Split Ergativity in Subordination

Daniela Thomas*

Abstract

The aim of this paper is to derive split ergativity in subordination in the framework of the Minimalist Program. Data from Jacaltec and Sierra Popoluca show that this phenomenon is triggered by aspectlessness. Moreover, the only difference between the split system and the regular ergative system lies in intransitive contexts. To derive these encoding irregularities the *Constraint on case assignment in intransitive contexts* is introduced. It applies to the pre-syntactic numeration and guides the distribution of case features, leading to the assignment of the correct case. Furthermore, the functioning of the new constraint is demonstrated within the framework of optimality theory.

1. Introduction

This paper aims at deriving split ergativity in subordination in the framework of the Minimalist Program. Data illustrating this phenomenon are presented from the languages Sierra Popoluca and Jacaltec. The split in these languages is always triggered by the same condition, which is aspectlessness. In order to derive the irregularities in the encoding system, the analysis of ergativity in Müller (2009) based on Murasugi (1992) is extended with a new principle. This principle guides case assignment in intransitive contexts.

The present analysis is linked to the main topic of "Rule Interaction in Grammar" because Müller's (2009) analysis derives the difference between ergative and accusative encoding system by ordering the elementary operation Merge and Agree. Furthermore, the new *Constraint on case assignment in intransitive contexts* applies to the numeration, i.e., before syntactic structure is built, and eventually leads to the bleeding of absolutive case assignment in the derivation.

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The paper is structured as follows: section 2 presents language data that illustrate the phenomenon of split ergativity in subordination; it ends with generalisations about them. Section 3 contains the description of the syntactic basis as well as a new approach to split ergativity. It is completed by an optimality theoretic approach to the deletion of features in the numeration. Furthermore, an alternative theory is presented and discussed. Finally, in section 4 I draw some conclusions and mention directions for further research.

2. Language Data

In this section, data from the two unrelated languages Sierra Popoluca and Jacaltec are presented. The examples will illustrate the phenomenon of split ergativity in subordination.

2.1. Sierra Popoluca

Sierra Popoluca, a Mixe-Zoquean language spoken in Veracruz, Mexico, exhibits argument encoding via verbal agreement that is driven by a hierarchical system. The hierarchy ranks speech act participants (first and second person) above third person. That means that in transitive cases only the argument ranked higher on the hierarchy is realised on the verb. If a relation between two speech act participants is expressed, a special set of markers, the local set, is used.

The encoding system is an ergative one, marking the single argument of an intransitive verb and the internal argument of a transitive verb in the same way and the external argument of a transitive verb with a different set of markers. This can be seen in (1)[1]:

(1) a. si?ɨp ta=wi?k-pa=?am
now 1INCL.ABS=eat-INC=ALR
'Now we eat.'

[1] The following abberviations are used: 1/2/3 - first/second/third person, ABS - absolutive, ALR - 'already', ASP - aspect, C - consonant, CL - classifier, CMP - completive, DEP_{ib} - dependent intransitive type b, DEP_{t} - dependent transitive, ERG - ergative, etc. - et cetera, EXCL - exclusive, FUT - future tense, INC - incompletive, INCL - inclusive, JUST - 'just', NEG - negation, PERF - perfective, PLU_{sap} - plural, speech act participant, PRO - pronoun, PSR - possessor, Spec - specifier of, SUFF - suffix, V - vowel, '-' - morpheme boundary, '.' - morpheme boundary in lexicalised expression, '=' - clitic boundary

b. ta=kuʔt-pa
1INCL.ABS=eat-INC
'It eats us.'

c. ʔɨch ʔan=kuʔt-pa jeʔm saapnyi
1PRO 1EXCL.ERG=eat-INC that banana
'I ate this banana.'

d. jemɨ=ʔam ʔan=ʔix-pa
there=ALR 2:1=see-INC
'There you see me.' (de Jong Boudreault 2009: 337, 335, 401)

Example (1-a) shows an intransitive verb with its single argument in first person plural inclusive. It is encoded by *ta*=. In (1-b) *ta*= shows up again. This time it is the marker for the internal argument of the transitive verb. The argument is in the first person and outranks the third person external argument on the person hierarchy. Since Sierra Popoluca always realises only one argument, the higher ranked internal argument is encoded. Example (1-c) shows another transitive clause, but this time the external argument outranks the internal argument (1:3). Therefore the external argument is marked on the verb with ʔ*an*=.

