

Argument Encoding and Its Consequences for Displacement

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1 Introduction

1.1 Background

- Some kinds of linguistic expressions are less mobile than others; they may not cross domains that are transparent for other items: object vs. subject, argument vs. adjunct, referential vs. non-referential (Manzini (1992)), etc.
- This can be captured by imposing appropriate constraints on empty categories (traces) that are assumed to be left by displacement (movement, extraction)
- Such options do not exist if:
 - All constraints are either principles of efficient computation or imposed by the interfaces (Chomsky (2001; 2008)).
 - Traces do not exist. (This may be so because displacement does not leave a reflex in the original position; see Epstein and Seely (2002), Unger (2010), Müller (2011) for some options; or because a multidominance approach is adopted; see Gärtner (2002), Starke (2001), Abels (2004), Frampton (2004), among others.)
- **Conclusion:** If some items are less mobile than others, this must be so because their movement may lead to problems elsewhere, either for themselves or for other items in the clause.
- **Suggestion:** Movement of certain items (α) may create problems for other, sufficiently similar items (β).
- **Goal:** A *relational*, 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 and Hale (1996), Wunderlich (1997), Stiebels (2000), McFadden (2004)).

1.2 Case Study – The Ban on Ergative Displacement

In many morphologically ergative languages, ergative arguments (DP_{erg}) cannot undergo certain kinds of movement (*wh*-movement, focussing, relativization).

Question:

What explains the prohibition against displacement of ergative subject DPs?

Answers in previous approaches:

(For discussion of these analyses, see Assmann et al. (2012).)

- The trace of DP_{erg} is not licensed (e.g., in ECP terms, it is not strictly governed; cf. *that*-trace effects in English).
- There is nothing wrong with ergative movement as such; it's just that the relevant languages have a special (*agent focus*, AF) marker which does what the ergative marker does *and* signals the presence of a movement dependency at the same time. Given an optimality-theoretic approach, the agent focus construction can block the ergative+movement construction as suboptimal because it leads to a better constraint profile (Stiebels (2006)).
- (Covert) Case-driven movement 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 (2010)).

Answer in the present approach:

If an ergative subject DP undergoes movement, an absolutive object DP cannot get Case: Movement of the ergative DP per se is unproblematic; but problems are created for its absolutive co-argument. Thus, the approach captures Polinsky et al.'s (2011) 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).

2 Data

2.1 *Wh*-Movement

(1) *Wh*-Movement of DP_{erg} vs. DP_{abs} in *Kaqchikel*¹ (*Mayan*):²

- a. n-Ø-u-löq' jun sik'iwuj ri a Carlos
 INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book DET CL Carlos
 'Carlos buys a book.'
- b. atux n-Ø-u-löq' a Carlos?
 what INCOMPL-3SG.ABS-3SG.ERG-buy CL Carlos
 'What does Carlos buy?'
- c. *achike n-Ø-u-löq' jun sik'iwuj?
 who INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book
 'Who buys a book?'

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

- a. n-Ø-tze'en a Carlos
 INCOMPL-3SG.ABS-laugh CL Carlos
 'Carlos laughs.'
- b. achike ri n-Ø-tze'en?
 who DET INCOMPL-3SG.ABS-laugh
 'Who laughs?'

¹Unless references are provided, the *Kaqchikel* and *K'ichee'* data presented 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*).

²See appendix B for abbreviations used in the glosses.

- (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?'
- (5) *Wh-Movement of DP_{erg} vs. DP_{abs} in Mam (Mayan; England (1983a; 1989: 88)):*
- a. Ma-aʔ chi tzaj t-tzyu-ʔn Cheep kab' xiinaq
RPST-EMPH 3PL.ABS DIR 3SG.ERG-grab-DS José two man
'José grabbed the men.'
- b. Alkyee-qa xhi tzaj t-tzyu-ʔn Cheep
who-PL RPST.DEP.3PL.ABS DIR 3SG.ERG-grab-DS José
'Whom did José grab?'
- c. *Alkyee saj t-tzyu-ʔn kab' xiinaq
who RPST.DEP.3SG.ABS.DIR 3SG.ERG-grab-DS two man
'Who grabbed the men?'
- (6) *Wh-Movement of DP_{abs} in Mam (England (1983a; 1989); Campana (1992: 92)):*
- a. Ma chi b'eet xiinaq
RPST 3PL.ABS walk man
'The men walked.'
- b. Alkyee x-hi b'eet?
who 3PL.ABS-DEP walk
'Who walked?'
- (7) *Wh-Movement in Kanamarí (Katukinan; Queixalos (2010)):*
- a. Hanian tu Nodia nah=hoho-nin?
who(m) Q Nodia ERG=call-DURATIVE
'Whom is Nodia calling?'
- b. Hanian tu waokdyi-nin?
who(m) Q arrive.here-DURATIVE
'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?'

2.2 Relativization

(8) *Relativization of DP_{erg} vs. DP_{abs} in Jacaltec* (Mayan; Craig (1977); Campana (1992: 91))

- 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 ...'

(9) *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.'
- b. ŋuma-Ø yabu-ŋgu [CP banaga-ŋu-rru] bura-n
 father-ABS mother-ERG return-REL-ERG see-NONFUT
 'Mother, who was returning, saw father.'
- c. *yabu-Ø [CP bural-ŋu ŋuma-Ø] banaga-n^u
 mother-ABS see-REL-ABS father-ABS return-NONFUT
 'Mother, who saw father, was returning.'
- d. yabu-Ø [CP bural-ŋa-ŋu ŋuma-gu] banaga-n^u
 mother-ABS see-ANTIPASS-REL-ABS father-DAT return-NONFUT
 'Mother, who saw father, was returning.'

