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Ergatives Move Too Early: On an Instance of Opacity in Syntax*

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Abstract. We examine the ban on Ā-movement of the external argument of a transitive verb that holds in many morphologically ergative languages. We argue that the prohibition against movement of the ergative subject should not be derived from restrictions on the movement of the ergative DP. Rather, we suggest that movement of the ergative argument is per se unproblematic, but if it applies, it applies too early and thereby creates problems for its absolutive co-argument, which does not receive structural case. In morphologically accusative languages, no such movement asymmetry arises because arguments move too late to trigger the fatal consequences that moving ergatives cause. We present a co-argument-based analysis that implies a strictly derivational syntax in which the order of operations plays an important role in deriving properties of the grammar. The analysis also involves an instance of syntactic opacity that (all things being equal) cannot be captured by representational means, thus lending support to a derivational approach to syntax.

1. Introduction

In many morphologically ergative languages, ergative arguments cannot undergo Ā-movement (*wh*-movement, focusing, relativization). This is an instance of the more general observation that languages exhibit extraction asymmetries—that is, that some kinds of linguistic expressions are less mobile than others. In the present paper, we suggest that movement asymmetries can arise because movement of an item α may create problems for another, sufficiently similar item β. We present a co-argument-based approach to displacement (α cannot move in the presence of β because α-movement creates problems for β-licensing) of the type that has sometimes been suggested for case assignment (α is assigned x-case in the presence of β; see Marantz 1991, Bittner & Hale 1996b, Wunderlich 1997, Stiebels 2000, McFadden 2004).

As a case study on movement asymmetries, we focus on the ban on ergative movement in morphologically ergative languages. We argue that the prohibition against movement of the ergative subject should not be deduced from restrictions on the movement of the ergative. Rather, we claim that movement of the ergative DP is per se unproblematic, but if it applies, it applies too early and thereby creates problems for the absolutive co-argument of the ergative subject (cf. Polinsky et al.'s [2012] hypothesis that ergative displacement leads to a processing problem because removal of an ergative DP from a clause makes identification of the grammatical function of the absolutive DP difficult, but not vice versa). Here, we argue that

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movement of the ergative prevents case assignment to the absolutive DP (contrasting with Aldridge 2004 and Coon et al. 2011, in which it is proposed that case movement of the absolutive creates an island for ergative extraction). No extraction asymmetry arises in morphologically accusative languages because accusative or nominative arguments move too late to trigger fatal consequences. In our account, the different timing of movement in the two types of languages is a direct consequence of the background theory that derives morphological ergativity and accusativity in the first place. This theory, along with the co-argument-based analysis of the ban on movement of ergatives proposed here, implies a derivational syntax in which the order of operations plays an important role in deriving properties of the grammar. The analysis also involves a case of syntactic opacity that cannot be accounted for by standard representational techniques (e.g., traces/copies or other abstract representational elements), thus lending support to the derivational approach to syntax pursued here.

In section 2, we introduce data from morphologically ergative languages that also show syntactic ergativity with respect to Ā-movement—that is, the ban on movement of ergative arguments of transitive predicates. We also discuss problems of previous analyses of the phenomenon. Section 3 contains the assumptions and shows how morphological ergativity/accusativity is derived. We illustrate in section 4.1 how the movement asymmetry in morphologically ergative languages arises in this system, and we show in section 4.2 why no such asymmetry results in morphologically accusative languages. Section 4.3 discusses a case of syntactic opacity arising in the analysis that is interesting in that it resists reanalysis in representational terms. In section 5, we address further predictions of the analysis. In section 6, we develop an approach to a repair strategy of the ban on ergative movement, the agent focus construction, within the system, and section 7 is the conclusion.

2. Syntactic Ergativity in Ā-Movement

2.1. Data

In morphologically ergative languages (Comrie 1988, Dixon 1994), the internal argument of a transitive verb (DP_{int}) and the sole argument of an intransitive verb are encoded by the same morphological markers: they either bear the same case marker, called absolutive case, or they trigger the same agreement markers on the verb.[1] The external argument of a transitive verb (DP_{ext}) is encoded differently from the two other arguments: it bears ergative case or is cross-referenced by a different set of agreement markers on the verb. Many morphologically ergative languages also exhibit syntactic ergativity with respect to Ā-movement: DP_{ext} of a transitive verb cannot be questioned, relativized, or focused. DP_{int} of a transitive verb and the sole argument of an intransitive verb, however, can be freely extracted. Thus, the

[1] Morphological quirks can, in principle, make syntactic nonabsolutive case look like absolutive on the surface (see Legate 2008). We know of no evidence that this is the case in the languages under discussion here and thus assume that the absolutive case involved is syntactic.

absolutive DPs cluster together, and the ergative DP behaves differently. In this subsection, we present data from various morphologically ergative languages and different types of Ā-movement that illustrate this ban on ergative movement.[2]

2.1.1. *Wh-movement*

In Mayan languages, argument DPs do not bear overt case markers, but ergative and absolutive DPs trigger different kinds of agreement: DP_{ext} triggers ergative agreement, whereas DP_{int} and the sole argument of an intransitive verb trigger absolutive agreement. Most Mayan languages are verb initial in affirmative sentences. If a DP is questioned, it is moved to the preverbal position. As the data with transitive verbs in (1) from Kaqchikel and in (3) from K'ichee' show, DP_{int} can be questioned (see the (b) examples), but *wh*-movement of DP_{ext} leads to ungrammaticality (see the (c) examples). The basic sentence without *wh*-movement is given in the (a) examples. The sole argument of an intransitive verb can also be questioned, as shown in (2) for Kaqchikel and in (4) for K'ichee'. It is thus possible to Ā-move DP_{abs} but impossible to extract DP_{erg}.[3]

(1) *Wh*-movement of DP_{erg} vs. DP_{abs} in Kaqchikel (Mayan)

a. N-Ø-u-löq' jun sik'iwuj ri a Karlos.
INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book DET CL Carlos
'Carlos buys a book.'

b. Atux n-Ø-u-löq' a Karlos?
Q INCOMPL-3SG.ABS-3SG.ERG-buy CL Carlos
'What does Carlos buy?'

c. *Achike n-Ø-u-löq' jun sik'iwuj?
Q INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book
'Who buys a book?'

(2) *Wh*-movement of DP_{abs} in Kaqchikel

[2] Not all morphologically ergative languages exhibit the ban. Explanations for this variation are proposed in section 5.2. There is also variation as to which type of Ā-movement is subject to the constraint (see Stiebels 2006 on Mayan); we leave this issue unaddressed. Many Austronesian languages show constraints on Ā-movement similar to the one under discussion. However, for some of them it is unclear whether they are ergative (see, e.g., Chung 1998:27–32, 99–111 on Chamorro; see also Aldridge 2004). We therefore confine the discussion to languages whose ergative status is undisputed. The restrictions in Austronesian also differ from the one discussed here in that adjunct extraction in these languages is also highly constrained if not impossible (cf. Keenan 1976 on Malagasy). Despite the qualification with respect to Austronesian and the variation among ergative languages in general, we take it that the ban on Ā-movement of the ergative argument in morphologically ergative languages instantiates a pattern and is not accidental. If it were, one would expect a similar ban to occur in accusative type languages, which is not the case as far as we know.

[3] Unless references are provided, the Kaqchikel and K'ichee' examples in this paper are from our informants Telma Can Pixabaj (K'ichee') and Rony Arnoldo Otzoy Chipix, Erika Edith Mux Son, and Herminia Son Bal (Kaqchikel). For abbreviations used in the glosses, see Appendix A.

a. N-Ø-tze'en a Karlos.
INCOMPL-3SG.ABS-laugh CL Carlos
'Carlos laughs.'
b. Achike (ri) n-Ø-tze'en?
Q DET INCOMPL-3SG.ABS-laugh
'Who laughs?'

(3) *Wh*-movement of DP_{erg} vs. DP_{abs} in K'ichee' (Mayan)
a. X-Ø-r-aj ri al Mari'y ri a Karlos.
COMPL-3SG.ABS-3SG.ERG-want DET CL Maria DET CL Carlos
'Carlos loved Maria.'
b. Jachin x-Ø-r-aj ri a Karlos?
who COMPL-3SG.ABS-3SG.ERG-want DET CL Carlos
'Who did Carlos love?'
c. *Jachin x-Ø-r-aj r-eech ri al Mari'y?
who COMPL-3SG.ABS-3SG.ERG-want 3SG.ERG-RN DET CL Maria
'Who loved Maria?'

(4) *Wh*-movement of DP_{abs} in K'ichee'
a. X-Ø-kam ri a Karlos.
COMPL-3SG.ABS-die DET CL Carlos
'Carlos died.'
b. Jachin x-Ø-kam-ik?
who COMPL-3SG.ABS-die-ITV
'Who died?'

The same pattern is found in the unrelated language Kanamarí (Katukinan; Queixalos 2010). In Kanamarí, the grammatical function of a DP is signaled by case markers and word order: DP_{ext} bears an overt ergative marker and immediately precedes the verb, whereas DP_{int} and the single argument of an intransitive verb bear a phonologically zero absolutive marker and follow the verb in affirmative sentences.[4] Ā-moved constituents are dislocated to the sentence-initial position. The single argument of an intransitive verb and DP_{int} of a transitive verb can be *wh*-moved (see (5a) and (5b)). The external argument of a transitive verb can, however, not be questioned (see (5c)). The antipassive has to be used in order to extract DP_{ext} (see (5d)).[5] It turns the agent DP into the sole absolutive-marked DP of an intransitive verb which can then be extracted.

[4] In the glosses, the ergative marker *na(h)* seems to be a verbal agreement marker. But according to Queixalos (2010: 237, n. 3), this morpheme is a case marker that phonologically cliticizes to the following phonological word.

[5] Alongside the antipassive, there is another construction that enables extraction of the ergative, which shows up in many Mayan languages and is called the *agent focus* in the Mayanist literature. This construction is discussed in section 6; see Coon et al. 2011 (and references therein) on the difference between agent focus and antipassive.

(5) *Wh*-movement in Kanamarí (Katukinan; Queixalos 2010)
   a. Hanian tu Nodia nah=hoho-nin?
      who(m) Q Nodia ERG=call-DUR
      'Whom is Nodia calling?'
   b. Hanian tu waokdyi-nin?
      who(m) Q arrive.here-DUR
      'Who is arriving here?'
   c. *Hanian tan na=dyuman tahi yu?
      who here ERG-spread water Q
      'Who spread water here?'
   d. Hanian tan wa-dyuman tahi yu?
      who here AP-spread water Q
      'Who spread water here?'

2.1.2. *Focus movement*

If a DP is focused in Mayan, it is also moved to the preverbal position. The data from K'ichee' in (6) and from Mam in (8), respectively, show the same ergative pattern as we saw with *wh*-movement: DP_{int} of a transitive verb can be extracted (see the (b) examples), but focusing of DP_{ext} leads to ungrammaticality (see the (c) examples). Focusing of the single argument of an intransitive verb is grammatical, see (7) and (9).

(6) Focus movement of DP_{erg} vs. DP_{abs} in K'ichee'
   a. K-Ø-u-loq' jun wuuj ri a Karlos.
      INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book DET CL Carlos
      'Carlos buys a book.'
   b. Are ri jun wuuj k-Ø-u-loq' ri a Karlos.
      FOC DET INDEF book INCOMPL-3SG.ABS-3SG.ERG-buy DET CL Carlos
      'It is a book which Carlos buys.'
   c. *Are ri a Karlos k-Ø-u-loq' ri jun wuuj.
      FOC DET CL Carlos INCOMPL-3SG.ABS-3SG.ERG-buy DET INDEF book
      'It is Carlos who buys a book.'

(7) Focus movement of DP_{abs} in K'ichee'
   a. Ka-Ø-tze'n-ik ri a Karlos.
      INCOMPL-3SG.ABS-laugh-ITV DET CL Carlos
      'Carlos laughs.'
   b. Are ri a Karlos ka-Ø-tze'n-ik.
      FOC DET CL Carlos INCOMPL-3SG.ABS-laugh-ITV
      'It is Carlos who laughs.'

