in which languages vary, depending on whether the unaccusative requirement on nominalization is obligatory. When the subject is assigned absolutive Case in non-perfective sentences, it is base-generated as the argument of a non-verbal predicate in the matrix clause under our analysis. I have argued that this is due to the unaccusative requirement on nominalization. The absolutive morpheme on the subject as in (179) thus implies that a nominalized verb embedded under the non-verbal predicate is intransitive and particularly has an unaccusative structure. It then follows that the verb *cannot* assign absolutive Case to the object. Therefore, we can correctly predict that the type of alignment given in (179) is not attested.

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<sup>48</sup>As Coon (2013b) discusses, this neutralized alignment can be found in non-perfective sentences of languages such as Basque, Hindi and Gujarati.

Consider the alignment pattern in (180), where all arguments are cross-referenced by the ergative morpheme. This pattern is also unattested in the languages we discussed above.<sup>49</sup>

(180) IMPOSSIBLE ALIGNMENT # 2 IN NON-ERGATIVE PATTERNS OF MAYAN LANGUAGES

- a. A (= ERG) O (= ERG)
- b. S (= ERG)

Under our analysis, the ergative morpheme on the subject implies that the subject is generated inside the nominalized clause because the nominalized verb need not be unaccusative, and hence can license its external argument. The subject receives phase head ergative Case within the nominalized clause since it is the highest Case-less DP. The object *cannot* receive ergative Case because it is not the highest Case-less DP. We have argued that the object instead receives absolutive Case from the nominalized verb (= Chol/Q'anjob'alt-type languages). The verb in this type of languages may be transitive since the unaccusative requirement is not obligatory. Thus, the present analysis correctly predicts the unavailability of the alignment pattern in (180).

However, Mam (Mamean) appears to present a counterexample to this conclusion.<sup>50</sup> England (1983a,b) observes that there are instances of subordinate clauses in Mam where all grammatical relations are cross-referenced by the ergative morpheme. For example, in temporal clauses headed by *ok* 'when', ergative extends to all subjects and the object of a transitive verb.<sup>51</sup> The embedding particle *ok* selects for an aspectless (or non-finite) clause. In (181), the intransitive subject (= first person plural) is cross-referenced by the ergative morpheme *q-* inside the subordinate clause.

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<sup>49</sup>It is attested in *begin*-sentences of Kaqchikel (§3.3.1). I have suggested that it is possible because *cháp* 'begin' is transitive, unlike an intransitive non-verbal predicate found in non-perfective sentences. I set aside *begin*-sentences for the moment.

<sup>50</sup>I thank Edith Aldridge (p.c.) for bringing Mam examples to my attention.

<sup>51</sup>England (1983b) analyzes the temporal particle *ok* as potential in opposition to its nonpotential counterpart *aj*. As England points out, "*aj* and *ok* are in strict complementary distribution with regard to aspect/time, and the specific time of an *aj* clause is inferred from context..." (England, 1983b, : 265).

MAM

- (181) at- $\emptyset$  txab'an siich' ok q-ook-a juu7n priim.  
 Loc-Abs3s bit cigarette when ERG1P-enter-1P each early  
 'There are bits of cigarette there when we go by in the morning.'

(England, 1983b, : 265)

Likewise, the transitive subject is cross-referenced by *q-* in (182) inside the temporal clause. Crucially, the object (= third person singular) of the transitive verb is also cross-referenced by the ergative morpheme *t-* appearing on the verb. Example (182) thus represents an instance of 'double ergative'.

- (182) ok qo tzaalaj-al ok t-q-il u7j t-e yool t-e l7tzal  
 Por Abs1P be.happy-Por when ERG3s-ERG1P-see book ERG3s-RN word ERG3s-RN Ixtahuacán  
 'We will be happy when we see the Ixtahuacán dictionary.'

(England, 1983b, : 260)

Like Kaqchikel, Mam is a high absolutive language. Under our analysis, an absolutive Case assigner is (finite) Infl in Mam (see the Absolutive Case Parameter in chapter 2 or the Mayan Absolutive Parameter by Coon et al. 2011, to appear). In fact, England (1983b, to appear) observes that the absolutive morpheme is absent in non-finite (embedded) clauses of Mam (see also Coon et al. to appear) – only the ergative morpheme may appear in these clauses as in Kaqchikel and other high absolutive languages. This strongly suggests that the temporal clauses in the above examples lack the absolutive assigner since they are non-finite clauses. If our analysis is correct, the ergative in the temporal clause is phase head Case since it can be argued that ergative Case is assigned to a DP which would be otherwise Case-less in clauses without an absolutive Case assigner.

However, the example in (182) poses a problem to this conclusion because ergative Case is assigned to two DPs, as opposed to our proposal that phase head ergative Case is assigned to the highest Case-less DP. Although I do not attempt to develop an answer in detail, I suggest that the temporal clause headed by *ok* contains two phase heads. If this is along the right lines, we can capture the instance of double ergative in (181) by arguing that each phase head assigns ergative Case to a Case-less DP when these phase heads trigger Spell-Out. This results in two ergative DPs appearing in the same clause.

There appears to be converging evidence for this account. As England (1983b) observes, most transitive verbs in temporal clauses are accompanied by functional elements called *directionals*.<sup>52</sup> In the temporal clause of (183), the transitive verb is preceded by the directional *ku7-x*. Crucially, this directional carries the ergative morpheme cross-referencing the object (= *kjo7n* "cornfield"). The verb in the temporal clause bears the ergative morpheme cross-referencing the plural subject (= *xjaal* "person").

- (183) ok t-ku7-x ky-awa-7n xjaal kjo7n b'i7x n-ø-xi7 cheenaq'  
 when ERG3s-Dir-Dir ERG3P-plant-ds person cornfield all.at.once Prog-Abs3s-go bean  
 t-i7j.  
 ERG3s-RN  
 'When the people plant the cornfield at the same time the beans go in.'

(England, 1983b, : 259)

I propose that the directional in (183) is the overt realization of an additional phase head, and that this is the source of ergative Case on the object: therefore, double ergative arises. If we assume that the directionals like the one in (183) appear in the temporal clauses of (181) and (182) but their appearances are covert, unlike in (183), two instances of ergative Case may receive a natural account as in (183). If the suggestion I have made is tenable, the Mam examples do not serve as counterexamples to our analysis. Nevertheless, I leave a detailed account of double ergative in Mam for future research.

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<sup>52</sup>According to England, directionals in Mam are derived from intransitive verbs of motion (England, 1983b, : 263).





# Appendix

## 3.A Certain differences between Kaqchikel and Chol: derived nominals

In §2.3.1, I showed that nominalized verbs formed with *-ik* and *-oj* in Kaqchikel display nominal properties on the basis of the compatibility with the following elements: determiners, adjectives, prepositions and an occupational prefix.<sup>53</sup> As mentioned in §2.3.2, however, nominalized verbs in Chol do not behave the same way as in Kaqchikel. Below I will illustrate certain differences between Kaqchikel and Chol.

### Chol

While nominalized verbs in Chol behave like nominals in several respects as shown by Coon (2010a, 2013a) (see §2.3.2 for details), they do not exhibit the same range of nominal behaviors as in Kaqchikel. First, nominalized forms are either impossible or degraded with determiners and adjectives as seen in (184).

- (184) ??Mach weñ [jiñi kabäl a-jats'-oñ].  
NEG good DET a.lot ERG2s-hit-Abs1s  
'Your hitting me a lot isn't good.'

(Coon, 2013a, :141)

Second, nominalized forms cannot follow the preposition as in (185).

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<sup>53</sup>We observed that nominalized verbs formed with *-ik* cannot occur with the occupational prefix *-aj*.

- (185) \*Tyi majl-i [tyi i-k'el jiñi wakax].  
 PRFV go-ITV PREP ERG3s-watch DET cow  
 'He went to look at the cows.'

(Coon, 2013a, :142)

Third, they cannot combine with an occupational prefix (i.e., *aj-*).

- (186) \*[Aj-i-chuk ili chäy] jiñi wiñik.  
 CL-ERG3s-catch DET fish DET man  
 'The man is a cather of these fish.'

(Coon, 2013a, :142)

Under Coon's analysis, nominalized forms contain *vP*, which is further dominated by articulated nominal projections such as *nP*, *PossP* and *DP*. Aside from the additional nominal projections, the structure of nominalized verbs in Chol is intrinsically identical with the one in Kaqchikel. Given this, the differences between the two languages regarding the range of nominal properties of nominalized forms are puzzling.

To capture the degraded status or ungrammaticality of (184)-(186), Coon makes the following suggestions. Regarding (184), she points out that the incompatibility of a nominalized verb with adjectives follows from the fact that adjectives occur below *D*. Furthermore, she stipulates that the *D* head of a nominalized form must be null – the determiner thus cannot occupy the position. Coon relates this fact to a restriction on determiners/demonstratives in gerunds in English as in (187). *Poss-ing* cannot cooccur with determiners or demonstratives as seen in (187-b). In this respect, nominalized forms in Chol can be treated on a par with gerunds in English, as Coon suggests.

- (187) a. We discussed [this/that/the criticism of the book].  
 b. \*We discussed [this/that/the criticizing the book].

The incompatibility with prepositions as in (185) is, she suggests, related to the fact that prepositions in Chol cannot be followed by a full *DP* (with a determiner) as shown in (188).

- (188) Tyi majl-i [tyi (\*jiñi) otyoty].  
 PRFV go-ITV PREP DET house  
 'She went to to the house.'

(Coon, 2013a, :143)

The ungrammaticality of (185) thus receives a natural account if a nominalized form projects up to a DP. Likewise, Coon suggests that the ungrammaticality of (186) follows from a restriction on clitics including *aj-*. They cannot attach to a full DP as seen in (189).<sup>54</sup>

- (189) Tyi chäm-i [aj-(\*jiñi) ts'o'].  
 PRFV die-ITV CL-DET turkey  
 'The turkey died.'

(Coon, 2013a, :144)

### Kaqchikel

Recall that nominalized verbs in Kaqchikel can occur with determiners and adjectives, unlike in Chol. To capture this difference, I make the following suggestions, although I do not develop them further here. In contrast to Chol, an overt determiner is allowed to occupy a D position, and adjectives can appear between NP and DP in Kaqchikel.

The compatibility with prepositions in Kaqchikel is presumably related to the fact that prepositions may occur with a full or non-bare DP. This is supported by the examples in (190) and (191). The noun is modified by the demonstrative in (190). The noun *k'ayb'äl* in (191) is not only preceded by the determiner but followed by the relative clause: therefore, these nouns head a full DP.

- (190) x-i-b'e pa re k'ayb'äl re.  
 PRFV-ABS1s-go PREP this market this  
 'I went to this market.'

- (191) x-i-b'e pa ri k'ayb'äl ri k'o pa esquina.  
 PRFV-ABS1s-go PREP DET market DET EXT PREP corner  
 'I went to the market at the corner.'

<sup>54</sup>This restriction only holds for transitive nominalizations, but not intransitive nominalizations (p.c. Jessica Coon).

However, consider the example as in (192). At first blush, the preposition does not seem to be compatible with the DP preceded by the determiner.

- (192) x-i-b'e            pa    (\*ri) k'ayb'äl.  
      PRFV-ABS1s-go PREP DET market  
      'I went to the market.'

I suggest that this restriction may not be general enough to lead us to conclude that prepositions cannot be followed by DPs in Kaqchikel. The ungrammaticality of (192) might be related to a restriction found in the following English example.<sup>55</sup>

- (193) I went to (\*the) school/church.

In (193), *going to school/church* has the conventionalized meaning of *going to study/pray* rather than literally *going to a school/church building*. With this conventionalized meaning, the determiner cannot occur inside the prepositional phrase. If the Kaqchikel phrase *x-i-b'e pa k'ayb'äl* is conventionalized and denotes *going shopping* as in English, the ungrammaticality of (192) may be ruled out by the same restriction as in (193), though I leave it open whether this restriction follows from anything. Therefore, I suggest that the difference between Kaqchikel and Chol regarding the compatibility of nominalized verbs with prepositions has to do with whether prepositions allow a full DP complement.<sup>56</sup>

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<sup>55</sup>I thank Sabine Iatridou (p.c.) for bringing this example to my attention.

<sup>56</sup>Coon (2010a) suggests independently that the preposition *tyi* in Chol is not a true preposition but an oblique determiner whose function is solely to Case-license a DP.

## Chapter 4

# Default ergative outside split ergativity: Ixil

### 4.1 Introduction

In the preceding chapter, I demonstrated that certain instances of ergative Case are best analyzed as phase head ergative Case on the basis of the alignment puzzle found in the nominative-accusative side of ergative splits in Mayan languages. In these cases, ergative Case is assigned to either subject or object because the relevant domain (i.e., a DP) does not have a Case-assigner for it. Given that the split side of the Mayan languages discussed in chapter 3 involves nominalization, the distinction between ergative and genitive is somewhat blurred by their homophonous nature. In contrast, the language I will investigate in this chapter will clearly demonstrate that ergative Case, but not genitive, is employed to license an otherwise Case-less DP.

In this chapter, I will address an example in which a Case-assigner present in the relevant domain fails to assign Case. As a result of this failure, ergative Case is employed for the purpose of the Case filter. To illustrate this, I will investigate the interaction between Case alignment and a certain type of voice constructions called *instrumental voice* in Ixil (Mayan) (Dayley, 1981a; Ayres, 1983, 1991; Yasugi, 2012). In particular, I will discuss the unexpected emergence of the ergative in intransitive clauses in Ixil. This occurs when an instrumental phrase is fronted to clause-initial position. I will show that a fronted instrumental phrase blocks the assignment of absolutive Case to the intransitive subject due to *defective intervention* (Chomsky 2000). I will then claim that the intransitive subject receives phase head ergative Case because it would be

otherwise Case-less. This particular analysis of Ixil will place it on a par with familiar languages exhibiting nominative-accusative agreement/Case systems in which defective intervention effects have been attested in various unrelated constructions.

The chapter is organized as follows. §4.2 describes the basic properties of Ixil and introduces an instrumental voice construction. §4.3 presents an analysis of the construction and particularly addresses the question of why the ergative arises in intransitives with a fronted instrument. §4.4 concludes the chapter.

## 4.2 Instrumental voice in Ixil

### 4.2.1 Surprising ergative

Below I will illustrate instrumental voice constructions in Ixil, and particularly show that the presence or absence of the ergative in intransitive clauses correlates with the position of an instrumental phrase.

Ixil, a member of the Mamean branch of the Mayan languages, is spoken by about 50,000-69,000 speakers in the Guatemalan Highlands (Lengyel 1978, Ayres 1981, Lewis 2009 cf. Elliott 1961).<sup>1</sup> The complete set of ergative (= set A) and absolutive (= set B) agreement morphemes is given in Table 4.1.<sup>2</sup>

Table 4.1: Ergative and absolutive agreement morphemes in Ixil

Ergative		Absolutive	Person & number
- C	- V		
un-/in-	v-	(')in	1 person singular
a-	a(v)-	(')axh	2 person singular
i-	t-	∅	3 person singular/plural
ku-/qu-	q-	(')o'	1 person plural
e-	et-	(')ex	2 person plural

(based on Lengyel 1978, 1991 and Ayres 1990)

Ixil is a low absolutive language as seen in (1) and (2).<sup>3</sup>

<sup>1</sup>While Ixil has several dialects, two dialects (i.e., the Chajul and Nebaj dialects) will be discussed in the works cited below (= both Chajul and Nebaj dialects) and the data obtained by the author from Elaine Elliott and Stephen R. Elliott (= the Nebaj dialect). I am grateful to them for their assistance with Ixil data. The specification of the dialects will be omitted in the data unless necessary.

<sup>2</sup>Absolutive agreement morphemes tend to lose their initial glottal stop (= ') (Ayres, 1981).

<sup>3</sup>*xh* is an apico-alveopalatal fricative in the Chajul dialect and a palatoalveolar fricative in the Nebaj dialect (Ayres, 1981, 1983, 1991; Yasugi, 1995).

(1) a. kat in-/un-q'os axh.  
PRFV ERG1s-hit ABS2s  
'I hit you.'

b. kat a-q'os in.  
PRFV ERG2s-hit ABS1s  
'You hit me.'

