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.

1. Introduction

In many morphologically ergative languages, ergative arguments cannot undergo Ā-movement (wh-movement, focussing, relativization). This phenomenon is an instance of the more general observation that languages exhibit extraction asymmetries, viz. 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

* We are grateful for comments from and helpful discussion with the participants of the colloquium *Theory of Grammar* at the University of Leipzig as well as the audiences of *Generative Grammatik des Südens* in Freiburg/Breisgau, GLOW 35 in Potsdam, and the workshop on *Decomposition and natural classes in argument coding* of the Forschergruppe 742 in Leipzig. Particular thanks go to Michael Yoshitaka Erlewine, Peter Gallmann, and Erich Groat.

Rule Interaction in Grammar, 363–412
Fabian Heck & Anke Assmann (eds.)
Linguistische Arbeits Berichte 90, Universität Leipzig 2013

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 and Hale 1996, 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 will argue that movement of the ergative prevents case assignment to the absolutive DP (cf. Aldridge 2004, Coon et al. 2011, where it is proposed that case movement of the absolutive creates an island for ergative movement). No extraction asymmetry arises in morphologically accusative languages because accusative or nominative arguments move too late to trigger the fatal consequences that early moving ergatives cause. In the formal account we develop, 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 as well as the relational, co-argument-based analysis of the ban on movement of ergatives proposed here implies a strictly derivational syntax in which the order of operations plays an important role in deriving properties of the grammar.

We will proceed as follows: 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. Furthermore, we discuss problems of previous analyses of the phenomenon. Section 3 contains the assumptions and shows how morphological ergativity/accusativity is derived. Next, we illustrate in section 4 how the movement asymmetry in morphologically ergative languages arises in this system and why no such asymmetry results in morphologically accusative languages. In section 5 we address further predictions of the analysis. Finally, in section 6 we develop an approach to a repair strategy of the ban on ergative

movement, the agent focus construction, within the system. Section 7 concludes.

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 focussed. DP_{int} of a transitive verb and the sole argument of an intransitive verb, however, can be freely extracted. Thus, the absolutive DPs cluster together, 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]

[1] In what follows, we assume that the absolutive case involved is syntactic. We are aware of the possibility that morphological quirks can make a syntactic non-absolutive case look like absolutive on the surface (see Legate 2008).

[2] Not all morphologically ergative languages exhibit the ban on Ā-moving the ergative. 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). We therefore confine the discussion to languages whose status as being ergative is undisputed. The restrictions in Austronesian also differ from the one discussed here in that adjunct extraction in these languages is also very constrained if not impossible (cf. Keenan 1976 on Malagasy). Despite the limitation 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.

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 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?'

[3] Unless references are provided, the Kaqchikel and K'ichee' examples in this paper are due to our informants Telma Can Pixabaj (K'ichee') and Rony Arnoldo Otzoy Chipix, Erika Edith Mux Son, and Herminia Son Bal (Kaqchikel). We used the following abbreviations in the glosses: 1/2/3 = $1^{st}/2^{nd}/3^{rd}$ 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, textscitv = intransitive status suffix, LOC = locative, NEG = negative, NONFUT = non-future, 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.

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

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
who COMPL-3SG.ABS-3SG.ERG-want 3SG.ERG-RN DET CL
Mari'y?
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. 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 (5-a) and (5-b)). The external argument of a transitive verb can, however, not be questioned (see (5-c)). The

antipassive has to be used in order to extract DP_{erg} (see (5-d)).[4] It turns the agent DP into the sole absolutive marked DP of an intransitive verb which can then be extracted.

(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 focussed 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 focussing of DP_{ext} leads to ungrammaticality (see the c.-examples). Focussing 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.'

[4] Many Mayan languages exhibit, alongside the antipassive, yet another construction that enables extraction of the ergative argument, which 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.

b. Are ri jun wuuj k-Ø-u-loq' ri a
FOC DET INDEF book INCOMPL-3SG.ABS-3SG.ERG-buy DET CL
Karlos.
Carlos
'It is a book which Carlos buys.'

c. *Are ri a Karlos k-Ø-u-loq' ri jun
FOC DET CL Carlos INCOMPL-3SG.ABS-3SG.ERG-buy DET INDEF
wuuj.
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-ʔn 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-ʔn 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-ʔn 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 focussed (see (10-a) and (10-b)), but DP_{erg} cannot be focussed; antipassive is needed to extract the transitive agent (see (10-c) and (10-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 (11-a)) and the sole argument of an intransitive verb (see (11-b)), but it is impossible to relativize DP_{ext} of a transitive verb (see (11-c)).

(11) *Relativization of DP_{erg} vs. DP_{abs} in Jakaltek* (Campana 1992, 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 …'

Again, 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, see Otsuka 2000, 2006).