The full paradigm of agreement markers is shown in (2) (see de Jong Boudreault 2009: 396, Elson 1960: 207):[2]

(2) *Agreement markers in Sierra Popoluca:*

	Set A/Ergative	Set B/Absolutive	Set C/Local
1.EXCL	ʔan=	ʔa=	
1.INCL	tan=	ta=	
2	ʔin=	mi=	
3	ʔi=	∅=	
2:1			ʔan=
1:2			man=

Looking at the subordinate clause (in brackets) in (3-a) with an intransitive verb, one can observe that instead of the expected absolutive marker the ergative marker ʔ*an*= emerges. In the examples (3-b) and (3-c) a transitive verb is embedded. In these cases we find the anticipated markings: ergative ʔ*in*= for the external argument and absolutive ʔ*a*= for the internal argument. This

[2] The notation 'x:y' means subject person x acts on object person y.

yields an accusative pattern since here the single argument of the intransitive verb and the external argument of the transitive verb are treated in the same way (ergative marking) while the internal argument of the transitive verb receives a different treatment (absolutive marking), cf. de Jong Boudreault (2009: 419, 726, 727).

(3) a. dya ʔa=joʔy-neʔ-W=ʔam
NEG 1EXCL.ABS=be.angry-PERF-CMP=ALR
[ʔan=put-W_3]
[1EXCL.ERG=exit-DEP_{ib}]
'I wasn't angry when I left.'

b. mich dya=ʔam mi=ʔoy-W [ʔin=ʔaʔm-W_2
2PRO NEG=ALR 2ABS=go/return-CMP [2ERG=see-DEP_t
ʔin=choomo]
2PSR=grandmother]
'You didn't go see your grandmother.'

c. ʔoy=tyi=ʔam [ʔa=ʔaʔm-taʔm-W_2]
go/return$_{aux}$=JUST=ALR [1.EXCL.ABS=see-PLU_{sap}-DEP_t]
'They just went to see me.' (de Jong Boudreault 2009: 419,726,727)

These irregularities in argument encoding are triggered in certain multi-verb constructions (de Jong Boudreault 2009, Marlett 1986, Elson 1960):

(4) (i) temporal adverbial clauses, which are not introduced by a Spanish adverbial
(ii) embedded clauses with the subordinators ∅, *mo*, *=mu*
(iii) multi-verb constructions with the progressive auxiliary *si*ʔ
(iv) multi-verb constructions with Type II auxiliaries[3]
(v) multi-verb constructions with Type I auxiliaries where the embedded verb is in passive voice

However, the embedded verbs in Sierra Popoluca display further special characteristics: in the constructions mentioned above, the verbs lack any kind of mood or aspectual marking, but receives dependent morphology instead. In

[3] The distinction between Type I and Type II auxiliaries is based on the pattern that emerges when an auxiliary combines with a verb. With Type II auxiliaries an accusative pattern emerges. With Type I auxiliaries an accusative pattern emerges only if the dependent verb is in the passive (cf. de Jong Boudreault 2009).

(5) I contrast the matrix verb and the embedded verb of (3-a) in order to illustrate this (de Jong Boudreault 2009: 419).

(5) a. ʔa=joʔy-neʔ-W=ʔam
1EXCL.ABS=be.angry-PERF-CMP=ALR
b. ʔan=put-W_3
1EXCL.ERG=exit-DEP$_{ib}$

In Sierra Popoluca a (matrix) verb consists at least of the verbal root, a person proclitic and markings for aspect and/or mood. But as we have seen, this is not the case with the embedded verbs of multi-verb constructions, in which split ergativity is triggered. This view is in line with Boudreault saying that these verbs are best described as aspectless. The dependent marking consists of an inaudible consonant represented in the glosses by *-W*.[4,5] Despite its inaudibility this consonant has effects on the assignment of stress (cf. de Jong Boudreault 2009).

2.2. Jacaltec

Jacaltec, a Mayan language spoken in Guatemala, also basically instantiates an ergative system of agreement:

(6) a. ch-ach hin-mak-a'
ASP-2ABS 1ERG-hit-FUT
'I will hit you'
b. xc-ach toyi
ASP-2ABS go
'You went.' (Craig 1977: 119, 333)

In contrast to Sierra Popoluca, Jacaltec realises both arguments of a transitive verb via person marking on the verb. This can be seen in (6-a): ergative *hin-* for

[4] According to Boudreault, intransitive verbs embedded under Type I auxiliaries that are not in passive voice also receive dependent marking, which simply differs from the marking used in the other constructions (*-i* instead of *-W*). My impression is that these embedded clauses are actually nominalisations, since *-i* is also a nominaliser and those verbs are inflected for plural with the nominal plural marker. This also explains why in auxiliary-I-constructions with the dependent marker *-i* no split-ergativity arises.

[5] In the glosses, *-W* is further differentiated in *-W_2* for transitive verbs and *-W_3* for intransitive verbs.

the first person external argument and absolutive *-ach* for the second person internal argument. On the intransitive verb in (6-b) we find the same marker encoding the second person single argument as with the internal argument of the transitive verb in (6-a). Absolutive markers can either be unbound or clitics on the aspect words. Ergative markers always precede the verbal stem. A full paradigm of agreement markers is given in (7), cf. Craig (1977).