(10) *Relativization in Kanamarí* (Queixalos (2010)):

- a. Yo-hik nyan Nodia na=dahudyi-nin tukuna
 1SG-know DEICTIC Nodia ERG=bring-DEPENDENT Indian
 'I know the Indian that Nodia brought.'
- b. Yo-hik nyan waokdyi-nin anyan piya
 1SG-know DEICTIC arrivi.here-DEPENDENT this man
 'I know the man who arrived here.'
- c. *Yo-hik nyan piya na=dahudyi-nin Hanani
 1SG-know DEICTIC man ERG=bring-DEPENDENT H.
 'I know the man who brought Hanani.'
- d. Yo-hik nyan piya wa-dahudyi-nin Hanani
 1SG-know DEICTIC man AP-bring-DEPENDENT H.
 'I know the man who brought Hanani.'

(11) *Relativization in Tongan* (Austronesian; Otsuka (2006)):

- a. e fefine [na'e fili 'e Sione]
 DEF woman PST choose ERG Sione
 'the woman (who) Sione chose'
- b. *e fefine [na'e fili 'a Sione]
 DEF woman PST choose ABS Sione
 'the woman (who) chose Sione'

2.3 Focus Movement

- (12) *Focus Movement of DP_{erg} vs. DP_{abs} in K'ichee'*:
- K-Ø-u-loq' jun wuuj ri a Karlos
INCOMPL-3SG.ABS-3SG.ERG-buy INDEF book DET CL Carlos
'Carlos buys a book.'
 - 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.'
 - *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.'
- (13) *Focus Movement of DP_{abs} in K'ichee'*:
- Ka-Ø-tze'n-ik ri a Karlos
INCOMPL-3SG.ABS-laugh-ITV DET CL Carlos
'Carlos laughs.'
 - Are ri a Karlos ka-Ø-tze'n-ik
FOC DET CL Carlos INCOMPL-3SG.ABS-laugh-ITV
'It is Carlos who laughs.'
- (14) *Focus Movement of DP_{erg} vs. DP_{abs} in Mam (England (1983b:4))*
- Ma chi kub' t-tzyu-ʔn xiinaq qa-cheej
ASP 3PL.ABS DIR 3SG.ERG-grab-DS man PL-horse
'The man grabbed the horses.'
 - Qa-cheej xhi kub' t-tzyu-ʔn xiinaq
PL-horse DEP.ASP.3PL.ABS DIR 3SG.ERG-grab-DS man
'It is the horses which the man grabbed.'
 - *Xiinaq chi kub' t-tzyu-ʔn qa-cheej
man 3PL.ABS DIR 3SG.ERG-grab-DS PL-horse
'It is the man who grabbed the horses.'
- (15) *Focus Movement of DP_{abs} in Mam (England (1983b:4))*
- Ma tz-uul xiinaq
ASP 3SG.ABS-arrive.here man
'The man arrived here.'
 - Xiinaq s-uul
man DEP.ASP.3SG.ABS-arrive.here
'It is the man who arrived here.'
- (16) *Focus Movement in Kanamarí (Queixalos (2010)):*
- Maranmaran na=tyo kana tona tyo
M. ERG/GEN=daughter FOCUS go.away EXCLAMATIVE
'It's Maranmaran's daughter that went away.'
 - A-obatyawa kana Aro na=nuhuk kariwa
3SG-wife FOCUS Aro give white.man ERG=LOC
'It's his own wife that Aro gave to the white man.'
 - *Waro na=minkudak-boni wa:pa
parrot ERG=hindquarters-peck dog
'It's the parrot that pecked the dog's hindquarters.'

- d. Waro wa-minkudak-boni wa:pa
 parrot AP-hindquarters-peck dog
 ‘It’s the parrot that pecked the dog’s hindquarters.’

3 Assumptions

3.1 Clause Structure

$$(17) \quad [_{CP} C [_{TP} \boxed{\mathbf{T}} [_{vP} DP_{ext} [_{v'} \boxed{\mathbf{v}} [_{VP} V DP_{int}]]]]]$$

3.2 Elementary Operations

- The structure of clauses is generated step by step in a bottom-up fashion by the application of the two elementary operations Merge and Agree.
- MERGE: structure-building operation (combines two constituents and creates a new constituent)

$$(18) \quad \alpha \quad \beta \quad \longrightarrow_{Merge} \quad [_{\gamma} \alpha \beta]$$

- AGREE: argument-encoding operation (case-assignment, agreement; copies feature values from one element to another)
- All Merge and Agree operations are triggered by features: $[\bullet F \bullet]$ triggers Merge, $[*F*]$ triggers Agree

3.3 Argument Encoding

3.3.1 Background

- DPs enter the derivation without a Case value.
- Every DP needs abstract Case.
- Two abstract Case values: $[c:int]$ (internal Case), $[c:ext]$ (external Case).
- Morphologically, $[c:int]$ corresponds to the marked case (ergative or accusative), while $[c:ext]$ is the unmarked case (nominative or absolutive) (Levin and Massam (1985), Chomsky (1995, ch.3), Bobaljik (1993), Laka (1993), Řezáč (2003), Bobaljik and Branigan (2006) (with a qualification for Chukchi), etc.).
- Case is assigned under Agree by the functional heads v and T to the DPs
- T assigns external Case, v assigns internal Case, see (19).