(12) *Relativization of DP_{erg} vs. DP_{abs} in Dyirbal* (Pama-Nyungan; 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.' *rel. 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.' *rel. of DP_{ext}*

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.' *rel. of DP_{int}*

b. yo-hik nyan waokdyi-nin anyan piya
1SG-know DEIC arrive.here-DEP this man
'I know the man who arrived here.' *rel. 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.' *rel. of DP_{ext}*

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* (Austronesian; Otsuka 2006):

a. e fefine [na'e fili 'e Sione]
DET woman PST choose ERG Sione
'the woman (who) Sione chose' *rel. of DP_{int}*

b. *e fefine [na'e fili 'a Sione]
DET woman PST choose ABS Sione
'the woman (who) chose Sione' *rel. of DP_{ext}*

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 focussing.

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 illustrate some of their drawbacks. The analyses under discussion 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 which does what the ergative marker does *and* signals the presence of an Ā-dependency at the same time. Given an optimality-theoretic approach, the agent focus construction can block the ergative+movement construction as suboptimal because the former leads to a better constraint profile than the latter (Stiebels 2006).
2. Case-driven movement (sometimes covert) of DP_{abs} blocks movement of DP_{erg}, either due to 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 agent focus construction (AF). As such, it has nothing to say about languages which lack agent focus and which nevertheless show the ban on movement of the ergative argument (see section 2.1).

Analyses of type 2 have theoretical or empirical problems. To begin with, a minor technical flaw of Campana's (1992) analysis is that it is based on a non-standard concept of intervention.

Empirically, Campana (1992), Aldridge (2004), and Coon et al. (2011) all must assume that there is covert movement of DP_{abs}, which is hardly 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 section 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 while they are merged vP-internally in ergative-absolutive languages.

Finally, the 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, i.e., 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 1983*a*,*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 Jakaltek* (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 the examples in (17-a-c) from Kaqchikel show, indirect objects, instrumental and locational constituents can be Ā-moved even in a transitive context.[5]

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

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

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

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

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

[5]Henderson (2007) reports that extraction of certain adjuncts in Kaqchikel (including instrumental and locational adverbs) obligatorily requires the presence of the verbal marker *-wi*. (For reasons that are not clear 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 and that adjunct extraction from vP is exceptionally possible in the presence of *-wi*. However, Henderson (2007) also observes that there are adjuncts that do *not* require *-wi* when they undergo extraction (such as temporal adverbs and benefactives). We take this as evidence that vP in Kaqchikel is not an island. See Erlewine (2012) for further intriguing observations about extraction in Kaqchikel, which we have nothing to say about here.

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, viz., T and C. However, the projection of C will not occur in the following trees since 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 and Müller 2007 and references cited there):

(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 take it 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) demand that probe and structure building features are checked (application of these constraints at each derivational step derives the effects of the Earliness Principle; Pesetsky 1989).

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

(21) Merge Condition (MC):
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 SpecC must make an intermediate stop in SpecT. This can be ensured in various ways: either by assuming that TP is a phase (Richards 2011), by stipulation (Chomsky 2005, Boeckx and Grohmann 2007), or by assuming that every phrase is a phase (for successive-cyclic movement through all intermediate phrase edges see, e.g., 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; (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 the standard, 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, footnote 52; Müller 2004, Müller 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 and Vergnaud 1980). Structural case is assigned by the functional heads v and T to argument DPs under Agree. This means that T and v, respectively, have valued case probe features [∗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 morphologically 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).[6] In intransitive contexts only the T head is active, so the single argument receives the unmarked case.[7] More specifically, 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.[8] The unmarked case (nominative/absolutive) is represented as the external case [c:ext] and the marked case (ergative/absolutive) as the internal case [c:int]. Since T assigns unmarked external case and v assigns the marked internal case, these heads bear the following probe features:[9]

[6] This assumes that the ergative is a structural case. See Nash (1996), Alexiadou (2001), Woolford (2001, 2006), Legate (2008) for the opposite view. Woolford (2001, 2006) and Legate (2008) 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 has different sources (Aldridge 2004, Paul and Travis 2006, Legate 2008; see also footnote 1). The working hypothesis here is that morphological ergativity, at least in the languages that show the ban on Ā-moving the ergative argument, has a uniform base (see section 3.5).

[7] There are at least two other recent 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 and Massam 1985, Chomsky 1995: ch.3, Bobaljik 1993, Laka 1993, Řezač 2003, Bobaljik and Branigan 2006); (b) T assigns ergative, v assigns accusative, nominative=absolutive is default (Bittner and Hale 1996).

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

[9] Throughout this paper, we assume that Agree results in valuation: DPs enter the derivation without a case value and get this value under Agree with a probe which provides a value. Note that this is the reverse of what is standardly assumed for Agree in phi-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 phi-features; rather, case is assigned to DPs (cf. Adger 2003, Pesetsky and Torrego 2007). We take case to be uninterpretable on both probe and goal.