(7) *Agreement markers in Jacaltec:*

Person/ Number	Absolutive	Ergative	
		C-initial verbal root	V-initial verbal root
1 Sg	hin	hin-	w-
2 Sg	hach	ha-	haw-
3 Sg	∅+CL	s-+CL	y-+CL
1 Pl	hoñ	cu-/co-	y-
2 Pl	hex	he-	hey-
3 Pl	∅+PL+CL	s-+PL+CL	y-+PL+CL

Jacaltec shares with Sierra Popoluca the property that in some subordinate clauses split ergativity arises. (8) is an example of subordination without an overt complementizer where in (8-a) a transitive and in (8-b) an intransitive verb is embedded.

(8) a. x-∅-w-ilwe [hach hin-col-ni]
ASP-3ABS-1ERG-try [2ABS.PRO 1ERG-help-SUFF]
'I tried to help you.'
b. x-∅-w-il [ha-cañalwi]
ASP-3ABS-1ERG-see [2ERG-dance]
'I saw you dance.' (Craig 1977: 115f.)

The transitive context shows no deviations; both arguments are encoded as in the matrix clauses: the external argument receives ergative marking and the internal argument is realised by an absolutive marker. However, in the intransitive case the absolutive marker is expected to encode the sole argument, but the ergative marker emerges. Again, this yields an accusative pattern: the ergative marking shows the typical nominative distribution by encoding the sole argument of an intransitive verb and the external argument of a transi-

tive verb, while the internal argument is realised by absolutive marking. In Jacaltec this phenomenon is triggered in the following constructions:

(9) (i) aspectless complement clauses
(ii) aspectless temporal adverbial clauses (Craig 1977)

It is obvious that the factor of aspectless verbs plays an important role here. Other subordinate clauses with embedded verbs bearing aspectual marking do not show split ergativity: (10) is an example of subordination with the *tato*-complementizer, where the embedded intransitive verb exhibits the expected absolutive marker for the sole argument.

(10) x-∅-aw-abe [tato ch-in to-j hecal]
ASP-3ABS-2ERG-hear [that ASP-1ABS go-FUT tomorrow]
'You heard that I will go tomorrow.' (Craig 1977: 232)

2.3. Generalisations

Two unrelated languages which both exhibit an ergative encoding system and split ergativity in certain subordinate clauses have been presented. Their split ergativity in subordination is never triggered by the subordination itself but is influenced by other factors. This has already been observed by Dixon (1994). In Sierra Popoluca and Jacaltec this factor is aspectlessness.

Crucially, there is no genuine change from an ergative to an accusative encoding system in these embedded clauses; rather, the domain of the ergative marker is extended. The only difference between the split and the normal ergative system occurs in intransitive contexts: instead of the expected absolutive, we find ergative marking. This leads to a pseudo-accusative system where the ergative marker has a distribution like the nominative marker in accusative systems. I will come back to this at the end of section 3.2.

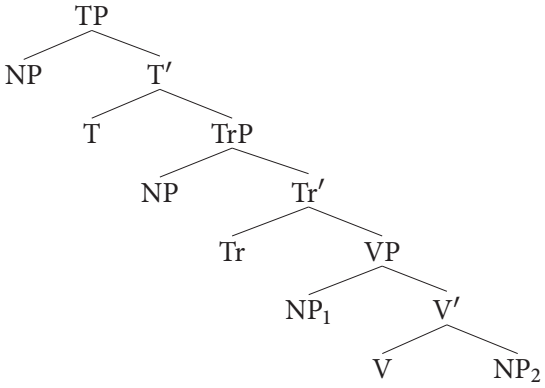
3. Analysis

As a background theory on ergativity I will adopt the analysis of ergative encoding systems by Murasugi (1992) and its reconstruction by Müller (2009). After introducing these theories, I will come to the details of my analysis of split ergativity.

3.1. Syntactic Basis: Ergativity vs. Accusativity in Murasugi (1992) and Müller (2009)

Murasugi (1992) proposes an approach towards deriving the accusative and ergative encoding system in one and the same syntactic structure. In that account, she assumes the following sentence structure:

(11) *Sentence structure in Murasugi (1992)*



The core idea is that intransitive contexts work similarly in both systems, whereas transitive contexts differ. TP and Tr(ansitivity)P are the functional projections of the heads that, among other things, assign case. In this system T assigns the unmarked case, i.e., absolutive in the ergative system and nominative in the accusative system. Tr assigns the marked case, i.e., accusative and ergative. Case is assigned when the NP moves to the specifier of the functional head.