(Ayres, 1983, :27 *slightly modified*)

(2) kat ja' in ta'n iqwil.  
PRFV go.up ABS1s by rope  
'I went up with (the) rope.'

(Ayres, 1983, :42 *slightly modified*)

The ergative morpheme for first person singular can be either *in-* or *un-* as shown in (1-a).<sup>4</sup> On the other hand, the absolutive morpheme for first person singular appears invariably as *-in*. I will thus take it that the position of the morpheme (i.e., preverbal vs. postverbal) as well as the replaceability by *un-* is the sole indicator of the ergative vs. absolutive distinction of a first person singular subject or possessor.<sup>5</sup>

Let us now turn to instrumental voice constructions. As shown in (3-a), an instrumental phrase is normally introduced by a preposition (e.g., *ta'n*). Ixil allows fronting of the instrumental phrase *machit* as seen in (3-b). When the instrumental phrase is fronted to clause-initial position, the suffix *-b'e* called the *instrumental voice* (Dayley, 1981a; Ayres, 1983, 1991) is attached to the verb.<sup>6</sup> Fronting triggers focus interpretation of the instrumental phrase (Norman, 1978). In addition, the instrumental phrase loses its preposition. The agreement pattern remains unchanged in transitives as in (3-b).

<sup>4</sup>Lengyel (1991) documents the variation between *in-* and *un-* in a possessive use of the ergative morpheme in the Chajul dialect of Ixil.

<sup>5</sup>Ayres (1991) notes that first and second person absolutive morphemes in Ixil are identical with first and second person pronouns. It might be argued that absolutive morphemes in the language are full pronouns rather than agreement morphemes – indeed they can be separated by other elements such as locative clitics from the verb (Ayres 1983; see also Coon et al. 2011). However, as Ayres (1981) points out, there are several non-trivial differences between pronouns and absolutive morphemes. First, only pronouns may occur clause-initially and precede a (nominal) predicate in contexts such as copulative sentences, whereas absolutive morphemes always follow a predicate. Second, absolutive morphemes tend to “lose their initial glottal stop, and glottalize the preceding consonant” (Ayres, 1981, :139).

<sup>6</sup>As Ayres (1983) notes, the instrumental voice construction appears to be more productive in the Chajul dialect than in the Nebaj dialect. Ayres further observes that some speakers of the Nebaj dialect often avoid the construction, but when they choose to use it, they do so in the same way as speakers of the Chajul dialect do. In a subdialect of the Nebaj dialect, the construction functions as a valency-changing operation in that the verb agrees with the fronted non-third-person instrument (Ayres, 1983, :44). See §4.2.2 for relevant discussion.

(3) INSTRUMENTAL VOICE

- a. n in-tzok'- $\emptyset$  tze' ta'n machit.  
PROG ERG 1s-cut-Abs3s tree PREP machete  
'I am cutting the tree with a machete.'
- b. machit n in-tzok'-b'e- $\emptyset$  tze'.  
machete PROG ERG 1s-cut-INST-Abs3s tree  
'With a machete I am cutting the tree.'

(Ayres, 1991, :159-160)

However, an intransitive clause behaves differently in instrumental voice constructions. As seen in (4-b), the absolutive morpheme disappears when the instrumental phrase is fronted. Crucially, the ergative morpheme appears in the preverbal position of the intransitive (= *surprising ergative*). In other words, ergative Case, but not absolutive Case, is assigned to the intransitive subject in (4-b). As in (3-b), the verb is suffixed by *-b'e*, and the preposition is absent.

(4) SURPRISING ERGATIVE

- a. kat ja'-in ta'n iqvil.  
PRFV climb-Abs1s PREP rope  
'I climbed with a rope.'
- b. iqvil kat in-ja'-e-b'e.  
rope PRFV ERG 1s-climb-EP-INST  
'With a rope I climbed.'

(Ayres, 1991, :159-160)

While the verb in (4-b) is unergative, unaccusatives exhibit the same range of properties when the instrument is fronted as seen in (5).<sup>7</sup>

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<sup>7</sup>The speaker optionally inserts the preposition *tan* in (5-b). Notice that the preposition is different from the one found in (5-a) for reasons unknown to me.



- (5) a. *kat ul-in tu ch'ich'.*  
 PRFV come-Abs1s PREP car  
 'I came by car.'
- b. *ch'ich' kat v-ul-e-b'e.*  
 car PRFV ERG1s-come-EP-INST  
 'By car I came.'

(p.c. Elaine Elliott and Stephen R. Elliott)

Furthermore, not only first person (or second person) subjects but third person subjects can form instrumental voice constructions as shown in (6).

- (6) a. *kat je'-ø naj ta'n ijvil.*  
 PRFV climb-Abs3s he PREP rope  
 'He climbed with a rope.'
- b. *ijvil kat i-je'-e-b'e naj.*  
 rope PRFV ERG3s-climb-EP-INST he  
 'With a rope he climbed.'

(p.c. Elaine Elliott and Stephen R. Elliott)

One might now argue that the emergence of the ergative in (4-b) has to do with nominalizations found in split ergativity. As mentioned in chapter 3, Ixil displays aspect-based split ergativity. The accusative pattern arises in non-perfective aspects such as the progressive and involves nominalization of verbs as in many other Mayan languages (see §4.3.1 for details). The ergative in (4-b) might be analyzed as involving nominalization as in the progressive aspect – the ergative might be then analyzed as the genitive. However, instrumental fronting occurs in various aspects and is not limited to the progressive as can be seen in (4-b). Moreover, even if the verb in (4-b) were nominalized (although there is no evidence for it), one would still need to explain why nominalization occurs in (4-b), but not in (4-a), despite the fact that the same perfective aspectual marker *kat* is present in both examples. Thus it seems implausible to reduce the source of the ergative in (4-b) to nominalization found in the nominative-accusative side of the ergative split.

The contrast between (3-b) and (4-b) thus suggests that a fronted instrumental phrase only affects agree-

ment patterns (and hence Case alignment) in intransitives, but not in transitives. Given that the presence of absolutive agreement morphemes correlate with the presence of absolutive Case and vice versa (see chapter 2 for details), we can state the generalization as in (7).

- (7) A fronted instrumental phrase *bleeds* the assignment of absolutive Case in intransitives, but not in transitives.

The main focus of this chapter is to account for the asymmetry stated in (7) in which absolutive Case is successfully assigned to the object, whereas it fails to be assigned to the intransitive subject in instrumental voice constructions.

#### 4.2.2 Valency-changing operation?

Before proceeding to an analysis, I will show below that an instrumental voice construction in Ixil is not a valency-changing phenomenon in contrast to other Mayan languages and languages outside Mayan such as some Bantu languages (Marantz 1984, 1993, Baker 1988b, Alsina and Mchombo 1993 and the references cited therein) and Austronesian languages such as Tagalog (Rackowski, 2002) and Malagasy (Paul, 2000) – the construction does not promote or advance an instrumental phrase to a direct object.

One might claim that the emergence of the ergative in Ixil (e.g., (4-b)) results from the transitivity of the intransitive verb due to a valency-changing operation. Under this analysis, (4-b) would not be unexpected but follow straightforwardly from the fact that the ergative appears in transitives. However, there is evidence that instrumental voice constructions in Ixil do not change the valency of a verb.<sup>8</sup> In (3-b) above, both the transitive object and the instrumental phrase are third-person singular. In (4-b), the fronted instrument is third-person. Given that absolutive agreement for third-person singular is always null across Mayan, (3-b) and (4-b) do not clearly show whether the object or instrumental controls the null agreement morpheme.

To see if instrumental voice constructions involve the promotion of the instrument, we need to construct sentences with a non-third person object or instrumental phrase – the first or second person always triggers overt agreement. Consider the examples in (8) and (9).<sup>9</sup> In (8), the second person instrumental phrase is

<sup>8</sup>As mentioned briefly in §4.2.1, the instrumental voice construction in a subdialect of the Nebaj dialect behaves like a valency-changing operation. I leave an analysis of this subdialect for future research.

<sup>9</sup>In Ixil, tense/aspectual markers are omitted when certain adverbs and adverbial phrases including instrumental phrases appear clause-initially (Ayres, 1981). Ayres notes that it is possible to insert a tense/aspectual marker with most adverbs appearing at the

fronted, while the first person object appears in (9). In (9), the verb carries the overt absolutive morpheme cross-referenced by the first person object. If the instrumental phrase were promoted to direct object, it would control third person agreement (i.e.,  $\emptyset$ ). In a similar vein, the fronted second person instrument does not trigger agreement on the verb in (8) – the verb still agrees with the third person object *u ispeeha* and thus bears a null morpheme (i.e.,  $\emptyset$ ).

#### TRANSITIVE

- (8) axh la' in-paxi-b'e- $\emptyset$  u ispeeha.  
 you ASP ERG1s-break-INST-ABS3s DET glass  
 'With you, I'll break the glass; I'll use you to break the glass.'

(Ayres, 1983, :42)

- (9) uula a-k'oni-b'e in.  
 sling ERG2s-shoot-INST ABS1s  
 'With (a) sling you shot me.'

(Ayres, 1983, :42)

Likewise, the fronted instrumental phrase does not promote to subject or object and triggers agreement in intransitive clauses. As shown by (10) in which the second person instrumental phrase is fronted, the verb still agrees with the first person subject, not the instrumental phrase. Moreover, the verb bears a single agreement morpheme, suggesting that it is not transitivized. As we saw above, the ergative morpheme, instead of the absolutive morpheme, appears in (10).

#### INTRANSITIVE

- (10) axh in-ja'-e-b'e.  
 you ERG1s-climb-EP-INST  
 'I went up with you; I used you to go up.'

(Ayres, 1983, :43)

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beginning of the sentence, but the omission of the marker is generally preferred.

Crucially, these examples demonstrate that instrumental voice constructions do not promote instrumental argument and that agreement patterns remain unaffected except in that the ergative morpheme, not the absolutive morpheme, appears in intransitives.

The suffix *-b'e* (or *-be*) is observed in applicative, locative, or instrumental voice constructions of the southern lowland (except Tojolabal and Chorti') and eastern highland (except Q'eqchi') Mayan languages (Yasugi, 2012). These languages include Chol (Coon, 2010a, 2013a), Tzotzil (Aissen, 1983), Tseltal (Shklovsky, 2012), Tz'utujil (Dayley, 1978, 1981a), Kaqchikel (Norman, 1978; García Matzar and Rodríguez Guaján, 1997) and K'ichee' (Norman, 1978; Dayley, 1981a; Larsen, 1988; Campbell, 2000). Unlike Ixil, many of these languages involve the promotion of indirect object/locative/instrumental to direct object.

For example, instrumental voice constructions in K'ichee' illustrate this. Example (11-a) is a regular transitive clause with an instrumental phrase introduced by the preposition. The second person object controls absolutive agreement (i.e., *at*) on the verb. As in Ixil, fronting the instrumental phrase triggers suffixation by *-b'e* on the verb as seen in (11-b).

#### K'ICHEE'

- (11) a. *x-at-in-ch'ay*            *chi chee'*.  
 PRFV-ABS2s-ERG1s-hit PREP WOOD  
 'I hit you with a stick.'
- b. *chee' x-Ø-in-ch'aya-b'e-j*            *aaw-eeh*  
 WOOD PRFV-ABS3s-ERG1s-hit-INST-TV ERG2s-RN  
 'I used a stick to hit you.'

(Campbell, 2000, :278)

In contrast to Ixil, the direct object is demoted to an oblique argument in instrumental voice constructions. The second person object is introduced by the relational noun *-eeh* and appears as *aaw-eeh* in (11-b). Crucially, the instrumental phrase is promoted to the direct object of the verb suffixed by *-b'e* in (11-b): the null absolutive morpheme is cross-referenced by *chee'*. The transitive status suffix *-j* clearly indicates that the verb is transitive.

### 4.3 Analysis

In this section, I will propose that the appearance of the ergative in intransitives with a fronted instrumental phrase results from the failure of absolutive Case assignment. To formulate this analysis, I will suggest that the fronted instrument blocks absolutive Case assignment due to *defective intervention* (Chomsky, 2000) and that ergative Case is employed to satisfy the Case-need of the intransitive subject.

#### 4.3.1 Case assignment in Ixil

I will show below that Case assignment in Ixil proceeds the same way as in other low absolutive languages, adopting the analysis developed in chapter 2 (i.e., the Absolutive Case Parameter and the Mayan Absolutive Parameter by Coon et al. 2011, to appear). To be more precise, I will demonstrate that Ixil displays the split absolutive assignment system, depending on the type of a clause.

As mentioned in §4.2, Ixil is a low absolutive language, as repeated below.

- (12) kat a-q'os in.  
 PRFV ERG2s-hit ABS1s  
 'You hit me.'

(Ayres, 1983, :27 *slightly modified*)

- (13) kat ja' in ta'n iqwil.  
 PRFV go.up ABS1s by rope  
 'I went up with (the) rope.'

(Ayres, 1983, :42 *slightly modified*)

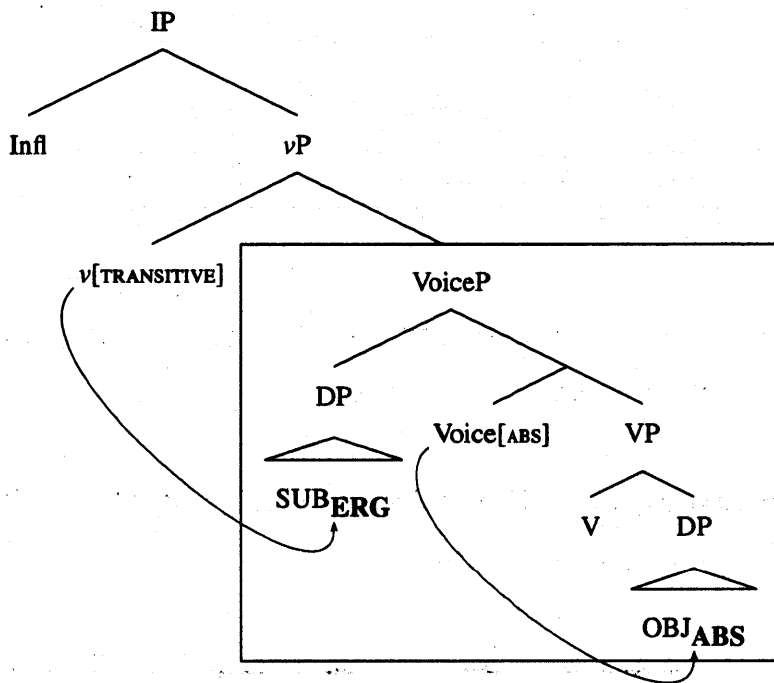
In chapter 2, I presented the Absolutive Case Parameter as shown in (14), adopting the Mayan Absolutive Parameter (Coon et al., 2011, to appear).

- (14) THE ABSOLUTIVE CASE PARAMETER

	High ABS languages	Low ABS languages
ABSTRANSITIVE	Infl <i>finite</i>	Voice
ABSINTRANSITIVE	Infl <i>finite</i>	Infl <i>finite</i>

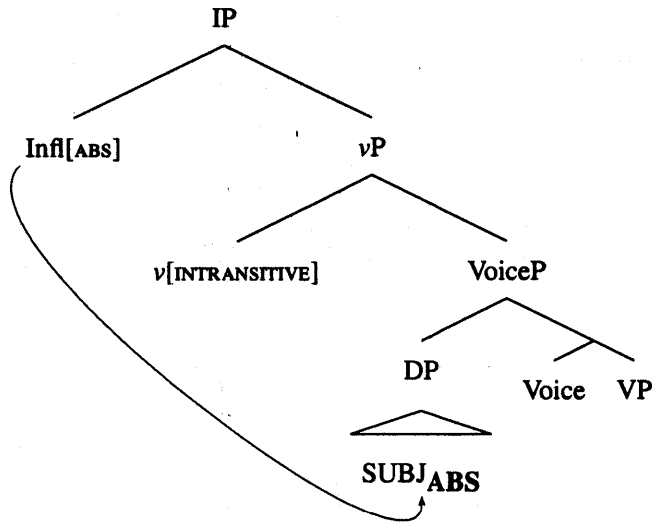
In low absolutive languages like Chol and Ixil, the locus of absolutive Case assignment is “split” into two different functional heads, depending on the transitivity of a clause. In transitive clauses such as (12), Voice assigns absolutive Case to the object. In the structure of transitive clauses as seen in (15), when transitive *v*P triggers Spell-Out, the subject is the only Case-less DP since the object receives absolutive Case from Voice. Thus the subject receives phase head ergative Case.