(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 Agree relation that involves the feature *case*. The only difference is the locus of the morphological realization of this relation:[10]

(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

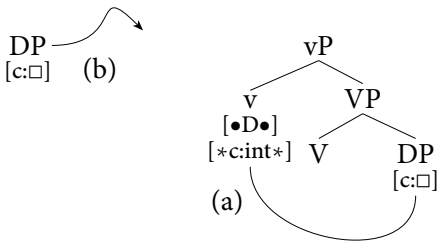
In ergative languages, DP_{int} of a transitive verb and the sole argument of an intransitive verb (DP_{int} or DP_{ext}) are treated alike, but differently from DP_{ext} of a transitive verb. In accusative languages, DP_{ext} of a transitive verb and the sole argument of an intransitive verb (DP_{int} 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 and Müller 2007), which relies on the *timing* of elementary operations. It turns out that the assumptions needed to derive the two basic

[10] 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 phi-features: In addition to case probes, there is secondary, purely phi-based Agree.

encoding patterns are also suited to account for the movement asymmetries described in section 2.1.

According to Müller (2009), ergative vs. accusative patterns of argument encoding result from different resolutions of conflicting earliness requirements for Agree and Merge on the vP level. The conflict emerges because v has a dual role in the present system: It participates in a Merge operation with DP_{ext} and it 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: AC (= (20)) 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)); MC (= (21)) demands that the next step is Merge of DP_{ext} in Specv (see (b) in (26)).

(26) *Stage* Σ:

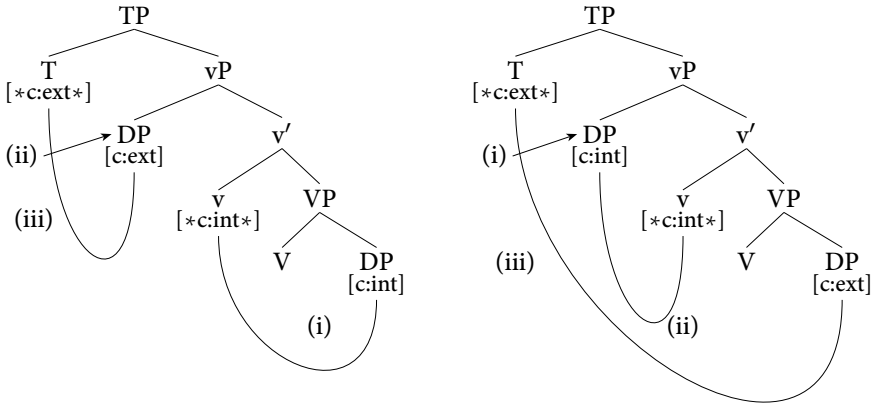


Assuming that only a single operation can apply at any stage of the derivation (pace Chomsky 2008), AC and MC need to be ordered.[11] This ordering has consequences for argument encoding. If Agree takes priority over Merge, then an accusative pattern arises; if Merge takes place before Agree, then an ergative pattern emerges. More precisely, the two patterns of argument encod-

[11] Three ways to resolve a conflict w.r.t. the order in which operations apply are thinkable: (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 the other way round). Simultaneous rule application as in (c) is at variance with a strictly derivational approach to syntax (see Brody 2002, Epstein and Seely 2002).

ing 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. In a subsequent step, T is merged and DP_{ext} receives the external case, called nominative (see the a.-derivation in (27)). 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 the b.-derivation in (27)); [c:ext] is called absolutive in this environment.

(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, it is DP_{ext} in Specv that 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.[12] 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 inverted, is presented in Béjar and Řezáč 2009.)

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

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

Since 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, viz., 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.[13] This critical situation emerges in 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 Specv 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 MLC (though 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 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.

With this final remark we finish the illustration of the analysis of argument encoding patterns developed in Müller (2009). 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. Interestingly, 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.

[13] This preference could also be derived by assuming that the probe agrees with the goal which 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 Specα is shorter than the path from α to an element in the complement domain of α (see e.g. Heck and Müller 2007). Here, we opt for the Spec-Head Bias which is compatible with equi-distance effects, which in turn pose a problem for path-based definitions of minimality.

