

Derived Ergative in Ixil

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1. Introduction

In this paper, I will argue that a subset of derived subjects (particularly the unaccusative subject) is allowed to receive ergative Case, contra the widely accepted generalization that derived subjects such as the subject of unaccusatives and passives are not marked with ergative (Marantz, 1991).¹ To illustrate this, I will investigate the interaction between Case alignment and instrumental voice constructions (hereafter IVCs) in Ixil (Mayan) (Dayley, 1981; Ayres, 1983, 1991). In particular, I will address the unexpected emergence of the ergative in a subcase of IVCs: unergatives and unaccusatives. This occurs when an instrumental phrase is fronted to clause-initial position. I will claim that the fronted instrumental phrase *feeds* the assignment of ergative Case, adopting a recent phase-based analysis of dependent ergative case (Baker, 2014, 2015). As will be shown, the ergative found in unaccusatives and unergatives as well as the regular ergative of Ixil can be analyzed as “dependent” ergative under this analysis.

2. The instrumental voice construction in Ixil

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 cf. Elliott 1961).² Like other Mayan languages, Ixil is a head-marking ergative language in the sense of Nichols (1986). 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* markers, respectively, in Mayan linguistics. Set A markers cross-reference transitive subjects and possessors: the homophony between ergative and genitive can be found across Mayan languages. Set B markers cross-reference intransitive subjects and transitive objects. Ergative/genitive morphemes have prevocalic and preconsonantal allomorphs. The absolutive agreement for third person nominals is null (= \emptyset). Like other Mayan languages, the word order of Ixil is predicate-initial in pragmatically neutral contexts, and particularly VS(O). All pronominal arguments in Mayan languages, including subjects, objects and possessors, may be pro-dropped.

The examples shown in (1) and (2) illustrate the (in)transitive sentences of Ixil.³ The absolutive morpheme follows the ergative morpheme and the verb, while the ergative morpheme always appears in preverbal (= ergative) or pronominal (= genitive) position.

- (1) a. kat **in-/un-q'**os **axh**.
PRFV ERG1s-hit ABS2s
'I hit you.'

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¹ I will use “Case” for abstract Case and “case” for morphological case.

² While Ixil has several dialects, two dialects (= the Chajul and Nebaj dialects) will be discussed in the paper. The original data come from the Nebaj dialect. The specification of the dialects will be omitted in the data unless necessary.

³ The following abbreviations will be used: ABS = absolutive agreement morpheme; ASP = non-perfective aspect; DET = determiner; EP = epenthetic vowel; ERG = ergative agreement morpheme; INST = instrumental voice suffix; NOML = nominalizing suffix; PREP = preposition; PRFV = perfective aspect; apostrophe = glottal stop (following vowels), implosive stop (following [b]) or ejectives (following other consonants).

- b. kat a-q'os in.
 PRFV ERG2s-hit ABS1s
 'You hit me.'

(Ayres, 1983:27)

- (2) kat ja' in t-a'n iqwil.
 PRFV climb ABS1s ERG3-PREP rope
 'I climbed with (the) rope.'

(Ayres, 1983:42)

Let us now turn to IVCs found in Ixil. Consider intransitive clauses, first. As shown in (3-a) (= the Chajul dialect), an instrumental phrase is normally introduced by an (inflected) preposition (= *t-a'n*): *-a'n* is a functional element called *the relational noun* in Mayan linguistics. Relational nouns inflect for their complement noun just like inflected prepositions found in languages such as Irish and Welsh.⁴ I will take these relational nouns to be inflected prepositions, following Ayres (1983, 1991). Ixil allows the fronting of an instrumental phrase, as seen in (3-b). When the instrumental phrase appears as a bare form in clause-initial position, the suffix *-b'e* called *the instrumental voice* (Dayley, 1981; Ayres, 1983, 1991) is attached to the verb (see Ayres 1983 for discussion on dialectal variation regarding the construction). Fronting triggers focus interpretation of the instrumental phrase (Norman, 1978). What is remarkable about (3-b) is that the (postverbal) absolutive morpheme disappears. The ergative morpheme appears instead in the preverbal position.