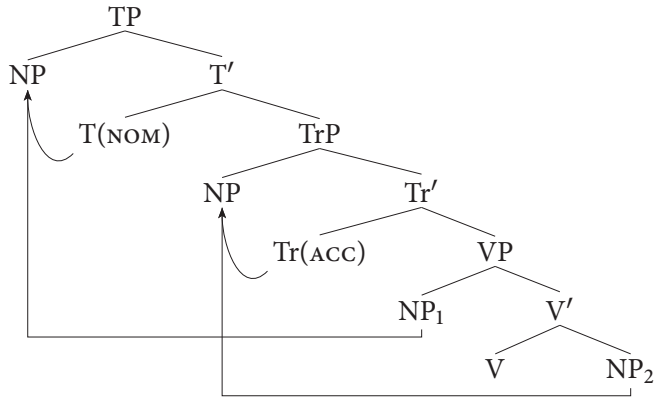
Moreover, Murasugi (1992) establishes three economy principles (cf. Murasugi 1992: 24):

(i) **Closest Available Source:** At each level of a derivation, a target must take the closest available source NP.
(ii) **Closest Featured Target:** At each level of a derivation, a source NP must move to the closest featured target.
(iii) **Procrastinate:** An operation must be done as late as possible.

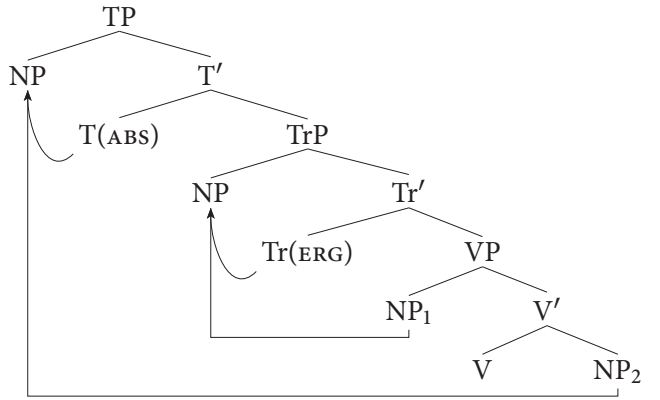
The parameter that eventually leads to the difference of the two systems is the strength of the features of T and Tr. The strong features need to be checked

at S-structure and therefore require overt NP movement. The features of the remaining functional head, which are not strong, will be checked on LF and hence do not require overt movement. In the accusative system T is strong and therefore the closest NP, which is the external NP, moves to Spec-T and the internal NP moves to Spec-Tr. In the ergative system Tr's features are strong causing the closest NP – again the external NP – to move to its specificier position. The internal NP can now only move to Spec-T.[6] This results in crossing paths in the accusative system (see (12)) and nested paths in the ergative system (see (13)).

(12) *Movement in the accusative system:*



(13) *Movement in the ergative system:*



[6] In contrast to the ergative system, the movements in the accusative system happen overtly.

Murasugi argues that Tr has no case features in intransitive contexts and hence only movement to Spec-T is possible for case assignment. As already mentioned, T assigns the unmarked case. Hence according to this system nominative or absolutive encode the sole argument.

Müller (2009) develops a reconstruction of Murasugi's system. The background assumption is that syntactic structure is built bottom-up, incrementally, by the operations Merge and Agree. Müller defines Merge and Agree as follows (cf. Müller 2009: 273):

(14) *Merge:*
α can be merged with β, forming a projection of α, if α bears a subcategorization feature [+F+] and F is the label of β.

(15) *Agree:*
α can agree with β with respect to a feature bundle Γ, if a., b., and c. hold:
   a. α bears a probe feature [$*$F$*$] in Γ, β bears a matching goal feature [F] in Γ.
   b. α m-commands β.
   c. There is no γ, such that (i) and (ii) hold:
      (i) γ is closer to α than β.
      (ii) γ bears a feature [F] that has not yet participated in Agree.

Especially (15-c-i) is important in what follows. It is based on a definition of Closeness from which it follows that '[. . .] the specifier of a head is closer to the head than a category that is further embedded in the complement of the head' (Heck and Müller 2007: 174).

With respect to the syntactic structure, Tr is replaced by v. This head also introduces the external argument. Furthermore this system also includes the numeration – a pre-syntactic collection of all lexical items that are to be used in the derivation.

In Müller's (2009) system, Agree is responsible for case assignment by checking the case features of the functional head and the DP under identity. The operation is triggered by features on T and v which act as probes.[7] This

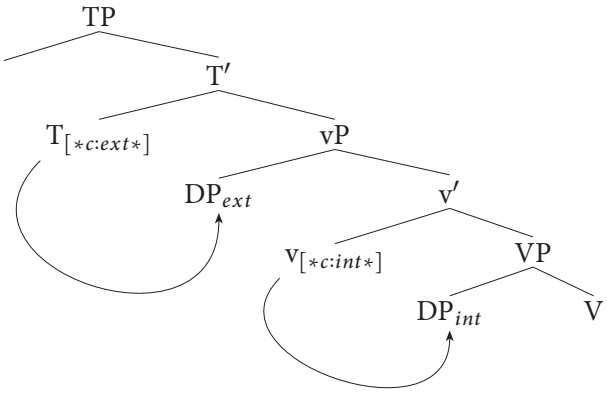
[7] Müller argues that case and agreement are basically the same. The only difference between case and agreement is the locus of the morphological reflex of the Agree relation in [CASE] (head marking vs. dependent marking): if this feature is spelled out on the functional head, it results in agreement; if, however, it is realised on the DP, it results in case marking. Languages

point needs some further explanation. Müller assumes that there is merely one case feature that can bear two values: [CASE:ext] or [CASE:int]. The corresponding probe features are localised on T (external case) and v (internal case). Agree can proceed independently of the feature values of the functional heads and the arguments. But the derivation will crash if the feature values of the functional heads and the DPs do not coincide.