(8) Focus movement of DP_{erg} vs. DP_{abs} in Mam (England 1989)
  a. Ma chi kub' t-tzyu-?n xiinaq qa-cheej.
     ASP 3PL.ABS DIR 3SG.ERG-grab-DIR man PL-horse
     'The man grabbed the horses.'
  b. Qa-cheej xhi kub' t-tzyu-?n xiinaq.
     PL-horse DEP.3PL.ABS DIR 3SG.ERG-grab-DIR man
     'It was the horses that the man grabbed.'
  c. *Xiinaq chi kub' t-tzyu-?n qa-cheej.
     man 3PL.ABS DIR 3SG.ERG-grab-DIR PL-horse
     'It was the man who grabbed the horses.'

(9) Focus movement of DP_{abs} in Mam (England 1989)
  a. Ma tz-uul xiinaq.
     ASP 3SG.ABS-arrive.here man
     'The man arrived here.'
  b. Xiinaq s-uul.
     man DEP.ASP.3SG.ABS-arrive.here
     'It was the man who arrived here.'

The same pattern is found in Kanamarí: DP_{abs} can be focused (see 10a,b), but DP_{erg} cannot be focused; antipassive is needed to extract the transitive agent (see 10c,d).

(10) Focus movement in Kanamarí (Queixalos 2010)
  a. Maranmaran na=tyo kana tona tyo.
     Maranmaran GEN=daughter FOC go.away EXCLAM
     'It's Maranmaran's daughter that went away.'
  b. A-obatyawa kana Aro na=nuhuk kariwa.
     3SG-wife FOC Aro ERG=give white.man.LOC
     'It's his own wife that Aro gave to the white man.'
  c. *Itiyan kawahiri kana na=duni tyon.
     this cat FOC ERG=catch rat
     'It's this cat that caught the rat.'
  d. Itiyan kawahiri kana wa-duni tyon.
     this cat FOC AP-catch rat
     'It's this cat that caught the rat.'

2.1.3. *Relativization*

In Jakaltek (Mayan), relativization exhibits a syntactically ergative pattern: it is possible to relativize DP_{int} of a transitive verb (see (11a)) and the sole argument of an intransitive verb (see (11b)), but it is impossible to relativize DP_{ext} of a transitive verb (see (11c)).

(11) Relativization of DP_{erg} vs. DP_{abs} in Jakaltek (Campana 1992:91, Craig 1977)
  a. ch'en ome [xinliko]
     the.CLASS earrings buy.3ABS.1ERG
     'the earrings that I bought'
  b. X-Ø-w-il naj [xto ewi].
     ASP-3ABS-1ERG-see CLASS GO.3ABS yesterday
     'I saw (the man) who went yesterday.'
  c. *metx tx'i [xintx'a ni'an unin]
     the.CLASS dog bite.3ABS.3ERG little child
     'the dog that bit the child'

This pattern is also found in a number of typologically unrelated languages such as Dyirbal (Pama-Nyungan; Dixon 1994), Kanamarí (Katukinan; Queixalos 2010), Tongan (Austronesian; Otsuka, 2000, 2006), Kalaallisut (Eskimo-Aleut; Bittner & Hale 1996a), Trumai (isolate; Guirardello-Damian 2010), Adyghe (North Caucasian; Caponigro & Polinsky 2011), and Chukchee (Chukotko-Kamchatkan; Comrie 1979).[6]

(12) Relativization of DP_{erg} vs. DP_{abs} in Dyirbal (Dixon 1994:169–170)
  a. ŋuma-Ø [$_{CP}$ banaga-ŋu] yabu-ŋgu bura-n.
     father-ABS return-REL.ABS mother-ERG see-NONFUT
     'Mother saw father who was returning.' Relativization of sole argument
  b. *Yabu-Ø [$_{CP}$ bural-ŋu ŋuma-Ø] banaga-n^{y}u.
     mother-ABS see-REL-ABS father-ABS return-NONFUT
     'Mother, who saw father, was returning.' Relativization of DP_{erg}
  c. Yabu-Ø [$_{CP}$ bural-ŋa-ŋu ŋuma-gu] banaga-n^{y}u.
     mother-ABS see-AP-REL-ABS father-DAT return-NONFUT
     'Mother, who saw father, was returning.' Antipassive

(13) Relativization in Kanamarí (Queixalos 2010)
  a. Yo-hik nyan Nodia na=dahudyi-nin tukuna.
     1SG-know DEIC Nodia ERG=bring-DEP Indian
     'I know the Indian that Nodia brought.' Relativization of DP_{abs}
  b. Yo-hik nyan waokdyi-nin anyan piya.
     1SG-know DEIC arrive.here-DEP this man
     'I know the man who arrived here.' Relativization of sole argument
  c. *Yo-hik nyan piya na=dahudyi-nin Hanani.
     1SG-know DEIC man ERG=bring-DEP Hanani
     'I know the man who brought Hanani.' Relativization of DP_{erg}

[6] Relativization of the ergative in Tongan involves resumption (i.e., no Ā-bar movement). Roviana (Austronesian; see Corston 1996, cited by Deal [2015]), exhibits the ban, too, but does not use resumption; rather, a special verbal morphology is required (as in many Mayan languages). The same holds for Trumai and Adyghe.

d. Yo-hik nyan piya wa-dahudyi-nin Hanani.
1SG-know DEIC man AP-bring-DEP Hanani
'I know the man who brought Hanani.' Antipassive

(14) Relativization in Tongan (Otsuka 2006)
a. e fefine [na'e fili 'e Sione]
DET woman PST choose ERG Sione
'the woman (who) Sione chose' Relativization of DP_{abs}
b. *e fefine [na'e fili 'a Sione]
DET woman PST choose ABS Sione
'the woman (who) chose Sione' Relativization of DP_{erg}

Assuming that relativization in all languages listed here involves Ā-movement (possibly of an abstract operator), this is an instance of the general pattern seen with *wh*-movement and focusing.

2.2. Previous Analyses

Two kinds of analyses of the ban on ergative movement have been proposed in the literature (cf. Campana 1992, Aldridge 2004, Coon et al. 2011, and Stiebels 2006). In this subsection, we discuss them briefly and point out some of their drawbacks. The analyses are the following:

1. Nothing is wrong with ergative movement as such; it is just that the relevant languages have a special (agent focus [AF]) marker that replaces the ergative marker and does what the ergative marker does *and* signals the presence of an Ā-dependency at the same time (see section 6 for more details on AF). Given an optimality-theoretic approach, the AF construction can block the ergative+movement construction as suboptimal (Stiebels 2006).
2. Case-driven movement of DP_{abs} blocks extraction of DP_{erg}, either because of minimality (Campana 1992) or because DP_{abs} blocks the only escape hatch within vP (Aldridge 2004, Coon et al. 2011).

The problem with analysis 1 is that it only works for Mayan languages with the AF construction. As such, it has nothing to say about languages that lack AF and that nevertheless show the ban on movement of the ergative argument (see section 2.1).

Analyses of type 2 have theoretical or empirical problems. A minor drawback of Campana 1992 is that this analysis is based on a nonstandard concept of intervention. Also, Campana 1992, Aldridge 2004, and Coon et al. 2011 all include the assumption that there is covert movement of DP_{abs}, which does not appear to be straightforwardly motivated on independent grounds.

Next, both Aldridge (2004) and Coon et al. (2011) must stipulate a ban on multiple vP specifiers: The absolutive moved to the edge of a v-head can only block extraction of the ergative if v does not project another specifier that can serve as an escape hatch. However, parallel extraction of both ergative and absolutive is possible in at least some

of the languages that exhibit the ban on moving the ergative in isolation (see sect. 5.1.2). This strongly suggests that v must be able to project multiple specifiers after all.

Furthermore, the analyses of Aldridge (2004) and Coon et al. (2011) predict that a similar movement asymmetry between co-arguments should be found in nominative-accusative languages. In their system, DP_{nom} of a transitive verb must move to the only escape hatch of v in order to get case from T. It should thus block extraction of the accusative marked DP. It is doubtful, however, whether such an asymmetry exists in accusative languages. In response to this problem, Coon et al. (2011) suggest that subjects in nominative-accusative languages are base-generated outside vP whereas they are merged vP-internally in ergative-absolutive languages.

Finally, type 2 analyses essentially derive an *absolutive island constraint* rather than an *ergative movement constraint*. As a consequence, the prediction is that DP_{abs} creates an island—that is, the (covertly) moved DP_{abs} does not only block movement of DP_{erg} but movement of all elements inside vP like PP-adjuncts, DPs with oblique case, or (referential) adjuncts (which are VP-internal; see Aoun 1986). Data from Mam in (15) and from Jakaltek in (16) show that the agent of a passivized verb and adjuncts of time and place in an intransitive context can be Ā-moved.

(15) *Wh*-movement of passive agent in Mam (England 1983a,b)
Al uʔn xhi kub' tzy-eet qa-cheej?
Q RN DEP-3PL.ABS DIR grab-PASS PL-horse
'By whom were the horses grabbed?'

(16) *Wh*-movement of referential adjuncts in Jacaltec (Craig 1977)
a. Bakin x-Ø-ul naj?
when ASP-3SG.ABS-arrive he
'When did he arrive?'
b. Bay chach yoyi?
where 2SG.ABS go
'Where are you going?'

In the analyses of Aldridge (2004) and Coon et al. (2011), this can be accounted for by assuming that intransitive vPs are never phases. Consequently, DP_{abs} does not have to move to the sole escape hatch of v to receive case and does not create an island. This accounts for the data in (15) and (16). However, a wrong prediction remains for transitive contexts, where v is always a phase. As examples (17a–c) from Kaqchikel show, indirect objects, instrumental and locational constituents can be Ā-moved even in a transitive context.[7]

[7] A reviewer points out to us the discussion in Henderson 2007. There, it is reported that extraction of certain adjuncts in Kaqchikel (including instrumental and locational adverbs) requires the verbal marker *-wi*. (For reasons unclear to us, the examples from our Kaqchikel informants consistently lack *-wi*.) From this, one may conclude that extraction from vP is generally banned in Kaqchikel (as predicted by Aldridge 2004 and Coon et al. 2011), adjunct extraction being exceptionally possible in the presence of *-wi*. However, Henderson also observes that some adjuncts do *not* require *-wi* when they undergo extraction (temporal adverbs and benefactives). We therefore conclude that vP in Kaqchikel is not an island, generally; see Erlewine 2013 for further intriguing observations about extraction in Kaqchikel.

(17) *Wh*-movement of oblique arguments in Kaqchikel

a. Achoq chi re n-Ø-u-ya' a Karlos jun sik'wuj?
Q PREP DET INCOMPL-3SG.ABS-3SG.ERG-give CL Carlos INDEF book
'To whom does Carlos give a book?' *Wh*-movement of indirect object

b. Achoq r-ik'in n-Ø-u-së̈l ri ti'ij ri a Karlos?
Q 3SG.ERG-RN.INSTR INCOMPL-3SG.ABS-3SG.ERG-cut DET food DET CL Carlos
'With what does Carlos cut the meat?' *Wh*-movement of instrumental

c. Akuchi n-Ø-u-ya' ri ti'ij ri a Karlos?
Q.3SG.ERG-RN.LOC INCOMPL-3SG.ABS-3SG.ERG-give DET food DET CL Carlos
'Where does Carlos put the meat?' *Wh*-movement of locative

In what follows, we present an account that (a) derives the ban on ergative movement without predicting absolutive (and nominative) islands and (b) relates this account to the nature of ergativity itself. The background assumptions of the analysis are summarized in the following section.

3. Assumptions

3.1. Clause Structure

We adopt the following standard minimalist clause structure:

(18) $[_{CP}\ C\ [_{TP}\ T\ [_{vP}\ DP_{ext}\ [_{v'}\ v\ [_{VP}\ V\ DP_{int}]]]]]$

The internal argument is the sister of V, whereas the external argument is introduced as the specifier of v (Chomsky 1995, Kratzer 1996). There are two functional heads above v—namely, T and C. However, the projection of C will not occur in the following trees because it does not play an important role in the analysis of the ban on ergative movement.

3.2. Operations

All syntactic operations are feature-driven. The two basic operations are Merge for structure building (external and internal Merge) and Agree for argument encoding by case assignment/agreement. These are triggered by the following features (Heck & Müller 2007 and references therein):

(19) Two types of features that drive operations:

a. Structure-building features (edge/subcategorization features) [•F•] trigger Merge.

b. Probe features [*F*] trigger Agree.