- (3) a. kat ja' in t-a'n iqvil.
 PRFV climb ABS1s ERG3-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)

As will be made clear, *-b'e* is actually not a voice suffix but rather close to an applicative suffix. (Ayres 1983 also acknowledges this and sometimes calls the suffix *an instrumental index*.) For consistency with the literature on Ixil, however, we will continue to use the name of instrumental voice constructions, but avoid using "voice" in discussing the suffix.⁵

Note that the instrumental phrase may be fronted, while retaining its preposition, as shown in (4-b) (= the Nebaj dialect).⁶ In this case, however, neither *-b'e* nor the verbal form with the ergative morpheme can be used. As (4-c) also demonstrates, the preposition cannot appear with the fronted instrumental phrase when *-b'e* is suffixed.

- (4) a. kat je' ∅ chaak t-i' ijvil.
 PRFV climb ABS3 they ERG3-PREP rope
 'They climbed with a rope.'
- b. t-i' ijvil kat je' ∅/*i-je'-e-b'e kat chaak.
 ERG3-PREP rope PRFV climb ABS3/ERG3-climb-EP-INST Loc they
 'With a rope they climbed.'

⁴ It appears that different prepositions may be used in IVCs without semantic consequences, as described in Ayres (1991). I will thus ignore the alternation among prepositions in IVCs. I also leave for future research the question of how ergative/genitive Case is assigned inside inflected prepositions (or relational nouns) in Ixil.

⁵ The applicative, locative or instrumental suffix *-b'e/be* is observed in some other Mayan languages such as Tzotzil, K'ichee', Tzutujil, and involves the promotion of an indirect, locative or instrumental argument. Many of these languages restrict suffixation by *-b'e/be* to transitive verbs, unlike in Ixil.

⁶ Ayres (1983) observes that when locative phrases appearing with a preposition and some adverbial phrases denoting notions such as time duration, manner and motive occur in clause-initial position, the element *kat* (called *a locative index*), which is homophonous with the perfective aspectual marker, appears in post-verbal position in the Nebaj dialect.

- c. (*t-i') ijvil kat i-je'-e-b'e chaak.
 ERG3-PRFV rope PRFV ERG3-climb-EP-INST they
 'With a rope they climbed.'

In what follows, “a fronted instrumental phrase” will refer to an instrumental phrase that appears clause-initially without a preposition.

While the verb in the above examples is unergative, unaccusative verbs such as *ul* ‘come/arrive’ and *ooj* ‘disappear’ exhibit the same range of properties when the instrument is fronted, as seen in (5) (see below for detailed discussion of unaccusatives).

- (5) a. kat ul in tu ch'ich'.
 PRFV come/arrive ABS1s PRFV car
 'I came/arrived by car.'
 b. ch'ich' kat v-ul-e-b'e.
 car PRFV ERG1s-come/arrive-EP-INST
 'By car I came/arrived.'

Furthermore, as shown by (6) in which the second person instrumental phrase is fronted, the verb still agrees with the first person subject, not the instrumental phrase. As we saw above, the ergative morpheme, instead of the absolutive morpheme, appears in (6).

- (6) 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)

Crucially, the example in (6) demonstrates that the IVC *does not* promote the instrumental phrase to direct object via transitivity of the verb.⁷ If the verb in (6) were transitivized, it would bear the overt absolutive morpheme cross-referenced by the second person instrument *axh*.

By contrast, the fronted instrumental phrase does not affect alignment in transitive clauses. In particular, the absolutive morpheme cross-referenced by the direct object is not replaced by the ergative morpheme, unlike in intransitive clauses, as seen in (7): the verb still carries the overt absolutive morpheme (= *in*) cross-referenced by the first person object.⁸

- (7) uula a-k'oni-b'e in.
 sling ERG2s-shoot-INST ABS1s
 'With (a) sling you shot me.'