3.6. Maraudage

A final assumption that is necessary to account for the extraction asymmetries described in section 2.1 concerns the behaviour 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. 2013, see also Merchant 2006 and references therein). 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 where a DP α that 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 that DP cannot receive case, which leads to the crash of the derivation. Put differently, DP α uses up a case feature that it does not need (because it already has a case value), but that would be absolutely necessary for its co-argument. We call this taking away of features that should normally be reserved for some other item "maraudage" (see Georgi et al. 2009, Georgi 2012, Müller 2011 on maraudage).[14]

In the present system, maraudage occurs in the following situation: Suppose there is a head γ which triggers Merge of a DP_1 and Agree for case. Under the order Merge before Agree, the structure-building feature of γ is discharged first and a DP is merged in Specγ. Due to the Spec-Head Bias, γ next checks its case probe with DP_1 in its specifier, although there may be another potential goal DP_2 in the complement domain of γ. Now, if DP_1 has already gotten a case value earlier in the derivation, it marauds the case feature of γ, with fatal consequences for its co-argument DP_2, which does not receive a case

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

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

The configuration in (30-b) 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. Recall that 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 structure-building feature triggering Merge, but it can induce only a single operation at once. Crucially, the same indeterminacy may arise with T, given the assumptions laid down in section 3: If a DP is to be Ā-moved to SpecC, it must make an intermediate stop in SpecT, due to the PIC. This movement step is triggered by a category-neutral edge feature [•X•] instantiated on T. However, T also triggers Agree because it bears [∗c:ext∗]. Thus, if an element is to be Ā-moved to SpecC, 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 make the natural assumption 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 language and the absence of extraction asymmetries in accusative languages.

4.1. Displacement in Languages with Ergative Encoding Patterns

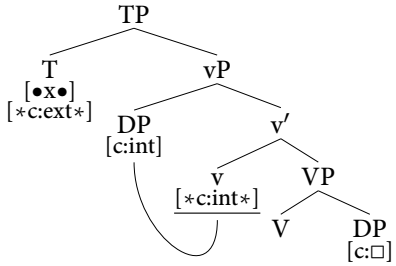
4.1.1. Illegitimate Movement of the Ergative DP

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. Afterwards, it assigns [∗c:int∗] to the external argument in its specifier (due to the Spec-Head Bias), see (31-a). Given the PIC, DP_{erg} must move from Specv to SpecT if it is to undergo subsequent Ā-movement to SpecC. Given 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 (31-b). Given the Specifier-Head-Bias, DP_{erg} in SpecT 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 (31-c). 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.[15]

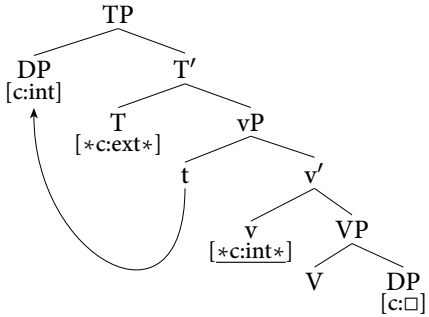
[15] In the following tree structures underlining signals a discharged probe; discharged edge features are not represented anymore; traces are only inserted as mnemonic devices.

(31) *Illegitimate movement of DP_{erg}*:

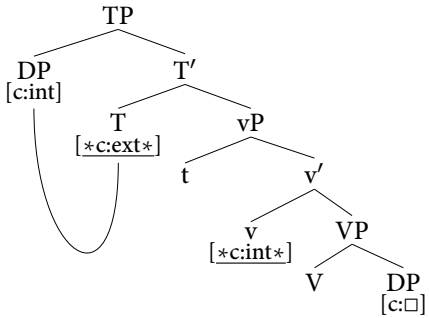
a. Structure after T is merged



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



c. Specifier-Head Bias triggers maraudage of T



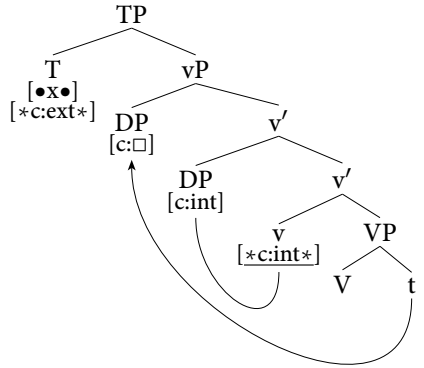
4.1.2. Legitimate Movement of the Absolutive DP

No such problem arises for movement of DP_{abs}. On the vP cycle in (32-a), 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 Specv is necessary because vP is a phase and

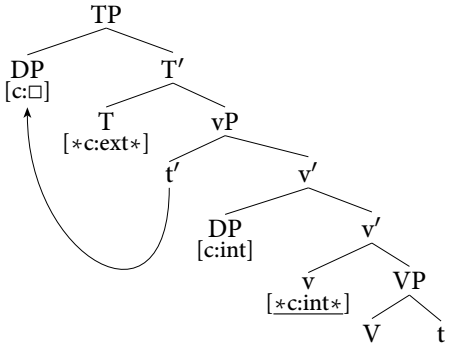
DP_{int} would otherwise be trapped in the domain of the phase head. Next, v assigns [c:int] to DP_{ext} in its specifier. Afterwards, T is introduced. Given that Merge applies before Agree, T first discharges its edge feature and attracts DP_{int}, which does not yet have a case value, see (32-b). Then T triggers Agree and due to the Spec-Head Bias it assigns [c:ext] (absolutive) to the DP in its specifier (32-c). Finally, DP_{abs} moves to its final landing side SpecC. 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 SpecT. Hence, maraudage does not take place.