We assume that Agree and Merge both take place under *m-command* (i.e., Agree may affect a head and its specifier). Next, the Agree Condition and the Merge Condition in (20) and (21), respectively, demand that probe and structure-building features are checked (application of these constraints at each derivational step derives the effects of the Earliness Principle of Pesetsky 1989).

(20) Agree Condition
Probes ([∗F∗]) participate in Agree.

(21) Merge Condition
Structure-building features ([•F•]) participate in Merge.

3.3. Locality of Movement

A crucial assumption of the analysis in section 4 is that Ā-movement to Spec,C must make an intermediate stop in Spec,T. This can be ensured in various ways: either by assuming that TP is a phase (Richards 2011), by stipulation (Chomsky 2005, Boeckx & Grohmann 2007), or by assuming that every phrase is a phase (for successive-cyclic movement through all intermediate phrase edges, see Sportiche 1989:36, 45–47; Takahashi 1994; Boeckx 2003:16–25; Müller 2004; Chomsky 2005:18). We follow the last proposal and assume that movement takes place successive-cyclically, from one XP edge domain to the next one higher up. Given the Phase Impenetrability Condition (PIC; Chomsky 2001; see (22)), this follows if every XP is a phase.

(22) Phase Impenetrability Condition (PIC)
The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations.

(23) Edge
The edge of a head X comprises all specifiers of X (and adjuncts to XP).

In a model of syntax where all operations are feature-driven, it must be ensured that intermediate steps of movement, like movement to the edge domain of a phase as required under the PIC, are possible in the first place. A standard assumption is that an *edge feature* [•X•] (Chomsky 2007, 2008) that triggers intermediate movement can be inserted on any intervening phase head.

Departing from standard assumptions, we assume that there is no minimality condition on Agree or Merge. Rather, we take it that minimality effects are derivable from other principles of grammar, such as the PIC (Chomsky 2001:47, fn. 52; Müller, 2004, 2011). This means that if there is more than one DP in an accessible domain that can be attracted or agreed with, then in principle any of them can be targeted by the operation-inducing head.

3.4. Assignment of Structural Case

Every argument must receive abstract structural case in the syntax, otherwise the derivation crashes (Rouveret & Vergnaud 1980). Structural case is assigned by the functional heads v and T to argument DPs under Agree. This means that T and v have valued case probes [∗c:α∗] that assign their value α to DPs with an unvalued case feature [c:□]. We follow a proposal by Murasugi (1992) (see also Jelinek 1993, Ura 2000:206 Müller 2009), according to which in ergative as well as accusative languages T assigns the unmarked structural case (i.e., nominative = absolutive) and v assigns the marked structural case (i.e., ergative = accusative).[8] In intransitive contexts only the T head is active, so the single argument receives the unmarked case.[9] More specifically, we assume that there is a single structural case feature *case*, abbreviated as *c*. This feature can have the two values *ext(ernal)* and *int(ernal)*, determined with respect to the vP, the predicate domain.[10] The unmarked case (nominative/absolutive) is represented as the external case [c:ext] and the marked case (ergative/accusative) as the internal case [c:int]. Given that T assigns unmarked external case and v assigns the marked internal case, these heads bear the following probe features:[11]

(24) Case probe features on T and v
   a. T bears a probe [∗c:ext∗] that instantiates a matching [c:ext] goal on DP.
   b. v bears a probe [∗c:int∗] that instantiates a matching [c:int] goal on DP.

We assume that argument encoding by case or agreement is the result of the same syntactic operation: Both case marking and verbal agreement are instances of an

[8] This assumes that the ergative is a structural case. See Nash 1996; Alexiadou 2001; Woolford 2001, 2006; Legate 2008 for the opposite view. Woolford and Legate also assume that ergative is assigned by v; the only relevant difference is that they postulate that ergative assignment must go hand in hand with θ-assignment. Sometimes, it has been argued that ergativity may have different sources (Aldridge 2004, Paul & Travis 2006, Legate 2008; see also fn. 1). The working hypothesis here is that ergativity, at least in the languages that show the ban on Ā-moving the ergative argument, has a uniform base (see sect. 3.5); see section 5.2 for further discussion on variation.

[9] There are at least two other proposals on how to derive the difference between ergative and accusative alignment patterns that we will not further pursue here: (a) T assigns nominative = ergative, v assigns accusative = absolutive (Levin & Massam 1985, Chomsky 1995: chap. 3, Bobaljik 1993, Laka 1993, Řezač 2003, Bobaljik & Branigan 2006); and (b) T assigns ergative, v assigns accusative, nominative = absolutive is default (Bittner & Hale 1996b).

[10] The concept of external and internal case is independent of the concept of external and internal argument. Both the external and the internal argument may, in principle, bear either external or internal case (depending on the alignment pattern).

[11] We assume that Agree results in valuation: DPs enter the derivation without a case value and get this value under Agree with a probe. This is the reverse of what is standardly assumed for Agree in ϕ-features where the goal provides the values for the probe. This is due to the nature of the feature case; case is not an inherent feature of DPs, in contrast to ϕ-features; rather, case is assigned to DPs (cf. Adger 2003, Pesetsky & Torrego 2007). We take case to be uninterpretable on both probe and goal.

Agree relation that involves the feature *case*. The only difference is the locus of the morphological realization of this relation:[12]

(25) Argument encoding by case or agreement
  a. Argument encoding proceeds by case-marking if [c:α] is realized on DP.
  b. Argument encoding proceeds by agreement if [∗c:α∗] is realized on T/v.

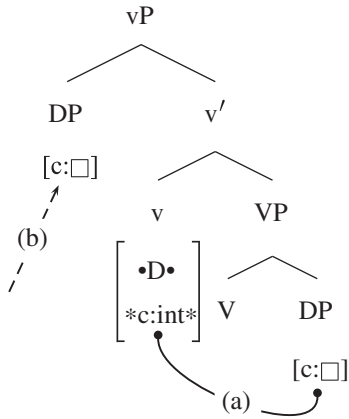
3.5. Patterns of Argument Encoding

In morphologically ergative languages DP_{int} of a transitive verb and the sole argument of an intransitive verb (DP_{int} or DP_{ext}) are treated alike but differently from DP_{ext} of a transitive verb. In morphologically accusative languages, DP_{ext} of a transitive verb and the sole argument of an intransitive verb (DP_{int} or DP_{ext}) cluster together: they bear nominative case or trigger the same kind of agreement. DP_{int} of a transitive verb behaves differently; it receives accusative case or is cross-referenced by a different set of agreement markers. The question is how the difference between ergative and accusative encoding patterns can be derived if v assigns the marked case and T assigns the unmarked case in both types of languages. We adopt the analysis of argument encoding patterns proposed by Müller (2009) (see also Heck & Müller 2007), which relies on the *timing* of elementary operations. In what follows, we briefly outline the analysis. It will turn out that the assumptions needed to derive the two basic morphological encoding patterns as such also directly account for the movement asymmetries described in section 2.1.

In Müller 2009, ergative versus accusative patterns of argument encoding result from different resolutions of conflicting earliness requirements for Agree and Merge on the vP level. The conflict between these two operations emerges because the functional head v has a dual role in the present system: it participates in a Merge operation with DP_{ext} and also participates in an Agree relation with some DP with respect to case. It thus bears two operation-inducing features: [•D•] and [∗c:int∗]. Consider a simple transitive context with the two arguments DP_{int} and DP_{ext}. Suppose that the derivation has reached a stage Σ where v has been merged with a VP containing DP_{int}, with DP_{ext} waiting to be merged with vP in the workspace of the derivation. At this point, a conflict arises: the Agree Condition demands that the next operation is Agree (case assignment) between v and DP_{int}, which is the only potential goal at this point of the derivation, (see (a) in (26)); the Merge Condition demands that the next step is Merge of DP_{ext} in Spec,v (see (b) in (26)).

[12] In some languages, there is a one-to-one relation between case marking and agreement. In other languages, case/agreement mismatches may arise. Sometimes there is agreement with only a single argument or the resulting agreement pattern need not be identical to the one established for case (in particular, the case pattern may be ergative and the agreement pattern accusative). A possible analysis of such phenomena relies on delinking Agree for case and ϕ-features: in addition to case probes, there is secondary, purely ϕ-based Agree.

(26) Stage Σ

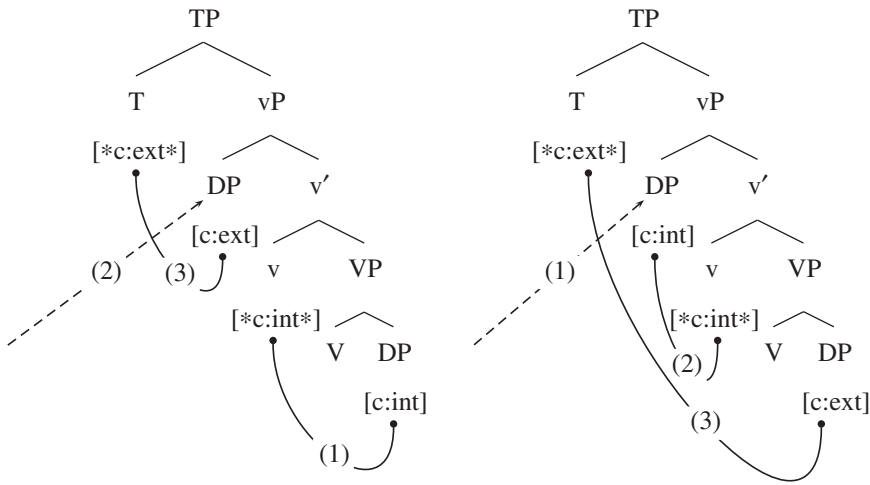


Assuming that only a single operation can apply at any given stage of the derivation (pace Chomsky 2008), the Agree and Merge Condition need to be ordered.[13] This ordering has far-reaching consequences for the nature of argument encoding. If Agree takes priority over Merge, then an accusative encoding pattern arises; if Merge takes place before Agree, then an ergative pattern emerges.[14] More precisely, the two patterns of argument encoding are derived as follows: if Agree applies before Merge, then v first assigns the internal case to DP_{int} via Agree. DP_{int} is the only available goal at this step of the derivation; [c:int] is then called accusative. In a second step, DP_{ext} is merged. Then, in a subsequent step, T is merged and DP_{ext} receives the external case, called nominative (see (27a)). An accusative pattern emerges. If, however, Merge takes priority over Agree, the structure-building feature [•D•] on v triggers Merge of DP_{ext} first. After this, the case probe feature on v triggers Agree and assigns [c:int] to DP_{ext}; this case is usually called ergative. DP_{int} later receives the unmarked [c:ext] from the case probe on T (see (27b)); [c:ext] is called absolutive in this environment.

[13] Three ways to resolve a conflict with respect to the order in which operations apply are conceivable: (a) the order is fixed (cf. "Merge over Move" in Chomsky 2000), (b) the order is free, or (c) operations apply simultaneously (Chomsky 2008). We adopt (a), assuming that Merge and Agree are ordered in a language-specific manner; as we will see, this has consequences for the argument-encoding pattern and the extractability of core arguments in a language. Solution (b) is incompatible with the idea that operations apply as soon as their context of application is fulfilled (see Pesetsky 1989, Chomsky 1995:233, Lasnik 1999:198, among others). Otherwise, the "free" order between Merge and Agree, in fact, is a disjunction (Merge applies before Agree or vice versa). Simultaneous rule application as in (c) is at variance with a strictly derivational approach to syntax (see Brody 2002, Epstein & Seely 2002).

[14] This parameter could be specified either in the lexicon (cf. Borer 1984) or in the grammar; for further discussion see Müller 2009. A reviewer asks whether it may change within one language family. This is an empirical question, which we cannot answer conclusively here. Our hunch is that we are dealing with a macro-parameter, which means that we would not expect it to vary among languages of one family.

