In this paper I will argue, that due to empirical reasons, the existing analyses for split ergativity in subordination cannot be used to explain the data from Jacaltec, Sierra Popoluca and Päri. It can be observed that the phenomenon is accompanied by aspectlessness. My new approach towards deriving these data is based on a new principle for case assignment in intransitive contexts that makes further reference to aspectlessness. It applies to the pre-syntactic numeration and guides the distribution of case features, leading to the assignment of the correct case.

1. Introduction

In this paper I shall be concerned with the phenomenon of split ergativity in subordination. I will present how to derive it within the framework of the Minimalist Program (Chomsky 1995, 2000). Therefore, this type of split ergativity will be treated as a purely syntactic phenomenon. But at first I want to characterize the topic of split ergativity.

Regarding argument encoding, languages always exhibit a basic system. The two most widely used encoding systems are the accusative and the ergative system. In the accusative system the external argument of the transitive verb and the single argument of the intransitive verb are encoded in the same way (nominative). The internal argument of the transitive verb on the other hand is encoded differently (accusative). In the ergative system the single argument of an intransitive verb and the internal argument of a transitive verb are encoded by the same set of markers (absolutive) whereas the external argument of a transitive verb is encoded differently (ergative).

However, the languages of the world do not always stick to their basic encoding system, rather they show variations in various contexts. There are several factors that may trigger a split in the encoding system. One of these factors can be the semantics of a verb, for instance. In some languages the single argument of an intransitive verb can be encoded either like the external argument of a transitive verb or like the internal argument, depending on whether the single argument takes control in the event denoted by the verb or not (cf. Dixon 1994: 71f.). This is called a ‘Split-S-System’. In the ‘Fluid-S-System’ on the other hand, an intransitive verb basically allows for both encoding variants for its single argument (like the internal or like the external argument of a transitive verb). Which markers are chosen depend on the
semantics of the very situation in which the combination of verb and argument is used (cf. Dixon 1994:78f.). Another factor can be the semantic nature of the argument itself. Silverstein (1976) introduced a nominal hierarchy ordering the various types of nominals from those that most likely take control (left end) to those that probably are not the controller of the situation (right end). Split-systems can also arise along these lines (cf. Dixon 1994:85).

In addition, tense, aspect and mood might be triggers for a split system. Dixon (1994:99) generalizes that if there is split triggered by tense or aspect, then the past or perfect aspect is associated with the ergative system and the non-past or imperfect aspect with the accusative system. Regarding mood, the imperative might lead to an accusative system whereas all others occur with the ergative system.

Finally, there are also clause-type-based splits in which the argument encoding in matrix clauses differs from the argument encoding in subordinate clauses. This is the type of split system I will focus on.

Another important aspect of split systems is the type of system that is produced by the encoding irregularities. There are several variants but the one I will approach is called ‘extended ergative’. This means that underlyingly an ergative system is present but in split contexts the ergative extends its domain. In intransitive contexts the ergative instead of the absolutive shows up while the combination of ergative and absolutive remains in transitive contexts.

With this background in place we can now turn to the main part of this paper. It will be structured as follows: section 2 presents language data that illustrate the phenomenon of split ergativity in subordination and it ends with generalisations about them. The following section is dedicated to previously proposed analyses of the ‘extended ergative’ pattern and why they cannot cope with the data I present. Section 4 comprises a new approach to the derivation of split ergativity and variations of the analysis. The following section deals with predictions of the analysis. Finally, in section 6 I draw some conclusions and point out directions for further research.

2. Language data

In this section data from the three unrelated languages Sierra Popoluca, Jacaltec and Päri 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. This means that in transitive cases only the argument ranked higher on the hierarchy is marked on the verb. If a relation between two speech act participants is expressed, a special set of markers, the so-called 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) Ergative encoding system in Sierra Popoluca

a. ?a=seet-pa
   1.EXCL.ABS=return-INC
   ‘I return.’

b. ?ich ?an=kuʔt-pa jeʔm saapnyi
   1PRO 1.EXCL.ERG=eat-INC that banana
   ‘I ate this banana.’

c. jeʔm ?a=pak-kaʔ-W
   that 1.EXCL.ABS=knock.down-CMP
   ‘That one knocked me down.’ (de Jong Boudreault 2009: 592, 335, 216)

Example (1a) shows an intransitive verb with its single argument in first person exclusive. It is encoded by ?a=. In (1c) ?a= 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 (1b) 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 ?an=. The full paradigm of agreement markers is shown in (2) (de Jong Boudreault 2009: 396 & Elson 1960: 207):