(32) *Legitimate movement of DP_{abs}*:

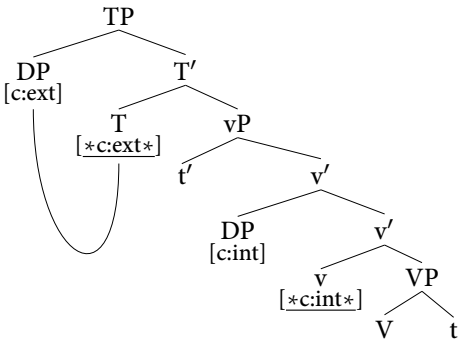
a. Structure after T is merged



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 Specv 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, see above; 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 SpecT. DP_{ext} is then left without case.

To summarize, an ergative DP_{ext} cannot be Ā-moved because intermediate movement to SpecT 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} is already assigned case within vP. 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.

4.2. Displacement in Languages with Accusative Encoding Patterns

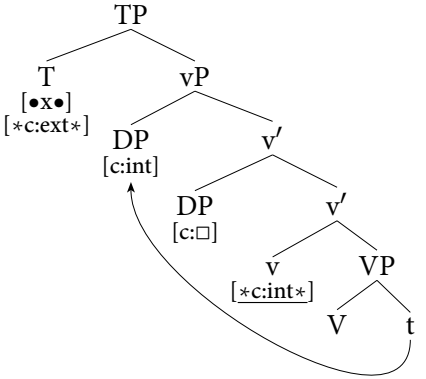
4.2.1. Legitimate Movement of the Accusative DP

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. Next, DP_{int} moves to the edge of v to escape the vP-phase, see (33-a). Agree before Merge is also active on the TP cycle. Here it ensures that Agree with DP_{ext} in Specv can be carried

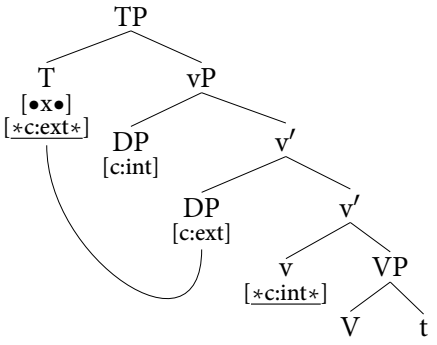
out *before* DP_{int} undergoes successive-cyclic movement to SpecT (and then to a higher position), see (33-bc). This derivation converges because both arguments receive structural case. Note that at the point where T triggers Agree, there are two possible goals: If T assigns case to DP_{ext}, a well-formed output results. Since there is another DP in the c-command domain of T and there is 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}*:

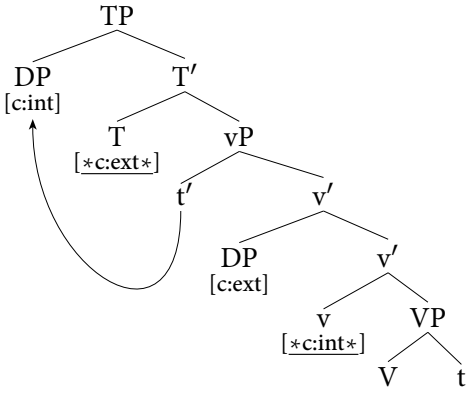
a. Structure after T is merged



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



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

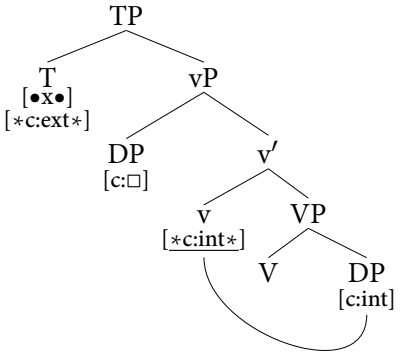


4.2.2. Legitimate Movement of the Nominative DP

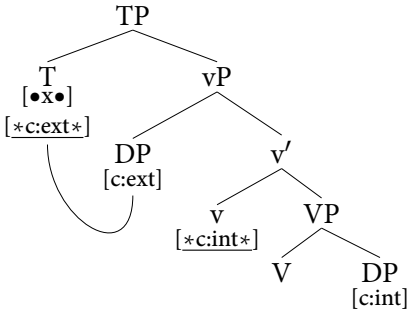
Similarly to movement of DP_{abs}, there is no problem for movement of DP_{nom} because DP_{acc} has already been assigned case when DP_{nom} moves to SpecT and hence DP_{nom} cannot cause maraudage. The initial step, the assignment of [c:int] to DP_{int} (= accusative), is shown in (34-a). Then T assigns case to DP_{ext} (= nominative) before DP_{ext} moves to SpecT, see (34-b) and (34-c). Since both arguments receive structural case, the derivation converges. Note that T could in principle 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}*:

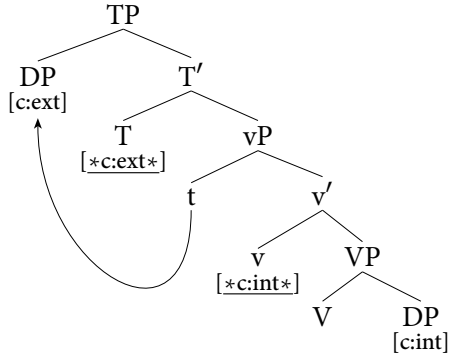
a. Structure after T is merged



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



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



4.3. Opacity

The above analysis instantiates an interesting case of opacity (Chomsky 1951, 1975, Kiparsky 1973, Arregi and Nevins 2012). The term opacity characterizes rule interactions that are not transparent: In cases of counter-feeding, a certain rule has not applied although its context is given; in cases of counter-bleeding, a rule has applied although its context is not given (see Kiparsky 1976). In our case, we are dealing with an instance of counter-bleeding of the following abstract pattern: There is a rule R_1 (Agree between T and a DP in what follows) that changes a structure AB into AC, and there is a rule R_2 (edge feature-driven Merge to SpecT in what follows) that changes A into 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 DC why rule R_1 could apply at all

because its application context has been destroyed by application of R_2, i.e., rule R_2 should bleed R_1, but R_1 applies nevertheless (hence counter-bleeding). The only way to change AB into DC is to apply rule R_1 first and change AB into AC and then apply rule R_2 to change AC into DC. In the remainder of this section, we will discuss bleeding in ergative languages and an instance of counter-bleeding in accusative languages that arise through 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 SpecT *bleeds* Agree between T and DP_{abs} (rule R_1): Given that (internal) Merge of DP_{erg} precedes Agree due 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 SpecT (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 (compare (31-c)): There is a DP in SpecT 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 SpecT *counter-bleeds* Agree between T and DP_{nom}. Counter-bleeding 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 SpecT, which could potentially cause bleeding, comes too late; T has assigned case before DP_{acc} moves.

Note that the derivational order that creates counter-bleeding cannot be reconstructed by just looking at the output representation on the TP cycle: DP_{acc} in SpecT *does* occupy the preferred position for case valuation with T, compared with DP_{nom} in Specv, and there is no representational way to recover 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 (like, 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.[16]

Indeed, 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 counter-feeding configuration: Movement of DP_{erg} to SpecC (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 SpecT anymore. The counter-feeding effect can be accounted for if traces are present, unlike the counter-bleeding effect with accusative movement.[17]

5. Predictions and Outlook

5.1. Predictions

The analysis presented 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 illustrate that these predictions are borne out empirically.

5.1.1. Extractability of the Sole Ergative Marked Argument of an Intransitive Verb

The present analysis of the ban on ergative movement is a co-argument-based approach: Ā-movement of DP_{erg} is unproblematic per se, but it creates prob-

[16] Another case of this rare type of opacity is presented in Lechner (2010).

[17] 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), Heck and 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 due 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 counter-bleeds 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.

lems 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 which 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 exhibit 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 examples from Yukatek in (35). Aspect has no influence on the alignment pattern of transitive verbs: Here, DP_{ext} always triggers ergative agreement and DP_{int} absolutive agreement (36).[18]

[18] In the system of ergative vs. 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. Since 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 which checks multiple cases maintains the value of the first case feature it checks. An alternative analysis is proposed by Larsen and Norman (1979), Bricker (1981), Coon (2010*b*). 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 Smith-Stark 1976, 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 compatible with the present analysis can be found in Müller (2009) and Coon and Preminger (2012).

(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.'

There are at least four Mayan languages that have both the ban on ergative movement and an aspect-based split with intransitives: Yukatek, Pocoman, Ixil and Chuj. We tested the prediction with examples from the two latter languages.[19] 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, (cf. Lengyel 1978). The ban on ergative movement can be exemplified with constituent negation. If a DP is negated in Ixil, it 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 focussed constituents. (37-a) and (37-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 (37-c)), giving rise to an ergative pattern of Ā-movement. Crucially, 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 (37-d).

[19] In Yukatek and Pocoman the use of agent focus 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.

(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. (38) shows that Chuj exhibits the ban on ergative movement with transitive verbs under focus. The focussed constituent is Ā-moved to the preverbal position. It is possible to focus DP_{abs} (38-c), but focussing of DP_{erg} requires the agent focus construction (38-b). In intransitive clauses, DP_{abs} can also be focussed, see (39).