(15) *Transitive clauses*



On the other hand, Infl assigns absolutive Case in intransitive clauses such as (13). Since intransitive *v*P is not a (strong) phase, it does not trigger Spell-Out. Thus, ergative Case assignment does not take place, and the subject receives absolutive Case from Infl. This is shown by the structure of unergatives in (16). The derivation for unaccusatives proceeds the same way as in unergatives (see chapter 2 for discussion on unaccusatives).

(16) *Intransitive clauses (=unergatives)*



As in the case of Chol, this split absolutive assignment system in Ixil is supported by the correlation between finiteness and the presence or absence of the absolutive morpheme. In other words, we predict that the intransitive subject does not receive absolutive Case in the absence of (finite) IP: no absolutive morpheme appears. On the other hand, the transitive object should be able to receive absolutive Case even when (finite) IP is absent. Since Voice is an absolutive Case assigner in transitives, the absence of IP does not affect absolutive Case assignment.

We can employ non-finite clauses as a testing ground for these predictions. As mentioned briefly in chapter 3, Ixil displays aspect-based split ergativity and an accusative alignment pattern in non-perfective aspects such as the progressives. The non-perfective sentence consists of a biclausal structure and is formed by a non-verbal aspectual predicate (i.e., *n(i)*) and a non-finite clause that undergoes nominalization, as we observed in other Mayan languages (see chapter 3 for details).<sup>10</sup>

Let us consider the intransitive non-perfective sentence as in (17). The bracketed form is a non-finite clause. Crucially, the absolutive morpheme disappears in the intransitive non-finite clause.

<sup>10</sup>Lengyel (1978) calls sentences formed with *n(i)* the durative aspect.

- (17) n(i) [un-wat-e']  
 ASP ERG1s-sleep-NOML  
 'I am sleeping./I habitually sleep.'

(Lengyel, 1978, :81)

In contrast, the absolutive morpheme cross-referencing the transitive object is still present in non-finite clauses of transitives, as shown in (18).

- (18) n(i) [un-q'os-ax]  
 ASP ERG1s-hit-Abs2s  
 'I am hitting you.'

(Lengyel, 1978, :81)

In both cases, the ergative morpheme cross-references the subject. Adopting the analysis of Chol and Q'anjob'al developed in chapter 2, I suggest that all subjects in non-finite clauses of Ixil receive phase head ergative Case when a nominalized clause (i.e., DP) triggers Spell-Out.

The asymmetry between intransitive and transitive non-finite clauses regarding the availability of the absolutive morpheme is consistent with our claim that in low absolutive languages (finite) Infl assigns absolutive Case in intransitives, whereas Voice does so in transitives. In other words, the absolutive morpheme (and absolutive Case) is absent in intransitives once the clause lacks Infl as in non-finite clauses.

Before closing this subsection, let us comment on the nominal status of non-finite clauses in Ixil. Ayres (1981) and Mateo Pedro (2009) observe that the suffix *-e'* found in (17) marks the nominalization of a non-finite clause (cf. Lengyel 1978). The suffix occurs in clause-final position. For example, the same suffix appears on certain types of noun phrases in clause-final position as seen in (19).

- (19) un-q'ab'-e'  
 ERG1s-hand-NOML  
 'my hand'

Lengyel (1978)



Moreover, the non-finite clause which bears the ergative morpheme and the suffix *-e'* behaves as a noun phrase in that it can appear in argument position: e.g., the object position as in (20).

- (20) N un-sa' [un-b'en-e'].  
ASP ERG1s-want ERG1s-go-NOML  
'I want to go. (lit. I want my going)'

(Ayres, 1981, :141)

As shown by (21), regular nouns can appear in the same object position.

- (21) N un-sa' [u kapee].  
ASP ERG1s-want DET coffee  
'I want (the) coffee.'

(Ayres, 1981, :141)

While nominalized verbs occurring with *-e'* in (17) and (20) are intransitives, the transitive in (18) does not occur with the suffix although the verb is in clause-final position. I suggest that this is simply due to a morphophonological restriction. As seen in (22), *-e'* appears with the (monosyllabic) transitive verb. The verb in (22) has a null absolutive morpheme, whereas the one in (18) occurs with an overt absolutive morpheme. The generalization seems to be that the nominalizing suffix *-e'* is not compatible with an overt morpheme on the verb. The suffix *-e'* is thus sensitive to the phonological overtness of the absolutive morpheme.

- (22) n(i) [un-q'os-~~ø~~-e'].  
ASP ERG1s-hit-Abs3s-NOML  
'I am hitting it/him/her.'

Lengyel (1978)

To summarize, I demonstrated above that Case assignment (and particularly absolutive Case assignment) in Ixil proceeds in accordance with the Absolutive Case Parameter presented in chapter 2 and the Mayan Absolutive Parameter (Coon et al., 2011, to appear). It was shown that the split absolutive assignment system receives support from the interaction of absolutive Case with the finiteness of a clause.

### 4.3.2 The surprising ergative follows from defective intervention

Below I will argue that the ergative arises unexpectedly in intransitives with a fronted instrumental phrase because the subject cannot receive absolutive Case from Infl and is assigned ergative Case in order to avoid a violation of the Case Filter. To formulate this analysis, I will suggest that the fronted instrument triggers a defective intervention effect (Chomsky, 2000) on the intransitive subject.

#### The role of *-b'e*

Recall that there is an asymmetry between intransitives and transitives regarding the effects associated with the fronting of an instrumental phrase. To be precise, the absolutive morpheme cross-referencing the subject disappears in intransitive clauses, whereas the one cross-referencing the object remains in transitive clauses. This is shown by the examples repeated below.

#### (23) SURPRISING ERGATIVE IN INTRANSITIVE CLAUSES

- a. kat ja'-in ta'n iqvil.  
PRFV climb-ABS1s PREP rope  
'I climbed with a rope.'
- b. iqvil kat in-ja'-e-b'e.  
rope PRFV ERG1s-climb-EP-INST  
'With a rope I climbed.'

(Ayres, 1991, :159-160)

#### (24) AGREEMENT PATTERNS REMAIN UNAFFECTED IN TRANSITIVE CLAUSES

- a. n in-tzok'-ø tze' ta'n machit.  
PROG ERG1s-cut-ABS3s tree PREP machete  
'I am cutting the tree with a machete.'

- b. machit n in-tzok'-b'e-ø tze'.  
 machete PROG ERG 1s-cut-INST-Abs3s tree  
 'With a machete I am cutting the tree.'

(Ayres, 1991, :159-160)

To account for the asymmetry, I make several suggestions about the instrumental voice *-b'e*, as stated in (25).<sup>11 12</sup>

(25) THE INSTRUMENTAL VOICE *-b'e*

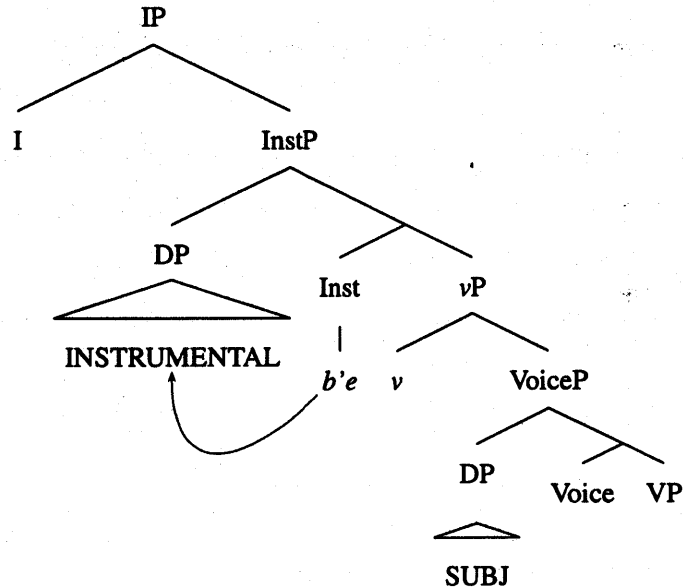
- a. INSTP, which is headed by *-b'e*, occurs between IP and *vP/VoiceP*.
- b. A fronted instrumental phrase originates in Spec-INSTP.
- c. *b'e* Case-licenses the instrumental phrase in its specifier position.

The structure of clauses in which the instrument is fronted can be illustrated as in (26).

<sup>11</sup>In Pykkänen (2008) (who builds on Baker 1988b and Marantz 1993), high applicatives appear above *vP* but below the external argument appearing in Spec-VoiceP, which dominates *vP*. High applicatives denote a relation between an event and an individual. In contrast, low applicatives occur below *vP*, and denotes a (possessor) relation between two individuals. INSTP in our analysis appears in a higher position than the external argument (or the subject) as well as *vP* and VoiceP.

<sup>12</sup>Rackowski (2002) makes a similar analysis for instrumental subjects in Tagalog. She proposes that an instrumental applied argument (which is promoted to the subject) in Tagalog originates in a high applicative position (see above) and must move from the position. When an instrument does not promote, she claims, it appears within *vP*.

(26)



I assume that when fronting does not take place, the instrument originates in the same position as in (26), but is contained within a PP.<sup>13</sup> In that position, the instrument is introduced and Case-licensed by a preposition (i.e., *ta'n*), as seen in the (a) examples of (23) and (24). In addition, the instrumental phrase does not c-command anything out of PP when it is not fronted.

I also assume that a Spec-InstP position serves as a focus position when *-b'e* licenses the instrumental phrase.<sup>14</sup> This captures the focus interpretation of a fronted instrumental (Norman, 1978). The instrumental voice construction thus does not involve actual fronting of the instrument in our analysis. I will use 'fronting' simply as a descriptive term to refer to situations in which the instrumental phrase occurs in clause-initial position.

In (26), the suffix *-b'e* Case-licenses the instrument.<sup>15</sup> This is compatible with the fact that the preposition is no longer present when the instrument is fronted as can be seen in the (b) examples of (23) and (24). The preposition does not appear since the instrument already satisfies the Case Filter. In this respect, *-b'e* can be analyzed as P-incorporation (Baker, 1988a).

<sup>13</sup>In this case, Spec-InstP may occur as a right-specifier since an instrumental phrase with a preposition follows a verb phrase.

<sup>14</sup>This is similar, but not identical with, to an IP-internal focus position (= Spec-IP) proposed by Aissen (1992) for some Mayan languages.

<sup>15</sup>I assume that *-b'e* does not appear overtly when it does not license the instrument: when the instrument is licensed by a preposition. In this sense, *-b'e* can be taken as the overt realization of Case assigned to the fronted instrument or P-incorporation (see below).

The role of *-b'e* as a Case-licenser can also be supported by the fact observed above, namely *the non-promotion* of the fronted instrumental phrase. As shown in §4.2.2, the fronted instrument never agrees with a verb. This suggests that it does not receive Case from the verb. One such example is repeated below. The fronted second person instrument does not trigger (overt) agreement on the verb.

- (27) axh la' in-paxi-b'e- $\emptyset$  u ispeeha.  
 you ASP ERG 1s-break-INST-ABS3s the glass  
 'With you, I'll break the glass; I'll use you to break the glass.'

(Ayres, 1983, :42)

Assuming that all DPs require Case (i.e., the Case Filter), this fact follows from the claim that the instrument is independently Case-licensed by *-b'e*.

Let us now discuss the justification of the structural position of INSTP: it appears between IP and  $\nu$ P. Evidence comes from the interaction of the instrumental voice with other types of voice morphology.<sup>16</sup> As shown by (28) (= the Chajul dialect), the instrumental voice can occur with the passive voice. In other words, a passive sentence can be formed from the sentence that involves instrumental fronting.

- (28) u machit kat tzok'- $\text{ox-b'e}$   $\emptyset$  u tze' (s-wa'n)  
 the machete PRFV cut-PAS-INST ABS3s the tree by-me  
 'with a machete the tree was cut (by me)'

(Ayres, 1983, :43)

What is crucial about (28) is the morphological ordering on the verb: verb (= *tzok'*) + passive voice (= *-ox*) + instrumental voice (= *-b'e*). Following the Mirror Principle (Baker, 1985) in that morpheme order should mirror syntactic structure, I suggest that the morpheme order in (28) supports the structure in (26) in the following way. The verb first merges with Voice (= passive) and subsequently with INST (= instrumental voice). The surface morpheme order can be derived via successive-cyclic head-movement of V to INST. The interaction of *-b'e* with the passive voice suggests that INSTP occurs in a higher position than the verbal

<sup>16</sup>While one might wish to test (variable) binding facts to determine the structural position of a fronted instrument relative to the subject, binding in Ixil does not seem constrained by c-command, but rather by linear order as pointed out by Ayres (1990) (see the reference for details). Thus, binding may not be a reliable diagnostic for structural relation in Ixil, though I leave detailed discussion of binding facts in the language for further research. Similar facts have been discussed for other Mayan languages (Larsen and Norman, 1979).

domain which accommodates the verb and the voice morpheme (see §4.3.3. for more discussion on this interaction). I take the position to reside in between IP and vP.<sup>17</sup>

### Defective intervention

Now that we have presented the analysis of the instrumental voice *-b'e*, we are in a position to address the unexpected emergence of the ergative in intransitives with a fronted instrumental phrase as shown in (29).

(29) SURPRISING ERGATIVE IN INTRANSITIVE CLAUSES

- a. kat ja'-in ta'n iqvil.  
PRFV climb-ABS1s PREP rope  
'I climbed with a rope.'
- b. iqvil kat in-ja'-e-b'e.  
rope PRFV ERG1s-climb-EP-INST  
'With a rope I climbed.'

(Ayres, 1991, :159-160)

Given the claim made above that the fronted instrument is Case-licensed by *-b'e*, I argue that the instrument blocks the assignment of absolutive Case to the subject in intransitives due to *defective intervention* (Chomsky, 2000) because the instrument is made inactive by *-b'e*.

As has been argued since Chomsky (2000), defective intervention is a phenomenon where Agree between a probe and its goal DP is blocked by other DP whose features are checked by some other element. The DP blocking Agree structurally intervenes between the probe and the goal DP. The defective intervention effect has been attested in some Romance languages, Icelandic, Japanese, (a certain variant of) Basque and certain types of A-movement in English (McGinnis 1998, Boeckx 1999, Hiraiwa 2001, Anagnostopoulou 2003, Holmberg and Hróarsdóttir 2003, Preminger 2009, Hartman 2011 etc.; cf. Bruening 2012). The following French examples illustrate one such example.

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<sup>17</sup>To capture the fact that a fronted instrument precedes an aspectual marker, I conjecture that the aspectual marker in (at least) Ixil functions like a free-standing clitic, and adjoins (just as a prefix) to a verbal phrase or verbal complex derived via head movement, rather than heading a dedicated functional projection (cf. Travis 2010).