(2) Agreement markers in Sierra Popoluca

<table>
<thead>
<tr>
<th></th>
<th>Set A / Ergative</th>
<th>Set B / Absolutive</th>
<th>Set C / Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.excl</td>
<td>?an=</td>
<td>?a=</td>
<td></td>
</tr>
<tr>
<td>1.incl</td>
<td>tan=</td>
<td>ta=</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>?in=</td>
<td>mi=</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>?i=</td>
<td>Ø=</td>
<td></td>
</tr>
<tr>
<td>2:1</td>
<td>?an=</td>
<td>man=</td>
<td></td>
</tr>
</tbody>
</table>

Turning now to the subordinate clause (in brackets) in (3a) with an intransitive verb, one can observe that instead of the expected absolutive marker the ergative marker ?an= emerges. In the following two examples a transitive verb is embedded. In these cases we find the anticipated markings: ergative ?in= for the external argument in (3b) and absolutive ?a= for the internal argument in (3c). This yields an accusative pattern in embedded clauses since

---


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

(3) **Split ergativity in subordination in Sierra Popoluca**

a. dya ?a=joʔy-neʔ-W=ʔam  
   NEG 1.EXCL.ABS=be.angry-PERF-CMP=ALR 1.EXCL.ERG=exit-DEP
   ‘I wasn’t angry when I left.’

b. mich dya=ʔam mi=ʔoy-W  
   2PRO NEG=ALR 2ABS=go-CMP 2ERG=see-DEP 2PSR=grandmother
   ‘You didn’t go see your grandmother.’

c. ʔoy=tyi=ʔam  
   goaux=just=ALR 1.EXCL.ABS=see-PLU=dep
   ‘They just went to see me.’ (de Jong Boudreault 2009: 419, 726, 727)

The split system is triggered in certain multi-verb constructions (de Jong Boudreault 2009, Marlett 1986, Elson 1960):

(4) **Split ergativity triggering constructions in Sierra Popoluca:**

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

Interestingly, the embedded verbs in the constructions mentioned above display further special characteristics: the verbs lack any kind of mood or aspect marking but receive dependent morphology instead. In (5) I contrast the matrix verb and the embedded verb of (3a) in order to illustrate this (de Jong Boudreault 2009: 419): The matrix verb in (5a) bears the marker -W for completive aspect (CMP) whereas the embedded verb in (5b) only consists of the verb root put, the agreement marker ?an-, and the dependent marker -W3.

(5) **Matrix and embedded verb contrasted:**

a. ?a=joʔy-neʔ-W=ʔam  
   1.EXCL.ABS=be.angry-PERF-CMP=ALR

b. ?an=put-W3  
   1.EXCL.ERG=exit-DEP

---

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).
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 de Jong Boudreault saying that these verbs are best described as aspectless. The dependent marking consists of an inaudible consonant represented in the transcription by -W. 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) Ergative encoding system in Jacaltec

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 or aspect word. This can be seen in (6a): ergative hin- for the first person external argument and absolutive -ach for the second person internal argument. On the aspect word in (6b) we find the same marker encoding the second person single argument as with the internal argument of the transitive verb in (6a).

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).

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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 The marker -W is further differentiated in -W2 for transitive verbs and -W3 for intransitive verbs.
(7) Agreement markers in Jacaltec

<table>
<thead>
<tr>
<th>Person / Number</th>
<th>Absolutive</th>
<th>Ergative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C-initial verbal root</td>
<td>V-initial verbal root</td>
</tr>
<tr>
<td>1sg</td>
<td>hin</td>
<td>hin-</td>
</tr>
<tr>
<td>2sg</td>
<td>hach</td>
<td>ha-</td>
</tr>
<tr>
<td>3sg</td>
<td>Ø + CL</td>
<td>s- + CL</td>
</tr>
<tr>
<td>1pl</td>
<td>hoñ</td>
<td>cu- / co-</td>
</tr>
<tr>
<td>2pl</td>
<td>hex</td>
<td>he-</td>
</tr>
<tr>
<td>3pl</td>
<td>Ø + PL + CL</td>
<td>s- + PL + CL</td>
</tr>
</tbody>
</table>

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

(8) Split ergativity in subordination
a. x-Ø-w-ilwe [hach hin-col-ni]  
   ASP-3ABS-1ERG-try [2.ABS.PRO 1ERG-help-SUFF]  
   ‘I tried to help you.’

b. x-Ø-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 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 transitive verb, while the internal argument is realised by absolutive marking. In Jacaltec this phenomenon is triggered in the following constructions (cf. Craig 1977):

(9) Split ergativity triggering constructions
   (i) aspectless complement clauses
   (ii) aspectless temporal adverbial clauses

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 complementiser *tato*, in which the embedded intransitive verb exhibits the expected absolutive marker for the sole argument.
Split ergativity in subordination

(10) Embedded clause without split ergativity

\[
x-\text{Ø-aw-abe} \quad [\text{tato} \ \text{ch-in} \ \text{to-j} \ \text{hecal}] \\
\text{ASP-3ABS-2ERG-hear} \quad [\text{that} \ \text{ASP-1ABS go-FUT tomorrow}] \\
\text{‘You heard that I will go tomorrow.’} \\
\text{(Craig 1977: 232)}
\]

2.3 Päri

Päri, a Nilotic language spoken in Sudan, also basically features an ergative system.

