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Nominalization and Predicate-Fronting: Two Sources of Ergativity

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1 Introduction

Our goal in this paper is to provide a unified account of ergativity in two languages where the conditions under which we find ergativity initially appear to be very different: Chol (Mayan, Mexico) and Mëbengokre (Gê, Brazil). In the process, we hope to provide insights into systems of ergativity and accusativity more generally, as well as to make testable typological predictions.

Both Chol and Mëbengokre display what appear to be aspect-based ergative splits. However, while in Mëbengokre ergativity is found in verb stems which are formally nominal, ergativity in Chol is found in what can be shown to be truly verbal verb stems. This basic contrast is shown in (1) and (2).

(1) Mëbengokre perfects (stems = nominal):
   a. i-je  a-pumũn
       1-ERG 2-see.NML
       ‘I’ve seen you.’
   b. i-tẽm
       1-go.NML
       ‘I’ve gone.’

(2) Chol perfectives (stems = verbal):
   a. Tyi  k-mek’-e-yet.
       PRFV 1.ERG-hug-VRBL-2.ABS
       ‘I hugged you.’
   b. Tyi majl-i-yoñ.
       PRFV go-VRBL-1.ABS
       ‘I went.’

Previous authors have proposed that ergativity in a variety of languages may arise as the result of nominalization: Salanova (2007b) for Mëbengokre; Alexiadou (2001) for Indo-European process nominals; Johns (1992) for Inuktitut (Inuit). In Chol, however, ergativity cannot be the result of nominalization, since we find ergativity in stems that are verbal.

In this paper we propose that despite these differences, the source of ergativity is in fact the same in both languages. Drawing on Salanova (2007b), we propose that in both cases, ergativity is the result of a separation of the predicate head (v₀ or n₀) from T₀. In Mëbengokre this separation arises from nominalization, as in (1). In Chol, the separation is the result of phrasal fronting of the predicate vP to Spec,TP deriving the VOS pattern of the language. This is illustrated in (3–4).

(3) Mëbengokre ergativity as nominalization:

(4) Chol ergativity as predicate-fronting:
The analysis presented here provides a unified account not only of ergativity in Chol and Mēbengokre, but has the potential to be extended to a number of other ergative languages. First, it offers an explanation for the correlation between ergativity and nominalization, noted above. Second, this proposal offers an explanation for the ergative patterns found in many predicate-fronting languages, including languages in the Mayan, Otomanguean, and Austronesian families. Our account brings these two bodies of work together and makes testable predictions about where we should and should not find ergativity.

2 (Split) Ergativity and Case

2.1 Ergativity

Languages vary in the ways in which they mark their core arguments (whether through case-marking on nominals, or through agreement on the predicate). Different groupings result in various possible alignment systems, of which ergative-absolutive and nominative-accusative are by far the most commonly found in the world’s languages.2

In an ergative-absolutive system, the single argument of an intransitive clause (S) patterns with the object of a transitive clause (O), as in (5). In a nominative-accusative alignment, the subject of an intransitive clause patterns with the subject of a transitive (A), as shown in (6). We will refer to NOMINATIVE and ABSOLUTIVE as obligatory cases, since they are present in all clauses in both systems.

More abstractly, we may think of these two different systems in terms of the relative structural height of arguments: an ergative-absolutive system assigns obligatory (ABSOLUTIVE) case to the lowest arguments (transitive object, intransitive subject), while a nominative-accusative system assigns obligatory (NOMINATIVE) case to the highest arguments (transitive, intransitive subjects).

The Obligatory Case Parameter (Bobaljik, 1993; Laka, 1993, 2000; Rezac, to appear) attributes this difference to whether a high head, T₀ or a lower head, v₀ is “active” for obligatory (NOM/ABS) case-assignment:

(7) Obligatory Case Parameter:
   a. T₀NOM = active → nominative-accusative system
   b. v₀ABS = active → ergative-absolutive system

As an illustration, first consider the high head T₀ probing for a DP in the structures in (8) and (9). It will pick out the subject of the transitive clause and the sole argument of the intransitive clause, assigning them both NOMINATIVE case. This is a nominative-accusative pattern.