(27) a. Agree before Merge: accusative b. Merge before Agree: ergative



The derivation of the ergative pattern presupposes that a head prefers Agree with its specifier to Agree with an item included in the complement of that head. If DP_{ext} is merged before v triggers Agree, then DP_{ext} in Spec,v is assigned case by v, although DP_{int} included in the complement of v is in the m-command domain of v, too, and has not yet been assigned a case value.[15] This preference for agreement with a specifier can be formulated as the *Specifier-Head Bias* (cf. Chomsky 1986:24-27, Chomsky 1995:149, Kayne 1989, Koopman 1992:557, and Koopman 2006; a similar idea, with the bias reversed, is presented in Béjar & Řezáč 2009; phenomena that may provide further empirical evidence for (28) are first conjunct agreement in Arabic, dative possessor agreement in German, and agreement with predicative adjectives in French).

(28) Specifier-Head Bias (Spec-Head Bias)
Spec-head Agree is preferred to Agree under c-command.

Given that Agree takes place under m-command, a situation may arise in which there are two goals in the m-command domain of a probe on a head α—namely, if there is a DP in the specifier of α and a DP in the c-command domain of α. The Spec-Head Bias states that in this situation Agree with the DP in the specifier of α is preferred over Agree with the DP in the c-command domain of α.[16] This critical situation emerges in

[15] The derivation in (27b) presupposes either that (a) Agree can escape the PIC (under the assumption that every phrase is a phase), as suggested by Bošković (2007), among others, or that (b) the PIC is slightly less restrictive, as proposed in Chomsky 2001.

[16] This preference could also be derived by assuming that the probe agrees with the goal that is closer to α, provided a notion of closeness that is based on a definition of path length from which it follows that the path from α to Spec,α is shorter than the path from α to an element in the complement domain of α (see, e.g., Heck & Müller 2007). Here, we opt for the Spec-Head Bias, which is compatible with equidistance effects, which in turn pose a problem for path-based approaches to minimality.

languages with the order Merge before Agree on v after DP_{ext} is merged. The consequence of the Spec-Head Bias is that the internal case is assigned by v to DP_{ext} in Spec,v instead of to DP_{int} in the complement of v, resulting in an ergative alignment pattern. We take the Spec-Head Bias to replace standard minimality conditions like Relativized Minimality or the Minimal Link Condition (MLC) (although with a somewhat different empirical coverage).

As mentioned before, only the T head is active in intransitive contexts both in languages with an ergative and in languages with an accusative encoding pattern. As a consequence, the unmarked external case will be assigned to the single argument and an ergative or accusative encoding pattern emerges, depending on whether the single argument receives the same case as the internal or the external argument of a transitive verb.

In section 4, we will see that the same indeterminacy with respect to the order of elementary operations that emerges on the vP cycle also holds on the TP cycle because T triggers both Merge and Agree if one of the arguments of a transitive verb is to be extracted. If the indeterminacy on T is resolved in the same way as the indeterminacy on v (where it leads to morphological ergativity and accusativity, respectively), the ban on ergative movement in morphologically ergative languages and the absence of the corresponding effect in morphologically accusative languages follows automatically.

3.6. Maraudage

A final assumption that is necessary to account for the extraction asymmetries described in section 2.1 concerns the behavior of structural case features. Suppose that an argument can check more than one structural case feature (see Merchant 2006). This means that after a DP has received a structural case value, it is still an active goal for another structural case probe:

(29) Activity of structural case features
Structural case features act as active goals.

Independent motivation for this assumption might come from the existence of *case stacking* (see Andrews 1996, Nordlinger 1998, Richards 2013, Assmann et al. 2014; see also Merchant 2006 and references therein).[17] We take checking of [c:int] on a DP α with a conflicting value on a probe such as [$*$c:ext$*$] to be harmless as such; α will simply maintain its original case value. However, [$*$c:ext$*$] is then discharged and not available for further operations anymore.

In a transitive context with two structural case probes, the fact that a DP can check more than one structural case feature can lead to a situation in which a DP α that

[17] Andrews (1996) and Nordlinger (1998) are concerned with lexical case, but we are dealing with structural case. A reviewer remarks that case-stacking languages are problematic for a theory that assumes that arguments can check more than one case whereas case features on functional heads can only be discharged once. A possible way to account for this is by assuming that the clausal spine of case-stacking languages contains more case-valuing functional heads than arguments.

already got a case value from probe P_1 also checks the case feature of probe P_2. As a consequence, the co-argument of α cannot receive case, which leads to the crash of the derivation. Put differently, α uses up a case feature that it does not need (because it already has one) but that would be necessary for its co-argument. We call this taking away of features that should normally be reserved for some other item "maraudage" (Georgi et al. 2009, Georgi 2012, and Müller 2011).[18]

In the present system, maraudage occurs in the following situation. Suppose there is a head X that triggers Merge of a DPα and Agree for case. Under the order Merge before Agree, the structure-building feature of X is discharged first and α is merged in Spec,X. Owing to the Spec-Head Bias, X next checks its case probe with α in its specifier, although there may be another potential goal *β* in the complement domain of X. Now, if α has already gotten a case value earlier in the derivation, it marauds the case feature of X, with fatal consequences for its co-argument *β*, which does not receive a case value. Hence, DPs trigger maraudage in Spec-head configurations under the ranking Merge before Agree. The situation is abstractly depicted in (30).

(30) a. $[_{XP}\ X_{[*c:ext*]}\ [_{ZP}\ \ldots\ \alpha_{[c:int]}\ \ldots\ \beta_{[c:\square]}\ \ldots\ ]]$
b. $[_{XP}\ \alpha_{[c:int]}\ [_{X'}\ X_{[*c:ext*]}\ [_{ZP}\ \ldots\ t_{\alpha}\ \ldots\ \beta_{[c:\square]}\ \ldots]]]$

In (30a), an ambiguity arises: [∗c:ext∗] may be checked by either α or *β* because (a) there is no minimality condition on Agree, (b) both DPs can check structural case, and (c) both DPs are in the c-command domain of X. If *β* checks the case feature, the derivation converges because both α and *β* have structural case. If, however, α checks case with X, the derivation crashes because *β* is left with an unvalued case feature. Importantly, there is one converging derivation based on this configuration. In contrast, in (30b) there is no ambiguity because α is in Spec,X whereas *β* is in the c-command domain of X. Owing to the Spec-Head Bias, X must assign case to α. Because α already has case, it marauds the case feature that *β* needs, and this derivation crashes. Note that maraudage of case features is expected, given (29); preventing it would require further stipulation.

The configuration in (30b) will inevitably arise on the TP cycle in morphologically ergative languages if DP_{erg} is Ā-moved, given that Merge is preferred over Agree in the clausal domain in this language type. This will be shown to underlie the ban on ergative movement.

4. Analysis

The difference between morphologically ergative and accusative languages is explained by the order of the elementary operations Merge and Agree. This ordering of operations is necessary because there is an indeterminacy at the stage of the derivation where v is merged. It has a probe feature triggering Agree as well as a

[18] Similar concepts are suggested in Chomsky 2001:15, Abels 2012:105–108, Anagnostopoulou 2003:272–274, Adger & Harbour 2007:26, Béjar & Řeźač 2009, and Heck & Richards 2010:10; see also Trommer 2011 and Zimmermann 2013 for morphophonology).

structure-building feature triggering Merge, but it can induce only a single operation at once. The same indeterminacy may arise with T, given the assumptions laid down in section 3. If a DP is to be Ā-moved to Spec,C, it must make an intermediate stop in Spec,T, because of the PIC. This movement step is triggered by a category-neutral edge feature [•X•] instantiated on T.[19] However, T also triggers Agree because it bears [∗c:ext∗]. Thus, if an element is to be Ā-moved to Spec,C, then T bears two operation-inducing features, one that triggers Merge and another one that triggers Agree. Hence, an ordering of the two operations is not only necessary for v but also for T. We pursue the null hypothesis that the order of Merge and Agree that holds on the vP cycle is also maintained on the TP cycle. More generally, the same conflict-resolution strategy is manifested throughout the extended projection (see Lahne 2008 for an application of this idea to a different empirical domain, viz., word order). This means that Agree is given preference over Merge in the case of conflict on the TP cycle in accusative languages, and Merge preempts Agree on the TP cycle in ergative languages. Together with the concept of maraudage and the Spec-Head Bias, this derives the ban on ergative movement in morphologically ergative languages and the absence of extraction asymmetries in accusative languages.

4.1. Displacement in Languages with Ergative Encoding Patterns

4.1.1. *Illegitimate movement of the ergative DP*

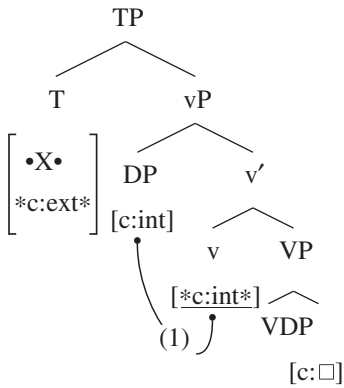
Suppose that the external argument of a transitive verb in a morphologically ergative language is to be extracted. In this type of language, Merge takes priority over Agree. Thus, once v is introduced into the structure, it triggers Merge of the external argument. Afterward, it assigns [∗c:int∗] to the external argument in its specifier (owing to Spec-Head Bias); see (31a). Given the PIC, DP_{erg} must move from Spec,v to Spec,T if it is to undergo subsequent Ā-movement to Spec,C. Provided that the "ergative" conflict-resolution strategy Merge before Agree is also maintained on the TP cycle, internal Merge of DP_{erg} to the edge of T will have to *precede* Agree of T with a DP; see (31b). Because of the Spec-Head Bias, DP_{erg} in Spec,T will maraud T's case probe (although it has already received case from v). The internal argument DP remains without a checked case feature; see (31c). Assuming that all DPs must have their case features checked eventually (and that there is no such thing as a default case in standard transitive contexts), the derivation will crash. This derives the ban on ergative movement. In a nutshell, ergative movement is impossible because it deprives the remaining argument of absolutive case; movement of DP_{erg} per se is unproblematic.[20]

[19] Two reviewers ask whether Spec,T must be an Ā-position (contrary to traditional belief) if it serves as an intermediate target on the way to Spec,C. We remain agnostic as to how the A–Ā distinction is to be expressed. But note that theories in which only vP and CP are the targets of intermediate movement are equally incompatible with the standard A–Ā distinction; see Takahashi 1994:109–111, Neeleman & van de Koot 2010:346–347, and Müller 2014.

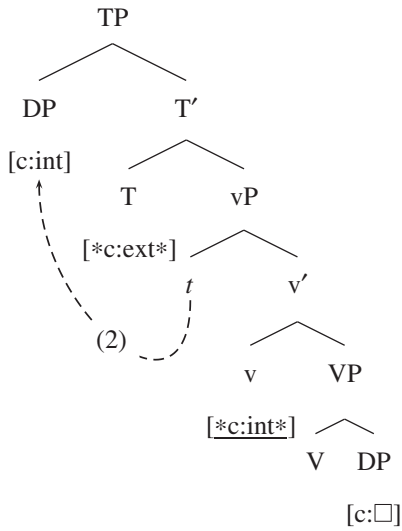
[20] In the following tree structures, underlining signals a discharged probe; discharged edge features are not represented anymore; traces are inserted as mnemonic devices.