(11) Ergative system in Päri

a. übúr-Ø ã-túuk'
   Ubur-ABS CMP-play
   ‘Ubur played.’

b. dháag-Ø ã-yàan ûbùrr-i
   woman-ABS CMP-insult Ubur-ERG
   ‘Ubur insulted the woman.’

c. dháag-Ø ã-cóol'-à
   woman-ABS CMP-call-1SG.ERG
   ‘I called the woman.’ \\
\text{(Andersen 1988: 292,295)}

(11-a) shows an intransitive verb whose single argument is encoded with null marking for absolutive. In (11-b) a transitive context is present and the null marking is used for the internal argument this time. The external argument receives the ergative marker -i. Pronominals are encoded differently. This can be seen in (11-c). A transitive context is present and the pronominal external arguments is realized with the affixe -à for 1st person ergative on the verb. The non-pronominal internal argument again receives null marking. The complete paradigm of Päri's pronouns and corresponding verbal markers can be seen below (cf. Andersen 1988: 297):

(12) Pronouns and verbal markers in Päri

<table>
<thead>
<tr>
<th></th>
<th>Absolutive</th>
<th>Ergative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronoun</td>
<td>Prefix / Proclitic</td>
<td>Pronoun</td>
</tr>
<tr>
<td>1SG</td>
<td>?ään(i)</td>
<td>á-</td>
</tr>
<tr>
<td>2SG</td>
<td>?iin(i)</td>
<td>-i-</td>
</tr>
<tr>
<td>3SG</td>
<td>yin(i)</td>
<td>yi-</td>
</tr>
<tr>
<td>1PL.EXCL</td>
<td>wán(i)</td>
<td>wá-</td>
</tr>
<tr>
<td>1PL.INCL</td>
<td>?ðon(i')</td>
<td>(?)ðon(i'))</td>
</tr>
<tr>
<td>2PL</td>
<td>?ùun(ù)</td>
<td>ù- / ò-</td>
</tr>
<tr>
<td>3PL</td>
<td>gin(i)</td>
<td>gi-</td>
</tr>
</tbody>
</table>
Taking a closer look at subordinate clauses without aspect markers, it can be observed that Pāri also features split ergativity. Examples are given in (13).

(13) Split ergativity in Pāri
a.ʔáan á-ci' [kù kwâl-á dhòk-Ø]
   1.SG.PRO.ABS CMP-go.LOC [CONJ steal-1SG.ERG cows-ABS]
   ‘I went to steal the cows.’

b.ʔáan á-ci' [kù kwât-á]
   1.SG.PRO.ABS CMP-go.LOC [CONJ steal.CF.AP-1SG.ERG]
   ‘I went to steal.’

c.ʔáan á-mdh'-ò
   1.SG.PRO.ABS CMP-drink.M.AP-SUFF
   ‘I drank.’ (Andersen 1988: 318, 300)

In (13-a) a transitive verb is present in the embedded clause. As in the data of the two languages before there are no unexpected markers for the two arguments. The internal argument dhòk ‘cows’ receives null marking for the absolutive and the external argument is realized by the ergative suffix -á for first person ergative on the verb. But (13-b) is an example with an intransitive embedded verb (the originally transitive verb kwâl ‘to steal’ is in the antipassive and therefore intransitive) and also bears the ergative suffix -á for first person ergative to encode its single argument. Evidence that this ergative marker is not due to the antipassive can be seen in (13-c) which shows a matrix clause with the originally transitive verb ‘to drink’ in antipassive. In that case the single argument is encoded with the help of an absolutive pronoun.

2.4 Generalisations

Three unrelated languages which all exhibit an ergative encoding system and split ergativity in certain subordinate clauses have been presented. What can be observed is that compared to the encoding system in matrix clause the only change that is happening is in intransitive contexts: Instead of the expected absolutive the ergative occurs. The argument encoding in transitive contexts remains untouched.

Moreover, the 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, Jacaltec and Pāri this factor is aspectlessness. Embedded sentences with aspect markings do not show any deviations from the basic encoding system.

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 in which the ergative marker has a distribution like the nominative marker in accusative systems. I will come back to this in section 7.
3. Existing analyses

Several derivations for different types of split ergativity giving rise to the ‘extended ergative’ pattern have been proposed in the literature. I will go into two of them and explain why they are not able to cope with the data presented.

I will start with the analysis proposed by Coon (2010). She suggests that the encoding irregularities arise because the embedded clauses are actually nominalisations. What seems to be the external argument would then rather be the possessor of this nominalisation. In Mayan languages the ergative is also used for encoding possessors. Hence, the unexpected occurrence of the ergative would not be an irregularity of the encoding system but just the regular case assignment of the ergative to a possessor of a nominalised sentence.