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2Here we concentrate on morphological ergativity (case and agreement), putting aside the facts associated with syntactic ergativity.
Now consider the lower head \( \nu^0 \) probing into the transitive and intransitive clauses in (10) and (11). It will select the object of the transitive clause, and the sole argument of the intransitive clause for obligatory case assignment. This results in an *ergative-absolutive* pattern.\(^3\)

The proposal we make in this paper is that in any given construction, the setting of the Obligatory Case Parameter is not arbitrary, but is predictable based on independent facts of the language. Specifically, we propose that when \( \nu^0 \) (or \( n^0 \) in predicate nominals) and \( T^0 \) are in a local relationship, \( \nu^0 \) activates \( T^0 \) for obligatory (NOM) case assignment, and the result is a nominative-accusative pattern. When \( \nu^0 \) and \( T^0 \) are not in a local relationship, then \( \nu^0 \) is the active case assigner, and obligatory (ABS) case is assigned to the lower arguments, resulting in an ergative pattern. For now we leave as an open question the mechanism which assigns the non-obligatory (also known as dependent) cases, that is, ACCUSATIVE and ERGATIVE. As debated in recent literature, they may be assigned relationally (cf. Marantz, 1991), or inherently (cf. Woolford, 1997; Legate, 2008). We return to the definition of "local" below. Our proposal is schematized in (12).

\( \nu^0 \) is allowed to "look up." This will account for languages which assign ABSOLUTIVE to the sole argument of unergative clauses.

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\(^3\)Following Rezac (to appear), we assume that if there is no lower DP, as in the case of unergatives, \( \nu^0 \) is allowed to "look up." This will account for languages which assign ABSOLUTIVE to the sole argument of unergative clauses.
2.2 Split Ergativity

According to the typological literature, if a language has an aspect-based ergative split, it associates ergative alignment with perfective aspect (or with the perfect, if it is distinct from perfective), and accusative alignment with imperfective. Both Chol and Mēbengokre have splits that conform to this generalization. Chol’s split opposes perfectives to imperfectives: the perfective clauses in (13) show an ergative-absolutive pattern, while the stems in the imperfectives in (14) show what appears to be a nominative-accusative pattern. Here we use the theory-neutral glosses ‘A’ and ‘B,’ traditional in Mayan linguistics.

(13) Chol perfectives (ERG-ABS):
   a. Tyi k-mek’-e-yety.  
      PRFV A1-hug-VRBL-B2
      ‘I hugged you.’
   b. Tyi majl-i-yety.  
      PRFV go-VRBL-B2
      ‘You went.’

(14) Chol imperfectives (NOM-ACC):
   a. Mi k-mek’-ety.  
      IMPF A1-hug-B2
      ‘I hug you.’
   b. Mi k-majl-el.  
      IMPF A1-go-NML
      ‘I go.’

In Mēbengokre, matrix clauses with an ergative pattern receive a perfect interpretation (15) while clauses with accusative alignment (16) are interpreted as either perfective or imperfective.

(15) Mēbengokre perfects (ERG-ABS):
   a. i-je a-pumû  
      1-ERG 2-see,NML
      ‘I’ve seen you.’
   b. i-têm  
      1-go,NML
      ‘I’ve gone.’

(16) Mēbengokre perfectives (NOM-ACC):
   a. ba a-pumû  
      1,NOM 2-see,VRBL
      ‘I saw you.’
   b. ba tê  
      1,NOM go,VRBL
      ‘I went.’

However, while the Chol perfective stems that exhibit ergativity in (13) are formally verbal (discussed in §4), the Mēbengokre stems that exhibit ergativity in (15) are formally nominal. This will be shown in the following section. The challenge will then be then to explain why we find ergativity (vs. accusativity) where we do in these languages.