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

a. ?ix-Ø-y-?il waj Mekel ?ix Katal.
PST-3SG.ABS-3SG.ERG-see CL Michael CL Kathleen
'Kathleen saw Michael.'

b. Ha ?ix Katal ?ix-Ø-?il-**an** waj Mekel.
FOC CL Kathleen PST-3SG.ABS-see-**AF** CL Michael
'It is Kathleen who saw Michael.' *focussed transitive subject*

c. Ha waj Mekel ?ix-Ø-y-?il ?ix Ketel.
FOC CL Michael PST-3SG.ABS-3SG.ERG-see CL Kathleen
'It is Michael who Kathleen saw.' *focussed 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 focussed like absolutive marked DPs; it is not necessary (and even impossible) to use the agent focus construction:

(40) *Chuj, focussing 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.[20] It patterns with absolutive marked DPs in this respect. This shows that 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).[21]

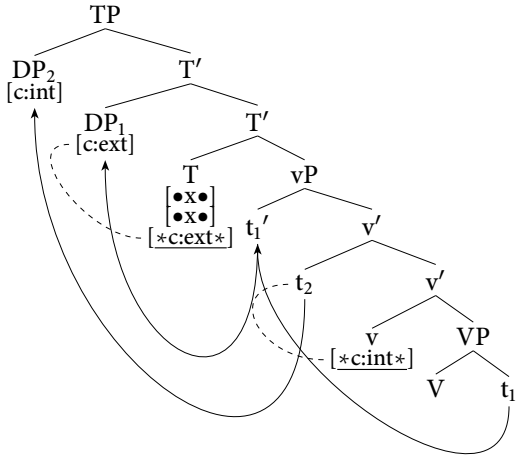
[20] The analyses in Aldridge (2004) and Coon et al. (2011), which are also co-argument based, make the same prediction. Under Stiebels's (2006) account, Ā-movement of the single ergative marked argument is predicted to require agent focus, just as the extraction of transitive agents does. The reason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

[21] 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} (cf. Bobaljik 1993, Laka 1993, Nash 1996, Bittner and Hale 1996). Thus, there is a co-argument which 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.

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 (32-a): 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 SpecC (internal Merge). Afterwards, v assigns [c:int] (the ergative) to DP_{ext}. As soon as T is merged, it attracts both DPs to its specifier, the edge of the TP phase. Since 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. Since 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) (dotted lines indicate case assignment, continuous lines indicate movement).[22] Finally, both DPs are moved to SpecC.

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



[22] 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 since there is one converging derivation, grammaticality is ensured.

Data from K'ichee' and Kaqchikel confirm this prediction. In section 2.1, we have seen that K'ichee' exhibits the ban on ergative movement with wh-movement and focussing. In (42), both DP_{erg} and DP_{abs} are focussed, and AF is not necessary. Kaqchikel exhibits 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 focussed/questioned as well; again, the AF construction is not employed.[23,24]

(42) *Focussing of DP_{erg} and DP_{abs} in K'ichee' (Can Pixabaj and England 2011: 26)*:

are k'u ri al Ixchel, are ri kinaq'
FOC PART DET CL Ixchel FOC DET beans
x-Ø-u-tzak-o.
COMPL-3SG.ABS-3SG.ERG-cook-TV
'... but as for Ixchel, it is beans that she cooked.'

[23] 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 OT account by Stiebels (2006), AF is wrongly predicted to occur with Ā-moved ergative DPs, regardless of whether another DP is extracted or not.

[24] Our account makes a wrong prediction with respect to double Ā-movement of DP_{erg} and DP_{abs} (we thank Erich Groat for pointing this out to us). The unwanted derivation runs as follows: After DP_{ext} and DP_{int} have been (externally and internally) merged to Specv, v assigns [c:int] to DP_{int}. T is merged and both DPs move to SpecT. 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 may be blocked as follows. First, suppose, following Chomsky (2000), that external Merge precedes internal Merge ("Merge before Move"). In addition, suppose that minimality holds after all, but only between multiple specifiers of a head α. In such a case, α can only enter into Agree with the DP in its innermost specifier. This is sufficient to block the unwanted derivation. In a morphologically ergative language Merge precedes Agree. If external Merge precedes internal Merge, then DP_{int} occupies an outer Specv and DP_{ext} an inner Specv. Consequently, minimality enforces that Agree targets DP_{ext} and thus the accusative pattern is not derived. (For another potential approach that does without minimality, see Georgi 2013.) A similar issue may arise with scrambling: In Mayan, the order of post-verbal 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 Specv, 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 2010*c* proposes for Chol, then there is no problem to begin with.)

(43) *Wh-movement of DP_{erg} and focussing 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?'

5.2. Open Questions

Not all morphologically ergative languages exhibit a ban on ergative movement. In some, DP_{erg} can be freely extracted, e.g., in Chol (Mayan, Coon et al. 2011), Avar (Nakh-Dagestanian, Polinsky et al. 2012), Basque (isolate, Ortiz de Urbina 1989). 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 SpecC must make a stop-over in SpecT, and (c) that a DP can check more than one case feature. The extraction asymmetry in ergative languages may not arise if one of these assumptions is changed.