FRENCH

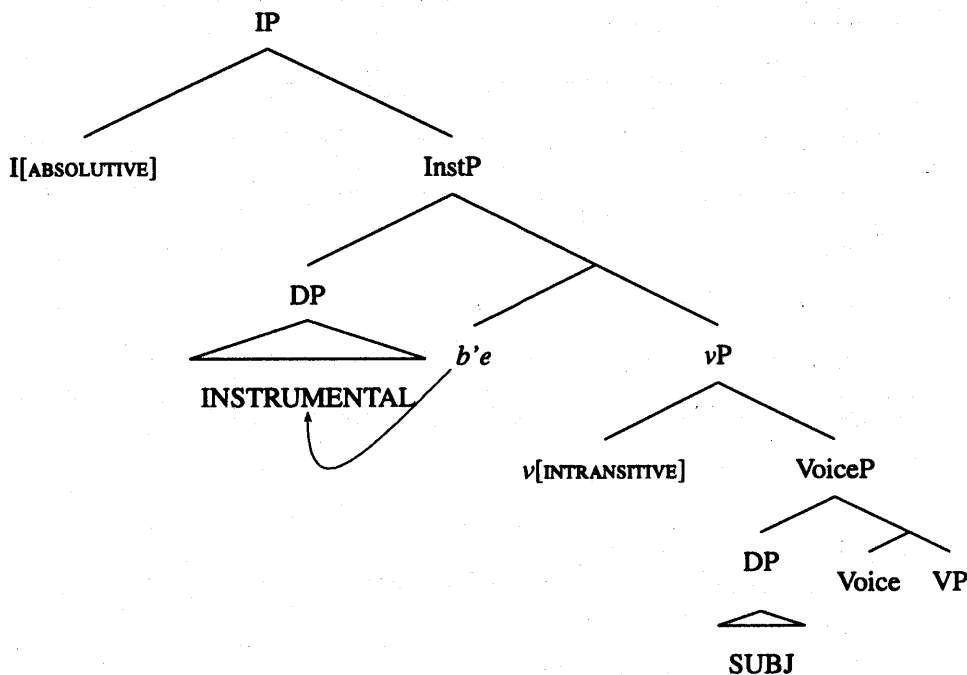
- (30) a. Jean semble avoir du talent.  
Jean seems to.have of talent  
'Jean seems to have talent.'
- b. ??Jean semble à Marie avoir du talent.  
Jean seems to Marie to.have of talent  
'Jean seems to Marie to have talent.'
- c. Il semble à Marie [que Jean a du talent].  
it seems to Marie that Jean has of talent  
'It seems to Marie that Jean has talent.'
- d. À qui est-ce que Jean semble avoir du talent?  
to whom is-it that Jean seems to.have of talent  
'To whom does Jean seem to have talent?'
- e. Jean lui semble avoir du talent.  
Jean D<sub>AT</sub>3s seems to.have of talent  
'Jean seems to him to have talent.'

(McGinnis, 1998)

The contrast between (30-a) and (30-b) suggests that the experiencer DP (= *à Marie*) whose features are checked by the preposition blocks subject raising. The ill-formedness of (30-b) has been analyzed as showing that the inactive experiencer blocks Agree between the matrix T and the subject, and its subsequent movement by triggering a defective intervention effect. If no Agree is required between the matrix T and the subject as seen in (30-c) where an expletive occupies the matrix subject position, the presence of the experiencer does not give rise to defective intervention. As shown by (30-d) and (30-e), raising of the subject can take place when the intervening experiencer is A'-moved or cliticized. As I will show below, a fronted instrument in Ixil patterns with the experiencer DP in French in that it exhibits a defective intervention effect.

Returning to Ixil, the structure in (31) illustrates the example in (29-b).

(31) *Infl fails to assign ABS to the subject*



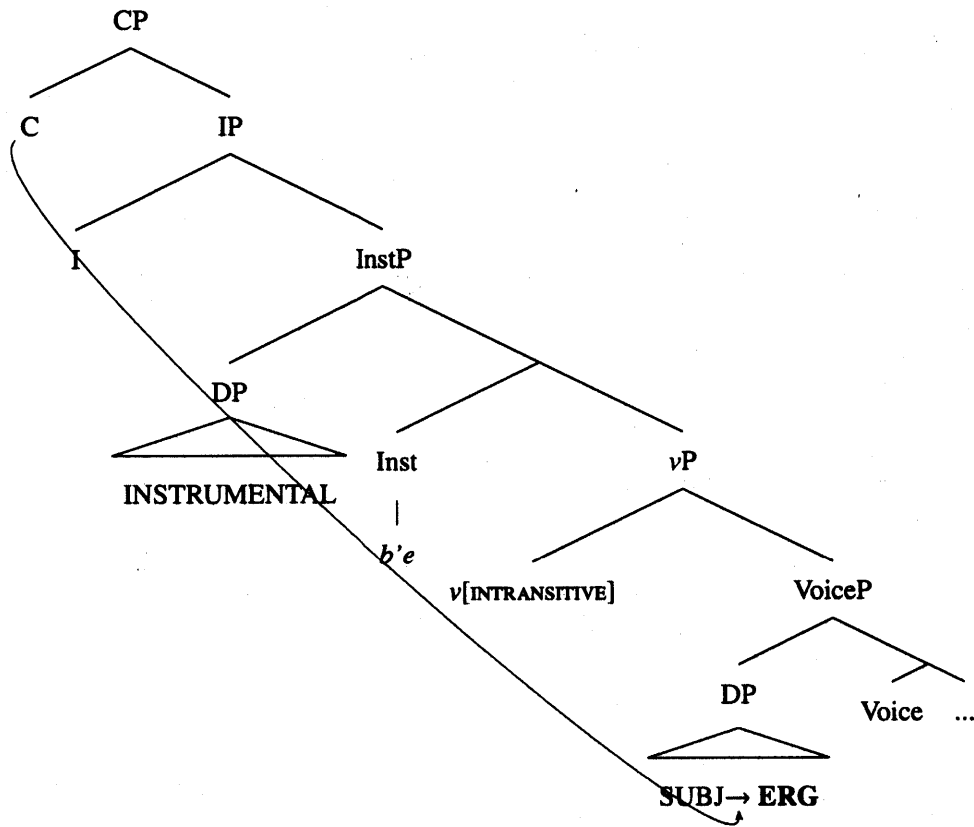
In (31), the instrumental phrase is Case-licensed by *-b'e* in Spec-InstP. When Infl is introduced, it probes its goal (i.e., the subject) to which to assign absolutive Case. However, the instrumental phrase is inactive since it is already licensed by *-b'e*, and intervenes between Infl and the subject: the instrumental phrase asymmetrically c-commands the subject. The inactive instrument thus triggers a defective intervention effect.<sup>18</sup> As a result, Infl fails to assign absolutive Case to the subject.<sup>18</sup> This is the source of the absence of the absolutive morpheme in (29-b). Such intervention effect does not occur when the instrument is not fronted since it is contained within a PP and thus does not c-command the subject, as discussed above.

Since the subject is still Case-less, it needs to receive Case. Therefore, ergative Case is employed for this purpose. When phase head C triggers Spell-Out, it assigns ergative Case to the highest Case-less DP within its Spell-Out domain, namely the subject. This is illustrated in (32).

<sup>18</sup>As mentioned in chapter 2, I do not assume the Inverse Case Filter (Bošković, 2002, etc.) – a Case-assigning head is allowed not to assign its Case.



(32)



This is an explanation of why the ergative appears in intransitives with a fronted instrumental phrase as in (29-b).<sup>19</sup>

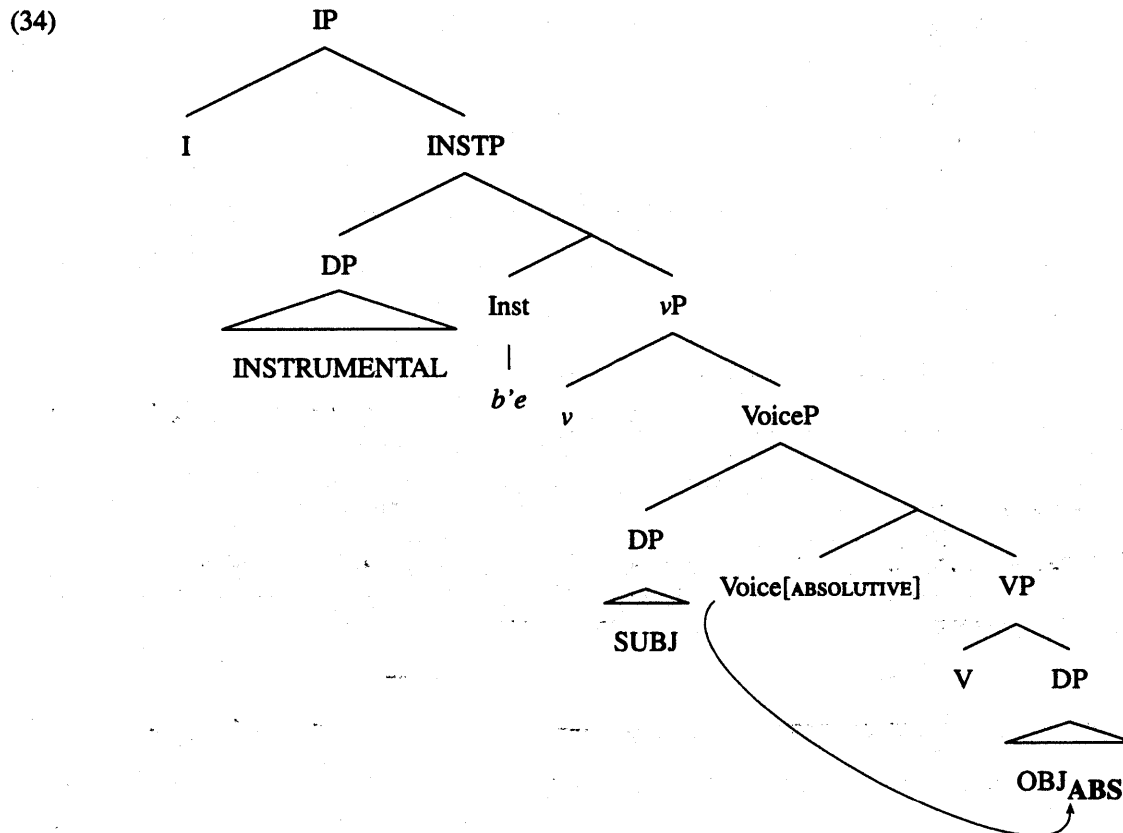
The next question is why absolutive assignment is not blocked by the fronted instrumental in transitives as seen in (33). The first person transitive object receives absolutive Case and controls the absolutive agreement in (33) even when the instrumental phrase is fronted.

- (33) uula a-k'oni-b'e in.  
 sling ERG2s-shoot-INST ABS1s  
 'With (a) sling you shot me.'

(Ayres, 1983, :42)

<sup>19</sup>I suppose that phase head C and Infl cannot host the ergative morpheme realizing ergative Case assigned by C. As a result, the morpheme adjoins to and is realized on v. I suggested in chapter 2 that Infl in Chol (= a low absolutive language) cannot host an absolutive morpheme. I assume that C and Infl of Ixil displays the same property.

I claim that the instrumental phrase is *too high* to block absolutive assignment in transitives. Recall that Voice assigns absolutive Case to the transitive object in Ixil. To the extent that INSTP appears in a higher position than  $\nu$ P, the inactive instrument does not act as an intervener for Voice, as shown in (34).



Therefore, the asymmetry between intransitives and transitives with respect to the availability of absolutive Case can be reduced to the interaction between the split absolutive system and the structural position of INSTP.

It was argued above that the fronted instrument in Ixil triggers a defective intervention effect on absolutive Case assignment in intransitives just as the dative experiencer does in raising constructions of French as shown in (30). However, defective intervention yields an ill-formed or degraded output in French, whereas it does not do so in Ixil. In the latter, the derivation still converges by resort to phase head ergative Case. I suggest that this difference can be reduced to whether a given language has a back-up strategy to rescue

the derivation. Ixil, like other ergative languages studied in this thesis, possesses a phase head ergative Case system, while French does not have such a back-up strategy.

In this respect, Ixil patterns with Icelandic. The defective intervention effect found in Icelandic results in *default* number agreement, rather than ungrammaticality. Consider the examples in (35).

ICELANDIC

- (35) a. Manninum virðast [hestarnir vera seinir].  
 the.man.DAT seem.PL the.horses.NOM be slow  
 'The man finds the horses slow.'
- b. Það virðist/\*virðast einhverjum manni [hestarnir vera seinir].  
 EXPL seem.SG/\*seem.PL some man.DAT the.horses.NOM be slow  
 'A man finds the horses slow.'

(Holmberg and Hróarsdóttir, 2003)

As shown by (35-a), the matrix verb *virðast* agrees in number with the plural nominative subject of the embedded clause, though number agreement is optional. However, once the dative experiencer DP (i.e., *einhverjum manni*) intervenes between the matrix verb and the embedded subject as in (35-b), plural agreement becomes impossible due to defective intervention. Unlike in French, the defective intervention effect in Icelandic does not render the sentence ungrammatical or degraded. Rather, it yields a grammatical sentence in which the verb appears as a *default* singular form (i.e., *virðist*). This comes close to situations observed in Ixil, where a defective intervention effect triggered by the fronted instrument gives rise to ergative Case on the intransitive subject.

### 4.3.3 On the interaction between the instrumental voice and other voices

In §4.3.2, I suggested that the structural position of INSTP is supported by the relative order of the passive voice *-ox* to the instrumental voice *-b'e*, as repeated in (36) (= the Chajul dialect).

- (36) u machit kat tzok'-ox-b'e ø u tze' (s-wa'n)  
 the machete PRFV cut-PAS-INST Abs3s the tree by-me  
 'with a machete the tree was cut (by me)'

(Ayres, 1983, :43)

In this subsection, I will suggest, on the basis of a different dialect from (36), that the underlying object in situations like those in (36) must receive absolutive Case from a different source than Infl. This will lend further support to the claim that the fronted instrument serves as an intervener for the subject/underlying object in intransitives.

While the example in (36) provides support for the structural position of INSTP, it also raises the question of how the underlying object (= *u tze'*) receives absolutive Case – the null absolutive morpheme or lack of the (overt) ergative morpheme suggests that the third person singular object receives absolutive Case. If the verb is intransitivized due to passivization, absolutive Case should come from Infl (see the Absolutive Case Parameter or the Mayan Absolutive Parameter). However, the fronted instrument blocks absolutive Case assignment in intransitives under the present analysis, as illustrated in (31). Where does absolutive Case in (36) come from?

To answer the question, we need to determine the syntactic function of the passive suffix or more generally passives in Ixil. For example, it might turn out that the underlying object in (36) receives absolutive Case from the passivized verb, not from Infl.<sup>20</sup> If this were the case, (36) would be consistent with the present analysis. However, Ixil has several passive suffixes, and their distribution seems unclear, as discussed in the appendix. This makes it difficult to illuminate the syntactic function of passive suffixes in the language. Thus it is not immediately clear whether the passivized verb in (36) maintains a Case-assigning ability.

However, consideration of another dialect, namely the Nebaj dialect, reveals intriguing properties that can be taken as suggesting that Infl is prevented from assigning absolutive Case in cases like (36) and that a different source of absolutive Case than Infl appears. As shown by the example from the Nebaj dialect in (37), a sentence parallel to (36), the suffix *-on* (and its allomorphs) is attached to the verb. The sentence in (37) is still understood as a passive as in (36). We will discuss the function of *-on* immediately below.

<sup>20</sup>This comes close to the assignment of accusative Case in passives found in several languages. For example, Lavine and Freidin (2002) argue that the underlying object in some Slavic languages such as Ukrainian receives accusative Case in passives and unaccusatives (= "accusative unaccusative" to use their term).

- (37) *u machit kat tzok'-on-b'e ø u tze' (sv-a'n)*  
 the machete PRFV cut-AP-INST ABS3s the tree ERG1s-by  
 'with a machete the tree was cut (by me)'

(p.c. Elaine Elliott and Stephen R. Elliott)

Crucially, the Nebaj counterpart of the passive suffix *-ox* (i.e., *-ax*) cannot be employed, as seen in (38). The verb formed with other passive suffixes (i.e., *-p(i)*, *-l*, *-ch*) is also ill-formed (p.c. Elaine Elliott and Stephen R. Elliott).

- (38) *\*u machit kat tzok'-ax-b'e ø u tze' (sv-a'n)*  
 the machete PRFV cut-PAS-INST ABS3s the tree ERG1s-by  
 'with a machete the tree was cut (by me)'

(p.c. Elaine Elliott and Stephen R. Elliott)

The incompatibility of the passive suffix in (38) follows if the passivized verb cannot assign absolutive Case to the underlying object *u tze'*. Since Infl cannot assign absolutive Case to the object due to the defective intervention effect triggered by the fronted instrument, absolutive Case of the object must come from a different source.