3 Ergativity and Nominalization: Mēbengokre

Mēbengokre is a Gê language spoken in the states of Mato Grosso and Pará, Brazil by ~10,000 people. For reasons of space, we will not discuss the exact aspectual semantics that is behind the ergative split found in Mēbengokre, introduced above. For this point, we refer the reader to Salanova (2007a). For the purpose of the present discussion, we refer to the ergative-absolutive constructions as having “perfect” aspect, while the nominative-accusative constructions have neutral aspect.

Our contention is that the verbal forms used in the perfect are nominal. Our reasons for believing this are essentially two: (a) they may head expressions that denote individuals or events, without the addition of any extra nominalizing morphology, complementizers, or relative pronouns; (b) the way in which they mark their arguments morphologically is identical to the way in which underived relational nouns do. Specifically, a first internal argument is given unmarked (absolutive) case, while an external argument is given an apparently oblique case. The latter point is exemplified in the following comparison between a nominal form of a verb, and an underived relational noun:

(17) a. kutr i-nar  
      3,ERG 1-hear,NML
      ‘The one that hears/knowns me.’
The only substantive morphological difference between these two constructions is that the external argument of nominalized verbs is normally marked with a dedicated case (ERGATIVE), while the “external argument” of underived nouns may be expressed through one of several locative postpositions. We ascribe this difference to semantic reasons (i.e., the absence of any real thematic external argument in underived nouns), rather than to any morphological peculiarity of either predicate.

The first point, about nominalized verbs heading noun phrases, is more directly relevant to our discussion. The noun phrases alluded to can be of two types: participant-denoting expressions, and event-denoting expressions. We exemplify the former type briefly in (18).

(18) ajr jadz2r ḋu 2.ERG clothes wear.NML these
    ‘the clothes that you were wearing’

This expression differs from the sentence ‘You wore (some) clothes’ simply by the verb form (nominal rather than fully verbal), and the consequent difference in case alignment. A determiner (jā in the sentence above) may be used directly to the right of the nominalized verb form. In the absence of complementizers or any other category that would subordinate a finite verb so as to render the whole expression nominal, we conclude that the verb form itself is nominal.

Turning our attention now to the event-denoting variant of such expressions, we believe that the basic semantics of the verbal forms in question is that of action nominals; this can be seen clearly in embedded contexts such as those in (19) and (20).

(19) ba 1.1k 1ar ma ḋu hear 1.NOM fowl coo.NML
    ‘I heard the bird calling.’
    (not ‘that the bird called’!)

(20) a-dʒu-jarēn mej 2-APASS-say.NML good
    ‘You spoke well.’
    (not ‘it was good that you spoke’!)

In both of these, the nominal form of the verb “names the action,” so to speak, and can’t stand for a full propositional meaning. This constitutes further evidence of their strictly nominal character.

Given this, it might seem surprising that such verbal forms should appear as the ostensible main predicate in matrix clauses. Remember from the discussion above that we described an aspectually-conditioned ergativity split in main clauses, which as we claimed, was mediated by the nominal or verbal character of the predicate. If, as we established, the words heading ergative clauses are undisputedly nominal, and do not inherently have a propositional meaning, one may ask how they manage to become main clauses.

In fact, this is a question that could be posed for any noun, whether deverbal or underived, as any noun phrase may double as a clause without additional morphology. Consider the following examples:

(21) a. ba kam mrūn
    woods in game
    i. ∃x animal(x) ∧ in(the woods)(x)
        ‘There is an animal in the woods.’
    ii. ∀x animal(x) ∧ in(the woods)(x)
        ‘the animal in the woods’

b. kubē ṭō 1k
    barbarian POSS canoe
    i. ∃x canoe(x) ∧ to(white man)(x)
        ‘The white man has a canoe.’
Let us pause for a moment to consider what is going on here: it is not the case that a particular word is ambiguous between predicating and referring. If this were the case, then nominal sentences would mean “x is game/an animal” or “x is a canoe.” Nouns, in fact, are not predicating directly in these constructions, but rather are acting as the nuclear scope of an existential construction. In other words, in nominal clauses, the main predicate is not the nominal predicate (which actually never predicates), but rather a phonologically null existential “copula.”