(Ayres, 1983:42)

Example (8) clearly shows that the fronted instrumental phrase does not promote to direct object, thereby suggesting again that the IVC is not a valency-changing operation.

- (8) axh la' in-paxi-b'e ∅ u ispeeha.
 you ASP ERG1s-break-INST ABS3 DET glass
 'With you, I'll break the glass; I'll use you to break the glass.'

(Ayres, 1983:42)

In (8), the fronted second person instrument does not trigger agreement on the verb: non-third person objects would control overt absolutive agreement, whereas absolutive agreement for third person is null (= ∅). The verb still agrees with the third person object *u ispeeha* and thus bears a null morpheme.

⁷ The IVC in a subgroup of the Nebaj dialect behaves like a valency-changing operation. I leave an analysis of this group for future research.

⁸ In Ixil, tense/aspectual markers may be omitted when certain adverbs and adverbial phrases including instrumental phrases appear clause-initially (Ayres, 1981).

The contrast between transitives and intransitives thus suggests that a fronted instrumental phrase only affects alignment patterns in intransitives, but not in transitives: the absolutive morpheme in the former disappears, whereas the one in the latter does not. Let us now assume that there is a one-to-one correspondence between absolutive/ergative Case and absolutive/ergative morphemes in Ixil (see also Aissen 1992; Shklovsky 2012 etc.). I also conjecture that Case is morphologically null in Mayan. Given this, we can state the following generalization regarding IVCs in Ixil: ergative Case is assigned to the subject of unergatives and unaccusatives (see Imanishi 2014, to appear for discussion of passive subjects in IVCs). This generalization has escaped a theoretical account in the generative literature, although a fairly rich set of data have been documented. The main focus of this paper is to account for the generalization.

One might now argue that the emergence of the ergative in intransitive IVCs has to do with nominalization found in split ergativity. As in many other Mayan languages (e.g., Larsen and Norman, 1979; England, 1983a,b), Ixil displays aspect-based split ergativity. The accusative pattern arises in non-perfective aspects such as the progressive and involves nominalization of verbs like other Mayan languages (e.g., Larsen and Norman, 1979; Bricker, 1981; Mateo Pedro, 2009; Coon, 2010, 2013), whereas the ergative pattern occurs in perfective aspect. Under a nominalization analysis, the ergative in (3-b) might then be analyzed as genitive, as can be illustrated by the following literal translation: *With a rope my climbing took place*. However, IVCs are not associated with the ergative split just mentioned and hence nominalization, although they still represent an ergative split conditioned by the instrument: it occurs in perfective aspect, as clearly seen in (3-b). Moreover, if the verb in (3-b) were nominalized, one would need to explain why nominalization occurs in (3-b), but not in (3-a), despite the fact that the same perfective aspectual marker *kat* is present in both examples.⁹ Thus it seems implausible to reduce the source of the ergative in (3-b) to nominalization (and genitive) found in the accusative side of the ergative split.

The Ixil facts serve as important counterexamples to an inherent analysis of ergative Case (Aldridge, 2004, 2008; Coon, 2013; Legate, 2006, 2008, 2012; Woolford, 1997, 2006). This analysis argues that *v* assigns inherent ergative Case to the transitive subject and (sometimes) the unergative subject in split-S languages such as Basque and Georgian along with a specific θ -role in the sense of Chomsky (1986). Despite the complicating picture of the correlation between ergative Case and a type of θ -role, the consensus is that the only *v* that introduces the external argument may assign inherent ergative Case, regardless of the type of a θ -role it assigns: transitive and unergative *v* (see Legate 2012 for detailed discussion). This conclusion is consistent with the *Ergative Case Generalization* (Marantz, 1991): derived subjects such as the subject of unaccusatives and passives are not marked with ergative case. As shown above, however, not only unergative subjects but also unaccusative subjects receive ergative Case in IVCs of Ixil.