(31) Illegitimate movement of DP_{erg}

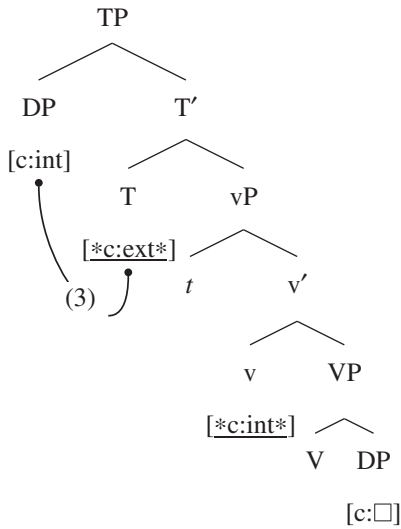
a. Structure after T is merged



b. Merge before Agree triggers movement of DP_{erg} first



c. Specifier-Head Bias triggers maraudage of T

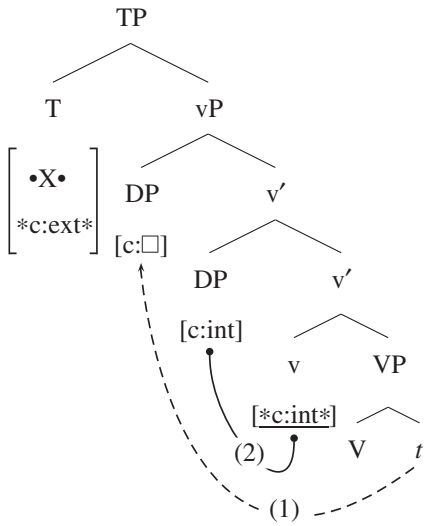


4.1.2. *Legitimate movement of the absolutive DP*

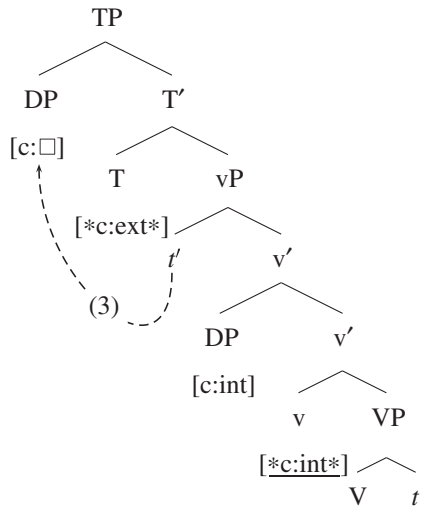
No such problem arises for movement of DP_{abs}. On the vP cycle in (32a), the order Merge before Agree ensures that external Merge of DP_{ext} and subsequent internal Merge of DP_{int} (triggered by [•D•] and [•X•] on v) precede Agree. Movement of DP_{int} to Spec,v is necessary because vP is a phase and DP_{int} would otherwise be trapped in the domain of the phase head. Next, v assigns [c:int] to DP_{ext} in its specifier. Then, T is introduced. Given that Merge applies before Agree, T first discharges its edge feature and attracts DP_{int}, which does not yet have a case value; see (32b). Then T triggers Agree and, owing to the Spec-Head Bias, it assigns [c:ext] (absolutive) to the DP in its specifier (32c). Finally, DP_{abs} moves to its final landing site, Spec,C. The derivation converges because both arguments receive structural case. It is thus possible to Ā-move DP_{abs}; DP_{erg} has already been assigned case when DP_{abs} moves to Spec,T. Hence, maraudage does not take place.

(32) Legitimate movement of DP_{abs}

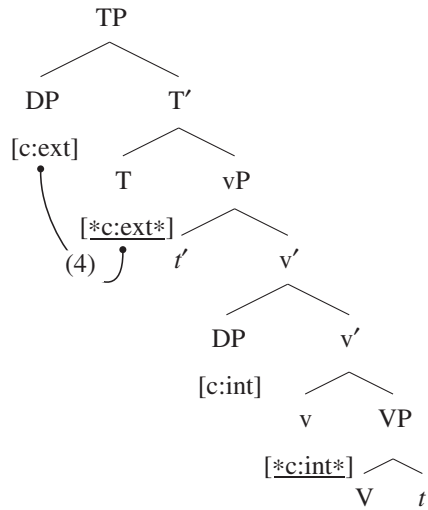
a. Structure after T is merged



b. Merge before Agree triggers movement of DP_{abs} first



c. Finally, Agree with T ensures external case of DP_{abs}; no maraudage



Note that on the vP cycle, when both DP_{ext} and DP_{int} occupy a Spec,v position, optionality arises: Since there is no MLC-like constraint, the Spec-Head Bias does not discriminate between the two arguments and the derivation can proceed in two ways. If Agree takes place between v and DP_{ext}, a well-formed output results; if, however, v Agrees with DP_{int} and assigns internal case to it, the derivation crashes because DP_{int}, which now bears [c:int], also marauds the external case assigned by T once it occupies Spec,T. DP_{ext} is then left without case.

To summarize, an ergative DP_{ext} cannot be Ā-moved because intermediate movement to Spec,T leads to maraudage. It applies *before* T can assign external case to DP_{int}, which needs the case value. The ergative DP thus moves too early. DP_{abs}, however, can be extracted because DP_{ext} has already been assigned case within vP.[21] In the following subsection, we show that no extraction asymmetries arise in morphologically accusative languages; both DP_{int} and DP_{ext} can be Ā-moved.

[21] The approach predicts that there should be no EPP-driven movement to Spec,T in languages with the ban on ergative movement because such movement would always maraud the case feature on T. A reviewer notes that Patzún Kaqchikel uses AF if the ergative argument undergoes Ā-movement, suggesting that extraction of the ergative is banned otherwise. Nevertheless, the language also has SVO order (see Kim 2011, Clemens 2013). If SVO results from moving DP_{ext} to Spec,T, then Patzún Kaqchikel falsifies the above prediction. An analysis of SVO that is compatible with the present approach would consist of scrambling DP_{int} (to an outer Spec,v) plus subsequent remnant movement of vP (see Coon 2010c on vP movement to Spec,T in the Mayan language Chol). In this configuration, the Spec-Head Bias would be vacuous because DP_{ext} is not in Spec,T. Consequently, maraudage would not apply, leaving T's case feature for DP_{int}.

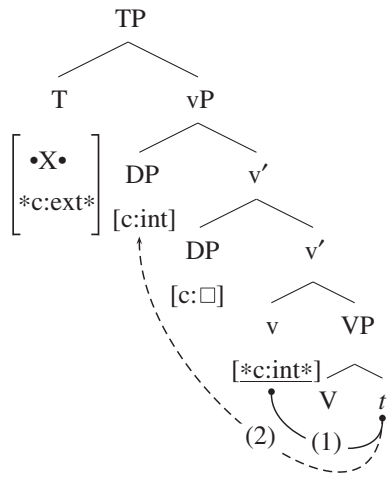
4.2. Displacement in Languages with Accusative Encoding Patterns

4.2.1. *Legitimate movement of the accusative DP*

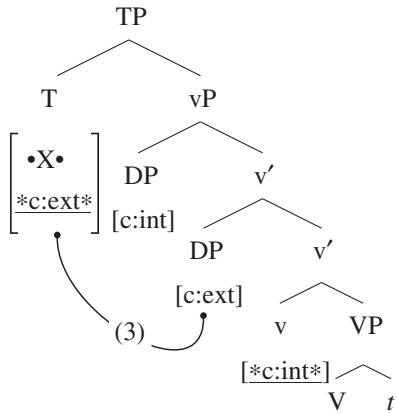
Suppose that the accusative marked DP is to be Ā-moved. The conflict-resolution strategy Agree before Merge gives rise to an accusative pattern: v assigns the internal case to DP_{int} *before* DP_{ext} is merged. Afterward, DP_{int} moves to the edge of vP to escape the vP-phase; see (33a). Agree before Merge is also active on the TP cycle. Here it ensures that Agree with DP_{ext} in Spec,v can be carried out *before* the accusative marked DP_{int} undergoes successive-cyclic movement to Spec,T (and then to a higher position); see (33b,c). This derivation converges because both arguments receive structural case. Note that at the point where T triggers Agree, there are two possible goals. If T assigns case to DP_{ext}, a well-formed output results. Because there is another DP in the c-command domain of T and no MLC-like constraint, T could also assign the case value to DP_{int}. However, this derivation crashes because DP_{ext} never gets case.

(33) Legitimate movement of DP_{acc}

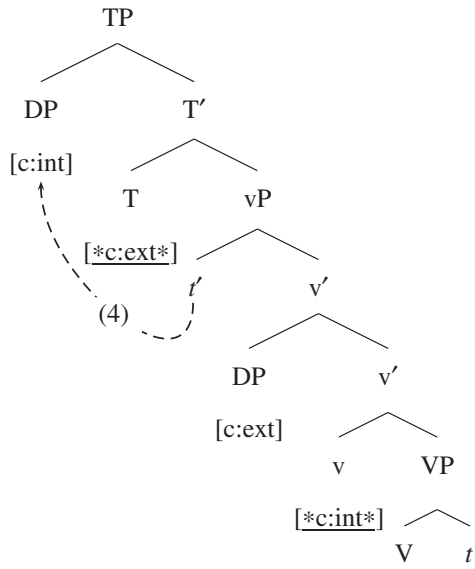
a. Structure after T is merged



b. Agree before Merge ensures external case of DP_{nom} first; no maraudage



c. Finally, movement of DP_{acc} takes place to Spec, T



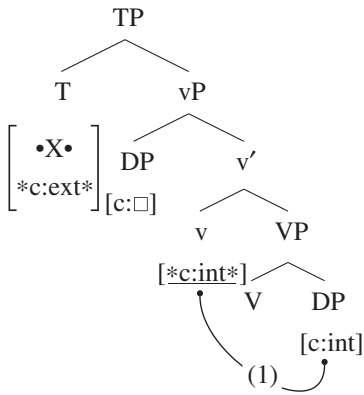
4.2.2. *Legitimate movement of the nominative DP*

Similarly to movement of DP_{abs}, there is no problem for movement of DP_{nom} because DP_{acc} has already been assigned case when DP_{nom} moves to Spec,T and hence DP_{nom} cannot cause maraudage. The initial step, the assignment of [c:int] to DP_{int} (= accusative), is shown in (34a). Then T assigns case to DP_{ext} (= nominative) before

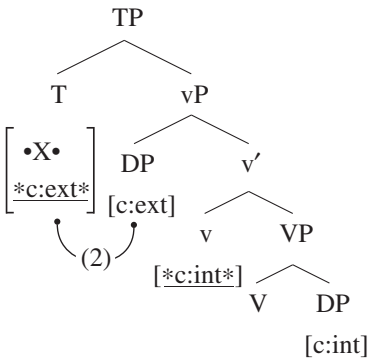
DP_{ext} moves to SpecT; see (34b,c). Given that both arguments receive structural case, the derivation converges. In principle, T could also assign case to DP_{int} because both DPs are in the c-command domain of T and there is no MLC-like constraint. Again, this derivation crashes because DP_{ext} does not receive structural case.

(34) Legitimate movement of DP_{nom}

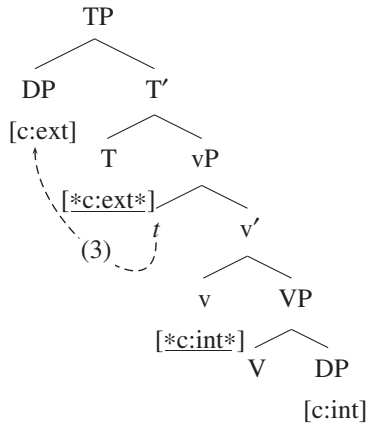
a. Structure after T is merged



b. Agree before Merge triggers valuation of DP_{nom} next



c. Finally, movement of DP_{nom} takes place to Spec,T



4.3. Opacity

This analysis instantiates an interesting case of opacity (Chomsky 1951, 1975; Kiparsky 1973; Arregi & Nevins 2012). The term "opacity" characterizes rule interactions that are not transparent in the sense that one cannot read off the surface representation (the output of the interacting rules) why a certain rule has applied or not applied. In one such case, counterfeeding, a certain rule has not applied although its context is given; in another case, counterbleeding, a rule has applied although its context is not given (see Kiparsky 1976). In the present context, we are dealing with an instance of counterbleeding. More specifically, a counterbleeding relation exhibits the following abstract pattern: there is a rule R_1 that changes B into C in the context A ($AB \xrightarrow{R_1} AC$), and there is a (context-free) rule R_2 that changes A into D ($A \xrightarrow{R_2} D$). Now, if an output DC is derived from an input AB, then both rules R_1 and R_2 must have applied. However, it is not clear from only looking at the output DC why rule R_1 could apply because its application context A has been destroyed by R_2 and is therefore no longer visible at the surface. In other words, rule R_2 is expected to bleed R_1, but R_1 applies nevertheless; this is an instance of counterbleeding. Under a derivational view, the opaque change from AB into DC becomes transparent because at the point where rule R_1 applies, changing AB into AC, context A is still present. Only at a later step does rule R_2 apply to change AC into DC. In the remainder of this section, we will discuss bleeding in ergative languages and an instance of counterbleeding in accusative languages, both involving the interaction of Merge and Agree.