We propose that action nouns in main clauses are interpreted through the same mechanisms as any other noun: they become the “locatum” in an existential construction. The apparently symmetric aspectually-conditioned ergative split consists therefore of two radically different constructions, one truly verbal, represented in (c) below, and the other a nominal construction embedded under an existential element, represented in (b).

This has an effect on interpretation (no direct link between the event time and the discourse context’s topic time), which we don’t discuss for reasons of space (see Salanova, 2007a,b). What matters is that the ∃ is the highest predicate in the structure in (22b), intervening between the lexical predicate \((n + \sqrt{P})\) and \(T^0\) (not shown). In both (22a) and (22b), the core participants are case-marked in the ergative-absolutive system. Our claim is that this happens because in both of them case assignment takes place in a domain that does not include \(T^0\). That is, the predicate head, in this case \(n^0\), is not in a local relationship with \(T^0\). As per the proposal made above, the lower head \(n^0\) is then responsible for obligatory case assignment, resulting in an ergative-absolutive alignment pattern.

In the verbal construction, on the contrary, \(v^0\) and \(T^0\) are in a local relation, which results in both a particular aspectual interpretation (the event is linked directly to a contextually salient topic time), and a particular case alignment: nominative-accusative.

4 Ergativity and Predicate Fronting: Chol

4.1 Chol’s Split

Chol is a Mayan language spoken in Chiapas, Mexico by approximately 150,000 people. As in other Mayan languages, grammatical relations in Chol are marked on the predicate via a set of morphemes, traditionally labeled ‘set A’ (ERGATIVE, GENITIVE) and ‘set B’ (ABSOLUTIVE). Importantly for the proposal below, third person set B is null.

While in Mëbengokre we found an ergative pattern in the nominalized stem forms, in Chol we find the opposite: non-perfective stems are formally nominal and show an accusative pattern; perfective stems are not nominal but show an ergative pattern. This contrast, seen in (13) and (14) above, is exemplified by the intransitive forms in (23) and (24).

(23) Tyi [wiy-i]-yety.
PRFV sleep-VRBL-B2
‘You slept.’
In addition to the different person markers in (23), we find differences in stem form between perfective and imperfective constructions. In the perfective aspect, the root appears with a vowel suffix found on all eventive verbal stems, which Coon (2008) identifies with \( v_0 \). In the imperfective form, however, the root appears with the suffix \(-el\). Suffixes of the form \(-Vl\) are found on nominals throughout Chol and other Mayan languages (Warkentin and Scott, 1980; Bricker, 1981).

Indeed, imperfective stem forms like \( \text{w} \&yel \) appear in the same contexts as nominals; the perfective stems like \( \text{w} \&yi \) are impossible here, as shown by the forms in (25). Similar facts can be shown for imperfective vs. perfective transitive stems, omitted here for reasons of space (see Coon, 2008).

(25) a. In argument position:
   
   Muk‘-\( \text{i} \text{c} \text{h} \text{i}y\text{’i}k\text{’e}n\text{’}o\text{n}-\text{la} \ [\text{w} \&y\text{-el}] \ ji\text{n}\text{i} \text{tyik}\text{wal}.
   
   IMPF-\text{AFF} A3-\text{give-B}1-\text{PL} \text{sleep-NML} \text{DET} \text{heat}
   
   ‘The heat indeed makes us tired.’ (lit.: ∼ ‘The heat gives us sleep.’) *\([\text{w} \&y\text{-i}]\)

b. With prepositions:
   
   Tax majl-i tyi [\text{w} \&y\text{-el}].
   
   PRFV.already go-VRBL PREP \text{sleep-NML}
   
   ‘She went to sleep already.’ *\([\text{w} \&y\text{-i}]\)

c. Possessed:
   
   Mach we\( \text{n} \ i-[\text{w} \&y\text{-el}] \ \text{\&ne}\text{n}e\text{‘}.  
   