But this cannot hold true for Sierra Popoluca. If the presented data really were instances of nominalisations the following would be expected:

(i) the typical nominaliser for these cases would be \(-i\)
(ii) the plural markers for nouns are \(=\text{tam} \) (for speech act participants, henceforth SAP) and \(=\text{yaj} \) (for non-SAP) whereas for plural agreement on verbs it is \(-\text{ta}m\) and \(-\text{yaj}\).\(^6\)

(14) Examples of nominaliser and plural markers

a. \(\text{kaʔ}-i\)
   \(\text{die-NMLZ}\)
   ‘dead person’

b. \(\text{yoomo}=\text{tam}\)
   \(\text{woman}=\text{PLU}\)
   ‘women’

c. \(\text{taʔ=oy}-\text{ta}m-W\ y\text{iʔp kootzik}\)
   \(1\text{INCL.ABS=go-PLU-CMP this mountain}\)
   ‘We went to the mountain.’  
   (de Jong Boudreault 2009: 174,190,428)

In (14-a) we can see an example of the nominaliser \(-i\) turning the verb \(\text{kaʔ} \) ‘to die’ into the nominal ‘dead person’. (14-b) shows the clitic \(=\text{tam} \) as plural marker for nominals. In this case it is used to produce the plural ‘women’ from the singular noun ‘woman’. The example (14-c) illustrates the use of the suffix \(-\text{ta}m\) as a plural marker on the verb.

Taking a look at the subordinate clauses with split ergativity, it can be observed that the plural marker is a suffix and no nominaliser is present as (15) for instance shows: No \(-i\) can be found but the plural suffix \(-\text{yaj}\) which indicates that we are dealing with a verb and not a nominalisation. Hence, the sole argument is not a possessor and it is not automatically clear why it bears the ergative marker. Thus, the nominalisation approach cannot account for these cases.

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\(^6\) Clitics and suffixes can be differentiated because suffixes participate in stress assignment and clitics do not (cf. de Jong Boudreault 2009:750).
Another proposal for the analysis of the ‘extended ergative’ pattern is developed in Bobaljik (1993). He suggests among others that the embedded intransitive verbs are actually hidden transitives (see also Levin 1983; Laka 1993; Hale & Kayser 1993). This means that what seems to be an intransitive verb actually is a transitive verb with a covert coargument. The reason why the only overt argument receives the ergative case would therefore be because it actually is the external argument of a transitive verb which is regularly marked by ergative case.

But arguments against this analysis come from Jacaltec. The embedded verb cañalwi ‘to dance’ in example (9b) (repeated below as (16)) consists of 3 morphemes:

(i) the stem cañal, which is the noun 'dance'
(ii) the intransitiviser -w, which derives intransitive verbs from transitive verbs and nouns
(iii) the stemformative for intransitive verbs -i

(16) Split ergativity in subordination in Jacaltec

x-Ø-w-il [ha-cañal-w-i]
ASP-3SG.ABS-1SG.ERG-see 2SG.ERG-dance-INTR-IV

‘I saw you dance.’ (Craig 1977: 116)

So the morphology clearly marks the verb as intransitive; nevertheless, the ergative shows up on the sole argument.

There is another argument, also from Jacaltecc, against the hidden-transitives-analysis. Examples of intransitive verbs can be found which occur in matrix clauses and their single argument is marked with the absolutive whereas when they occur in aspectless subordinate clauses their single argument is marked with the ergative. An example is shown below:

(17) Intransitive verb tzoteli as matrix verb and as embedded verb

a. c’ul x-(y)-u [ha-tzotel-i]
good ASP-3SG.ERG-AUX [2SG.ERG-talk-IV]
‘You talked well.’

b. ch-oñ tzotel-i
ASP-1PL.ABS talk-IV
‘We talk.’ (Craig 1977: 90,335)

In (17-a) the verb occurs in the aspectless embedded clause. Its single argument is encoded with the ergative marker ha-. (17-b) on the other hand shows the verb in a matrix clause. This time the single argument is realised by the absolutive suffix -oñ on the aspect word. If we want to follow Bobaljik’s idea that the unexpected ergative marking is due to a different transitivity status of the verb than what it seems to be, we would be forced to say in this case...
that the transitivity of the verb *tzoteli* is dependent on the clause-type, i.e. it is intransitive in matrix clauses and transitive in subordinate clauses (without an overt internal object). Additionally, we would have to call into question if the morpheme *-i* really is an intransitiviser. These two statements are implausible.

Since to the best of my knowledge no analysis can account for the data I collected yet, a new approach must be taken.