It is also important to note that Shipibo (a language of the Panoan family) presents a very similar counterargument against the inherent analysis. Baker (2014, 2015) demonstrates that the subject of unaccusatives as well as unergatives in applicative constructions of Shipibo receives ergative case. Therefore, I take the Ixil and Shipibo facts to suggest that the inherent analysis of ergative Case does not straightforwardly extend to these languages, though I remain agnostic about whether it holds for ergative in other languages.

3. Derived ergative in Ixil

3.1. A phase-based account of dependent ergative

I will argue, adopting a phase-based analysis of ergative (Baker, 2014, 2015), that ergative Case in Ixil is *dependent* Case assigned at the time of Spell-Out when a certain condition is met. This type of Case assignment stands in stark contrast to Chomsky's Case-by-agreement model in that Case assignment does not depend on the presence of a particular functional head, but on the presence of another (distinct) DP in the relevant domain.

In the model of dependent case assignment originally proposed by Marantz (1991) (see Yip et al. 1987 for its precedent), the assignment of dependent case including ergative and accusative cases

⁹ If the verb in IVCs were nominalized, the nominalizing suffix *-e'*, which only appears in clause-final position, should be attached in situations such as (3-b), contrary to fact.

depends on the presence of a distinct DP. In Marantz’s original formulation, if there are two distinct DPs in a clause (= “governed by V+I”, to use his original term) 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. 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.

More recently, the model of dependent case assignment has been updated by Baker and Vinokurova (2010) and Baker (2014, 2015) under the current theory of phase (Chomsky, 2001). In particular, Baker (2014, 2015) proposes that dependent case assignment takes place at the *interface* (= Spell-Out) between the syntax and PF, unlike Marantz’s original theory in which dependent case assignment happens in the PF component (see Baker 2015 for detailed discussion). Under Baker’s system, dependent case is assigned, based on the rules given in (9). I will use DP/NP and IP/TP interchangeably in the following discussion.

- (9) a. If NP_x c-commands NP_y at the Spell-Out of TP, value the case feature of NP_x ergative.
 b. If NP_x c-commands NP_y at the Spell-Out of TP, value the case feature of NP_y accusative.

(Baker, 2014)

In (9), the directionality of dependent case assignment found in Marantz’s original formulation is rephrased by the relative position of NPs defined in terms of c-command. Furthermore, the Spell-Out domain of the C head (i.e., TP/IP) is relevant to the assignment of ergative case and accusative case. As Baker suggests, languages differ as to which of the case assignment rules apply: e.g., (9-a) holds for ergative languages, whereas (9-b) is active in accusative languages (see Baker 2015 for an exhaustive discussion of dependent case assignment rules that hold for various case alignment patterns).

To address the unexpected emergence of the ergative in Ixil as well as its prototypical ergative alignment pattern, I assume that the rule in (9-a) holds for Ixil. It is important to note that Baker’s theory of dependent case assignment is designed to cover morphological case rather than abstract Case in the sense of Vergnaud (1976/2006) and Chomsky (1981). As should be clear by now, however, Ixil does not show morphological case on nominals. The present analysis can be thus taken as an attempt to expand the rules of dependent case assignment developed for languages with morphological case to head-marking languages characterized by ‘rich agreement’ such as Ixil. If this succeeds, we can conclude that ergative and absolutive agreement morphemes in Ixil may be perceived as a reflex of ergative and absolutive case. I will continue to use capital-C “Case” for Ixil, and assume the correspondence between abstract “Case” and morphological “case”. (Note, though, that morphological case does not always coincide with abstract Case, as discussed by Legate 2008 and Baker 2015.)

I adopt the following assumptions made by Baker (2014, 2015) (most of which are familiar notions of phase theory).¹⁰

- (10) a. C and *v* are phase heads.
 b. Their complements (IP, VP) are Spell-Out domains.
 c. Spell-Out involves mapping relevant c-command relations onto linear order statements, *case assignments*, and so on.
 d. CP is always a “hard phase”: its complement is invisible for later operations.
 e. *v*P may be a “hard phase” or a “soft phase”. If it is soft, the contents of its complement do remain visible in the next stage of derivation, but only new c-command relationships are considered at later Spell-Outs.