   NEG good A3-\text{sleep-NML} \text{baby}
   
   ‘The baby’s sleeping isn’t good.’ *\([\text{w} \&y\text{-i}]\)

d. With determiners and adjectives:
   
   Mach we\( \text{n} \ ji\text{n}\text{i} k\text{ab}i\text{l} [\text{w} \&y\text{-el}].
   
   NEG good DET a.lot \text{sleep-NML}
   
   ‘A lot of sleeping isn’t good.’ *\([\text{w} \&y\text{-i}]\)

Based on evidence like this, as well as on the fact that set A marks both ergative and genitive in Mayan languages, Coon (2008) argues that the stems in imperfective constructions are formally possessed nominals. Compare the imperfective constructions in (26) with the possessive phrase in (27):

(26) a. Mi \ i-[\text{ts}’\text{’am}-\text{el}] \ \text{\&ne}\text{n}e\text{‘}.  
   
   IMPF A3-\text{bathe-NML} \text{baby}
   
   ‘The baby bathes.’  

b. Mi \ i-[\text{wuts’} \text{pisil}] \ x’ixik.
   
   IMPF A3-\text{wash clothes CL-Woman}
   
   ‘The woman washes clothes.’

(27) \ i-[\text{chich}] \ \text{\&ne}\text{n}e\text{‘}
   
   A3-\text{sister baby}
   
   ‘the baby’s sister’

The true subjects in both imperfective constructions in (26) are null PROs which are controlled by the possessor; the possessor triggers set A agreement. Under this analysis, \text{x’ixik} ‘woman’ and \text{\&ne}\text{n}e\text{‘} ‘baby’ are not arguments of either predicate in (26). Evidence for this can be found in constructions with arbitrary PRO. Here we find no possessor, and consequently no set A agreement:

(28) Mach we\( \text{n} \ ji\text{n}\text{i} [\text{PRO}_{\text{ARB}} \text{jats’} \text{ts’i}]).
   
   NEG good DET hit dog
   
   ‘Hitting dogs isn’t good (in general).’
Recall from 2.1 that a nominative-accusative system picks out the highest arguments and treats them in the same way (i.e., assigns them NOMINATIVE case). The relationship of control also picks out the highest arguments. In Chol, the illusion of a nominative-accusative system is the result of two factors: 1. The fact that in the forms in (26) the Set A morphemes coindex grammatical possessors (ñeñe` and x`ixik) which control the true θ-marked arguments (null PROs); and 2. ERGATIVE and GENITIVE are identical in Mayan languages.

4.2 mi is a Predicate

The stem forms in the imperfective clauses are possessed nominals; yet the forms in (26) are sentences, not DPs. The true predicate in constructions like (26) is the imperfective aspect marker mi, which shows predicative properties in other environments as well (see Coon, 2008 for details). Like all other intransitives in the language, the one-place predicate mi takes a set B agreement marker. This is obscured by the fact that the agreed-with possessed nominal is always third person, and third person set B is null in Mayan languages.

The analysis of Chol’s split is summarized by the intransitive forms in (30). In both types of clause, the unaccusative wøy ‘sleep’ selects a single internal argument: in the verbal perfective this is the DP jiñi x`ixik ‘the woman,’ while in the nominal imperfective it is a null PRO. The nominal stem wøyel is possessed by jiñi x’ixik ‘woman,’ triggering set A (here GENITIVE) agreement; this possessor controls the PRO argument. The string iwøyel jiñi x`ixik is a DP argument of the one-place predicate mi. Both predicates—the perfective stem wøyi and the aspect marker mi—show set B agreement with their sole arguments. See Coon (2008) for arguments supporting this proposal.