The central part of this theory is v. It has a special role since it does not just assign case but also introduces the external argument. Hence, it participates in both elementary operations (Merge and Agree). Crucially, when v is merged, the context for the application of both operations is created. Assuming that they cannot proceed simultaneously, one needs to be carried out before the other. The idea is that the solution of this conflict is language-specific. It is a language-specific choice whether Agree takes priority over Merge or vice versa. This ordering of the elementary operations replaces Murasugi's feature strength and is thus responsible for the emergence of the accusative vs. ergative system in transitive contexts.

If Agree has priority over Merge, the internal argument will be assigned the internal case from v since the internal argument is the only potential goal at this stage of the derivation. Subsequently, the external argument will be introduced, which then receives the external case from T. This yields the accusative system:

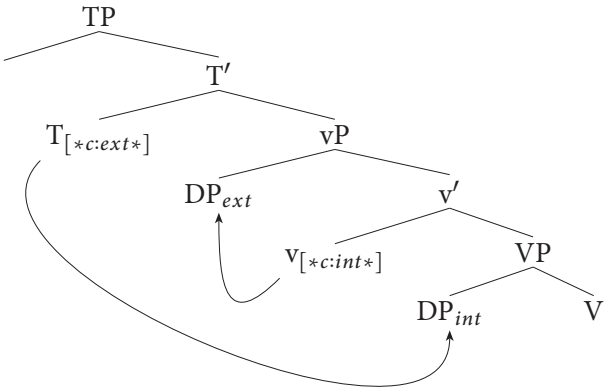
(16) *Agree before Merge – accusative system:*



that have both case and agreement, and that employ different patterns in the two areas, are addressed by postulating additional Agree operations that do not involve [CASE]. I adopt this general view.

The second possibility is that Merge applies prior to Agree. In that case, the external argument is introduced before v undergoes Agree. Therefore, it is closer to v than the internal argument, according to the definition of Closeness (see (15-c-i)). Hence, Agree takes place between v and the external argument which therefore receives the internal case. When T is merged, it assigns the external case to DP_{int}. This results in the ergative system.

(17) *Merge before Agree – ergative system:*



All of this holds in transitive contexts. For intransitives more needs to be said. First of all it needs to be ensured that there are only as many case features on functional heads as arguments. Otherwise, the derivation would crash because of unchecked features. This is accomplished by Müller's Feature Balance criterion, which applies to the numeration:

(18) *Feature Balance:*
For every feature specification [∗F:α∗], there must be a matching feature specification [F:α]. (Müller 2009: 279)

As a consequence of this criterion, either T or v has to lose its case feature in an intransitive context and with that the ability to assign case. But how is it determined which functional head maintains its case feature in the numeration? Müller suggests that this is decided by means of unmarkedness. He therefore invokes that the external case is the syntactically as well as morphologically unmarked case. Hence, the unmarked [∗case:ext∗] on T remains and [∗case:int∗] will not appear on v. The result is that the sole argument of an intransitive verb bears external case, just like the external argument of a transitive verb, if Agree takes priority over Merge (=accusative system, see

(16)), or the internal argument of a transitive verb, if Merge takes priority over Agree (=ergative system, see (17)).

With the background on ergativity in place, we can now have a closer look at split ergativity in subordination contexts.

3.2. Minimalist Analysis of Split Ergativity

What needs to be done now is to extend the existing analyses, such that they can cope with clause-type based split ergativity in intransitive contexts. This means a mechanism has to be created which leads to the assignment of the ergative case instead of the absolutive case in aspectless intransitive subordinate clauses. At the same time the absolutive case has to be preserved in transitive aspectless subordinate clauses.

I adopt Müller's approach almost completely. I agree with him regarding transitive contexts, but concerning intransitive contexts I will only adopt the Feature Balance criterion, since this is the critical point for split ergativity in subordination.

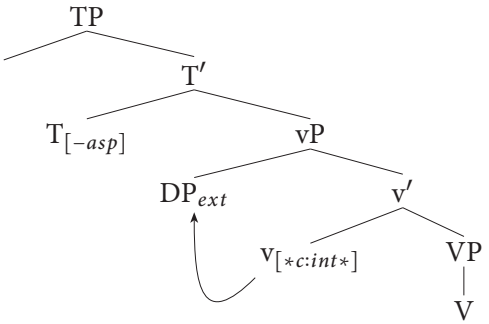
Furthermore, I assume that case features are lexical properties of the functional heads v and T that can be deleted in the numeration. As I have already pointed out in section 2.3, the only difference between split ergativity and the ordinary ergative system is that the ergative (internal case, assigned by v) instead of the expected absolutive (external case, assigned by T) shows up in intransitive contexts. Therefore, I suggest a new constraint that determines which functional head keeps its case feature in an intransitive context:

(19) *Constraint on case assignment in intransitive contexts:*
In intransitive contexts the case feature of the structurally highest, non-defective functional head remains.