Consider first the derivation in which DP_{erg} is to be extracted; see (31). Merge of DP_{erg} (rule R_2) to Spec,T bleeds Agree between T and DP_{abs} (rule R_1). Given that (internal) Merge of DP_{erg} precedes Agree owing to the ergative order Merge before Agree (i.e., R_2 precedes R_1), and given the Spec-Head Bias, T must Agree with DP_{erg}. DP_{erg} therefore marauds the case feature that DP_{abs} would need. Agree between T and DP_{abs} is thus fatally prevented. Compare this with the derivation in

(33) in which DP_{acc} is to be extracted. Movement of DP_{acc} to Spec,T (rule R_2) creates a configuration that, on the surface, is identical in all relevant respects to the configuration that leads to maraudage if DP_{erg} is moved (cf. (31c)): there is a DP in Spec,T that already has a case feature (assigned within vP), and T has a case probe. Thus, we might expect that DP_{acc} marauds the case feature of T just as DP_{erg} does in the same context. Hence, movement of DP_{acc} should bleed R_1 (i.e., Agree between T and DP_{nom}). This should lead to the crash of the derivation. However, this is not the case; as we have seen, it correctly follows from the present approach that it is possible to extract DP_{acc}. The reason is that internal Merge of DP_{acc} in Spec,T counterbleeds Agree between T and DP_{nom}. Counterbleeding results because the order of Merge and Agree, which stand in a bleeding relation if Merge applies before Agree, is inverted such that Agree preempts Merge (i.e., R_1 precedes R_2). The result is that movement of DP_{acc} to Spec,T, which could potentially cause bleeding, comes too late; T has assigned case before DP_{acc} moves.

The derivational order that creates counterbleeding cannot be reconstructed by just looking at the output representation on the TP cycle: DP_{acc} in Spec,T *does* occupy the preferred position for case valuation with T, compared with DP_{nom} in Spec,v, and there is no representational way to recover the information that DP_{acc} got there only after DP_{nom} was assigned case. Thus, unlike most other cases of syntactic opacity, which can be accounted for by positing devices like traces (e.g., *wanna* contraction in Bresnan 1978 or reconstruction in Barss 1986), the opacity discussed here is of a type that cannot be accounted for in representational terms, at least not straightforwardly so. As such, it presents strong evidence for the derivational nature of syntax.[22]

Closer inspection reveals that *both* rule interactions discussed here are strictly speaking opaque because their effects cannot be read off the final output representations. The bleeding case additionally gives rise to a counterfeeding configuration: movement of DP_{erg} to Spec,C (its final landing site) could feed Agree between T and DP_{int}, but it does not. From looking at the final configuration, it is unclear why case assignment from T to DP_{int} is not available, given that DP_{ext} is not in Spec,T anymore. However, this counterfeeding effect can be accounted for if traces are present, unlike the counterbleeding effect with accusative movement.[23]

[22] Another case of this rare type of opacity is presented in Lechner 2010.

[23] As a matter of fact, opacity not only arises on the TP level, as discussed in the main text, but also on the vP level, in the derivation of the accusative pattern, given the system of case assignment in Müller 2009 and Heck & Müller 2007 and the Spec-Head Bias: as soon as the external argument is merged in the specifier of v, it should be assigned the internal case of v owing to the Spec-Head Bias and hence bleed assignment of the internal case to the internal argument (which would ultimately result in an ergative alignment pattern). However, DP_{int} does receive the internal case. Merge of DP_{ext} thus counterbleeds internal case assignment. In the present analysis, this is again due to the order of the elementary operations Merge and Agree. In morphologically accusative languages, Agree applies before Merge, such that assignment of the internal case takes place before DP_{ext} is merged. At the point when the Spec-Head Bias could have an effect, Agree (i.e., case assignment by v) has already applied.

5. Predictions and Outlook

5.1. Predictions

The analysis in section 4 makes two falsifiable predictions: (a) the sole argument of an intransitive verb that bears ergative case/triggers ergative agreement should be extractable, and (b) the derivation converges if both arguments of a transitive verb are Ā-moved. In this subsection, we show that these predictions are borne out empirically.[24]

5.1.1. *Extractability of the sole ergative-marked argument of an intransitive verb*

The present analysis of the ban on ergative movement is co-argument-based: Ā-movement of DP_{erg} is unproblematic per se, but it creates problems for the co-argument of DP_{erg}, which cannot get case. Crucially, the extraction asymmetry is not an effect of being ergative marked alone under this perspective. The account thus predicts that in a language with the ban on ergative movement in transitive clauses, the single argument of an intransitive verb that is ergative marked should be able to undergo Ā-movement. This is the case because there is no co-argument in the structure for which movement of the single ergative-marked DP could have fatal consequences. Data from Mayan languages provide evidence that the prediction is correct. Some Mayan languages have an aspect-based split with intransitive verbs. Usually, the single argument of an intransitive verb triggers absolutive agreement like the internal argument of a transitive verb does (leading to an ergative alignment pattern). In the imperfective/progressive aspect, however, the single argument is cross-referenced by the same affixes (the ergative affix set) as the external argument of a transitive verb (the accusative alignment pattern). This means that one and the same verb can bear the ergative and the absolutive affix set, depending on aspect; see the Yukatek examples in (35). Aspect has no influence on the alignment pattern of

[24] As an editor correctly points out, we make another prediction: maraudage is not restricted to co-arguments. Hence, there may in principle be cases in which an element that is moved long-distance from a subordinate clause marauds the structural case feature of matrix T. Because this kind of maraudage leads to a crash of the derivation, this makes the prediction that there is no long-distance movement (of arguments) in languages that exhibit the ban on ergative movement. Unfortunately, we do not know whether the prediction is borne out at this point. However, if it is not borne out (if the languages in question do allow long extraction), more has to be said. For instance, one could assume that case features of arguments are deactivated when a clause boundary is crossed.

transitive verbs: here, DP_{ext} always triggers ergative agreement and DP_{int} absolutive agreement (36).[25]

(35) Yukatek, aspect split with intransitives (Bohnemeyer 2004:18)
  a. K-u=kim-il.
     IPFV-3SG.ERG=die-INCOMPL
     'He dies.'
  b. H=kim-Ø-ih.
     PFV=die-COMPL-3SG.ABS
     'He died.'

(36) Yukatek, no aspect split with transitives (Bohnemeyer 2004:18)
  a. K-u=hats'-ik-en.
     IPFV-3SG.ERG=hit-INCOMPL-1SG.ABS
     'He hits me.'
  b. T-u=hats'-ah-en.
     PFV-3SG.ERG=hit-COMPL-1SG.ABS
     'He hit me.'

At least two Mayan languages have both the ban on ergative movement and an aspect-based split with intransitives: Ixil and Chuj. We tested the prediction with examples from these languages.[26] Ixil has four aspects: potential, inceptive, punctual, and durative. In the latter, the single argument of an intransitive verb triggers ergative agreement like DP_{ext} of a transitive verb. In the other aspects, it triggers absolutive agreement like DP_{int} of a transitive verb; see Lengyel 1978. The ban on ergative movement can be exemplified with constituent negation. If a DP is negated in Ixil, it

[25] In the system of ergative versus accusative alignment patterns presented in section 3.5, the single argument receives the unmarked case from T because v is not active in intransitive contexts. The question arises how aspect-based splits can be integrated into this analysis. One possibility is to assume that v can be reactivated in the imperfective/progressive aspect. Suppose that aspect is located on T: T with imperfective/progressive aspect selects only an active vP, whereas T with perfective aspect selects an inactive vP. Because v is merged before T, the single argument introduced within vP would get the marked case (the ergative in Mayan). It will also be assigned the unmarked case by T later on, but this will have no effect on the morphological realization as ergative because we assumed that a DP that checks multiple cases maintains the value of the first case feature it checks; see Thomas 2014 for a related approach to aspect splits (based on defective T). An alternative analysis is proposed by Larsen & Norman (1979), Bricker (1981), and Coon (2010b). They suggest that the imperfective/progressive aspect marker embeds a nominalized verbal projection. Thus, 'I am sleeping' is essentially a possessive structure meaning 'my sleeping is going on'. In Mayan languages, the possessum bears an affix that cross-references the possessor. The set of affixes used with possession is the same set that is used to cross-reference DP_{erg} on a transitive verb. It thus follows that "ergative" markers occur in imperfective/progressive aspect—they are possessive affixes (see also Furbee-Losee 1976, Ayres 1981). This analysis is also compatible with the theory presented in section 4. Further accounts of aspect-based splits that are, or can easily be made, compatible with the present theory can be found in Müller 2009 and Coon & Preminger 2012.

[26] Other Mayan languages that have aspect-based splits and the AF construction are Yukatek and Pocomam. However, in these languages, the use of AF is optional; DP_{ext} can also be freely extracted. Therefore, these languages do not tell us much with respect to the prediction at hand. If the single ergative-marked argument of a transitive verb is extracted without the AF, it is not clear whether AF is impossible or just optionally did not apply.

is preceded by the negative element *ye?l*, and the constituent [neg+DP] must be Ā-moved into the preverbal position (an instance of overt quantifier raising). This position is also targeted by *wh*-words and focused constituents. Examples (37a,b) show that the absolutive-marked DP_{int} of a transitive verb can be negated, whereas the ergative-marked DP_{ext} cannot be negated. The single absolutive-marked argument (in punctual aspect) can also be negated and extracted (see (37c)), giving rise to an ergative pattern of Ā-movement. The single ergative-marked argument of an intransitive verb (in durative aspect) patterns with the absolutive-marked DPs in that it can be negated; see (37d).

(37) Negation in Ixil (Ayres 1981:130)

a. Ye?l in kat-et-il-in.
NEG 1SG PUNC-2PL.ERG-see-1SG.ABS
'It's not me who you saw.' Negated object

b. *Ye?l in in-w-il-ex.
NEG 1SG DUR-1SG.ERG-see-2PL.ABS
'It's not me who sees you.' Negated transitive subject

c. Ye?l in kat-ok-in.
NEG 1SG PUNC-enter-1SG.ABS
'It's not me who entered.' Negated intransitive subject

d. Ye?l in in-w-ok-e?.
NEG 1SG DUR-1SG.ERG-enter-SUF
'It's not me who is entering.' Negated intransitive subject

The same pattern is found in Chuj. Example (38) shows that Chuj exhibits the ban on ergative movement with transitive verbs under focus. The focused constituent is Ā-moved to the preverbal position. It is possible to focus DP_{abs} (38c), but focusing of DP_{erg} requires the AF construction; see (38b). The sole absolutive marked DP of an intransitive verb can also be focused; see (39).

(38) Focus in Chuj, transitive verb (Davis 2010:chap. 22, 37)

a. ʔix-Ø-y-ʔil waj Mekel ʔix Katal.
PST-3SG.ABS-3SG.ERG-see CL Michael CL Kathleen
'Kathleen saw Michael.'

b. Ha ʔix Katal ʔix-Ø-ʔil-**an** waj Mekel.
FOC CL Kathleen PST-3SG.ABS-see-AF CL Michael
'It is Kathleen who saw Michael.' Focused transitive subject

c. Ha waj Mekel ʔix-Ø-y-ʔil ʔix Ketel.
FOC CL Michael PST-3SG.ABS-3SG.ERG-see CL Kathleen
'It is Michael who Kathleen saw.' Focused object

(39) Focus in Chuj, intransitive verb (Buenrostro 2009:126)

a. Ix-Ø-way winh unin.
PST-3SG.ABS-sleep CLASS child
'The child slept.'

b. A jun unin ix-Ø-way-i.
FOC one child PST-3SG.ABS-sleep-ITV
'It was the child who slept.'

In the progressive aspect, the single argument of an intransitive verb triggers the same agreement as DP_{ext} of a transitive verb (ergative agreement); in other aspects it triggers absolutive agreement. Crucially, the ergative-marked sole argument of an intransitive verb can be focused like absolutive-marked DPs; it is not necessary (and even impossible) to use the AF construction:

(40) Chuj, focusing of an ergative-marked single argument (Buenrostro 2009:126)
a. Wan s-way winh unin.
PROG 3SG.ERG-sleep CLASS child
'The child is sleeping.'
b. A jun unin lanh s-way-i.
FOC one child PROG 3SG.ERG-sleep-ITV
'It is the child who is sleeping.'