(30) a. Perfective:
   Tyi wøy-i-Øi [DP jiñi x’ixikj].
   PRFV sleep-VRBL-B3 DET CL-woman
   ‘The woman slept.’

b. Imperfective:
   Mi-Øi [DP i- [wøy-el PROj] jiñi x’ixikj].
   IMPF-B3 A3- sleep-NML DET CL-woman
   ‘The woman sleeps.’
   (lit.: ‘The woman’s sleeping happens.’)

   The important point to take from this section is that under this analysis, all verbs in Chol show an ergative-absolutive pattern. The appearance of accusativity is an illusion, since the DP which triggers set A agreement in imperfectives is not an argument of the predicate, but a possessor. In Mèbengokre, in contrast, we find ergativity in nominal forms.

   One possibility would be to claim that ergativity in Chol and ergativity in Mèbengokre have entirely different sources. We argue instead that ergativity in Chol is also the result of a separation of the predicate head and T0, caused not by nominalization, but rather by fronting of the maximal projection containing the predicate.

4.3 Predicate Fronting

A growing body of recent research analyzes verb-initial order in some languages not as the result of head-movement of the verb, but of phrasal movement of the entire verb phrase (or remnant verb phrase). In this vein, Coon (to appear) argues that basic VOS order in Chol is the result of fronting
of the vP to Spec,TP as in (31). Evidence for this derivation of VOS in Chol is found in the placement of adverbs and PP adjuncts, as well as in restrictions on DP vs. NP objects.

(31) Chol VOS:

Recall from §2.1 that ergativity arises when the relationship between the predicate head and T⁰ is severed. While in Mëbengokre this separation is due to nominalization, in Chol we see evidence for this separation in predicate fronting. In the structure in (31), v⁰ and T⁰ are not local and thus T⁰ is not activated. The lower head v⁰ is responsible for obligatory (ABSOLUTIVE) case assignment. Further evidence for the inactivity of T⁰ in Chol comes from the fact that there is no grammatical tense marking in the language (Vázquez Álvarez, 2002).

In languages which are predicate initial as the result of phrasal predicate fronting—not V⁰-to-T⁰ like Celtic and Arabic—the predicate head and T⁰ will not be in a local relationship, so we expect to see ergativity. A number of predicate initial languages which display ergativity are found in Mayan, Otomanguean, Salish, and Austronesian language families. If this story is correct, the connection between predicate-initiality (as the result of phrasal predicate fronting) and ergativity may not be a coincidence.

5 Conclusion

In this paper we began with a look at two languages with apparently very different aspect-based ergative splits: Mëbengokre shows an ergative pattern in its nominal (perfect) forms, while Chol shows ergativity in verbal (perfective) forms. Despite these differences, we proposed that the source of ergativity is the same in both languages. Drawing on insights from the Obligatory Case Parameter, we argued that ergativity results from a disconnect between the predicate head and T⁰. In Mëbengokre (and possibly nominals which show an ergative pattern in other languages) ergativity was the result of nominalization. In Chol (and possibly other phrasal predicate-fronting languages) ergativity was the result of movement of vP to Spec,TP.

Specifically, when the predicate head and T⁰ are in a local relationship, T⁰ is active and assigns obligatory case to the first arguments in its search domain: the NOMINATIVE arguments of a nominative-accusative system. When the predicate head and T⁰ are not local, the predicate head is responsible for obligatory case assignment and it assigns ABSOLUTIVE to the first arguments in its search domain, resulting in the ergative-absolutive patterns found in Chol and Mëbengokre.

While we have independent evidence for a separation of predicate head from tense in the ergative-patterning portions of the grammar in both Mëbengokre and Chol (Salanova, 2007b; Coon, to appear), exactly what type of local relationship is required for activation of T⁰—head-movement, morphological merger, adjacency, containment within the same phase—is a topic for future research and will require more investigation into a variety of languages. Based on nominative-accusative languages like English, which do not overtly move the verb to T⁰, we know that overt head-movement is not a necessary condition for an active T⁰. In English, however, we do have morphological evidence for some type of relationship between the verb and tense. Exactly what this relationship is, we leave open for future research.
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