First of all this is a constraint that just like Feature Balance applies to the numeration. As a consequence, the number of possible numerations is reduced and derivations which would crash anyway are prevented from the very beginning. Now, the numeration is pre-syntactic and therefore contains no structure. Nevertheless, intransitive contexts can be detected at this stage already by counting the number of elements of the category D, which are representatives of future arguments. If the numeration of a clause contains two D elements, a transitive context is given; if it contains only one D element, the clause will be intransitive. Furthermore, since Merge is triggered by selection

features [+F+], it is already foreseeable that T (bearing [+v+]) will be merged above v. Hence, T will be the highest functional head in the structure. But there is a second requirement in the constraint that demands that the highest head must not be defective. Recall from the generalisations that no split ergativity in subordination is triggered by subordination itself; rather, it is subject to other factors. For Sierra Popoluca and Jacaltec this feature is aspectlessness. Since aspect is assigned by T to v, the embedded Ts obviously lack these features, for no aspect is assigned. Usually T has to bear these features in these languages. De Jong Boudreault (2009) states that a (matrix) verb in Sierra Popoluca consists at least of a verbal root with person marking as well as aspect (or mood) marking. This seems to hold for Jacaltec, too. We may speculate that this is a general condition for T heads. The embedded aspectless T heads violate this condition. They are thus defective and because of the principle in (19) the case feature cannot remain on T. Now v becomes the highest non-defective functional head. Consequently, [∗case:int∗] remains on v and the sole argument of the intransitive verb is assigned the external case (= ergative) by v.

(20) *Intransitive context with aspectless T:*



It follows that there is no change in encoding systems in split ergativity: the unexpected ergative case in intransitive contexts is assigned by v (= internal case), while in the accusative system nominative (= external case) is assigned in intransitive contexts. Thus, what happens is a change to an accusative pattern, but not a deep change from ergativity to accusativity in the system: to carry out a complete change of system, cases would have to be swapped in transitive contexts.

Moreover, there seems to be no way for v to be defective in a converging derivation, for the single feature it necessarily has to posses is [+V+].[8] If v does not bear this feature, no Merge of v and VP is possible and the derivation crashes anyway. Hence, v will never be defective and remains as an alternative for assigning case.

Note that the constraint in (19) merely expresses a preference of non-defective heads over defective ones. This does not mean that defective heads generally cannot bear case features. In transitive contexts, when no choice is to be made between the two heads, T does assign the external case, although it might be aspectless. In transitive contexts case assignment works as described in section 3.1.

However, a structure without aspectual information cannot survive. This problem is solved by subordination. The appropriate complementizer of the embedded CPs is a reflex of the defective T. It must necessarily be subordinating in order to ensure that the missing aspectual information can be obtained from the matrix verb. It could either be assumed that this complementizer bears a special selection feature [+$T_{[-asp]}$+] or that a defective T receives a diacritic '_' and that the selection feature is thus [+T_ +].

In languages which do not exhibit split ergativity in subordination due to the lack of aspectual features, it must be assumed that these features do not belong to the inventory of necessary features. Their absence is of no importance and thus does not create defectiveness. T therefore remains the highest non-defective functional head and is allowed to assign the unmarked case.

3.3. Optimality in the Numeration

Constraint (19) is rather complex and its functioning might be best illustrated within the framework of Optimality Theory. To this end, the constraint will now be split up into three constraints (plus Feature Balance).[9]

[8] Note that the notion of defectiveness used here differs from the common notion (cf. Chomsky 2001, 2005).

[9] The constraint *u-Case/[–asp,–trans] is introduced specifically for the languages discussed in this paper and is too specific to derive split ergativity in general. To achieve this, further research regarding languages with this phenomenon is needed, for there might be other factors besides lack of aspectual features triggering split ergativity in subordination. After finding out the common denominator of the triggers, the context in which the unmarked case is prohibited can be determined. But the constraint presented here might suffice for my purpose.

(21) a. Feature Balance
For every feature specification [∗F:α∗], there must be a matching feature specification [F:α].
b. *No Case
Case has to be assigned.
c. *u-Case/[–asp,–trans]:
In aspectless intransitive contexts, T must not bear [∗case:ext∗].
d. Faith/u-Case:
Preserve the unmarked case ([∗case:ext∗] on T).

The constraint ranking is as follows:

(22) Feature Balance ≫ *No Case ≫ *u-Case/[–asp,–trans] ≫ Faith/u-Case

These constraints apply to the numeration, so the lexical items with their features serve as input for the optimization procedure. I reduce them to a minimum. Since the numeration does not contain complete DPs, one can only infer the number of arguments from the number of D elements. Therefore, elements with the category D serve as representatives of the arguments here. The tableau T_1 in (23) shows an intransitive numeration with an aspectless T.