(Baker, 2014:355)

With the rule of dependent ergative case assignment at hand, let us consider the derivation of simple transitive sentences in Ixil. I adopt the structure as in (11) for transitive clauses: the subject is generated in Spec-VoiceP (see also Bruening 2013).

¹⁰ See Baker (2014, 2015) for relevant discussion on the difference between hard/soft phases and strong/weak *v*P phases (Chomsky, 2001).

- (11) [_{CP} [_{IP} SUBJ **ERG** Infl [_{VoiceP} ~~SUBJ~~ Voice [_{VP} V OBJ]]]]]

I also assume that Infl, which hosts an aspectual marker, bears an EPP feature: the EPP feature requires that the structurally closest element of *any* category (except a verbal maximal projection (e.g., VoiceP/VP) and any projection that dominates it) move to Spec-IP (see also Holmberg 2000 and Landau 2007 among others).¹¹ In normal transitive and intransitive clauses, the subject DP is the closest element and thus moves to Spec-IP to satisfy the EPP feature.

I assume that VoiceP in our analysis corresponds to *vP* in Baker's system and is a soft phase. The transitive subject moves to Spec-IP for EPP reasons and *c*-commands the object. Since VoiceP is a soft phase, the object in the VP domain remains visible for the next stage of derivation. When C is introduced, its complement (= IP) undergoes Spell-Out. According to the rule of ergative assignment in (9-a), the subject receives ergative Case at the Spell-Out of IP, as illustrated in (11).¹² Furthermore, I suggest, building on Baker (2014, 2015), that the object gets unmarked absolutive Case when C triggers Spell-Out of its complement, since it has not been assigned lexical/oblique or dependent Case (see also Marantz 1991 and Levin and Preminger 2015).

By contrast, ergative Case assignment does not take place in simple intransitive sentences since there is only one nominal. I assume, following Hale and Keyser (1993), that unergative subjects are generated in the same position as transitive subjects (i.e., Spec-VoiceP in our analysis). Regarding unaccusative subjects, I suppose that they are generated as a complement to V. The intransitive subject moves to Spec-IP for EPP reasons as in transitive sentences, and receives unmarked absolutive Case since it would be otherwise Case-less.

3.2. *Dependent ergative in IVCs*

In what follows, I will demonstrate that the generalization about IVCs in Ixil can receive a natural account from the rule of dependent ergative assignment introduced in the preceding section. In particular, I will show that the unexpected emergence of the ergative in IVCs can be analyzed as "dependent" ergative under the present analysis.

Recall that in IVCs, the suffix *-b'e* is attached to the verb. To account for IVCs, I make several suggestions about *-b'e*.¹³ First, InstP, which is headed by *-b'e*, occurs between IP and VoiceP. Second, the instrumental phrase is contained by a PP, which appears in Spec-InstP — the instrumental phrase is Case-licensed by the P. Third, the PP is headed by a null P, which is licensed by being in a local relationship with *-b'e*. The structure of intransitive IVCs can be schematized as in (12) (= unaccusatives). I refer the reader to Imanishi (2014) for supporting evidence for the proposed structure.

- (12) [_{IP} Infl_[EPP] [_{InstP} [_{PP} instrument] Inst [_{VoiceP} Voice [_{VP} V SUBJ]]]]]

Regarding the null-headed PP containing the instrument, I build on the proposals about applicatives of Amharic (Baker, 2012) and Shipibo (Baker, 2014): the applied argument in these languages is argued to be contained by a PP whose head is null. The null-headedness of the PP containing the fronted instrument in Ixil receives empirical support from the fact observed earlier: the overt preposition *cannot* appear in IVCs, as shown in (4-c).