4. Analysis

As a background theory on ergativity I will adopt the reconstruction of Murasugi's (1992) analysis of ergative encoding systems by Müller (2009). After introducing this theory, I will come to the details of my analysis of split ergativity which is an extension of the base theory that is flexible enough to derive the encoding irregularities of the ‘extended ergative’ pattern.

4.1 Background theory

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

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

(19) 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 (19-c-i) is important in this argument. It refers to the 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 & Müller 2007: 174).

The basic sentence structure consists of CP, TP, vP and VP. The v head also introduces the external argument. Furthermore this system also includes the numeration - a pre-syntactic assembly 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. This point needs some further explanation. 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
Daniela Thomas assumes that there is merely one case feature that can take on two values: \texttt{[CASE:ext]} or \texttt{[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 role, however, is played by v. It takes a special position 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. It is assumed that they cannot proceed simultaneously: one needs to be carried out before the other. The idea is that this conflict is resolved differently by various languages. It is a language specific choice whether Agree takes priority over Merge or vice versa. This ordering of the elementary operations is 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. Together with the intransitive context, which will be explained below, this yields the accusative system:

\begin{displaymath}
\text{(20) Agree before Merge: accusative system}
\end{displaymath}

\begin{center}
\begin{tikzpicture}
  \node (TP) {TP} [level distance = 1.5cm] child {node {DP} child {node (T) {T'} [level distance = 1.0cm] child {node (T*) {T[\texttt{[c:ext*]}]} child {node (vP) {vP}} child {node (DP_{\text{ext}}) {DP_{\text{ext}}}}}} child {node (v') {v'}}} child {node (VP) {VP} child {node (DP_{\text{int}}) {DP_{\text{int}}}} child {node (V) {V}}}};
\end{tikzpicture}
\end{center}

The second possibility is that Merge applies prior to Agree. In that case, the external argument is introduced before v enters Agree. Therefore, it is closer to v than the internal argument, according to the definition of Closeness (see (19-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_{\text{int}}. It cannot assign case to DP_{\text{ext}} again since this DP has already participated in Agree and does not have an active feature any more. This means that by the time T searches for a Goal to assign case to, DP_{\text{ext}} (more specifically, its goal feature) is not visible to T anymore. This derivation in combination with the intransitive context (explained below) results in the ergative system.
(21) Merge before agree: ergative system

All of this holds in transitive contexts. For intransitive ones more needs to be said. First of all it must be stated 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:

(22) Feature Balance
For every feature specification [F:α*], there must be a matching feature specification [F:α].
(Mueller 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 18), or the internal argument of a transitive verb, if Merge takes priority over Agree (=ergative system, see 20).

With this background on ergativity we can now have a closer look at split ergativity.

4.2 Minimalist analysis of split ergativity

What now needs to be done is to extend the existing analysis, such that it can cope with split ergativity in intransitive contexts. In Müller's (2009) analysis there is no flexibility in intransitive clauses which leads to the invariable assignment of the absolutive case. But the data show that this is not always the case. This means that 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. This will be achieved with a new constraint referring to the numeration. It guides the distribution of case features making reference to the presence or absence of features such as aspect and yields the desired result of flexibility in case assignment in intransitive contexts.
I adopt Müller's approach almost completely. I agree with him regarding transitive contexts, but concerning intransitive contexts I will only take over 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 2.4, 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 principle that determines which functional head keeps its case feature in an intransitive context:

(23) **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 principle 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. Admittedly, the numeration is pre-syntactic and therefore contains no structure. But because of the selection feature (represented as [+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 principle 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, Päri and Jacaltec this feature is aspectlessness. The assumption is that aspect is assigned by T to v and the embedded Ts obviously lack this aspect features, for no aspect is assigned. Usually T has to bear this feature 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 and Päri, too, and hence appears to be a condition for Ts. The embedded aspectless Ts thus violate this condition. They are thus defective and because of the principle in (23) the case feature on T cannot remain. v now 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.

(24) **Intransitive context with aspectless T**
From this analysis it follows why 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. All that happens is a change to an accusative pattern. To carry out a complete change of system, cases must 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 possess is [+V+]. If v doesn't 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 alternative for assigning case.

Note that the Constraint on case assignment in intransitive contexts merely expresses a preference for 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 depicted in (21).

A problem that poses itself is that a structure without aspectual information cannot survive. This issue 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 conducted by the lack of aspectual features, I assume 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.

4.3 Variation of the analysis

In this section I will present language data which show a minimally differing split system and how these encoding irregularities can be derived as a variation of the present analysis.

4.3.1 Mam

Mam, a Mayan language spoken in Guatemala, basically instantiates an ergative system which can be seen in the following example.

(25) Ergative encoding system in Mam

a. ma Ø-n-tzeeq' a-ya
   ASP 3SG.ABS-I 3SG.ERG-hit-1.ERG
   ‘I hit it.’

b. ma Ø-b'ee t
   ASP 3SG.ABS-walk
   ‘He walked.’

c. ma chin b'ee t-a
   ASP 1SG.ABS walk-1 ABS
   ‘I walked.’