There is converging evidence that the passivized verb suffixed by *-ax* as in (38) does not assign absolutive Case. One way to show this is to investigate whether an absolutive morpheme occurs with the passivized verb in the absence of other possible Case assigners such as (finite) Infl. These potential assigners can be controlled for in non-finite clauses. If the absolutive morpheme appears with the passivized verb in a non-finite clause which lacks Infl, this may suggest that absolutive Case is assigned by the passivized verb. Otherwise, the passivized verb would not be the source of absolutive Case in (36).

Example (39) (= the Nebaj dialect) illustrates this. The modal *tx'ol* takes a non-finite clause as its complement. The bracketed form lacks an aspectual marker, and the verb bears the nominalizing suffix *-e'* (see §4.3.1). The nominalized verb is suffixed by the passive morpheme *-ax*. It is important to note that there is no absolutive morpheme within the non-finite clause – the ergative morpheme cross-references the third person (underlying) object (= 'it') inside the non-finite clause.

- (39) la un-tx'ol [i-b'an-ax-e'].  
 ASP ERG1s-can ERG3-do-PAS-NOML  
 'I can do it.'

(Ayres, 1983, :23 *slightly modified*)

The fact that the absolutive morpheme does not occur with a passivized verb embedded in the non-finite clause strongly suggests that the passivized verb does not assign absolutive Case at least in the Nebaj dialect. With this, furthermore, the minimal-pair of (37) and (38) supports our claim that Infl cannot assign absolutive Case in instrumental voice constructions. If it could, (38) would be expected to be grammatical because Infl could be the source of absolutive Case. The remaining candidate for absolutive Case in (37) is the suffix *-on*, which we will discuss below.

#### Antipassive voice *-on*

In the discussion that follows, I will focus on the syntactic function of the suffix *-on* in (37). I will propose that the suffix assigns absolutive Case to the underlying object in (37).

The suffix *-on* found in (37) is the antipassive voice (Smith-Stark, 1978; Ayres, 1983). The antipassive voice *-on* in Ixil has two functions. First, the suffix appears in canonical antipassive sentences. Consider the examples in (40) and (41). Example (40) is a normal transitive sentence with two agreement morphemes. The verb occurring with *-on* in (41) can be analyzed as an antipassive form since the direct object is demoted to an oblique argument (which is introduced by a relational noun). The demoted object is often omitted (Ayres, 1983). The verb loses its ergative morpheme. The second-person subject is now cross-referenced by the absolutive morpheme (i.e., *axh*), suggesting that the verb is intransitized.

- (40) kat a-q'os in.  
 PRFV ERG2s-hit ABS1s  
 'You hit me.'

- (41) kat q'os-on axh (s wi').  
 PRFV hit-AP ABS2s on ERG1s  
 'You hit (me).'

(Ayres, 1983, :27)

This use of *-on* is called *the absolutive voice* (Smith-Stark, 1978; Ayres, 1983).

The second function of *-on* is that it marks a verb when the transitive subject is questioned, focused or relativized etc. (Smith-Stark, 1978; Ayres, 1983). This is called *transitive subject indexing* (Ayres, 1983) or *the agentive voice* (Smith-Stark, 1978). This use is generally known as *agent focus* in Mayan languages. The transitive subject is fronted to clause-initial position when it is focused or questioned, as shown in (42) and (43) (see Ayres 1983, 1991 for more details about this construction).

- (42) in kat q'os-on axh.  
I PRFV hit-AP Abs2s  
'I hit you.'

(Ayres, 1983, :27)

- (43) ab'il kat echub'u-n u lee?  
who PRFV eat-AP DET tortilla  
'Who ate the tortilla?'

(Ayres, 1983, :32)

The verbs in (42) and (43) bear the suffix *-(o)n*. As in the antipassive in (41), they lack the ergative morpheme. Unlike in (41), however, the direct object is not demoted to an oblique argument (e.g., *u lee* in (43)). The absolutive morpheme in (42) cross-references the object just as in transitives. I take the presence of object as a defining character of transitive subject indexing in opposition to antipassives. In terms of agreement morphemes, the verbs in (42) and (43) appear to be intransitive as they bear only a single agreement morpheme. (The example in (43) arguably contains a null absolutive morpheme but it is not clear whether it cross-references the subject or object since both of them are third-person.) In what follows, I will simply use the terminology *antipassive voice* to refer to the suffix *-on* found in both of the functions.

Despite the surface impression that verbal forms suffixed by *-on* in both functions are intransitive, there is evidence that verbs in antipassives (= the absolutive voice) are intransitive, whereas the ones in transitive subject indexing are transitive. A certain morphological characteristic of Ixil supports this distinction. Ixil has phrase-final status suffixes indicating the (in)transitivity of a verb. Intransitive verbs are suffixed by *-i* as in (44), while monosyllabic transitive verbs employ *-a* as shown in (45).

(44) kat opoon-i.  
PRFV arrive-ITV  
'He/she/it/they arrived.'

(45) kat a-q'os-a ø.  
PRFV ERG2s-hit-TV ABS3s  
'You hit him/her/it/them.'

(Ayres, 1983, :28)

For non-monosyllabic transitive verbs or transitives which bear a derivational suffix, no phrasal suffix is used as seen in (46).

(46) kat w-echb'u ø.  
PRFV ERG1s-eat ABS3s  
'I ate it.'

(Ayres, 1983, :28)

Crucially, the verbal form with *-on* in the antipassive as in (47) occurs with the intransitive status suffix.

(47) kat q'os-on-i ø.  
PRFV hit-AP-ITV ABS3s  
'He/she/it/they hit.'

(Ayres, 1983, :29)

In contrast, the verb formed with *-on* in transitive subject indexing as in (48) does not bear any status suffix, patterning with the transitive verb in (46). The verb *q'os* does not bear the transitive status suffix *-a* as in (45) presumably because the verb is treated on a par with derived transitives due to the suffixation by *-on* – transitive verbs with a derivational suffix do not bear a status suffix as mentioned above. What is crucial is that the verb form in transitive subject indexing *is not* suffixed by the intransitive status suffix *-i* unlike its near-minimal pair in (47).



- (48) in kat q'os-**on** ø.  
 I PRFV hit-AP ABS3s  
 'I hit it/her/him/them.'

(Ayres, 1983, :29)

The contrast between (47) and (48) can be taken as suggesting that the antipassive voice *-on* intransitivizes verbs in antipassives, whereas it maintains the transitivity of verbs in transitive subject indexing to a certain degree despite the fact that the verb only carries an absolutive morpheme. Thus, I propose that the verb in transitive subject indexing retains its Case-assigning ability – recall that Voice is an absolutive Case assigner in transitives of Ixil. This is consistent with the fact that the object in transitive subject indexing is not demoted to an oblique argument unlike in antipassives, but remains as a full-fledged object as in transitive sentences (e.g., (43)).

With this background, let us return to (37), repeated below as (49). I suggest that the verbal form be analyzed as transitive subject indexing as in (42), (43) and (48) because the object is not demoted unlike in antipassives. In other words, the verb in (49) remains transitive in spite of the passive interpretation.

- (49) u machit kat tzok'-**on-b'e** ø u tze' (sv-a'n)  
 the machete PRFV cut-AP-INST ABS3s the tree ERG1s-by  
 'with a machete the tree was cut (by me)'

(p.c. Elaine Elliott and Stephen R. Elliott)

Given that a verbal form suffixed by *-on* in transitive subject indexing remains transitive as shown in (48), it can be argued that the verb (or Voice) in (49) assigns absolutive Case to the underlying object *u tze'* just as in transitives.

Importantly, resistance to the passive suffix in the Nebaj dialect in (49) lends further support to the present analysis that absolutive Case from Infl is blocked by the fronted instrument in situations like (49) due to the defective intervention. The use of *-on*, instead of a passive suffix, in (49) is to keep the sentence transitive with the antipassive voice *-on* so that the (underlying) object can receive absolutive Case from a source other than Infl, namely Voice. Therefore, the example in (49) is consistent with our view of the fronted instrument as a defective intervener.

Before closing the section, let us address a potential counterargument, that is, why ergative Case is not assigned to the object in (49) for the purpose of the Case Filter. One might claim that if absolutive Case assignment fails in (49), ergative Case should be assigned just as in intransitives with a fronted instrument as repeated in (50).

- (50) iqvil kat in-ja'-e-b'e.  
 rope PRFV ERG1s-climb-EP-INST  
 'With a rope I climbed.'

(Ayres, 1991, :159-160)

However, the present analysis of ergative Case *does not* force it to be employed whenever absolutive Case assignment fails. Our claim is that the ergative may be used to license a Case-less DP. Thus, it does not preclude another strategy to rescue a Case-less DP: e.g., the use of the antipassive suffix *-on* in (49). In cases like those in (50), in contrast, there is no alternative way to rescue the subject – for example, there is no counterpart of *-on* which would assign Case to the subject. As a result, ergative Case is assigned to the intransitive subject.

To summarize, I showed above that the cooccurrence of the antipassive voice *-on* with the instrumental voice *-b'e* in the Nebaj dialect further supports the present analysis that a fronted instrument blocks absolutive Case assignment from Infl due to defective intervention. It was argued that the antipassive voice *-on* must be used in passive sentences in order to maintain the transitivity of the verb by which Voice can assign absolutive Case to the (underlying) object.

#### 4.4 Conclusion

In this chapter I have investigated the instrumental voice construction in Ixil in which the fronting of the instrument triggers *-b'e* suffixation. One of the striking properties of this construction is that the ergative morpheme, not the absolutive morpheme, appears unexpectedly in intransitives and cross-references the subject. I have claimed that the emergence of the ergative in intransitives with a fronted instrument is compatible with our analysis of the ergative. To be precise, I have defended the claim that ergative Case is assigned to the intransitive subject because the subject fails to receive absolutive Case due to a defective intervention

effect triggered by the fronted instrument. If the present analysis is correct, it places Ixil on a par with familiar languages with nominative-accusative Case/agreement systems such as (a subset of) Romance languages and Icelandic in which defective intervention effects have been attested in various unrelated constructions.



# Appendix

## 4.A Passives in Ixil

Below I will show that Ixil has several passive suffixes and that their distribution is at present unclear. I will also point out that one cannot conclude that a passivized verb suffixed by *-ox* in the Chajul dialect as in (36), repeated below as (51), lacks a Case-assigning ability.

- (51) u machit kat tzok'-ox-b'e ø u tze' (s-wa'n)  
the machete PRFV cut-PAS-INST ABS3s the tree by-me  
'with a machete the tree was cut (by me)'

(Ayres, 1983, :43)

There are four or five different passive suffixes in Ixil, according to Ayres (1991): *-p*, *-Vx* (Chajul) or *-ax* (Nebaj), *-l* and *-ch*. While Ayres does not seem to distinguish them on syntactic or semantic grounds, he observes that a verb containing a single vowel can be suffixed by any of these passive morphemes. For verbs whose ending is *l*, *-ch* is used instead of *-l*. Other verbs that contain more than a single vowel are suffixed by *-l*. These general rules are illustrated below.

- (52) a. q'os 'to hit' → q'os-p, q'os-ox (Chajul), q'os-ax (Nebaj), q'os-l 'to be hit'  
b. il 'to see' → il-p, il-ix (Chajul), il-ax (Nebaj), il-ch 'to be seen'

(Ayres, 1991, :127)

(53) echub'u 'to eat' → echub'u-l 'to be eaten'

(Ayres, 1991, :127)

However, there are a number of verbs that do not follow the general rules described above. These verbs can only combine with certain passive suffixes, as shown by the examples from the Nebaj dialect in (54).<sup>21</sup>

(54) a. yatz' 'to kill' → yatz'-pi, yatz'-ax 'to be killed'

b. k'oj 'to give' → k'aj-pi, k'aj-ax 'to be given'

c. juj 'to crush' → juj-pi, juj-li 'to be crushed'

(p.c. Elaine Elliott and Stephen R. Elliott)

In (54-a) and (54-b), only *-pi* and *-ax*, not *-l*, can be used, whereas *-pi* and *-l*, but not *-ax*, may be suffixed to the verb in (54-c), despite the fact that the verbs in (54-b) and (54-c) end with the homorganic consonant *j*. The examples in (54) may suggest that the distribution of passive suffixes in Ixil is governed by non-phonological factors as well as phonological ones, though the exact conditions are unclear.

Since no data from the Chajul dialect is currently available to show that a verb suffixed by the same passive morpheme as in (51) (= *-ox*) does not assign absolutive Case (e.g., a passivized verb with *-ox* in non-finite clauses as shown by the Nebaj dialect in §4.3.3), this may leave open the possibility that different passive suffixes in the language display different syntactic and/or semantic behaviors. For example, the passive suffix *-ox* (= the Chajul dialect) in (51) could assign absolutive Case unlike its Nebaj counterpart (*-ax*) (see §4.3.3 for discussion). However, detailed discussion of the syntactic/semantic properties of the passive suffixes must await further research.

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<sup>21</sup>*-pi* and *li* are used if they are out of context with no following words (p.c. Elaine Elliott).

## Chapter 5

# Conclusion

### 5.1 Conclusion

In this thesis, I have argued that ergative, commonly considered as marked Case, may be assigned to an otherwise Case-less DP as a last-resort strategy in certain languages. In this sense, ergative Case appears to be a default. At the same time, I have proposed that ergative Case may be assigned by *any* phase head if there is a Case-less DP within its Spell-Out domain (= *phase head Case*) – it is not just a default. This gives rise to the impression that assignment of ergative Case is a default, though it is in fact structurally determined. I have defended the model of phase head Case assignment as shown in (1).

(1) PHASE HEAD CASE (= ERGATIVE CASE) ASSIGNMENT

Ergative Case may be assigned by a phase head to *the highest* Case-less DP within the Spell-Out domain of a phase when it triggers Spell-Out.

Under this view, ergative Case can be aligned with grammatical relations more flexibly than in previous approaches. There is thus no a priori reason to posit a correlation between ergative Case and grammatical relations. Ergative may look like an ‘alignment’ because in the majority of sentences the subject in a transitive sentence is aligned with ergative Case. By investigating Mayan languages, I have shown that the appearances are deceiving, and that if we look carefully at the full range of instances in which ergative is found, a different generalization emerges. I have demonstrated that what is called ergative (or genitive, its

homophonous Case) may constitute phase head Case in these languages. Below I summarize the major claims of the thesis.

### 5.1.1 Summary of Major Claims

#### Default ergative

In chapter 2, I demonstrated how the phase head ergative Case analysis in (1) can capture (in)transitive clauses as well as other related constructions such as passives of high vs. low absolutive languages in Mayan. Adopting *the Mayan Absolutive Parameter* (Coon et al., 2011, to appear), I showed that Mayan languages display *split absolutive assignment*. I also explored the consequence of this analysis in other domains of Mayan grammars. In particular, I proposed to unify set A markers (= ergative and genitive) under the rubric of phase head Case. For this purpose, I discussed possessive constructions and relational nouns that occur with or without prepositions, and suggested that the genitive found in these constructions should be analyzed as phase head ergative Case in the same way as the ergative in transitive clauses.

#### Parameterizing split ergativity in Mayan

Chapter 3 addressed the variation of the alignment between grammatical relations and ergative/absolutive Case found in the nominative-accusative side of Mayan split ergativity: the ergative can be aligned either with the subject or with the object in non-perfective clauses. In particular, I investigated the contrastive alignment patterns between Kaqchikel and Chol/Q'anjob'al, summarized as *the alignment puzzle* below.

#### THE ALIGNMENT PUZZLE IN THE NOM-ACC PATTERNS OF MAYAN

(2)

KAQCHIKEL-TYPE		
	S	O
Intransitive	ABS	-
Transitive	ABS	ERG



## (3) CHOL/Q'ANJOB'AL-TYPE

	S	O
Intransitive	ERG	-
Transitive	ERG	ABS

This contrast is a puzzle, given that these languages have been shown to have a (nearly) identical biclausal structure for non-perfective sentences: a non-verbal aspectual predicate takes a nominalized clause as its complement.