(19) *The role of T and v in argument encoding:*

- a. T bears a feature $[*c:ext*]$ that instantiates a matching $[c:ext]$ feature on DP.
- b. v bears a feature $[*c:int*]$ that instantiates a matching $[c:int]$ feature on DP.
- c. In intransitive contexts, only T bears a Case feature that instantiates a matching Case feature on the single argument DP.

- A DP can receive more than one Case. (Independent motivation: the existence of *case stacking* in the world’s languages; see Andrews (1996); Nordlinger (1998); Richards (2007).)

- Morphologically, abstract Case can be realized by case on the DP (dependent-marking) or by an agreement marker on the verb (head-marking), see (20).

(20) *Argument encoding by case or agreement:*

- Argument encoding proceeds by case-marking if $[c:\alpha]$ is morphologically realized on DP.
- Argument encoding proceeds by agreement-marking if $[*c:\alpha*]$ is morphologically realized on T/v.

3.3.2 A Conflict

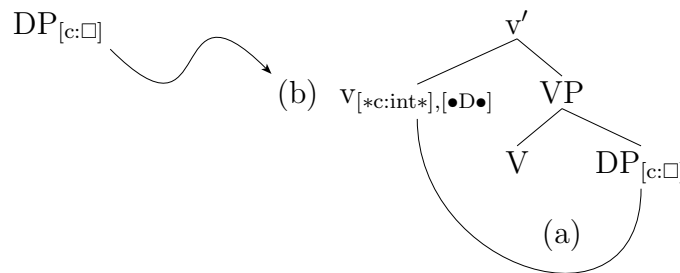
A conspicuous property:

The head v has a dual role: It participates in a Merge operation with DP_{ext} , and it also participates in an Agree relation with a DP. This dual role has far-reaching consequences for the nature of argument encoding.

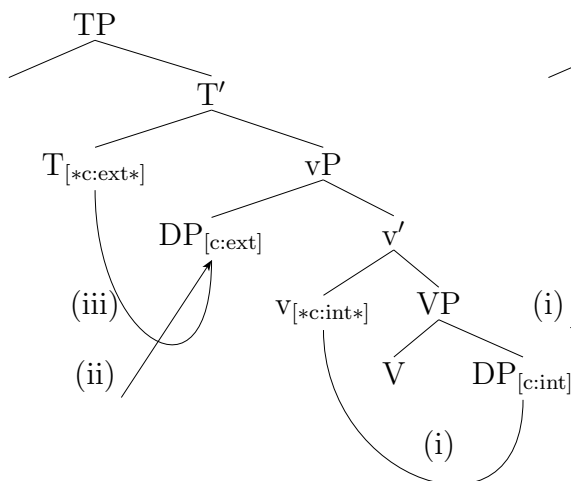
A conflict:

Consider a simple transitive context, with two arguments DP_{int} , 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 v in the workspace of the derivation. At this point, a conflict arises: v can trigger both Agree (with the internal argument DP_{int} ; see (a)) and Merge (with the external argument DP_{ext} ; see (b)), but only one operation can apply at a time. Consequently, the two operations have to be ordered (*Agree before Merge* or *Merge before Agree*).

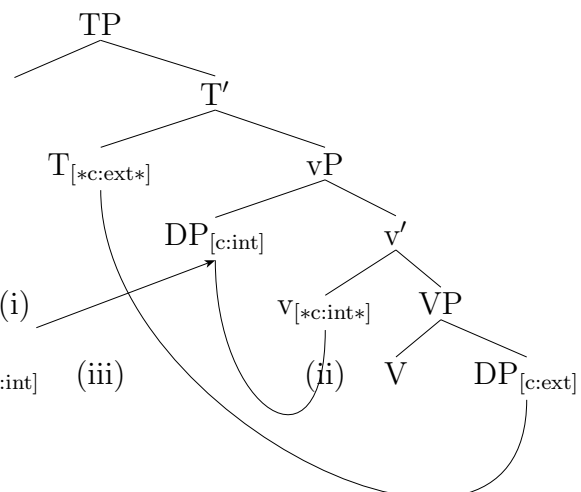
(21) *Stage Σ :*



(22) a. *Agree before Merge: accusative*



b. *Merge before Agree: ergative*



Note:

The derivation of the ergative pattern presupposes that a specifier is preferred with respect to Agree with its head to an item included in the complement of that head. This can be formulated as the *Specifier-Head Bias* (Chomsky (1986; 1995), Koopman (2006); see Béjar and Āezáč (2009) for a similar idea with the bias inversed).

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

Side Note:

This replaces standard minimality conditions (Relativized Minimality, MLC) (though with a somewhat different empirical coverage). The Specifier-Head Bias is compatible with equi-distance effects, which pose a problem for path-based definitions of minimality.

3.4 Displacement

3.4.1 Background

- Displacement is modeled as movement.
- In case of *wh*-movement, relativization and focus movement, a DP is moved from its base position within vP to SpecC.
- Movement does not apply in one fell swoop, but is divided into a sequence of short movement steps.
- In particular, we assume that movement to SpecC must make a stop-over in SpecT. This movement step is triggered by a feature [\bullet X \bullet]. (This can be ensured by assuming that either TP is a phase (Richards (2011)); or by stipulation (Chomsky (2005), Boeckx and Grohmann (2007)), or by assuming that every phrase is a phase.)

3.4.2 A Conflict

- Under these assumptions, a conflict arises when a DP is to be moved to SpecC.
- In this case, T triggers Agree (assigns external Case) and Merge (the intermediate movement step): T[\bullet X \bullet ,*ext*].
- That means the same indeterminacy arises as on v.
- The conflict is resolved in the same ways as the conflict on v. The order of operations on v is identical to the order of T.
- These assumptions suffice to derive the ban on ergative displacement.