(England 1983: 58)
In (25-a) a transitive context is present. The external argument is encoded by the combination of \( n \)- and \(-ya\) for first person ergative and the internal argument by a null marker for third person absolutive. The same null marker can be found in (25-b) where it is used to encode the single argument. (25-c) shows that a single argument of an intransitive verb in first person is encoded differently than the first person external argument of a transitive verb.

Interestingly, Mam also features embedded clauses without aspect marking leading to encoding irregularities. But in these cases we do not find the split system presented above but suddenly all arguments invariably are encoded with the help of ergative markers.

(26) Split system in aspectless subordinate clauses in Mam

a. \( n \)-chi ooq' [t-poon ky-txuu7]  
   PROG-3PL.ABS cry [3SG.ERG-arrive 3PL.PSR-mother]  
   ‘They were crying, when their mother arrived.’

b. [ok t-ku7-x ky-awa-7n xjaal kjo7n]  
   [when 3SG.ERG-DIR-DIR 3PL.ERG-plant-DIR person cornfield]  
   b'i7x n-Ø-xi7 cheenaq t-i7j  
   all.at.once PROG-3SG.ABS-go bean 3.PSR-RELN/PAT  
   ‘When the people plant the cornfield at the same time the beans go in.’

(England 1983: 259)

(26-a) includes an intransitive embedded verb. Its single argument is in third person. But this argument is not realized by the null marker for third person absolutive on the verb but by the marker \( t-\) for third person ergative. (26-b) on the other hand features a transitive embedded verb. Both its arguments ('the people' and 'the cornfield') are encoded by ergative markers on the verb and the directional: the verb bears \( ky-\) as third person plural ergative representing the external argument (i.e. the people) and the directionals bear the marker \( t-\) for third person singular ergative representing the internal argument (i.e. the cornfield).

This split system can be derived as a simple variation of the split ergativity we have seen so far: The T heads of the subordinate clauses become defective because they don't bear an aspect feature. What is different from the analysis of split ergativity now is that Mam does not just have a preference for non-defective heads but generally prohibits defective heads from bearing case features and consequently from assigning case. This is not a problem in intransitive contexts in which \( v \) simply takes over T's function as case assigner. But since two arguments are present in a transitive context, case has to be assigned twice. In order to achieve this, there are two possibilities at hand: First, as a result of T's inability to bear a case feature, \( v \) must bear two case features so that every argument has a partner to agree with. In order to avoid a violation of the Inclusiveness condition, it has to be assumed that a second \( v \) bearing two identical case features beside the standard little \( v \) is available. This special \( v \) is chosen in the presence of a defective T head in the numeration. In the course of the derivation \( v \) agrees with both arguments and assigns the ergative case twice.

The second option is that T still is not able to bear a case feature due to its defectivity but there is only the standard \( v \) bearing one case feature which is allowed to undergo multiple agree (Hiraiwa 2001). That means the case feature on \( v \) does not become inactive after entering the first agreement relationship and \( v \) is able to agree with both arguments, although it only bears one case feature.
Either way, the mechanism that one chooses from the two is a last resort, i.e. not a normal behaviour of v. It is not freely available but triggered under the special circumstance that T is defective and supposed to avoid a crash of the derivation. Both proposed solutions entail several questions which I will not be concerned with here.

4.3.2 Jacaltec

Jacaltec has already been introduced as a language that features split ergativity in aspectless subordinate clauses. But this is not the only context in which the split system is triggered. It also emerges in matrix clause constructions with an intransitive auxiliary (-u) that takes aspect marking but can only be marked for third person ergative.

(27) Split ergativity in auxiliary-construction in Jacaltec

(27-a) shows a grammatical instance of the construction in question. The matrix predicate is a combination of the adjective c'ul ‘good’ and the auxiliary -u. The single argument is encoded by a marker for third person ergative although the translation reveals that the actual agent is an entity in second person (which is subject of the embedded clause). (27-b) shows that it is not possible to use the marker for second person ergative in the matrix clause.

This phenomenon can also be subsumed under the present analysis. The idea is that the matrix T is defective again. But here the reason for the defectivity is the lack of φ-features. This also explains why this auxiliary can only be used impersonally. The same mechanism as in split ergativity in subordination sets in leading to the assignment of the ergative instead of the absolutive. But in this case no subordination is triggered because the third person marker is simply inserted via default. Hence, no information needs to be obtained from a superordinate clause.

So this split system also follows from the analysis proposed for split ergativity in subordination. The only difference is that the defectivity in this case is due to a different feature(set): absent φ-features instead of an absent aspect feature. Since T is defective it cannot assign case due to the constraint stated in (23). This results in v assigning ergative case and the marker for 3rd person singular is chosen because it is the default marker.