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 SpecT *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. This means that DP_{erg} that is to be Ā-moved to SpecC does not have to go through SpecT. 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 footnote 6). If (a) holds, DP_{erg}, which has already been assigned internal case by v and which moves to SpecT before T initiates Agree, cannot maraud the case feature of T. Assume that (b) holds: Since 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, both arguments of a transitive verb receive case. This variant has been worked out in Heck and Müller (2013).

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) while in those Mayan languages that lack the ban the absolutive marker appears to the right of the verb (low). Coon et al. (2011) 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 while in LOW-ABS languages it is assigned by v. Due to the PIC, DP_{int} must move to Specv to receive absolutive case in HIGH-ABS languages, but not in LOW-ABS languages. As a consequence, the escape hatch Specv is blocked in HIGH-ABS languages only, which derives the ban on ergative movement and its variation within Mayan. Coon et al.'s (2011) explanation can, in principle, be transposed 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 it was. 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 to high in the structure (Specv). Ā-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 agent focus 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 focussed in languages that exhibit the ban on ergative Ā-movement. One possibility in Mayan languages in addition to the detransitivizing antipassive is the *agent focus* construction (AF). In this section we introduce the properties of this construction and we 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 Ā-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). In addition, the verb carries the transitive status suffix (glossed as TV). An intransitive verb carries the intransitive status suffix (glossed as 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 (45-a) and (45-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 (45-c)). The agent focus construction can be used instead to express the same content (see

(45-d)). 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.[25] In addition, the verb carries the intransitive status suffix. Furthermore, an additional suffix attaches to the verb, glossed as AF, see (45-d). 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 footnote 26); it cannot be used in a regular transitive clause without extraction (see (46-a)) or if a non-agent DP in a transitive clause is extracted (see (46-b)).

(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.' *focussing 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. Following Ordóñez (1995) and drawing heavily from Coon et al. (2011),

[25] 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 have an impact on the analysis of AF that we will present in this section.

let us assume that in the AF construction DP_{int} is assigned structural case by an added probe, represented as [∗c:x∗] (cf. Béjar and Řezáč 2009). This probe is morphologically realized by the AF-morpheme. Since 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.[26] In addition, 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.[27] We start with the operations in the vP; these are the same, regardless of whether DP_{erg} or DP_{abs} 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. Afterwards, v is merged and it 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, it therefore still needs a structural case value.

(47) *Operations applying in the vP*:

$$[_{vP}\ DP_{ext}\ \{\ [c:\square]\}\ [_{v'}\ v\{[\bullet D\bullet]\}\ [_{VP}\ V\{\underline{[*c:x*]}\}\ DP_{int}\ \{\ [c:x]\}\ ]]]$$

(ii) Merge ↑ — (i) Agree ↑

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 SpecT. Given the order Merge before Agree in a morphologically ergative language, DP_{ext} moves to SpecT. Due to the Spec-Head Bias, T assigns the external case

[26] Since 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.

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

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. Since 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 SpecC.

(48) $[_{TP}\ DP_{ext}\ \{[c{:}ext]\}\ [_{T'}\ T\{[*c{:}ext*]\}\ [_{vP}\ t_{DP_{ext}}\ [_{v'}\ v\ [_{VP}\ V\ DP_{int}\ \{[c{:}x]\}\ ]]]]]$

(iii) Merge

(iv) Agree

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 SpecT before T assigns case. Due 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 which could be assigned to DP_{ext}. DP_{int} marauds the case that DP_{ext} needs; see (49). The derivation crashes. This is exactly the reverse pattern 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}.[28]

(49) $[_{TP}\ DP_{int}\ \{[c{:}ext]\}\ [_{T'}\ \ T\{\underline{[*c{:}ext*]}\}\ [_{vP}\ DP_{ext}\ \{[c{:}\square]G\}\ [_{v'}\ v\ [_{VP}\ V\ t_{DP_{int}}\ ]]]]]$

(iii) Merge

(iv) Agree

To sum up, 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. 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 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 Specv. [29]

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

[29] 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 any further here. As far as we can tell, no explanation is provided by Coon et al. (2011) either.

7. Conclusion

In this paper we have presented a relational, co-argument based account of the ban on ergative movement that holds in many morphologically ergative languages. We have argued that the extraction asymmetry cannot be brought about by restrictions on movement of the ergative DP if all constraints are principles of efficient computation or imposed by the interfaces and if traces do not exist as items that constraints can refer to, as is assumed in recent developments of the minimalist program. We have 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 already received its case feature. Hence, maraudage cannot take place. The different timing of operations in ergative vs. 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 have 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. In sum, the present account provides an argument for the privileged status of specifiers in syntactic derivations (DPs in specifiers maraud features of a head); and it emphasizes the role of timing in grammar and thereby argues for a strictly derivational syntax.

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