(23) *T_1: Optimization of numeration with aspectless T; 'split ranking':*

Input: T[–asp],[∗case:ext∗], v[∗case:int∗], D	F-Balance	*No Case	*u-Case	Faith Case
C_1: T[–asp],[∗case:ext∗], v, D[case:ext]			*!	
☞C_2: T[–asp], v[∗case:int∗], D[case:int]				*
C_3: T[–asp],[∗case:ext∗], v[∗case:int∗], D[case:ext]	*!		*	
C_4: T[–asp],[∗case:ext∗], v[∗case:int∗], D[case:int]	*!		*	
C_5: T[–asp], v, D		*!		*

The third and fourth candidates cannot win because both functional heads bear a case feature. That means there is one argument but two cases to be assigned. Therefore, Feature Balance is violated. The last candidate is ruled out because there are no case features at all. This violates *No Case. Finally, the first candidate cannot be the winner, for the defective T bears a case feature. This causes a violation of *u-Case/[–asp,–trans]. Hence, the second

candidate with v as the only case assigner in an intransitive aspectless context becomes optimal.

In a structure with aspect on the T head, the expected external case turns out as the winner of the competition, see tableau T_2 in (24). *u-Case/[–asp,–trans] does not rule out the first candidate with the T head as the only case assigner in an intransitive context anymore, for its context is not given.

(24) *T_2: Optimization of numeration with T bearing aspect; 'split ranking':*

Input: T[∗case:ext∗], v[∗case:int∗], D	F-Balance	*No Case	*u-Case	Faith Case
☞C_1: T[+asp],[∗case:ext∗], v, D[case:ext]				
C_2: T[+asp], v[∗case:int∗], D[case:int]				*!
C_3: T[+asp],[∗case:ext∗], v[∗case:int], D[case:ext]	*!			
C_4: T[+asp],[∗case:ext∗], v[∗case:int], D[case:int]	*!			
C_5: T[+asp], v, D		*!		*

For languages without split ergativity in subordination, it can be assumed that the absence of aspectual features (or another factor) does not create a defective head. As a consequence, the constraints have to be reranked:

(25) Feature Balance ≫ *No Case ≫ Faith/u-Case ≫ *u-Case/[–asp, –trans]

With the same input as in T_1 the competition ends with a different optimal candidate, namely the one in which the T head assigns the unmarked case to the sole argument of an intransitive verb, see T_3 in (26).

(26) *T_3: Optimization of numeration with T bearing aspect; no split:*

Input: T[–asp],[∗case:ext∗], v[∗case:int∗], D	F-Balance	*No Case	Faith Case	*u-Case
☞C_1: T[–asp],[∗case:ext∗], v, D[case:ext]				*
C_2: T[–asp], v[∗case:int∗], D[case:int]			*!	
C_3: T[–asp],[∗case:ext∗], v[∗case:int∗], D[case:ext]	*!			*
C_4: T[–asp],[∗case:ext∗], v[∗case:int∗], D[case:int]	*!			*
C_5: T[–asp], v, D		*!	*	

Since FAITH/U-CASE is ranked above *U-CASE/[–ASP,–TRANS], the candidate whose D bears the unmarked case (absolutive) will always win, independently of whether T bears aspect in intransitive contexts or not.

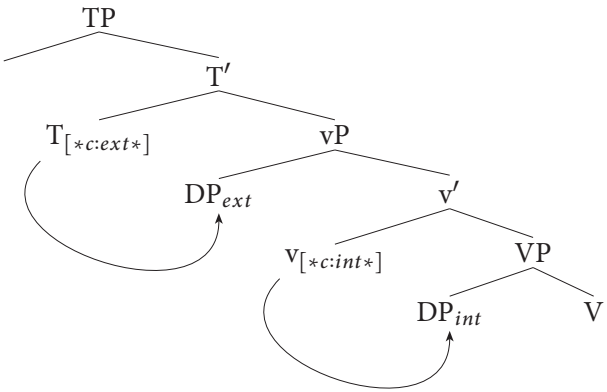
3.4. An Alternative Approach

In what follows I would like to go into the proposal by Bobaljik (1993) regarding the derivation of accusative and ergative systems and why it has problems with the phenomenon of split ergativity. For the purpose of facilitating the comparison, the clause structure in (16) is anachronistically adopted.

Bobaljik (1993) suggests that there are no differences between ergative and accusative systems in transitive contexts; nominative and ergative are practically the same case, likewise accusative and absolutive. This is the exact opposite of Murasugi's (1992) and Müller's (2009) theory, where the ergative and accusative system work the same in intransitive contexts but differ in transitive contexts.