I have argued that this flexible alignment of Case and especially ergative Case with a grammatical relation across languages can be explained by the phase head ergative Case analysis. For this analysis to go through, I have proposed that there is a single parametric difference between Kaqchikel and Chol/Q'anjob'al regarding an unaccusative requirement on nominalization: the requirement that a nominalized verb have an unaccusative structure. Crucially, the presence or absence of the unaccusative requirement and the type of alignment patterns are *causally connected*. This is summarized as below.

## (4) SUMMARY OF A NOM-ACC ALIGNMENT IN NON-PERFECTIVE CLAUSES

	The unaccusative requirement on nominalization	Alignment patterns
Kaqchikel	+	S/A=ABS, O=Erg
Chol/Q'anjob'al	-	S/A=ERG, O=ABS

The unaccusative requirement in Kaqchikel derives two properties. First, the external argument (or subject) is not generated inside the nominalized clause, because the nominalized verb must display an unaccusative structure. Second, the nominalized verb does not assign Case to its object because it is unaccusative (and passivized in the case of transitive verbs) as well as a high absolutive language. In the progressive of Kaqchikel, the subject is base-generated as the argument of *ajin* in the matrix clause and receives absolutive Case from the matrix Infl. Since a nominalized verb of Kaqchikel does not assign absolutive Case, the object receives ergative Case: otherwise it would be Case-less. I have pointed out that upon closer inspection, what appears to be aligned with ergative Case is derived (or thematic) subject due to passivization of nominalized

verbs. Viewed in this way, Kaqchikel comes closer to Chol and Q'anjob'al, in which all subjects are cross-referenced by the ergative morpheme in the split side.

By contrast, the unaccusative requirement on nominalization is not obligatory in Chol and Q'anjob'al. As a result, all subjects in non-perfective sentences may be generated inside the nominalized clause and receive ergative Case from phase head D (or transitive  $v$ ). Another consequence is that the transitive object receives absolutive Case from a nominalized verb because the verb may be transitive: the nominalized verb need not have an unaccusative structure.

Alongside non-perfective sentences, I have shown that embedding verbs like *chüp* 'begin' in Kaqchikel display the rare alignment: the subject of *chüp* and the transitive object alike receive ergative Case. It has been demonstrated that this alignment can be captured by the unaccusative requirement on nominalization as in progressive sentences.

Furthermore, the default view of the ergative is supported by other types of Kaqchikel nominalizations. I have analyzed them as employing other strategies such as antipassivization and (pseudo-)incorporation to satisfy the unaccusative requirement. I have demonstrated that in these instances, ergative Case cannot be assigned to the transitive object because it is independently Case-licensed. This is thus consistent with the view that ergative Case is only assigned when necessary.

Chapter 3 also demonstrated that alignment patterns in the nominative-accusative side of ergative splits in other selected Mayan languages receive either a Kaqchikel-type or a Chol/Q'anjob'al-type analysis. I suggested that alignment patterns of the split side in Mayan are determined by the presence or absence of the unaccusative requirement on nominalization. The survey of various Mayan languages thus provided further support for the causal relation between the presence or absence of the unaccusative requirement and the type of alignment found in the split side of these languages. I also provided an account of certain typological gaps in the alignment of the split side in Mayan.

#### **Default ergative outside split ergativity: Ixil**

In chapter 4, I examined the unexpected emergence of the ergative (= surprising ergative) in intransitive clauses of Ixil (Mayan). This occurs when an instrumental phrase is fronted to clause-initial position (Norman, 1978; Dayley, 1981a; Ayres, 1981, 1983, 1991; Yasugi, 2012). I showed that a fronted instru-

mental phrase blocks the assignment of absolutive Case to the intransitive subject by triggering a defective intervention effect (Chomsky, 2000). I claimed that the intransitive subject receives phase head ergative Case because it would be otherwise Case-less. This particular analysis of Ixil places it on a par with familiar languages exhibiting nominative-accusative agreement/Case systems in which defective intervention effects have been attested in various unrelated constructions.

## 5.2 Avenues for future research

### 5.2.1 Default ergative beyond Mayan

In the following sections, I will explore possible avenues in which we can expand the scope of our analysis. For this purpose, I will discuss languages outside Mayan (i.e., Chukchee, Tagalog and Kurmanji) with an eye towards the extension of the phase head ergative Case analysis to these languages.<sup>1</sup> Our focus will be on the cross-linguistically attested syncretism between ergative and oblique case (Dixon, 1979; Trask, 1979, *inter alia*). Trask (1979) notes the following universal property (or tendency) found in ergative languages.

#### (5) CASE SYNCRETISM IN ERGATIVE LANGUAGES

In case-marking languages, the ergative case is often identical with another case, most often the genitive or instrumental, sometimes the locative or dative.

(Trask, 1979, :385)

With the view that the case subject to syncretism is grouped as ergative (just as set A markers in Mayan languages), I will point out that an intriguing alternation arises in the languages to be discussed – the ergative is assigned to the transitive subject in one domain of their grammar, whereas it is assigned to the object in another. Extending our analysis to Chukchee, Tagalog and Kurmanji, I will suggest that ergative may also be assigned to an otherwise Case-less DP in these languages. This analysis will thus place them on a par with Mayan languages discussed in the previous chapters. The consequence of the analysis is that in languages in which ergative is identical with another case (i.e., oblique case) as stated in (5), the syncretism receives a

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<sup>1</sup>Since the languages I will discuss in this chapter show morphological case, I will use 'capital' and 'small' case interchangeably, assuming with (some of) the authors cited below that morphological case is the realization of abstract Case.

natural account because the syncretic case is assigned by the same mechanism, namely phase head ergative Case assignment.

The chapter is organized as follows. §5.2.2 will analyze Chukchee and particularly its antipassive constructions. In §5.2.3, we will discuss a certain type of constructions in Tagalog that have been analyzed as antipassives by one family of analyses (e.g., Aldridge 2004, 2012). §5.2.4 will introduce a default ergative analysis of Kurmanji proposed by Baker and Atlamaz (2013) and suggest that our analysis is compatible with theirs.

## 5.2.2 Chukchee

As I will show below, Chukchee, a Chukotko-Kamchatkan language spoken in North East Siberia, displays a set of properties that can be analyzed as employing the ergative as a last-resort strategy.<sup>2</sup> I will focus on the alternation between transitives and antipassives in Chukchee, and suggest that the case syncretism found in the alternation can be captured by the phase head Case analysis of the ergative.

Chukchee exhibits a prototypical ergative alignment pattern, as seen in (6) and (7).<sup>3</sup> Morphological ergativity in the language is expressed via case-marking on nominals.

### TRANSITIVE

- (6) ərgə-nan gəm ga-nmə-ygəm.  
they-ERG I.ABS PRFV.3PL-kill-1SG  
'They (had) killed me.'

(Kozinsky et al., 1988, :657)

### INTRANSITIVE

- (7) gəm təkətgəntat-gʔak.  
I.ABS 1SG.SUB-run-1SG.SUB  
'I ran.'

(Bobaljik and Branigan 2006 citing Skorik 1977)

<sup>2</sup>I am indebted to Masha Polinsky for bringing Chukchee to my attention and invaluable discussion on the language.

<sup>3</sup>In the orthography, *g* represents [ɣ]. Following Kozinsky et al. (1988), I will use *g* in the examples below.

In addition to case-marking, Chukchee displays complex agreement systems. Intransitive verbs agree with the subject, while transitive verbs agree with both the subject and the object. The verbal agreement is reflected by prefixes and suffixes. Prefixal agreement is always controlled by the subject, irrespective of whether the sentence is transitive or intransitive. On the other hand, suffixes cross-reference the subject in intransitives, whereas the object (or a combination of subject and object) controls suffixal agreement in transitives – the subject agrees with the verb twice in intransitives (see Comrie 1979, Kozinsky et al. 1988, Bobaljik and Branigan 2006 and the references cited therein for more details on the agreement system in Chukchee).

As in many other ergative languages, antipassives are productive in Chukchee. The antipassive affixes such as *-tko* and *ine-* are attached to the verb (see Kozinsky et al. 1988 for detailed discussion on the distribution of antipassive affixes). The direct object of a transitive verb is either omitted or demoted to an oblique argument in antipassives as shown by the following pairs of transitives and antipassives.<sup>4</sup> The subject in antipassives no longer bears ergative case – it is marked with absolutive case. In this respect, antipassives in Chukchee are derived intransitives as in many other languages (Comrie 1979, Kozinsky et al. 1988, Bobaljik and Branigan 2006 etc.).<sup>5</sup>

#### TRANSITIVE

- (8) *ətłəg-e keyŋ-ən penrə-nen.*  
 father-ERG bear-ABS attack-3sg:3sg/AOR  
 'The father attacked the bear.'

(Kozinsky et al., 1988, :652)

<sup>4</sup>As Kozinsky et al. (1988) notes, SVO word order seems preferable in antipassives while SOV is basic otherwise though word order in the language is rather free.

<sup>5</sup>Antipassive affixes are also employed in so-called inverse constructions where the object outranks the subject in person hierarchy: e.g., the combination of 3sg subject and 1sg object. This construction is also called *spurious antipassive* (Hale, 2002; Bobaljik and Branigan, 2006). Despite the appearance of antipassive morphemes, verbs in inverse constructions remain transitive in terms of case and verbal agreement. I abstract away from discussion of this construction (see Hale 2002 and Bobaljik and Branigan 2006).

ANTIPASSIVE

- (9) ətləg-ən penrə-tko-gʔe kayŋ-etə.  
father-ABS attack-AP-3SG/AOR bear-DAT  
'The father rushed at the bear.'

(Kozinsky et al., 1988, :652)

TRANSITIVE

- (10) ʔaaček-a kimitʔ-ən ne-nlʔetət-ən  
youth-ERG load-ABS 3p.SUBJ-carry-AOR.3s.OBJ  
'The young men carried away the/a load.'

ANTIPASSIVE

- (11) ʔaaček-ət ine-nlʔetət-gʔe-t kimitʔ-e  
youth-ABS AP-carry-AOR.3s.SUBJ-PL load-INST  
'The young men carried away the/a load.'

(Kozinsky et al., 1988, :652)

In (9) and (11), the demoted objects are marked with dative case and instrumental case, respectively. As shown by (12), the demoted object in antipassives may also bear locative case.<sup>6</sup>

- (12) ʔaacekyt ine-gynrity-rkyt qaa-k.  
youths AP-guard-PRES/II deer-Loc  
'The youths are guarding the deer.'

(Spencer, 1999)

With this background, one of the salient properties in Chukchee that concerns us is that ergative case is homophonous with instrumental or locative case except for pronouns – only pronouns have distinct ergative

<sup>6</sup>The case of demoted objects in antipassives appears to correlate with verbal and situational semantics (Kozinsky et al., 1988). They note that "the dative indicates that the object is still to be put into existence" (Kozinsky et al., 1988, :665). Locative case seems to stress the prominence of the location of the object, whereas instrumental case indicates the givenness of the object.

case. Spencer (1999, 2006) notes the following facts of case syncretism in Chukchee (see also Skorik 1977, Comrie 1979 and Kozinsky et al. 1988). For non-human nouns, ergative is syncretic with instrumental: i.e., *-(t)e/-(t)a*. The ergative for proper names and close kin is identical with locative: i.e., *-ne/-na* (SG)/*-rək* (PL).<sup>7</sup> Human common nouns are optionally homophonous with either instrumental or locative. This is shown in Table 5.1.

Table 5.1: Examples of syncretic cases in Chukchee

	non-human 'bear'	proper name Rintə	human common name friend (plural)
absolutive	kejŋə-n	Rintə-n	tumgə-t
instrumental	kejŋ-e	-	-
locative	kejŋə-k	Rintə-ne	tumgə-rək
ergative	kejŋ-e	Rintə-ne	tumgə-rək

(adapted from Spencer 2006)

Given the homophony between ergative and instrumental/locative (setting aside pronouns and dative case for now), an intriguing alternation arises between transitives and antipassives. The subject is marked with ergative/instrumental/locative case in transitives, whereas the (demoted) object is marked with that case in antipassives. The object in transitives bears absolutive case, while the subject bears absolutive case in antipassives. This alternation (henceforth *ergative alternation*) is illustrated as in (13). For the purpose of illustration, I use ERG for ergative/instrumental/locative case below.

(13) **ERGATIVE ALTERNATION IN CHUKCHEE**

- a. **SUBJ (= ERG) OBJ (= ABS) TRANSITIVES**
  
- b. **SUBJ (= ABS) OBJ (= ERG) ANTIPASSIVES**

Viewed in this way, transitives and antipassives are the mirror image of each other. Ergative alternation can be clearly seen in (10) and (11), above, repeated below. The ergative case *-a/-e* appears on the subject

<sup>7</sup>The allomorphs of ergative/instrumental/locative case are due to vowel harmony and/or stem type constraints (Kozinsky et al., 1988).

in transitives, whereas it is suffixed to the object in antipassives. The two distinct forms of ergative and absolutive are allomorphs.

#### TRANSITIVE

- (14) ?aačək-a kimit?-ən ne-nl?etət-ən  
youth-ERG load-ABS 3p.SUBJ-carry-AOR.3s.OBJ  
'The young men carried away the/a load.'

#### ANTIPASSIVE

- (15) ?aačək-ət ine-nl?etət-g?e-t kimit?-e  
youth-ABS AP-carry-AOR.3s.SUBJ-PL load-INST  
'The young men carried away the/a load.'

(Kozinsky et al., 1988, :652)

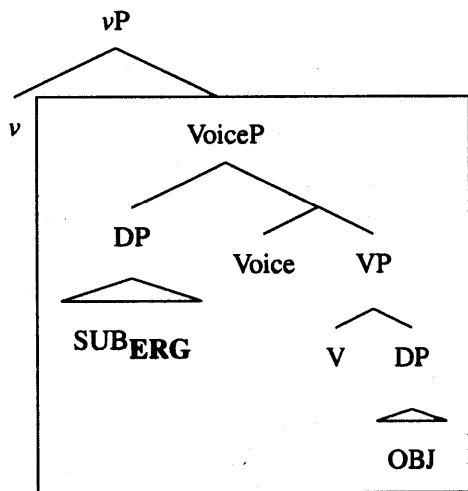
This cross-constructural ergative alternation is reminiscent of (albeit not identical with) the alignment puzzle found in Mayan languages. As discussed fully in chapter 3, the nominative-accusative side of ergative splits in Kaqchikel and Chol/Q'anjob'al displays a contrastive alignment pattern. In Kaqchikel, the (notional) direct object (= thematic subject) is cross-referenced by the ergative/genitive (= set A) morpheme, while the subject is cross-referenced by the absolutive (= set B) morpheme just as in the Chukchee antipassives. In contrast, in Chol and Q'anjob'al the subject controls the ergative morpheme, whereas the object is cross-referenced by the absolutive morpheme as in the Chukchee transitives.

I argue that the our analysis of ergative Case can capture the ergative alternation in Chukchee and particularly the homophony between ergative case and instrumental/locative case. First, I assume with Bobaljik and Branigan (2006) that absolutive Case is assigned by Infl/T in both intransitives and transitives of Chukchee – *v* does not have a Case-assigning ability, just like high absolutive languages in Mayan under our analysis. Second, I adopt the same structure of transitives and intransitives as in Mayan languages (see chapter 2). Third, I adopt the phase head Case assignment model: ergative Case may be assigned by a phase



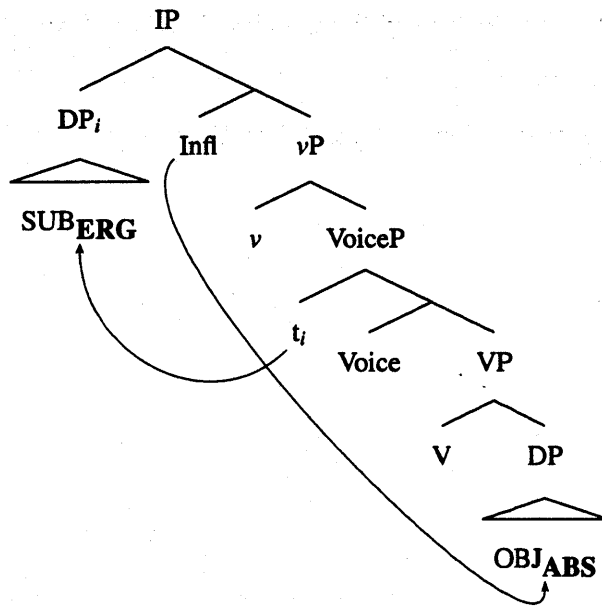
head to the highest Case-less DP within its Spell-Out domain.<sup>8</sup> Fourth, as discussed in chapter 2, the ergative subject moves to Spec-IP for an EPP-reason. As a result of this movement, Infl can assign absolutive Case to the object (on the assumption that Infl can still probe elements in the prior phase *à la* Fox and Pesetsky 2005); otherwise the subject would trigger a defective intervention effect. The derivation for transitives in Chukchee can be illustrated as in (16) and (17).