4 Analysis

A problem for displacement of ergatives:

The ergative marked external DP of a transitive verb cannot be displaced since it will inevitably receive Case from T when it moves to SpecT, although it has already received a Case value from v (DP_{ext} *marauds* the Case from T³). Hence, the internal DP, which is supposed to get Case from T, cannot receive a Case value and the derivation crashes.

4.1 Displacement in Languages with Ergative Encoding Patterns

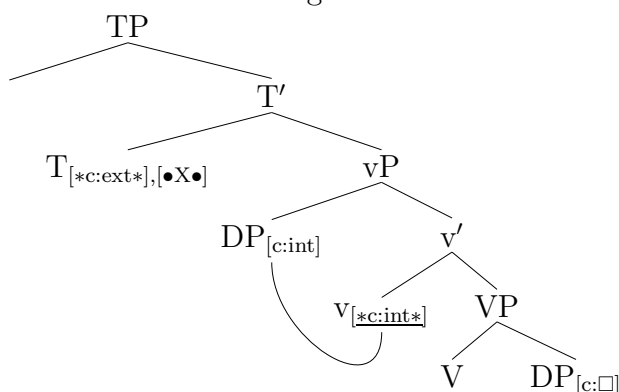
4.1.1 *DP_{erg} Movement

DP_{erg} needs to move from Specv to SpecT if it is to undergo subsequent movement to SpecC (*wh*-movement, relativization, focus movement). Given the “ergative” order *Merge before Agree* is also maintained on the TP cycle, movement of DP_{erg} will have to *precede* Agree of T with the VP-internal DP that has not yet valued its Case feature (as absolutive). Given the Specifier-Head Bias, DP_{erg} will next check T’s Case feature; the internal argument DP will consequently remain without a checked Case feature. Assuming that all DPs must have their Case features checked eventually (and assuming that there is no such thing as a default Case), the derivation will therefore crash. In a nutshell, ergative movement is impossible because the remaining argument cannot get absolutive Case in this context.

(Note: Underlining signals a discharged feature in the following trees; structure-building features are not represented; t’s are only inserted as mnemonic devices.)

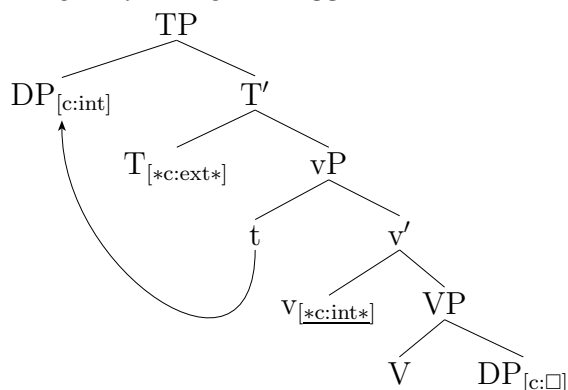
(24) *Illegitimate movement of DP_{erg}*

a. Structure after T is merged

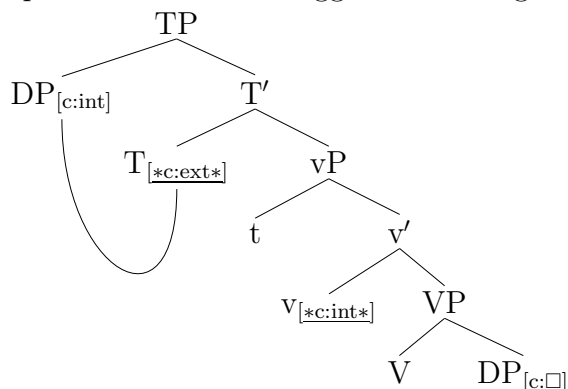


³See Georgi, Heck and Müller (2009), Georgi (2010), Müller (2011) on maraudage; similar concepts are suggested in Chomsky (2001), Abels (2003), Anagnostopoulou (2005), Adger and Harbour (2007), Béjar and Řezáč (2009); and by Trommer (2011) and Zimmermann (2011) for morphophonology.

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



c. Specifier-Head Bias triggers maraudage of T

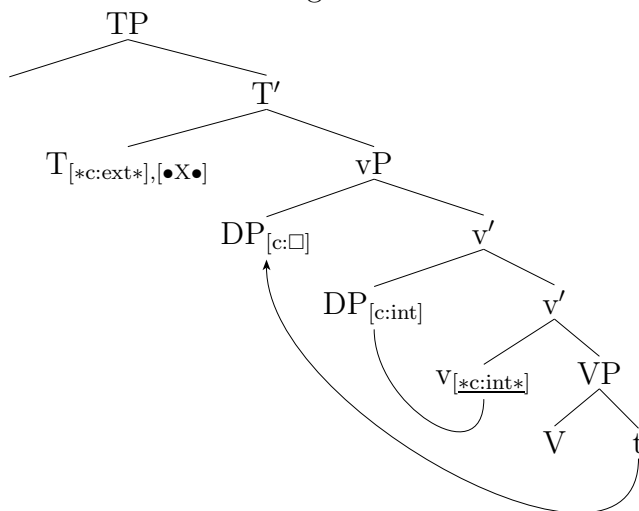


4.1.2 DP_{abs} Movement

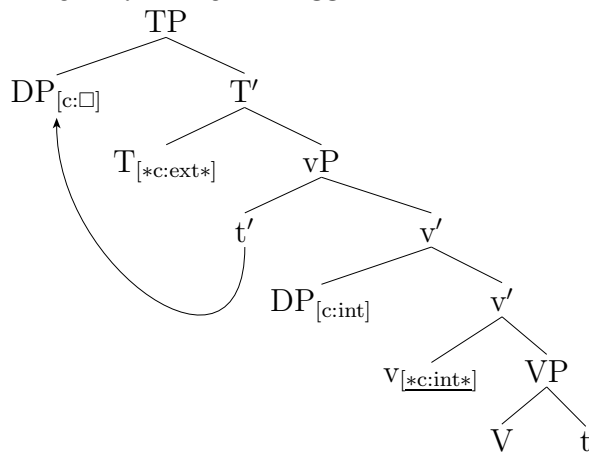
No such problem arises for movement of DP_{abs} because DP_{erg} has already been assigned Case when DP_{abs} moves to SpecT.