With respect to clause structure, Bobaljik assumes additional AgrPs above VP and TP (v does not exist) and movements of the NPs into their specifier-position. This concept is here replaced by Agree relations between the functional heads T and v and the arguments. Taking the terms 'external case' now for nominative and ergative and 'internal case' for absolutive and accusative, the structure looks as follows:

(27) *Transitive contexts in both systems:*



In order to determine which case is assigned in intransitive contexts, Bobaljik proposes the 'Obligatory Case Parameter' (cf. Bobaljik 1993: 50):

(28) *Obligatory Case*
Case X is obligatorily assigned/checked.

(29) *Obligatory Case Parameter*
a. In nominative/accusative languages, case X is nominative (= erg).
b. In ergative/absolutive languages, case X is absolutive (= acc).

As a result, the difference between ergative and accusative systems arises in intransitive contexts. The cases that show up in these contexts originate on different functional heads: absolutive is assigned by v and nominative by T.

This strict principle makes it impossible to explain why we sometimes find the ergative marking in intransitive contexts, for the absolutive has to be assigned obligatorily. Consequently, it would be necessary to alter the 'Obligatory Case Parameter' or replace it by a new principle. The difficulty there is that depending on the system a different functional head is active in intransitive contexts. Hence, a factor must be found that associates T and v, but ensures that depending on the system the right functional head assigns case. This problem might be solved with the help of the idea of unmarkedness of cases.

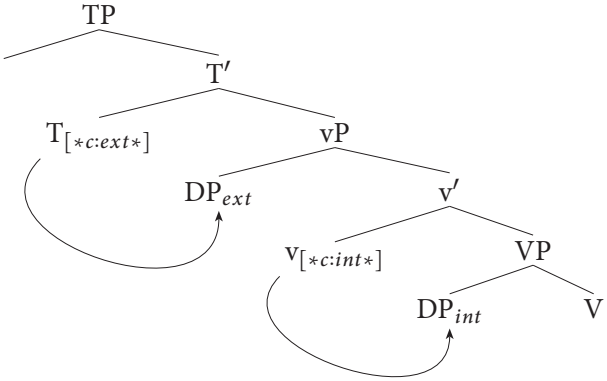
The task is to explain why v loses its case feature in intransitive contexts in the languages presented in section 2. The most obvious solution would be to assume that an aspectless (defective) T attracts case features, which stands in complete contrast to the constraint in (19). This would actually result in a true change of the encoding system: as already mentioned, the difference between ergative and accusative systems in Bobaljik's theory lies in intransitive contexts and would be neutralised in this special case.

4. Conclusion and Outlook

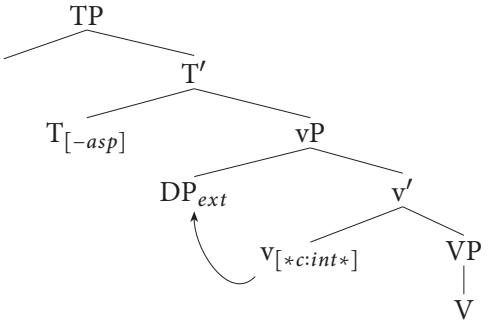
In this paper I have shown how the phenomenon of split ergativity in subordination can be derived in minimalist syntax. Based on the analysis of ergativity in Murasugi (1992) and its reconstruction by Müller (2009), I proposed a 'Constraint on case assignment in intransitive contexts'. This constraint derives split ergativity in intransitive contexts in the languages Sierra Popoluca and Jacaltec. In addition, the language Päri, a western Nilotic language, also exhibits split ergativity in certain subordinate clauses and seems to fit into this analysis, too. But further work is needed to confirm this hypothesis.

Interestingly, the present analysis does not only predict split ergativity but also an analogous split accusativity. This means that there can be languages which basically exhibit an accusative system (for case assignment in transitive cases see (16), repeated in (30)), but show accusative marking instead of nominative marking in certain intransitive (subordination) contexts, where T is defective (see (31)). Hence, the accusative would receive the typical absolutive distribution and create an ergative pattern.

(30) *Accusative system: transitive context*



(31) *Accusative system: intransitive context with defective T*



The next task then is to find either languages which instantiate exactly this prediction or independent parameters that may explain why no defective Ts appear in accusative languages and hence no 'split accusativity' can be triggered.

Another result of this paper is that a strict distinction between deep encoding systems and surface-oriented encoding patterns has to be made. To change from an ergative to an accusative encoding pattern there are two possibilities: either the cases in the transitive contexts are swapped or the case of the external argument of a transitive verb is used for the sole argument of an intransitive verb (ergative). In the same way, the change from an accusative to an ergative system can be achieved. But that is different with encoding systems. According to the present analysis the differences between basic encoding systems are interpreted differently: in Murasugi (1992) both systems behave identically in intransitive contexts, but differ in transitive cases. Bobaljik (1993), on the contrary, assumes that the systems work equivalently in transitive contexts but different functional heads are at work with intransitive verbs. But still there is only one parameter in each of the theories whose setting must be changed in order to achieve a change of system.

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