Thus, Ixil and Chuj provide evidence that the first prediction of the present co-argument-based analysis is borne out: the single ergative-marked argument of an intransitive verb can be Ā-moved.[27] It patterns with absolutive-marked DPs in this respect. Thus, the extraction asymmetry in transitive clauses is not triggered by morphological ergative marking alone; rather, it is the presence of a co-argument that causes the ban on ergative movement (which should thus better be called a ban on transitive ergative movement).[28]

5.1.2. *Extraction of both arguments of a transitive verb*

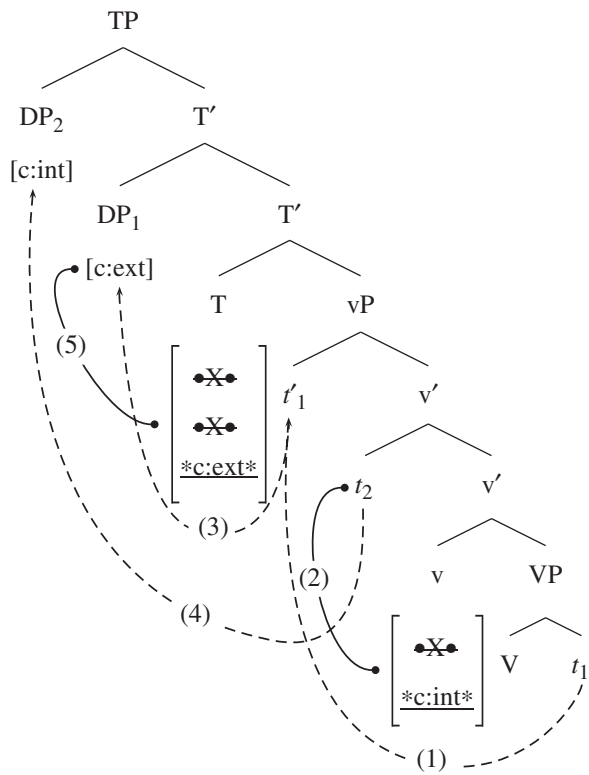
The second prediction of the present account is that in languages with the ban on ergative movement, DP_{erg} *can* be Ā-moved after all, if DP_{abs} is extracted as well. The reason is that there is a derivation with Ā-movement of both DP_{erg} and DP_{abs} in which both arguments receive structural case. The initial step is as in (32a): given that Merge applies before Agree, v introduces DP_{ext} (external Merge); next, DP_{int} moves to the edge of the phase head v in order to be able to be moved to Spec,C (internal Merge). Afterward, v assigns [c:int] (the ergative) to DP_{ext}. As soon as T is merged, it

[27] The analyses in Aldridge 2004 and Coon et al. 2011 make the same prediction. Under Stiebels (2006) account, Ā-movement of the single ergative-marked argument is wrongly predicted to require AF, just as the extraction of transitive agents does. The reason is that AF gives rise to a better constraint profile: it realizes the ergative and signals an Ā-dependency at the same time.

[28] The present account does not exclude the existence of languages in which the sole ergative-marked argument of an intransitive verb cannot be extracted: if the split is semantic-based (i.e., each verb falls in exactly one semantic class), verbs of the class that assign ergative to their sole argument must be hidden transitives with a phonologically null DP_{int} (see Bobaljik 1993, Laka 1993, Nash 1996, Bittner & Hale 1996b). Thus, there is a co-argument that does not get case when DP_{ext} is extracted. However, this analysis is not plausible for aspect-based splits because one and the same verb would have to be transitive and intransitive, depending on aspect.

attracts both DPs to its specifier, the edge of the TP phase. Given that there is no MLC-like constraint, the order of movements is free. The DP that moves first lands in the inner specifier, and the DP that moves later ends up in the outer specifier of T. Finally, [c:ext] is valued by T via Agree. Because both DPs are in a specifier of T at that point, the Spec-Head Bias does not determine which DP must be the goal of case assignment. Thus, both DPs can be the goal (recall that there is no MLC). The derivation converges if DP_{int} receives [c:ext] from T. In this case, there is no maraudage; see (41) (as before, continuous lines indicate case assignment, dashed lines indicate movement).[29] Finally, both DPs are moved to Spec,C.

(41) Legitimate movement of DP_{erg} and DP_{abs}



Data from K'ichee' and Kaqchikel confirm this prediction. In section 2.1, we saw that K'ichee' exhibits the ban on ergative movement with *wh*-movement and focusing. In (42), both DP_{erg} and DP_{abs} are focused, and AF is not necessary. Kaqchikel exhibits

[29] T could also assign the external case to DP_{ext}. In this case, however, DP_{ext} would maraud the case feature that DP_{int} needs and the derivation would crash. But because there is one converging derivation, grammaticality is ensured.

the ban on ergative movement if DP_{erg} is questioned; cf. (1) and (2). In (43) and (44), DP_{erg} is questioned and DP_{int} is focused/questioned as well; again, the AF construction is not used.[30]

(42) Focusing of DP_{erg} and DP_{abs} in K'ichee'(Can Pixabaj & England 2011:26)
are k'u ri al Ixchel, are ri kinaq' x-Ø-u-tzak-o.
FOC PART DET CL Ixchel FOC DET beans COMPL- 3SG.ABS- 3SG.ERG-cook-TV
'. . . but as for Ixchel, it is beans that she cooked.'

(43) *Wh*-movement of DP_{erg} and focusing of DP_{abs} in Kaqchikel
Achike ja ri jun sik'iwuj n-Ø-u-löq'?
Q.ANIM FOC DET INDEF book INCOMPL- 3SG.ABS-3SG.ERG-buy
'Who buys a BOOK?'

(44) *Wh*-movement of DP_{erg} and DP_{abs} in Kaqchikel
Atux achike n-Ø-u-löq'?
Q Q.ANIM INCOMPL-3SG.ABS-3SG.ERG-buy
'Who buys what?'

So far, there is still an unwanted derivation that involves double Ā-movement.[31] After DP_{ext} and DP_{int} have been (externally and internally) merged in Spec,v, v assigns [c:int] to DP_{int}. T is merged, and both DPs move to Spec,T. The derivation converges if T assigns [c:ext] to DP_{ext}. As a result, an accusative pattern emerges. However, we are not aware of a morphologically ergative language showing morphological accusativity under double extraction. The unwanted derivation can be blocked as follows. First, suppose, following Chomsky 2000, that external Merge precedes internal Merge (Merge before Move). Also suppose that the Spec-Head Bias actually prefers Spec-head agreement with the innermost specifier to *any other* agreement. This is sufficient to block the unwanted derivation. In a morphologically ergative language, Merge precedes Agree. If external Merge precedes internal Merge, then a moved DP_{int} occupies an outer Spec,v and DP_{ext} an inner Spec,v. Consequently, preference for the innermost specifier enforces that Agree targets DP_{ext} and thus the accusative pattern is not derived. (For an alternative approach to deriving ordered specifiers without minimality, see Georgi 2014.)[32]

[30] As noted in section 2.2, the analyses of Aldridge (2004) and Coon et al. (2011) differ from the present approach in that they predict Ā-movement of more than one DP to be impossible. In the optimality-theoretic account of Stiebels (2006), AF is wrongly predicted to occur with Ā-moved ergative DPs, regardless of whether another DP is extracted.

[31] We thank Erich Groat for pointing this out to us.

[32] A similar issue may arise with scrambling. In Mayan, the order of postverbal arguments is SO or OS with no difference in argument encoding. In principle, an accusative pattern might arise with OS word order: DP_{int}, which is scrambled above DP_{ext} to Spec,v, might get [c:int] from v. Assuming that scrambling is movement, this undesirable result is again excluded if external Merge applies before internal Merge. (If VOS in Mayan comes about via fronting of vP, as Coon [2010c] proposes for Chol, then there is no problem to begin with.)

5.2. Open Questions

Not all morphologically ergative languages have a ban on ergative movement. In some, DP_{erg} can be freely extracted (e.g., in Chol, Mayan, Coon et al. 2011; Basque, isolate, Ortiz de Urbina 1989; Avar, Nakh-Dagestanian, Polinsky et al. 2012). The question arises as to how language variation with respect to extraction asymmetries can be integrated into the present analysis. The central parts of the analysis of the ban on ergative movement are the assumptions (a) that the order of Merge and Agree on T and v is identical, (b) that DPs that are to be moved to Spec,C must make a stop-over in Spec,T, (c) that a DP can check more than one case feature, and (d) that the core arguments receive case from T and v. The extraction asymmetry in ergative languages may not arise if one of these assumptions is modified.

First, the order of Merge and Agree on T might, in principle, differ from the order on v. Merge before Agree on the vP cycle produces morphological ergativity. The same order on T results in the ban on ergative movement. The reverse order on T (Agree before Merge) has the consequence that movement of DP_{erg} comes too late to effect maraudage because T assigned case to DP_{int} earlier. However, this wrongly predicts the possibility of a ban on accusative movement in morphologically accusative languages. If the order in the T domain deviates from the order on v, then Merge before Agree on T may hold in some morphologically accusative languages (which have Agree before Merge on v). If DP_{acc} is to be extracted, it would be merged in Spec,T *before* T assigns case and would maraud the external case feature that DP_{ext} needs.

Second, the status of T as a phase head may vary between languages. In some languages, T may not be a phase head and hence not bear edge features. Thus, DP_{erg} that is to be Ā-moved to Spec,C does not have to go through Spec,T. As a consequence, this DP need not maraud the case feature that T provides for DP_{abs} in a Spec-head configuration; recall that this was the fatal step in the derivation with illicit movement of DP_{erg}.

The third option to account for the absence of the ban on ergative movement is to assume that a DP cannot check more than one case. This may be so because (a) the number of cases a DP is able to check varies between languages or (b) because the ergative is not a structural but rather an inherent case in some morphologically ergative languages (see fn. 8). If (a) holds, DP_{erg}, which has already been assigned internal case by v and moves to Spec,T before T initiates Agree, cannot maraud the case feature of T. Assume that (b) holds: given that only structural case features keep a DP active for further case checking (see (29)), an inherently case-marked DP_{ext} that is to be extracted is inactive and hence cannot maraud [c:ext] on T. As a consequence, Agree between T and DP_{int} is not bled, and both arguments of a transitive verb receive case. This variant has been worked out in Heck & Müller 2013.

Fourth, one may change the assumptions about the case-assigning heads, as done by Coon et al. (2011), who note that Tada (1993) observes that in languages of the Mayan family that exhibit the ban on ergative movement the absolutive marker appears to the left of the verb stem (high) whereas in those Mayan languages that lack the ban the absolutive marker appears to the right of the verb (low). Coon et al. call

the first subgroup "HIGH-ABS" languages and the latter "LOW-ABS" languages. They propose that in HIGH-ABS languages absolutive is assigned by T whereas in LOW-ABS languages it is assigned by v. Owing to the PIC, DP_{int} must move to Spec,v to receive absolutive case in HIGH-ABS languages but not in LOW-ABS languages. As a consequence, the escape hatch Spec,v is blocked in HIGH-ABS languages only, which derives the ban on ergative movement and its variation within Mayan. Coon et al.'s explanation can, in principle, be transferred more or less directly into the present theory. To this end, suppose that the unmarked absolutive in Mayan is either valued by T (HIGH-ABS languages, as in Coon et al. 2011) or by V (LOW-ABS languages). For HIGH-ABS languages everything remains as before. In LOW-ABS languages, absolutive on DP_{int}, having been valued by V, cannot be marauded by DP_{ext} simply because DP_{ext} is merged too high in the structure (Spec,v). $\bar{A}$-extraction of the ergative argument is without consequences. As will become clear shortly, this analysis of LOW-ABS languages is, to a certain extent, similar to the analysis of the AF construction in Mayan in the next section.

6. Agent Focus in Mayan

A question that emerges in connection with the ban on ergative movement is how the external argument of a transitive verb can be questioned, relativized, or focused in languages that exhibit the ban on ergative $\bar{A}$-movement. One possibility in Mayan languages, in addition to the detransitivizing antipassive, is the AF construction. In this section, we introduce the properties of this construction and present an analysis of AF within the system developed in section 3.

6.1. Properties of Agent Focus in Mayan Languages

In a regular transitive clause without $\bar{A}$-movement, both arguments receive structural case. The verb agrees in person and number with both DP_{erg} and DP_{int}. The features of DP_{ext} are cross-referenced on the verb by a set of affixes (the ergative affix set) that differs from the set which indicates the features of DP_{abs} (the absolutive affix set). Additionally, in many Mayan languages the verb carries a transitive status suffix (glossed TV). An intransitive verb (often) carries the intransitive status suffix (glossed ITV) and the sole argument of the verb also triggers the absolutive agreement set on the verb; see the examples from Q'anjob'al in (45a,b).