(25) *Legitimate movement of DP_{abs}*

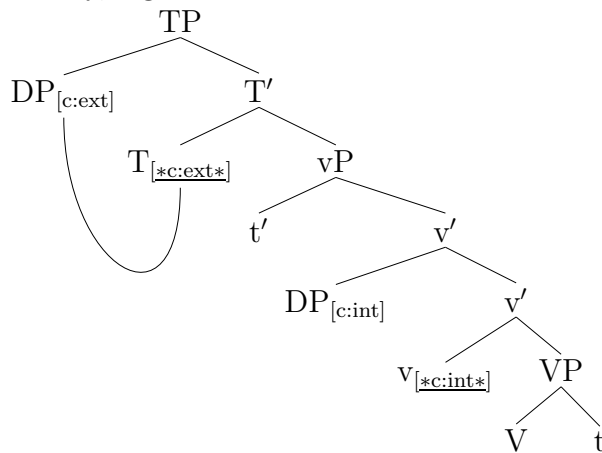
a. Structure after T is merged



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



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



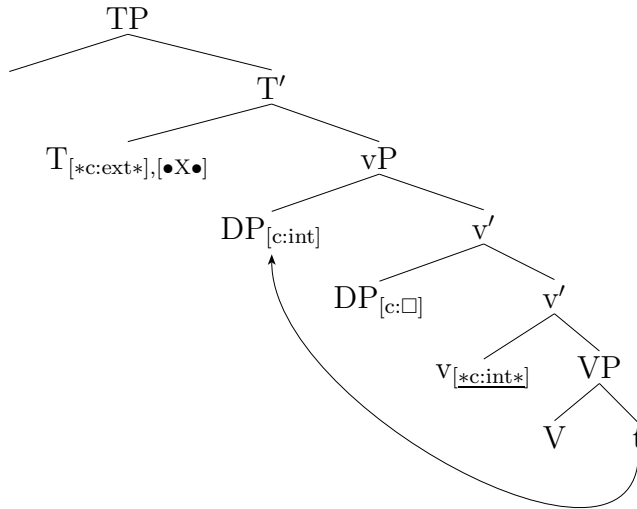
4.2 Displacement in Languages with Accusative Encoding Patterns

4.2.1 DP_{acc} Movement

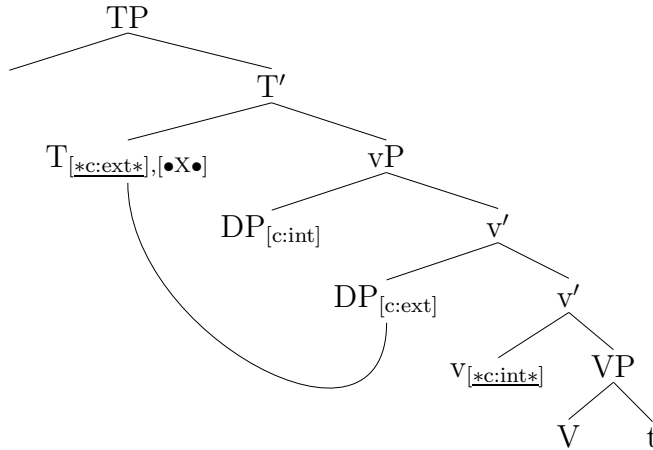
The order *Agree before Merge* that gives rise to an accusative pattern in the first place (on the vP cycle) is also active on the TP cycle. Here it ensures that *Agree with the DP_{nom} in Specv* can be carried out *before* the DP_{acc} undergoes successive-cyclic movement to SpecT (and then to a higher position).