Following Baker (2012, 2014), the special property of the null-headed PP is that it cannot move to Spec-IP to satisfy the EPP feature due to a ban on null heads (Landau, 2007). Landau (2007) argues, based on crosslinguistic evidence, that the head of an element satisfying the EPP feature must be phonetically realized. Baker (2012, 2014) also suggests that the complement DP cannot move out of the null-headed PP (see also Polinsky 2016 for a similar idea and its application to syntactic ergativity). In addition, I suppose that *-b'e* appears if and only if it licenses the null P.

We are now in a position to explain why ergative Case, not absolutive Case, is assigned to the intransitive subject in IVCs. When Infl is introduced, the EPP feature on Infl must be satisfied. A candidate that would satisfy it is the PP containing the instrumental phrase, according to the structure

¹¹ Since Ixil does not have an expletive, it excludes the option of satisfying the EPP feature by external merge.

¹² I abstract away from discussion on how to derive the surface word order of grammatical arguments due to space limitation (see Imanishi 2014 for relevant discussion).

¹³ InstP in our analysis comes close to high applicatives (Pylkkänen, 2008), but is not identical to it.

in (12). However, it cannot move to Spec-IP due to its null head (Landau, 2007), as discussed above. Applying the logic of Baker (2014) for Shipibo to Ixil, I suggest that the subject moves past the instrumental phrase to Spec-IP, where it satisfies the EPP feature, as illustrated in (13) (= unaccusatives).¹⁴

(13) [IP SUBJ_i Infl_[EPP] [InstP [PP instrument] Inst [VoiceP Voice [VP V t_i]]]]

Crucially, this movement creates a *new* c-command relationship. The theme subject c-commands the instrumental DP inside the PP in (13). Since this configuration satisfies the condition for dependent ergative C/case assignment introduced in §3.1, the subject, a c-commander, receives ergative Case when C is introduced and triggers Spell-Out of its complement. The instrumental phrase thus *feeds* the assignment of ergative Case. I conjecture that after the calculation of dependent ergative assignment is completed, the PP containing the instrument moves to Spec-CP to check a [+focus] feature, assuming that the left-peripheral position serves as focus position: this captures focus interpretation of the instrument (Norman, 1978) and its sentence-initial position. This seems a necessary assumption to capture case-marking phenomena in languages with varieties of A-bar movement such as scrambling and focus/topic movement, as also mentioned by Baker (2014). While (13) is the structure of unaccusatives, the same explanation extends to unergatives: the subject moves from Spec-VoiceP in unergatives.

As for the instrumental phrase appearing clause-initially with the overt preposition as in (4-b), I suggest that the instrument appears in the same position as in (13), but the difference is that the instrument is contained and Case-licensed by the *overt* preposition. Crucially, the PP containing the instrumental phrase in (4-b) serves as the closest goal that can satisfy the EPP feature on Infl since it is not null-headed, in contrast to IVCs, and thus moves to Spec-IP. In (4-b), therefore, the subject does not move past the instrumental phrase, and hence is not assigned ergative Case: the *underapplication* of dependent ergative assignment. This captures the ungrammaticality of the ergative form in (4-b). The PP further moves to Spec-CP, just as in IVCs.

As for transitive IVCs, the same alignment pattern as in regular transitives are derived. The transitive subject moves to Spec-IP to check an EPP feature and receives dependent ergative Case at the Spell-Out of the IP since it c-commands the instrumental phrase as well as the direct object. The object then receives unmarked absolutive Case.

4. Conclusion

In this article, I have argued that the apparently unexpected emergence of the ergative in unaccusative and unergative IVCs of Ixil can receive a natural account from a phase-based theory of dependent ergative assignment developed by Baker (2014, 2015). The present analysis calls for reconsideration of part of Marantz's generalization: it has been demonstrated that unaccusative subjects are allowed to receive ergative Case, contra the generalization.

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¹⁴ This movement arguably does not violate a locality condition such as the Minimal Link Condition (Chomsky, 1995) once we assume that the null-headed PP does not count as a closer EPP-satisfier than the subject due to its null head, whereas the overtly-headed PP does (see below for discussion).

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