(16) *Transitive = (14): Ergative Case assignment at Spell-Out*



<sup>8</sup>Bobaljik and Branigan (2006) propose that both ergative and absolutive Case are assigned by a single head (= T). I abstract away from the discussion of how agreement prefixes/suffixes are derived. See Bobaljik and Branigan (2006) for relevant discussion.

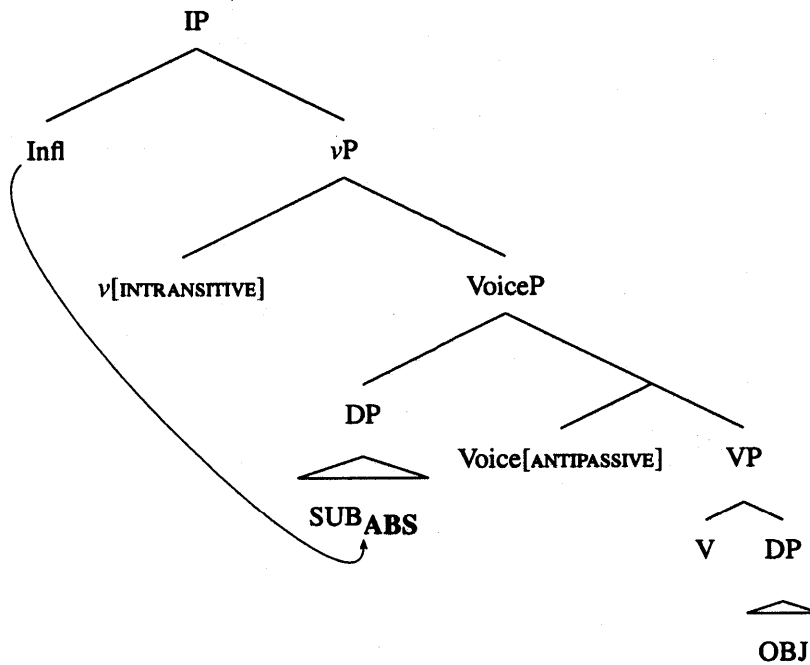
(17) *Transitive = (14): The movement of the subject feeds absolutive Case assignment*



Turning to antipassives as in (15), I suggest that antipassive affixes intransitivize (transitive) verbs (see also Comrie 1979, Kozinsky et al. 1988, Polinsky 2011 cf. Bobaljik and Branigan 2006).<sup>9</sup> The consequence of this is that antipassive *v*P's are presumably never a (strong) phase. This gives rise to the ergative alternation in Chukchee. As shown in (18), no ergative Case assignment takes place at *v*P-level as Spell-Out is not triggered in antipassives. When Infl is introduced, it assigns its absolutive Case to the closest DP, namely the subject.

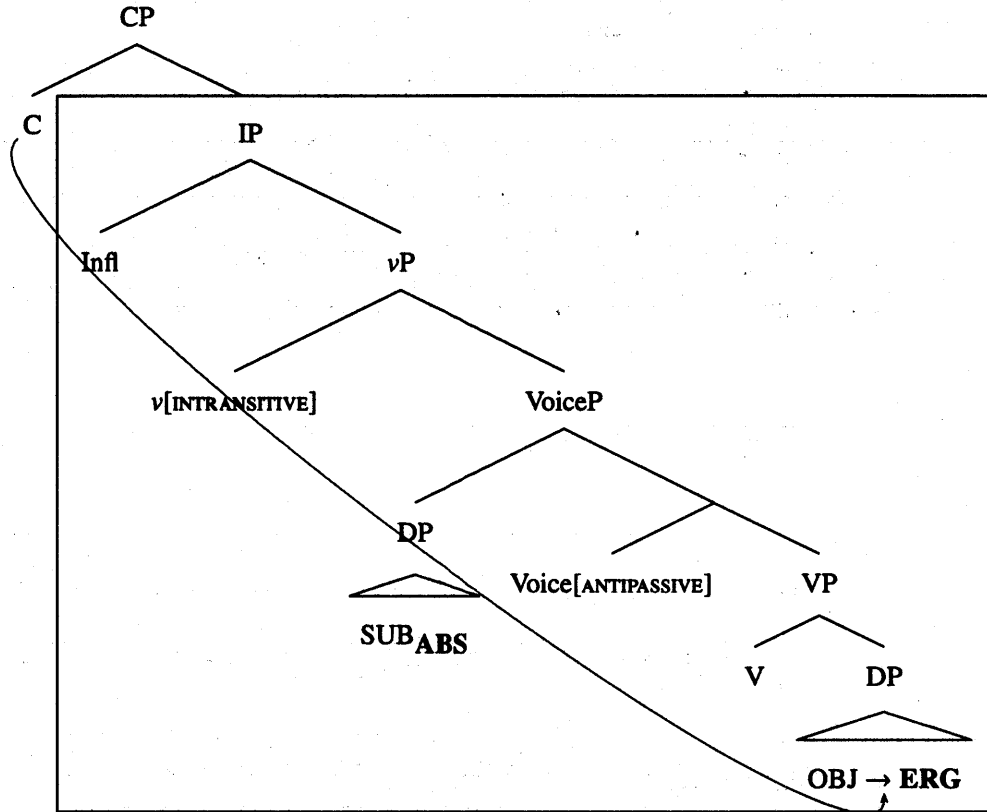
<sup>9</sup>Bobaljik and Branigan (2006) suggests that antipassive affixes in Chukchee are realized via a post-syntactic vocabulary insertion under the framework of Distributed Morphology (Halle and Marantz, 1993) when the object remains within *v*P – they assume that objects do not move out of VP or *v*P in antipassives. Thus, the presence of antipassive affixes merely signals that the object stays within the verbal domain in their analysis: the function of antipassive affixes is not to intransitivize verbs.

(18) *Antipassive* = (15)



Crucially, the object is Case-less in (18) unlike in transitives where it receives absolutive Case from Infl. It is thus the object that receives phase head ergative Case in antipassives. When C triggers Spell-Out, it assigns ergative Case to the object, as shown in (19). This derives antipassives as in (15).

(19)



To summarize, the ergative alternation in Chukchee receives a natural account under the present analysis because the subject in transitives and the (demoted) object in antipassives form a natural class in the sense that both of them are Caseless and thus receive phase head ergative Case. Therefore, the syncretism between the ergative and the instrumental/locative is not accidental but rather expected – they are assigned by the same mechanism.

### 5.2.3 Tagalog

While there is unsettled controversy on whether Tagalog is ergative or accusative (or forms its own typological class), I will suggest below that Tagalog can be viewed as displaying the ergative alternation comparable to the one found in Chukchee. For this purpose, I will adopt an ergative view of the language (Aldridge 2004, 2012 and the references cited therein).<sup>10 11</sup>

<sup>10</sup>I thank Norvin Richards for suggesting Tagalog to the discussion of default ergative.

<sup>11</sup>See Guilfoyle et al. (1992), Kroeger (1993) and Rackowski (2002) among many others for a nominative-accusative analysis of Tagalog. Shibatani (1988) proposes that Philippine languages including Tagalog form an original typological class.

As shown by the following pairs of transitive and intransitive clauses, Tagalog exhibits an ergative alignment pattern. The transitive object and the intransitive subject bear the same case marker *ang*. In contrast, the transitive subject has the distinct case marker *ng*. Following Aldridge (2004, 2012), I gloss *ang* and *ng* as absolutive and ergative, respectively.<sup>12</sup>

- (20) a. B<in>ili      ng babae ang isda.  
 <TR.PRFV>buy ERG woman ABS fish  
 'The woman bought the fish/\*a fish.'
- b. D<um>ating      ang babae.  
 <INTR.PRFV>arrive ABS woman  
 'The woman arrived.'

(Aldridge, 2012, :192)

The morpheme *um* appearing on the verb in (20-b) is the intransitive perfective infix, while *in* in (20-a) is the transitive perfective infix (Aldridge, 2004).

With this background, consider the example in (21). In contrast to the transitive clause in (20-a), the subject in (21) carries absolutive case (i.e., *ang*), and the object has *ng* (glossed as *oblique*), the same case marker as the ergative in (20-a). In Tagalog, ergative is homophonous with oblique and genitive, but not with dative (Aldridge, 2004). Furthermore, the sentence is made intransitive, as can be seen by the intransitive infix (i.e., *um*) in (21).

- (21) B<um>ili      ang babae ng isda.  
 <INTRA.PRFV>buy ABS woman OBL fish  
 'The woman bought a fish/\*the fish.'

(Aldridge, 2012, :193)

Given the ergative alignment in (20), the alignment in (21) appears to be an unexpected pattern.

Aldridge (2004, 2012) argues that sentences like those in (21) are antipassive forms commonly found in

<sup>12</sup>*ang* and *ng* are case-markers for common nouns. *ni* (= ergative) and *si* (= absolutive) are used for proper names (Schachter and Otones, 1972; Aldridge, 2004).

ergative languages (cf. Kroeger 1993).<sup>13</sup> As often observed in ergative languages, antipassives inflect on a par with intransitives. This is in accordance with the intransitive infix in (21).

In addition, it is cross-linguistically attested that the object in antipassives tends to receive an indefinite or nonspecific interpretation (Kozinsky et al., 1988; Tsunoda, 1988, *inter alia*). As pointed out by Aldridge, this holds for antipassive forms in Tagalog. The oblique object in antipassives must be indefinite as seen in (21), whereas the absolutive object must be definite as shown above in (20-a).

Aldridge also points out that the alternation between (20-a) and (21) gives rise to different scope possibilities. As shown by (22-a), the quantified absolutive object scopes over the the ergative subject. In contrast, the oblique object in antipassives takes scope under the absolutive subject as seen in (22-b).

- (22) a. B<in>asa [ng lahat ng bata] [ang marami-ng libro].  
<Tr.PRFV>read ERG all GEN child ABS many-LK book  
'All the children read many books.'

MANY > ALL

- b. Nag-basa [ang lahat ng bata] [ng marami-ng libro].  
INTR.PRFV-read ABS all GEN child OBL many-LK book  
'All the children read many books.'

ALL > MANY

(Aldridge, 2012, :195)

Similar scope interactions have been reported in active-antipassive alternation in several ergative languages such as West Greenlandic (Bittner 1987, 1994, Basilico 2004 *inter alia*) – oblique objects in antipassives tend to receive narrow scope.

Based on these examples (among other things), Aldridge concludes that sentences like (21) can be best analyzed as antipassive forms. Under this analysis, the form in (21) follows from the ergative analysis of Tagalog. As commonly attested in active-antipassive alternation, the object bears oblique case, and the subject has absolutive case because the sentence is intransitivized.

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<sup>13</sup>Richards (2000) analyzes the alternation between (20-a) and (21) as topicalization, and proposes that topicalization in Tagalog patterns with movement to V-2 position in Icelandic, thereby suggesting that topicalization should be disassociated from case assignment.

If we analyze (21) as an antipassive form following Aldridge (2004, 2012), we can state an alternation analogous to what we found in Chukchee. Given the homophony between ergative and oblique as mentioned above, let us call both of them ergative case. Tagalog can be now shown to have ergative alternation as in (23).

(23) ERGATIVE ALTERNATION IN TAGALOG

a. SUBJ (= ERG) OBJ (= ABS) TRANSITIVES

b. SUBJ (= ABS) OBJ (= ERG) ANTIPASSIVES

As in the case of Chukchee, the ergative is aligned with either subject or object, depending on the type of clauses.

I suggest that ergative alternation in Tagalog can be captured by the phase head Case analysis of the ergative in the same way as in Chukchee. Before doing so, let us briefly outline the analysis of Tagalog proposed by Aldridge (2004, 2012). She proposes that *v* assigns absolutive Case to the object in transitives, while T assigns absolutive case to the subject in intransitives: i.e., a *v*-type ergative language to use Aldridge's term.<sup>14</sup> This analysis (together with Legate 2002, 2008) is a precursor of the Absolutive Case Parameter as proposed for Mayan languages in chapter 2 or the Mayan Absolutive Parameter (Coon et al., 2011, to appear). This split absolutive assignment system in Tagalog is supported by the correlation between finiteness and absolutive case, just as in Mayan languages (see Aldridge 2004, 2012 for details). Under this analysis, therefore, there is only a single assigner of structural Case in a clause (i.e., *v* or T) as in our analysis of Mayan languages.

Assuming Aldridge's analysis, we can predict which argument nominal is aligned with ergative Case in Tagalog. In transitive clauses, a Case-less DP is the subject since the object receives absolutive Case

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<sup>14</sup>Aldridge claims that the transitive object undergoes (covert) object shift to the outer Spec-*v*P due to an EPP feature on transitive *v*. This object shift derives the fact that the absolutive object must receive definite/presuppositional interpretation (= (20-a)), given that moving an element of VP maps it to the restrictive clause in the sense of Diesing (1992). Furthermore, since the object moves across the subject at LF, it is expected to scope over the ergative subject as observed in (22-a). In contrast, she argues that the object does not undergo object shift and stay within VP in antipassives since antipassive/intransitive *v* is assumed not to have an EPP feature. The lack of object shift captures the fact that the oblique object is interpreted as an indefinite and receives narrow scope relative to the subject by staying within VP. In this analysis, as Aldridge points out, the object in antipassives is *not demoted* to an oblique argument (e.g., adjunct), but fails to move out of VP.

from *v*. On the other hand, the subject in antipassives receives absolutive Case from T given that antipassive forms are intransitive. Thus, the object is Case-less in antipassives. Extending our analysis to Tagalog, it can be argued that the subject in transitives and the object in antipassives receive phase head ergative Case as they would be otherwise Case-less. This can capture (i) the ergative alternation in Tagalog and (ii) the homophony between ergative and oblique. Therefore, Tagalog can be viewed as displaying phase head ergative Case in parallel with Mayan languages and Chukchee.<sup>15</sup>

Let us discuss another advantage of the present analysis.<sup>16</sup> As mentioned above, ergative is homophonous with genitive as well as oblique in Tagalog. As seen in (24), genitive is expressed by *ng* (= common nouns) or *ni* (= proper names).

- (24) a. *libró ng babae*  
 book GEN woman  
 'the woman's book'
- b. *libró ni Maria*  
 book GEN Maria  
 'Maria's book'

(Aldridge, 2004, : 17)

The genitive/ergative marker is also found in a wide range of nominal constructions. When a noun specifies its preceding noun, it is marked with *ng*, as shown in (25) (Schachter and Otnes, 1972). Schachter and Otnes call these nominal constructions *ng phrases of specification* (Schachter and Otnes, 1972, : 148).

- (25) a. *buwan ng Agosto*  
 month ERG August  
 'month of August'

<sup>15</sup>Aldridge suggests that the transitive subject and the antipassive object receive ergative and oblique, respectively, inherently from *v* (Woolford, 1997, etc.). Our analysis of the ergative comes close to Aldridge's analysis in the sense that ergative and oblique are treated as the same category + it is inherent Case in Aldridge's analysis, whereas it is phase head Case in ours.

<sup>16</sup>I am indebted to Norvin Richards (p.c.) for insightful discussion on the relevance of the present analysis to other domains of Tagalog grammar.



b. siyudad ng Maynila  
city     ERG Manila  
'city of Manila'

c. sakit ng ulo  
illness ERG head  
'headache'

(Schachter and Otones, 1972, : 149)

In addition, the genitive/ergative is used in nominalized verbs or gerunds, as shown in (26). The arguments of the nominalized verb *pagbili* 'buying' are marked with *ng*: i.e., the subject introduced by oblique (*babae* 'woman') and the object introduced by genitive (= *isdá* 'fish').