(26) *Legitimate movement of DP_{acc}*

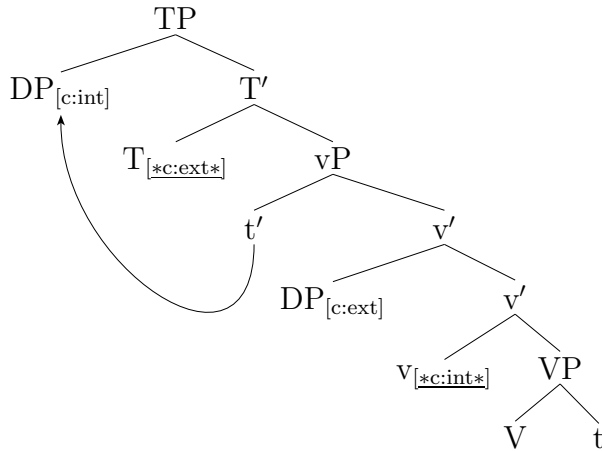
a. Structure after T is merged



b. No maraudage: *Agree before Merge* triggers Case valuation of DP_{nom} next



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

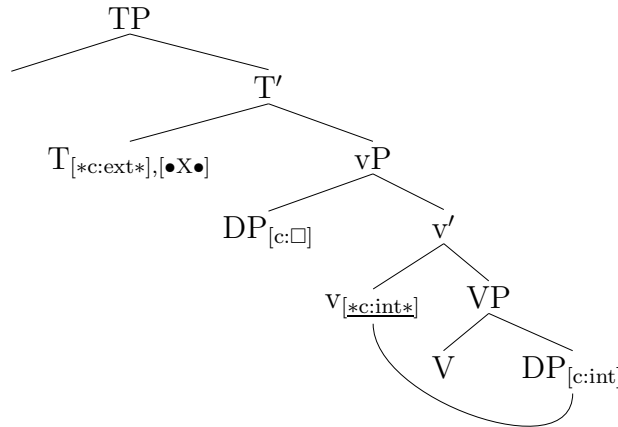


4.2.2 DP_{nom} Movement

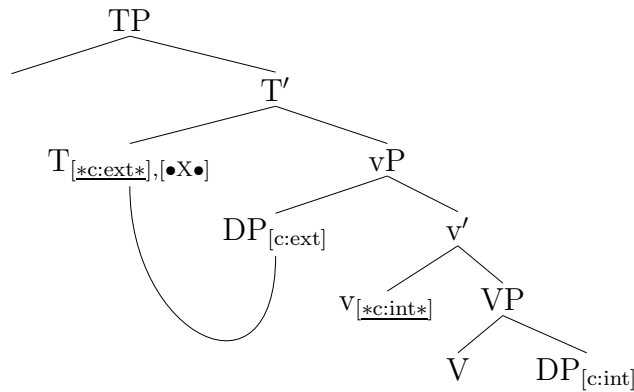
Similarly to the DP_{abs} Case, there is no problem for movement of DP_{nom} because DP_{acc} has already been assigned Case when DP_{nom} moves.

(27) *Legitimate movement of DP_{nom}*

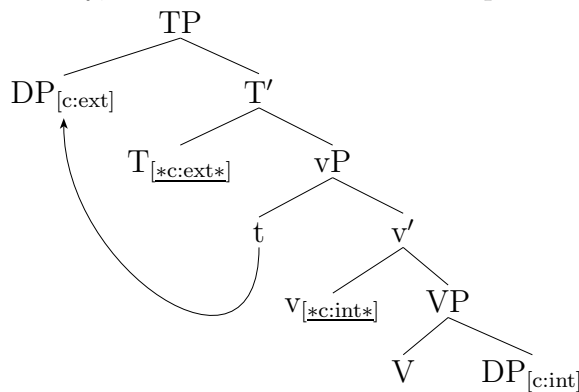
a. Structure after T is merged



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



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



5 Predictions

5.1 Intransitive Verbs

- The present approach is co-argument-based: the displacement of the DP_{erg} creates a problem for its co-argument DP_{abs} .
- For intransitive verbs where the single argument is marked by ergative Case, we predict that the sole argument can be displaced.
- As shown below for Chuj (Maya), this prediction is borne out.

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

- a. $\text{?ix-}\emptyset\text{-y-?il}$ waj Mekel ?ix Katal
 PST-3SG.ABS-3SG.ERG-see CL Michael CL Kathleen
 ‘Kathleen saw Michael.’
- b. ha ?ix Katal $\text{?ix-}\emptyset\text{-?il-an}$ 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 $\text{?ix-}\emptyset\text{-y-?il}$?ix Ketel
 FOC CL Michael PST-3SG.ABS-3SG.ERG-see CL Kathleen
 ‘It is Michael who Kathleen saw.’ *focussed object*

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

- a. ix- \emptyset -way winh unin
 PST-3SG.ABS-sleep CLASS child
 ‘The child slept.’
- b. a jun unin ix- \emptyset -way-i
 FOC one child PST-3SG.ABS-sleep-ITV
 ‘It was the child who slept.’

In the progressive aspect, the single argument is ergative marked; in other aspects it is absolutive marked. Crucially, the ergative marked sole argument of an intransitive verb can be focussed like absolutive marked DPs:

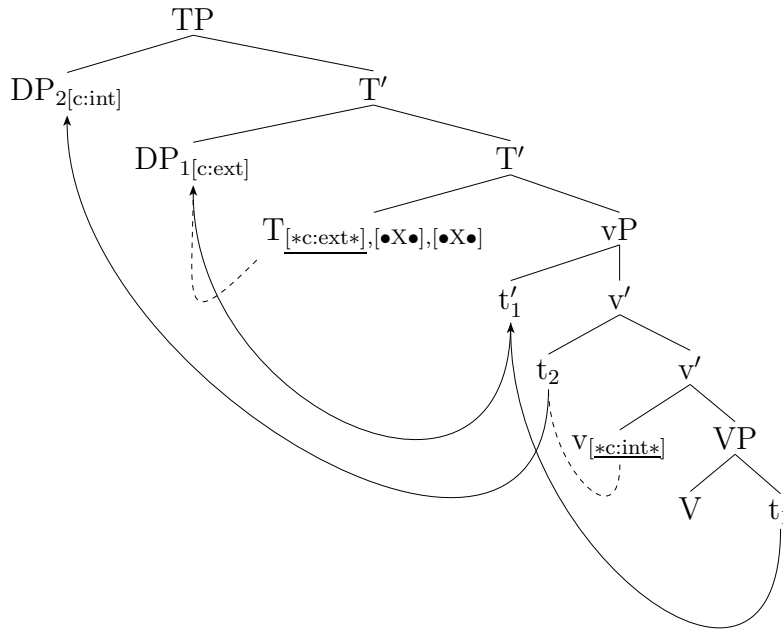
(30) *Chuj, focussing of an ergative marked single argument (Buenrostro (2009: 126)):*

- 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.’