This also shows that there are two ways to compensate the absence of a feature: either subordination is triggered which gives the opportunity to obtain the missing information from a superordinate clause or a default value is inserted in which case no subordination is necessary. Consequently, the analysis I propose is completely independent from subordination and that is why the Constraint on case assignment in intransitive contexts does not make reference to it.
5. Prediction of the analysis

Interestingly enough, the present analysis does not only derive split ergativity. Since the basis of this analysis is a system that derives accusativity and ergativity within one structure and the new condition does not explicitly refer to the ergative system, a split accusativity analogous to split ergativity is predicted. This means that there should be languages which basically exhibit an accusative system but show accusative marking instead of nominative marking in certain intransitive (subordination) contexts. This arises if T is defective in an accusative system: in transitive contexts no change in the encoding system is triggered (for case assignment in transitive cases see (20), repeated in (28)) but in intransitive contexts the defective head is not allowed to assign case. Therefore, v does so (see (29)) and v assigns the marked case which is accusative in an accusative encoding system. So the sole argument of an intransitive verb in a defective context bears the same case as the internal argument of a transitive verb in defective contexts (accusative). Hence, the accusative would receive the typical absolutive distribution and create an ergative pattern.

(28) Accusative system: transitive context

![Diagram](28accusative_transitive_context)

(29) Accusative system: intransitive context with defective T

![Diagram](29accusative_intransitive_context_with_defective_T)

This prediction is borne out. Evidence for this phenomenon comes from Kĩsëdjë, a Brasilian language of the Jë family. This language basically exhibits an accusative system with a marked nominative. The arguments are encoded by case clitics.
(30) **Accusative encoding system in Kĩsẽdjê**

a. Ø Pasi=ra thê
   
   FACT.NF Pasi=NOM go
   
   ‘Pasi is gone/going.’

b. hên Ø i-nā=Ø mu
   
   FACT 3PRO.NOM 1.PSR-mother=ACC see
   
   ‘He saw my mother.’

c. Ø i-nā=ra khu-ku
   
   FACT 1.PSR-mother=NOM 3ACC-eat
   
   ‘My mother ate it.’

(Nonato 2013a: 2,4)

In (30-a) an intransitive context is present. The single argument receives the nominative clitic =ra. The same clitic is used for the external argument of the transitive verb in (30-c). (30-b) on the other hand also features a transitive verb but this time the external argument is a 3rd person pronoun which is realised by a null marker. The internal argument bears the accusative marker =Ø. Example (30-c) also shows that pronominal arguments can be realized by a verbal marker. In this case it is the prefix khu- for an internal argument in third person accusative.

Another important point is that in Kĩsẽdjê tense is not morphologically encoded. But matrix clauses have to have a modal particle. These can be missing in subordinate clauses. In that case split accusativity appears, i.e. the accusative is used to encode the single argument of an embedded intransitive verb. Argument encoding in transitive embedded verbs remains untouched. This can be seen in the following set of data:

(31) **Split accusativity in Kĩsẽdjê**

a. hên Ø [i-nā=Ø thêm] mu
   
   FACT 3PRO.NOM [1.PSR-mother=ACC go] see
   
   ‘He saw my mother.’

b. hên Ø [i-nā=re/ra khwârâ=Ø khuru] mu
   
   FACT 3PRO.NOM [1.PSR-mother=NOM manioc=ACC eat] see
   
   ‘He saw my mother eating manioc.’

(Nonato 2013a: 4 & Nonato 2013b: 4)

In (31-a) it can be observed that the single argument in the embedded clause is null marked, i.e. receives the accusative. (31-b) contains a transitive embedded verb. Its internal argument is also null marked and the external argument bears the nominative clitic =ra (or the stylistic variant =re). This means that the accusative marker shows the typical distribution of the absolutive which creates an ergative encoding pattern. This exactly confirms the predicted accusative counterpart of split ergativity.

In what follows I would briefly like to go into the analysis of ergativity and accusativity by Bobaljik (1993) and show why this theory has difficulties once we try to capture the data presented above. To facilitate the comparison with Müller's (2009) theory I will use the same clause structure.

Bobaljik (1993) assumes that the difference between ergative and accusative encoding system lies in intransitive contexts (as opposed to Müller): he takes nominative and ergative to be basically the same case just as accusative and absolutive.

Regarding the clause structure, Bobaljik assumes additional AgrPs above VP and TP (v is non-existent) and movement of the NPs to their specifiers. The case assignment then takes place in a specifier-head-configuration. I replace this concept by an Agree operation between the functional heads T and v and the arguments. The term ‘external case’ subsumes now nominative and ergative (assigned by T), while ‘internal case’ stands for absolutive and accusative (assigned by v). So the structure for a transitive context looks identical for both encoding systems.