(26) ang pagbili ng babae ng isdá  
ABS buying ERG woman ERG fish  
'the buying of the fish by the woman'

(p.c. Norvin Richards)

Likewise, other constructions in Tagalog demonstrate that *ng* spreads to the argument other than the subject. Example in (27) is an applicative construction (see Rackowski 2002 among others for detailed discussion). The verb appears in a form which promotes the indirect object (= the benefactive) to absolutive. Crucially, not only the transitive subject but the theme object are marked with *ng*.

(27) I-b<in>ili                 ng babae ng isda ang bata.  
APPL-<Tr.PRFV>buy ERG woman ERG fish ABS child  
'The woman bought the fish for the child.'

(p.c. Norvin Richards)

Moreover, the sentence with 'the recent perfective aspect' marks both the subject and the object with *ng*, as seen in (28).<sup>17</sup>

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<sup>17</sup>The recent perfective aspect expresses "actions completed just before the moment of speaking or just before some other specified time (Schachter and Otones, 1972, : 371). I thank Masha Polinsky and Norvin Richards (p.c.) for suggesting this construction to me.

- (28) Kabibili lang ng babae ng isda.  
 RECENT.PERFECTIVE.buy just ERG woman ERG fish  
 'The woman just bought the fish.'

(p.c. Norvin Richards).

These examples show that *ng* is not limited to the subject position of a transitive clause, and its distribution is widespread. This fact might be taken as a counterargument to the ergative analysis of Tagalog. In particular, it would require a special rule to explain the fact that ergative, genitive and oblique cases are all realized as *ng*.

In contrast, the distribution of *ng* and its syncretism follows if we treat all of these cases as the realization of phase head ergative Case. To be precise, I suggest that *ng* found in nominal constructions such as the ones in (24), (25) and (26) is ergative Case assigned to a Case-less DP when phase head D of a DP triggers Spell-Out, as we proposed for the genitive in Mayan. In this way, the genitive and the oblique in (24), (25) and (26) can be analyzed in parallel with the ergative in transitives and the oblique in antipassives discussed above.

Regarding "the double ergative" in (26), (27) and (28), they appear to challenge the present analysis because phase head ergative Case may be only assigned to the highest Case-less DP. To address this problem, I assume that two phase heads are introduced and each of them assigns ergative Case to a DP when they trigger Spell-Out. The plausible candidates for the phase heads involved in these examples are as follows, although I do not attempt to provide a concrete analysis of them: phase head D and the prepositional head introducing the oblique subject in (26), transitive *v* and an applicative head in (27), and transitive *v* and an aspectual head responsible for the recent perfective aspect in (28). If this line of analysis is possible, the cases of the double ergative in Tagalog can be analyzed in an analogous way to the counterparts of Mam discussed in chapter 3: the ergative spreads to the subject and the object in temporal subordinate clauses. I proposed that two phase heads (which may optionally appear overtly) introduced in the subordinate clause are responsible for two instances of ergative Case.

Therefore, the present analysis promises to provide a unified account of the syncretic cases such as ergative case and genitive/oblique case in Tagalog under the rubric of phase head ergative Case, thereby supporting the ergative view of Tagalog.

## 5.2.4 Kurmanji

Kurmanji (Kurdish), an Iranian language spoken in Southeastern Turkey, exhibits a similar type of ergative alternation to Chukchee and Tagalog, but it manifests itself in split ergativity not in active-antipassive alternation. In discussing ergative alternation in Kurmanji, Baker and Atlamaz (2013) (henceforth B&A) have recently reached the conclusion that ergative (or oblique) case in the language is best analyzed as default (morphological) case. Below I will review their analysis and show that our analysis can accommodate the default view of the ergative in Kurmanji.

Kurmanji displays aspect-based split ergativity. In present tenses, all subjects are nominative, and the direct object of a transitive verb is accusative. The verb agrees in person and number with the subject, irrespective of transitivity. This is shown by the examples in (29) - (31). The following examples of Kurmanji are drawn from B&A.<sup>18</sup>

### PRESENT TENSE

- (29) Ez di-rv-1m-e.  
I.NOM IMPF-run.PRES-1SG-PRES.COP  
'I am running.'
- (30) Ez te di-vun-1m-e.  
I.NOM you.ACC IMPF-see.PRES-1SG-PRES.COP  
'I am seeing you.'
- (31) Ti mi di-vun-ê.  
you.NOM I.ACC IMPF-see.PRES-2SG-PRES.COP  
'You are seeing me.'

In past tense clauses, in contrast, subjects of transitives are marked with ergative, whereas transitive objects and intransitive subjects are marked with nominative. The verb agrees in person and number with the transitive object, if any, otherwise it agrees with the subject: it never agrees with the ergative subject. This is seen in (32) - (34).

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<sup>18</sup>B&A focus on the dialect called Adiyaman Kurmanji.

PAST TENSE

- (32) Ez ri vi-m.  
I.NOM run.PAST-1SG  
'I ran.'
- (33) Mi ti di-yi.  
I.ERG you.NOM see.PAST-2SG  
'I saw you.'
- (34) Te ez di-m.  
you.ERG I.NOM see.PAST-1SG  
'You(sg) saw me.'

What is crucial is that ergative case as shown in (33) and (34) is homophonous with accusative case as shown in (30) and (31).<sup>19</sup> This case is traditionally called oblique in Iranian linguistics. If we treat ergative on a par with accusative (i.e., oblique) following the tradition of Iranian linguistics and call it ergative, we can state ergative alternation as shown in (35).

- (35) **ERGATIVE ALTERNATION IN KURMANJI**
- a. **SUBJ (= ERG) OBJ (= NOM) PAST TENSES**
- b. **SUBJ (= NOM) OBJ (= ERG) PRESENT TENSES**

In past tenses, transitive subjects are ergative, while transitive objects are ergative in present tenses.

To capture (i) the homophony between ergative and accusative and (ii) the ergative alternation in (35), B&A propose that ergative (or oblique) Case in Kurmanji be uniformly analyzed as default case.<sup>20</sup> While I

<sup>19</sup>Non-pronominal DPs display the same case patterns as pronouns found in the above examples.

<sup>20</sup>Another important conclusion of B&A's analysis is to support the thesis that functional heads can assign Case via Agree (or agreement) in opposition to (i) a family of analyses in which case is assigned prior to agreement and it dictates whether a head can agree with a DP (Bobaljik, 2008, etc.) and (ii) a camp of analyses in which case is assigned according to the disjunctive hierarchy

abstract away from its details, B&A's analysis can be summarized as in (36).

- (36)
- a.  $\nu$  is phase head in present clauses, but not in past clauses.
  - b. F (= Voice) agrees with the closest visible DP probing downward, if any, otherwise with Spec-VoiceP in the sense of cyclic agree (Béjar and Rezac, 2009).
  - c. F (= Voice) assigns nominative Case to the DP it agrees with.
  - d. Otherwise a DP gets oblique (= ergative and accusative) case.

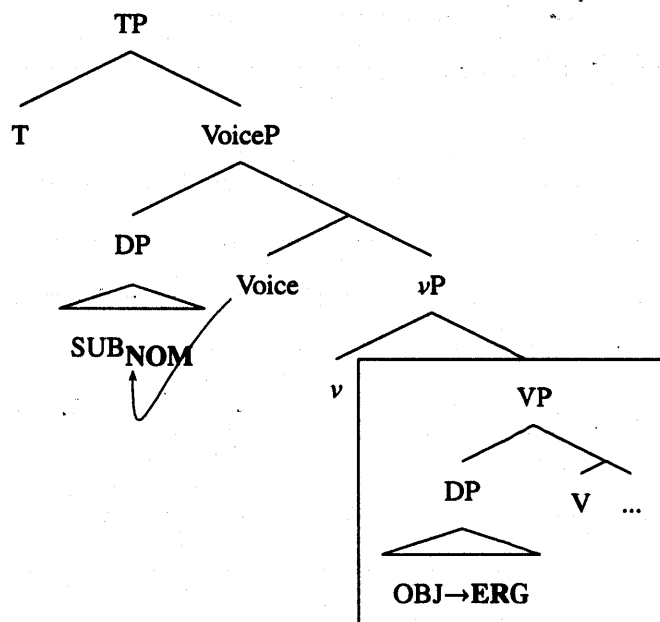
As in Chukchee and Tagalog as well as Mayan languages, there is only a single structural Case assigner (i.e., Voice) in Kurmanji. The crucial part of their analysis is that the phasal status of  $\nu$  varies, depending on tenses of clauses as stated in (36-a).

Let us start with present tense clauses. Adopting the structure for transitives as in (37), B&A argue that Voice, an assigner of nominative Case, cannot probe into VP and assign Case to the object because  $\nu$ P is a phase and VP is a Spell-Out domain in present tenses. They assume the Phase Impenetrability Condition (PIC) (Chomsky, 2001) (unlike our analysis) to ensure that no head higher than a phase head can access the complement of the phase head.

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independently of agreement (Marantz, 1991).

(37) *Present tense clauses: NOM-ERG*



Voice then agrees with the subject in its Spec position via cyclic agree. The subject receives nominative Case. Since the object is Case-less, B&A argue, it receives ergative as default case. This gives rise to a NOM-ERG pattern in present tense clauses. In intransitive clauses, Voice assigns nominative Case to the subject in Spec-VoiceP as there is no object.

While the structure in (37) departs from the one in our analysis, I suggest that our analysis can easily accommodate the default view of the ergative in Kurmanji though I will not attempt to choose one of the analyses over the other. When *v* triggers Spell-Out in (37), the highest Case-less DP within the Spell-Out domain (i.e., VP) is the object. Thus, it receives phase head ergative Case from *v*. When Voice is introduced, it assigns nominative Case upwards to the subject since it finds no active goal DP.

Turning to past tense clauses in which ergative is aligned with the transitive subject, B&A claim that *v* does not constitute a phase in past tenses. They present converging evidence for this claim. In particular, they show among other things that the past verbal stem in Kurmanji is intrinsically passive, while the present stem is not. For instance, a participle can be formed by adding the suffix *-i* to the past stem in Kurmanji. As shown in (38) and (39), this participle functions as an adjective.<sup>21</sup>

<sup>21</sup> *EZ* in the examples represents the so-called *ezafe* marker, which appears between a noun and its modifier or possessor.

- (38) beq-ê kuşt-i  
frog-Ez kill.PAST-PART  
'the killed frog (the frog is dead, passive interpretation)'

*Not:* 'the frog which killed x' (active interpretation)

- (39) merik-ê hat-i  
man-Ez come.PAST-PART  
'the come man' (i.e., the man who came' )

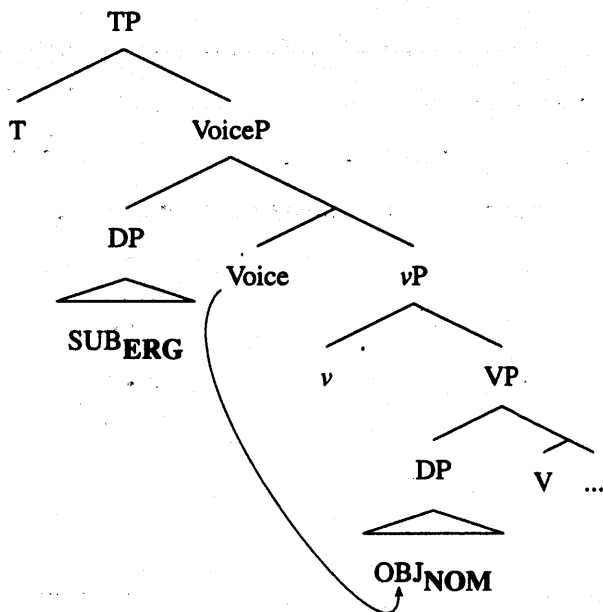
As B&A point out, the participles are *passive* forms because a modified noun must be the internal argument (= theme) of the verb as indicated by the possible interpretation of (38). This can also be seen in the participle formed out of the unaccusative in (39). The example in (40) further suggests that unergative verbs cannot form a participle.

- (40) \*merik-ê şığıl-i  
man-Ez work.PAST-PART  
'the worked man' (i.e., 'the man who worked' )

From these, they conclude that the past stem (and the participle based on it) can be analyzed just like a passive/past participle (e.g., *a murdered man*, *a fallen leaf*, *\*a worked man* in English), not like an active/present participle (e.g., *a working man* in English). There is no comparable evidence for the present verbal stem, as they point out.

To the extent that *v* in past tenses is passive, it follows that it is not a phase head or does not constitute a strong phase (Chomsky, 2001) – VP is not a Spell-Out domain. The consequence of this is that Voice can probe into VP and agree with the object as shown in (41). The object receives nominative.

(41) *Past tense clauses: ERG-NOM*



Importantly, it is the subject in past tenses that is Case-less. Therefore, B&A suggest that it receives default ergative case. This correctly yields ERG-NOM alignment in transitives. As in present tense clauses, Voice assigns nominative Case to the subject in Spec-VoiceP in intransitives.

As in the case of present tense clauses, the derivation in (41) can be translated into our analysis in the following way. Building on B&A's observation that  $\nu$ P does not constitute a (strong) phase due to passivization, it does not trigger Spell-Out. As a result of this, the object can receive nominative Case from Voice when the latter is introduced. The only assumption we need to make is that a head probes first downwards (and upwards when it finds no goal) *à la* cyclic agree (Béjar and Rezac, 2009) as in B&A's analysis. Crucially, the subject is Case-less. When C triggers Spell-Out, it assigns ergative Case to the subject. Thus, our analysis also correctly gives rise to the alignment in transitives in which the subject receives ergative, while the object receives nominative.

To summarize, by differentiating between a phasal  $\nu$ P and a non-phasal  $\nu$ P, B&A can derive the variation of case alignment in past and present tense clauses. To be precise, Voice can access and assign nominative Case to the object in past tenses because  $\nu$ P is not a phase. On the other hand, Voice cannot probe into VP in present clauses due to the phasal status of  $\nu$ P (i.e., the PIC). Voice then assigns nominative upward to the transitive subject in transitives of present tense clauses. The fact that the transitive subject in past tenses and



the transitive object in present tenses are assigned ergative receives a natural account under this analysis – both of them are Case-less and receives ergative as default case.

I have also noted that our analysis can derive the same results, adopting (part of) the analysis proposed by B&A. The component of phase theory plays a crucial role in both B&A and our analysis. It feeds/bleeds nominative assignment in a slightly different way. In present tenses, Spell-Out bleeds nominative assignment to the object due to the PIC in B&A, whereas it does so by assigning phase head ergative Case to the object before a nominative assigner (i.e., Voice) is introduced. In past tenses, on the other hand, the lack of Spell-Out allows Voice to agree with and assign nominative to the object either because there is no PIC effect under B&A's analysis or because ergative Case assignment by a phase head does not take place under our analysis.

### **5.2.5 Conclusion**

I have suggested that languages beyond Mayan such as Chukchee, Tagalog and Kurmanji can be analyzed on a par with Mayan languages in the sense that ergative may be assigned to an otherwise Case-less DP. Under our analysis of ergative Case (as well as B&A's analysis of Kurmanji), the variation of ergative alignment found in active (or transitive) - antipassive alternation (= Chukchee and Tagalog) and split ergativity (= Kurmanji) follows from the interaction between structural Case assignment and phase head Case assignment in each language – a DP which does not receive structural Case (i.e., absolutive in Chukchee and Tagalog or nominative in Kurmanji) in a clause is assigned ergative Case. The consequence of this analysis is that the case syncretism between ergative and oblique case found in these languages receives a natural account because the syncretic case is assigned by the same mechanism. If the extension of our analysis to the languages discussed in this chapter is tenable, we can lend further support to the hypothesis that phase head Case exists, and ergative is an instance of such Case – ergative in certain class of languages is not dedicated to a particular argument nominal such as the transitive subject or the agent nominal, but rather flexibly aligned with a DP which would be otherwise Case-less.



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