5.2 Multiple Displacement

- The approach predicts that it should be possible to extract the ergative argument if the absolutive argument is extracted as well, see (31).
- This prediction is borne out, as shown by the data from Kaqchikel and K’ichee’ below.

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



(32) *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' 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.'

(33) *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?'

6 Natural Classes

6.1 Natural Classes of Arguments

6.1.1 The Rise of Natural Classes with Respect to Argument Encoding

- In ergative languages, the sole argument of an intransitive verb and the internal argument of a transitive verb form a natural class, excluding the external argument of a transitive verb, see (34-a).
- In accusative languages, the sole argument of an intransitive verb and the external argument of a transitive verb form a natural class, excluding the internal argument of a transitive verb, see (34-a).
- Whether the sole argument of an intransitive verb patterns with the external or internal argument of a transitive verb with respect to argument encoding depends on the order of Agree and Merge operations on v.

- (34) a. *Ergative languages* b. *Accusative languages*
- | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| DP _{ext} -V _i | DP _{int} -V _i | DP _{ext} -V _i | DP _{int} -V _i |
| DP _{ext} -V _t | DP _{int} -V _t | DP _{ext} -V _t | DP _{int} -V _t |
| erg | abs | nom | acc |
- v: *Merge before Agree* *Agree before Merge*

(V_i = V_{intransitive}; V_t = V_{transitive})

6.1.2 The Rise of Natural Classes with Respect to Displacement

- In ergative languages, the sole argument of an intransitive verb and the internal argument of a transitive verb form a natural class, excluding the external argument of a transitive verb, see (35-a) (an instance of syntactic ergativity).
- In accusative languages, the sole argument of an intransitive verb, the external and internal argument of a transitive verb form a natural class see (35-a) (*no syntactic accusativity*).
- Whether the sole argument of an intransitive verb patterns with the external or internal argument of a transitive verb with respect to displacement depends on the order of Agree and Merge operations on T.

- (35) a. *Ergative languages* b. *Accusative languages*
- | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| DP _{ext} -V _i | DP _{int} -V _i | DP _{ext} -V _i | DP _{int} -V _i |
| DP _{ext} -V _t | DP _{int} -V _t | DP _{ext} -V _t | DP _{int} -V _t |
| erg | abs | nom | acc |
- T: *Merge before Agree* *Agree before Merge*

Note:

Since indirect and oblique arguments (locative, instrumental, etc.) can be displaced freely (see (36)), they form a class together with the absolutive rather than the ergative (even though in Mayan languages they are marked by ergative Case and an additional relational noun).

- (36) *Wh-movement of oblique arguments in Kaqchikel:*
- a. achoq chi re n-Ø-u-ya' a Carlos 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-sël ri ti'ij ri a
 Q 3SG.ERG-RN.INSTR INCOMPL-3SG.ABS-3SG.ERG-cut DET food DET CL
 Carlos?
 Carlos
 'With what does Carlos cut the meat?' (*wh-movement of instrumental*)
- c. akuchi n-Ø-u-ya' ri ti'ij ri a Carlos?
 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*)

6.1.3 Observation

- In ergative languages, the natural classes for argument encoding are identical to the natural classes for displacement.
- In accusative languages, the natural classes for argument encoding and displacement differ.

6.2 Natural Classes of Functional Heads

- In the present analysis, the functional heads T and v form a natural class with respect to the order of operations. Both have either *Agree before Merge* (in accusative languages) or *Merge before Agree* (in ergative languages).

6.3 Reanalyzing Syntactic Ergativity

- In the present approach, the ban on ergative displacement is not derived by a constraint about displacement of DPs with a certain Case value.
- Instead, the alleged syntactic ergativity emerges from the system of argument encoding.
- Ergative and absolutive Case result from the order *Merge before Agree* on the vP cycle. The extraction asymmetry is the result of the same order on T.

7 Conclusion

- We presented a relational, co-argument based analysis of the ban on ergative displacement.
- 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.
- We have seen that the natural classes of arguments in ergative languages are the same for argument encoding and displacement while they differ in accusative languages.

A Appendix: Agent Focus

Question:

How can the external argument of a transitive verb be questioned, relativized or focussed?

Answer:

One possibility is to use the *Agent Focus* construction (AF).

A.1 Properties of Agent Focus in Mayan languages

Transitive verb, no AF:

- Both arguments receive structural Case.
- The verb agrees with DP_{int} and DP_{ext} in person and number. DP_{ext} is cross-referenced by set A-affixes; DP_{int} and the sole argument of an intransitive verb are cross-referenced by set B-affixes (ergative pattern).
- The verb carries the transitive status suffix (gloss: TV).

Transitive Verbs in the AF Construction:

- Both arguments receive structural Case. There is no demotion of one of the arguments, AF is not a detransitivizing operation (for arguments see the references in Aissen (1999)).
- The verb agrees with only one of the two arguments and cross-references this argument by the set B-affixes. The choice of the agreement-triggering argument is regulated by language-specific rules.
- The verb carries the intransitive status suffix (gloss: ITV).
- The AF-suffix attaches to the verb.

The AF construction is syntactically transitive, but morphologically intransitive.