(32) Transitive contexts in both systems

In order to decide which case appears in intransitive contexts, Bobaljik proposes the ‘Obligatory case parameter’ (OCP, cf. Bobaljik 1993: 50) which basically states that in intransitive contexts in an accusative system the nominative (=external case) must be assigned whereas in an ergative system the absolutive (=internal case) must be assigned in intransitive contexts.

As a result, the difference between the two encoding systems arises in intransitive contexts because in these cases they work differently. The cases that show up are assigned from different functional heads. Absolutive is assigned by v (see (33)) and nominative is assigned by T (see (34)).
If one attempts to capture the irregularities in intransitive contexts of split ergativity now, the OCP causes problems because it is such a strict principle that leaves no room for flexibility. Because it demands the obligatory assignment of the absolutive case in intransitive contexts in an ergative encoding system, it cannot explain why the ergative shows up in intransitive defective contexts.

Bobaljik tried to overcome these problems by proposing the 'hidden-transitive-analysis' which - as we have seen in section 3 - is not able to account for the data. Another possibility to capture the encoding irregularities is to change or to replace the OCP. The challenge that is faced here is that according to Bobaljik different functional heads are active in intransitive contexts in the different systems. Hence, a factor needs to be found that associates T and v but also ensures that the right functional head is chosen. This problem could again be solved with the help of unmarkedness: the case features of the unmarked case in each system (nominative and absolutive) receive an additional indicator simply by virtue of being the feature of the unmarked case. The nominative is the external case and assigned by T, therefore the case feature for the external case receives the additional mark in the accusative system: T[CASE:ext #]. The absolutive on the other hand is the internal case and assigned by v. Consequently, the case feature for the internal case must bear an additional indicator in the ergative system: v[CASE:int #]. As a general condition, one might now assume that the unmarked case has to be assigned. Consequently, the case feature with the additional indicator
must be preserved in the numeration. This leads to the assignment of the absolutive in the ergative system and the nominative in the accusative system in a usual intransitive context.

The next task is now to explain why v loses its case feature in aspectless intransitive contexts. The obvious answer would be that an aspectless, defective T attracts the case feature. This is in complete contrast with the *Constraint on case assignment in intransitive contexts.* But interestingly, this would lead to a genuine change of encoding system in the context of defectivity: both encoding systems work similarly in transitive contexts but differ in intransitive ones. In a normal derivation of an intransitive context, v assigns the absolutive to the sole argument in an ergative system and T assigns nominative in an accusative system. Exactly this point is neutralised in the context of split ergativity in subordination: in an intransitive context the defective T attracts the case feature which leads to T assigning ergative to the sole argument. This is the exact match of case assignment in normal intransitive contexts in an accusative system (compare (34) and (35)).

(35) *Ergative system: intransitive context with defective T*

Consequently, the ‘extended ergative’ pattern leads to a genuine change of encoding system under this account. This contrasts with Müller's (2009) analysis.

7. Conclusion and outlook

In this paper I have argued that the existing analyses for the ‘extended ergative’ pattern cannot account for the data I have reviewed. Therefore, a new approach had to be taken and 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 the *Constraint on case assignment in intransitive contexts.* This constraint derives split ergativity in intransitive contexts in the presented languages Sierra Popoluca, Päri and Jacaltec. The fact that these three languages are unrelated but have their split ergativity governed by the same factor makes the aspectlessness seem very deeply rooted in this phenomenon. Moreover, the analysis is completely independent from subordination. It does not seem to be a trigger in any way; rather, the subordination is or can be a consequence of the actual trigger. Therefore, terms like ‘clause type-based split’ or ‘main/subordinate clause split’ that can be found in the literature seem to be somewhat misleading for the phenomenon I have presented.
Another result of this paper is that a strict distinction between encoding systems and encoding patterns has to be made. To change from an ergative to an accusative encoding pattern one has two possibilities at hand: 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). Equally, the change from an accusative to an ergative system can be achieved. But that is different with encoding systems because in that case there is only one way to change from one to the other. In Müller (2009) both systems behave identically in intransitive contexts, but differ in transitive cases. So in order to change from one system to the other, case assignment in transitive contexts needs to be turned around. But this is not what happens in split ergativity in subordinate clauses. In these cases case assignment in intransitive contexts is affected. So in Müller's analysis the split ergativity merely leads to a change of encoding pattern, not encoding system. This is different if a different background theory is chosen, for example Bobaljik's (1993) theory. Bobaljik interprets the difference between ergative and accusative encoding systems differently. According to him, both systems work identically in transitive contexts but differ in intransitive contexts and exactly those are targeted in instances of split ergativity in subordination. Consequently, split ergativity leads to a change of encoding system in this theory.

Furthermore, it is very interesting to see that in all these split systems the marked case (accusative and ergative) is also used in possessive constructions. This is common for the ergative system but rare for accusative systems and might be an interesting issue for further research.

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