(45) Agent focus in Q'anjob'al (Coon 2010a)

a. Max-ach y-il-a'.
ASP-2SG.ABS 3SG.ERG-see-TV
'She saw you.' Transitive verb, no extraction

b. Max-ach way-i.
ASP-2SG.ABS sleep-ITV
'You slept.' Intransitive verb, no extraction

c. *Maktxel max-ach s-laq'-a'?
who ASP- 2SG.ABS 3SG.ERG-hug-TV
'Who hugged you?' Extraction of transitive agent without AF

d. Maktxel max-ach laq'-on-i?
who ASP- 2SG.ABS hug-AF-ITV
'Who hugged you?' Extraction of transitive agent with AF

Ā-movement of DP_{erg} is ungrammatical in Q'anjob'al (see (45c)). The AF construction can be used instead to express the same content (see (45d)). In AF, both arguments receive structural case, just as in a regular transitive clause without extraction. None of the arguments is realized as an oblique; there is no demotion of arguments. Hence, AF is not a detransitivizing operation (in support of this view, see the references in Aissen 1999). However, the verb can agree with only one of the two arguments of a transitive verb and cross-references this argument by the absolutive set of affixes.[33] Additionally, the verb carries the intransitive status suffix. Furthermore, an additional suffix (glossed AF) attaches to the verb; see (45d). To summarize, the AF construction is syntactically transitive, but morphologically intransitive. Apart from the AF morpheme, the verbal morphology looks like the one we find on intransitive verbs, but there are two core arguments.

Moreover, there are restrictions on the use of AF: it can only be used if a transitive agent is to be extracted (but see fn. 34); it cannot be used in a regular transitive clause without extraction (see (46a)) or if a nonagent DP in a transitive clause is extracted (see (46b)).

(46) AF restrictions in Tzotzil (Aissen 1999:455)

a. *I-kolta-on tzeb li Xun-e.
COMPL-help-AF girl the Juan-ENC
'Juan helped the girl.' No extraction

b. ??A li Xun-e, I-kolta-o li tzeb-e.
FOC the Juan-ENC, COMPL-help-AF the girl-ENC
'The girl helped JUAN.' Focusing of DP_{int}

We thus need to account for the following properties of AF: (a) intransitive agreement morphology, (b) structural case assignment to both DPs, (c) obligatory extraction of DP_{ext}, and (d) impossibility of extracting DP_{int}.

6.2. Analysis of the Agent Focus Construction

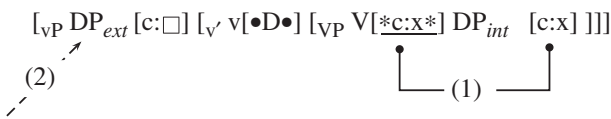
Under the present analysis, the problem with Ā-movement of DP_{erg} is that its co-argument, the internal argument of a transitive verb, does not receive case.

[33] The choice of the agreement-triggering argument is regulated by language-specific rules: in some Mayan languages only the object triggers agreement, in others only the subject, and in a third group Silverstein hierarchies determine which argument agrees with the verb (see Stiebels 2006 for an overview). This choice does not affect the analysis of AF that we present in this section.

Following Ordóñez 1995 and drawing heavily from Coon et al. 2011, let us assume that in the AF construction DP_{int} is assigned structural case by an added probe (cf. Béjar & Řezáč 2009), represented as [∗c:x∗]. This probe is morphologically realized by the AF morpheme. Because the AF morpheme is always adjacent to the verbal root, we can conclude that the added probe is located very low in the structure, on V.[34] Additionally, an intransitive v is merged that does not assign [c:int] (ergative case) but still introduces the external argument (this variant of v is independently needed to account for case assignment with unergative verbs; it introduces an external argument but does not assign ergative case to it). All other assumptions we made so far stay the same. In particular, the feature content of T does not change; it still assigns [c:ext] and triggers intermediate movement steps via edge features.

The assumption that an intransitive v is merged accounts for the intransitive morphology in the AF construction. Only a single argument is cross-referenced on the verb (via Agree with T), because v does not have a probe and hence cannot trigger Agree. The extractability of DP_{ext} and the ban on extraction of DP_{int} as well as the assignment of structural case to both DPs follow automatically from the assumptions in section 3.[35] We start with the operations in the vP; these are the same, regardless of whether DP_{ext} or DP_{int} is to be extracted; see (47). First, the added probe on V enters into Agree with DP_{int}, which is the only available goal at that point of the derivation because V does not introduce a DP in its specifier. Afterward, v is merged and introduces DP_{ext}. Being an intransitive variant, v does *not* trigger Agree; hence, the order of operations does not play any role on the vP cycle. DP_{ext} does not receive case from v, so it still needs a structural case value.

(47) Operations applying in the vP



Suppose that DP_{ext} of a transitive verb is extracted; see (48). T has a case probe and an edge feature that triggers the intermediate movement step to Spec,T. Given the order Merge before Agree in a morphologically ergative language, DP_{ext} moves to Spec,T. Owing to the Spec-Head Bias, T assigns the external case to DP_{ext}. But in contrast to the derivation without AF (cf. (31)), DP_{ext} is in need of case from T because it did not receive a case value within vP. Because DP_{int} gets case early in the derivation from V and does not depend on the case assigned by T (as it does in regular transitives), the derivation converges. Both DPs get structural case. DP_{ext} can be moved to Spec,C.

[34] Because the analysis of AF is borrowed from Coon et al. 2011, it accounts in the same way for their observation that embedded transitive clauses in Q'anjob'al exhibit the AF morpheme, too; see Coon et al. 2011 for details.

[35] Other accounts of the AF construction have been put forward by Larsen (1988), Tada (1993), and Coon et al. 2011.

(48) [TP DP$_{ext}$ [c:ext] [T′ T [*c:ext*] [vP $t_{DP_{ext}}$ [v′ v [VP V DP$_{int}$ [c:x]]]]]]

(3), (4)

If DP$_{int}$ is Ā-moved, the derivation continues on the basis of (47) as follows. Given the order Merge before Agree, DP$_{int}$ is moved to Spec,T before T assigns case. Owing to the Specifier-Head Bias, DP$_{int}$ checks [c:ext] on T in addition to the case [c:x] it checked with the added probe on V. There is no case left that could be assigned to *DP$_{ext}$*. DP$_{int}$ marauds the case that DP$_{ext}$ needs; see (49). The derivation crashes. This pattern is exactly the reverse of what we saw in the derivation of the ban on ergative movement (cf. (31)): in AF, the Ā-moved DP$_{int}$ marauds the case that DP$_{ext}$ would need; in regular transitives, the Ā-moved DP$_{ext}$ marauds the case for DP$_{int}$.[36]

(49) [TP DP$_{int}$ [c:ext] [T′ T [c:ext] [vP DP$_{ext}$ [c:□] [V′ v [VP V $t_{DP_{int}}$]]]]]

(3), (4)

Finally, our analysis of AF makes the prediction that the AF morpheme should be optional when both arguments are extracted because in both cases (i.e., with or without the added probe on V), there is a converging derivation: the case of double extraction without AF was discussed in (41); the case of double extraction with the AF morpheme is straightforward. DP$_{int}$ receives its case from the added probe on V. After caseless v and DP$_{ext}$ are merged, both arguments are extracted and make an intermediate stop in Spec,T. If the DP$_{ext}$ receives T's [c:ext], both arguments end up with case and further extraction may proceed. Empirically, the prediction seems to be borne out, at least for Kaqchikel. Double extraction is possible with or without the AF marker:

(50) Double extraction of a focused object and a *wh*-subject in Kaqchikel

a. Achike ja ri jun sik'iwuj n-Ø-u-löq'?
INT FOC DET INDF book INCOMPL-3SG.ABS-3SG.ERG-buy

b. Achike ja ri jun sik'iwuj n-Ø-loq'-o?
INT FOC DET INDF book INCOMPL-3SG.ABS-buy-AF
'Who buys A BOOK?'

To summarize, the analysis accounts for the fact that the external argument of a transitive verb can be Ā-moved under AF, whereas the internal argument cannot be extracted. Multiple extraction is possible under AF. The pattern is the reverse of what we find with extraction of DP$_{erg}$. However, one open question remains: why can AF only be applied if an element is extracted? Under the present account, there is an AF

[36] Coon et al. (2011) do not provide an explanation for this restriction on AF.

derivation that converges if no DP is extracted: DP_{int} gets case from the added probe on V and DP_{ext} receives [c:ext] from T in its base position in Spec,v.[37]

7. Conclusion

In this paper, we presented a relational, co-argument-based account of the ban on ergative movement that holds in many morphologically ergative languages. We proposed that movement of the ergative is per se unproblematic, but if it applies, it creates problems for the absolutive co-argument of the ergative. The internal argument cannot get absolutive case because the ergative, by its very nature, moves early and marauds the case feature for the internal argument. No such movement asymmetry arises in morphologically accusative languages because movement of a DP applies late, after the co-argument has received its case feature. Hence, maraudage cannot take place. The different timing of operations in ergative versus accusative languages is derived from the analysis of morphological ergativity and accusativity: The order Merge before Agree holds in ergative languages, whereas Agree before Merge holds in accusative languages on v and T. The analysis implies a strictly derivational syntax in which the order of operations plays an important role in deriving properties of the grammar.

Moreover, the varying order of Merge and Agree leads to opacity effects. In ergative languages, movement of DP_{erg} bleeds Agree between T and DP_{abs}, with fatal consequences; in accusative languages, movement of DP_{acc} counterbleeds Agree between T and DP_{nom}. Furthermore, the approach predicts that no ban on ergative movement arises (a) if DP_{abs} is extracted as well and (b) if the sole ergative marked argument of an intransitive verb is extracted. These predictions have been shown to be borne out empirically. Finally, we suggested that the AF construction, a repair strategy used for extraction of DP_{erg} in Mayan languages, is another phenomenon in which the timing of operations plays an important role. Movement of DP_{int} bleeds Agree between T and DP_{ext}, the reverse of what we find with the extraction of DP_{erg} in a regular transitive clause. All in all, the present account emphasizes the role of timing in grammar and thereby argues for a strictly derivational syntax.

[37] One could pursue the idea that AF is a repair strategy that steps in only if the derivation without AF crashes. We will not pursue the issue further here. As far as we can tell, no explanation is provided by Coon et al. (2011), either. A reviewer asks whether, according to the present analysis, AF is predicted not to show up in what Coon et al. call LOW-ABS languages of the Mayan family (see sect. 5.2). Indeed, if all things remain equal, this seems to be the case: a LOW-ABS language with AF would have two case features on V, a situation that is incompatible with transitive constructions in the present theory. If those Mayan languages that allow for extraction of the ergative are LOW-ABS (see sect. 5.2), then this amounts to saying that these languages cannot exhibit AF. But according to Stiebels (2006), Pocomam and Pocomchi' exhibit both extraction of the ergative and AF (see also Norcliffe 2009 on Yukatek). Thus, provided the preceding premises, our analysis requires one more assumption (e.g. that in these languages the AF-probe is added to T, not to V).

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Appendix A. Glosses

1/2/3	first/second/third person
ABS	absolutive
AF	agent focus
ANIM	animate
AP	antipassive
ART	article
CL	clitic
CLASS	class marker
COMPL	completive aspect
DAT	dative
DEIC	deictic element
DEP	dependent aspect
DET	definite determiner
DIR	directional
DUR	durative aspect
ENC	enclitic
ERG	ergative
EXCLAM	exclamative
FOC	focus
GEN	genitive
INCEP	inceptive aspect
INCOMPL	incompletive aspect
INDEF	indefinite
INSTR	instrumental
IPFV	imperfective aspect
ITV	intransitive status suffix
LOC	locative
NEG	negative
NONFUT	nonfuture
PART	participle
PASS	passive
PFV	perfective aspect
PL	plural
POSS	possessive
POT	potential aspect
PREP	preposition
PROG	progressive aspect
PST	past
PUNC	punctual aspect
Q	question word
QUANT	quantifier
REL	relativization
RN	relational noun
RPST	recent past
SG	singular
SUF	suffix
TV	transitive status suffix