(37) *Agent Focus in Yucatec (Tonhauser (2007)):*

- a. aree ri achii x-Ø-aa-ch'ay-o
FOC the man PERF-3SG.ABS-2SG.ERG-hit-TV
'It was the man that you hit.' *patient extraction without AF*
- b. aree ri at x-at-ch'ay-ow ri achii
FOC the you PERF-2SG.ABS-hit-AF the man
'You were the one who hit the man.' *agent extraction with AF*

(38) *Agent Focus in Q'anjobal (Coon (2010)):*

- a. Max-ach y-il-a
ASP-ABS.2 ERG.3-see-TV
'She saw you.' *transitive verb, no extraction*
- b. Max-ach way-i
ASP-ABS2 sleep-ITV
'You slept' *intransitive verb*
- c. *Maktxel max-ach s-laq'-a'
who ASP-ABS.2 ERG.3-hug-TV
'Who hugged you?' *agent extraction without AF*

- d. Maktxel max-ach laq'-on-i
 who ASP-ABS.2 hug-AF-ITV
 'Who hugged you?'

agent extraction with AF

Distribution of AF

- AF can only be used if an agent is to be extracted, it cannot be used in a regular transitive clause without extraction.
- AF cannot be used if a non-agent DP is extracted.

(39) *AF Restrictions in Tzotzil (Aissen (1999:455)):*

- a. *I-kolta-on tzeb li Xun-e
 CP-help-AF girl the Juan-ENC
 'Juan helped the girl.'

no extraction

- b. ??A li Xun-e, I-kolta-o li tzeb-e
 TOP the Juan-ENC, CP-help-AF the girl-ENC
 'The girl helped JUAN.'

extraction of DP_{int}

A.2 Analysis of Agent Focus

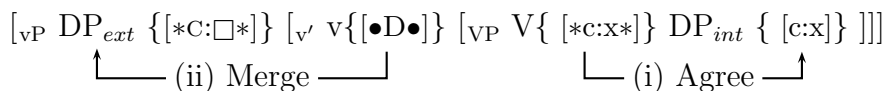
We need to account for (i) the intransitive agreement, (b) the structural Case assignment, (c) the extractability of DP_{ext} and (d) the impossibility of extracting DP_{int}.

Assumptions

- DP_{int} is assigned structural Case by an added Case feature [*c:x*] (Béjar and Řezáč (2009)). This feature is realized morphologically by the AF-morpheme (cf. Coon (2010)).
- The Case feature is located below v. For concreteness, we assume that it is added to V (the AF morpheme is adjacent to the verbal root).
- 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 unergatives). This accounts for the intransitive status suffix and intransitive agreement morphology.
- The feature content of T does not change, it still assigns [c:ext].

The (non-)extractability of DP_{int} and DP_{ext}, respectively, follows automatically from the system developed in section 5.

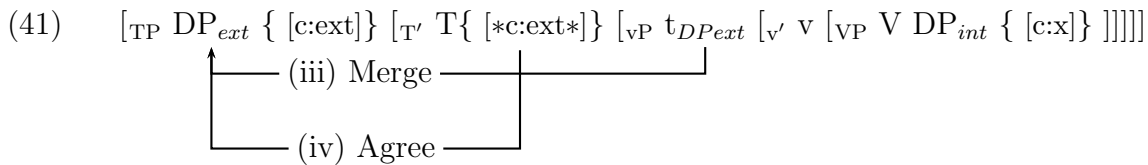
(40) *Operations applying in the vP:*



AF: DP_{ext} Movement

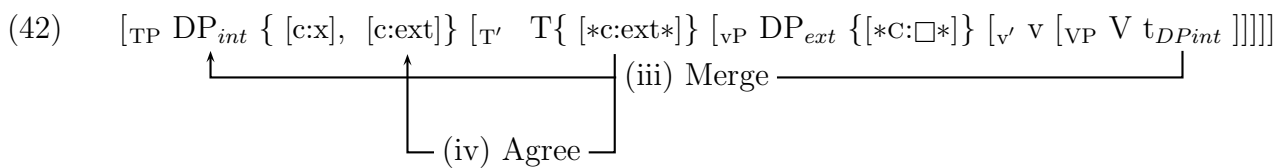
A Case-assigning feature is added to V. Since V does not introduce a DP in its specifier, the Case of V is assigned to the complement of V, i.e., to DP_{int}. DP_{ext} does not get Case from v because the intransitive variant of v is merged (cf. (40)). Given the ranking *Merge before Agree* on the TP cycle, DP_{ext} moves to SpecT. Afterwards, it is assigned [c:ext] by T due to the Specifier-Head Bias (cf. (41)). DP_{ext} can then be moved further to the left periphery. Since

DP_{int} gets Case early in the derivation from V and does not depend on the Case assigned by T as in regular transitives, the derivation converges. Maraudage does not apply.



*AF: *DP_{int} Movement*

DP_{int} is assigned Case by the added feature on V because V does not select a specifier that could compete for Case assignment with DP_{int}. DP_{ext} is introduced in the specifier of v but does not receive Case from the intransitive v (cf. (40)). Given the ranking *Merge before Agree*, DP_{int} is moved to SpecT before T assigns Case. Due to the Specifier-Head Bias, DP_{int} gets [c:ext] from T in addition to the Case [c:x] it was assigned by the added feature on V. There is no Case left which could be assigned to DP_{ext} and hence, the derivation crashes (cf. (42)). This is exactly the reversed pattern of what we saw in the derivation of the ban on ergative movement in regular transitives: In AF, DP_{int} marauds the Case that DP_{ext} would need; in regular transitives, DP_{ext} marauds the Case for DP_{int}.



It is still an open question why AF can only be applied if an element is extracted.

B Abbreviations

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

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