A uniform analysis of global & local argument encoding patterns
A local and cyclic approach

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In languages with global case splits (GCS), an overt case marker shows up on one of the arguments of a transitive verb if the internal argument is higher on a Silverstein hierarchy than the external argument. Thus, it seems that case assignment in vP either requires look-ahead or has to apply counter-cyclically. In this paper, I present a strictly local analysis of GCS in a derivational framework. To this end, I depart from the traditional assumption that case depends on the ϕ-features of both arguments of a transitive verb in GCS languages. Furthermore, I show that the approach can also be extended to capture Local Case Splits, non-split case systems as well as direct-inverse marking. Besides, Burzio's Generalization falls out as a byproduct of the analysis.

1. Introduction

Case marking is a strategy to encode the grammatical function of arguments. The characteristic property of split systems is that an argument in the syntactic position X does not always bear the same case Y. Instead, the case exponent varies with respect to the location of the argument's properties on a Silverstein hierarchy. Arguments high on a scale are marked differently from those lower on that scale, a phenomenon called differential argument encoding.

(1)   *Silverstein hierarchies (Silverstein 1976)*
   a.   person scale: 1st $\succ$ 2nd $\succ$ 3rd
   b.   animacy scale: human $\succ$ animate $\succ$ inanimate
   c.   definiteness scale: pronoun $\succ$ proper name $\succ$ definite $\succ$ indefinite specific $\succ$ non-specific

Silverstein (1976) distinguishes between *local* and *global case splits* (LCS and GCS, respectively). A split is called local when the case marking of an argument solely depends on its own properties. In Hebrew, for example, an object is overtly case marked by *ʔet* if it is a pronoun, a name or definite. In any other configuration, it is zero–marked a (nominative):

(2)   *Local Case Split in Hebrew (Aissen 2003:448)*

    a.   Ha-seret   her?a   ?et-ha-milxama
        DEF-movie showed ACC-DEF-war
        'The movie showed the war.'

    b.   Ha-seret   her?a   *(?et)-milxama
        DEF-movie showed (ACC-)war
        'The movie showed a war.'

Global case splits (GCS) differ from LCS in that the case exponent of an argument in transitive contexts does not only depend on the argument's properties but also on those of its coargument. In the languages that will be considered in this paper, both arguments of a transitive verb are usually zero marked, but if the internal argument (DP_{int}) is higher on a Silverstein hierarchy than the external argument (DP_{ext}), one of both arguments receives an overt case marker. Languages differ with respect to the relevant hierarchy and the argument on which the split shows up.

In Yurok, for example, DP_{int} bears an object marker (glossed as accusative) if it is higher on the person scale than DP_{ext}, the hierarchy being 1st/2nd person $\succ$ 3rd person.

(3)   *Yurok (Robins 1958:21)*

    a.   ke?l   nek   ki newoh-pa?
        2SG.NOM 1SG.NOM FUT see-2¿1SG
        'You will see me.'

    b.   yo?   nek-ac   ki newoh-pe?n
        3SG.NOM 1SG-ACC FUT see-3SG¿1SG
        'He will see me.'

The following table shows a survey of GCS languages, but of course only some of them are discussed in this article.

Language	Reference
Arizona Tewa (Kiowa-Tanoan)	Kroskrity (1978, 1985)
Awtuw (Sepik-Ramu)	Feldman (1986)
Fore (Trans-New Guinea)	Scott (1978)
Kashmiri (Indo-European)	Wali & Koul (1997)
Kolyma Yukaghir (Yukaghir)	Maslova (2003)
Tauya (Trans-New Guinea)	MacDonald (1990)
Umatilla Sahaptin (Penutian)	Rigsby & Rude (1996)
Yurok (Algic)	Robins (1958)

Table 1: Languages with Global Case Splits

Local case splits have been discussed a lot in the literature (cf. among others Silverstein 1976; Comrie 1979; Lazard 1984; Bossong 1985; Aissen 1999, 2003; Keine & Müller 2008), but there are only a few articles on global case splits Béjar & Řezč (2007); De Hoop & Malchukov

(2008), although the latter are more problematic for derivational syntactic theories because it seems that the decision which case to assign needs a non-local representation of structure that includes both coarguments and the case assigner. Besides, all of these approaches are non-local and/or not compatible with a derivational syntax.[1] In the following 2 sections I present an analysis of GCS which is both local and cyclic. In section 4 I go through the derivations in detail and in the following section I show how the analysis proposed for GCS can also capture local case splits, non-split case systems and direct-inverse marking. Section 6 concludes.

2. Global case splits as a challenge for locality

Under the minimalist theory of case assignment as proposed in Chomsky (2000, 2001); Adger (2003), GCS are a challenge for locality and cyclicity. The reason is that the case assigner must be able to compare the properties of two arguments in order to be able to decide which case to assign to one of them, hence a non-local (global) representation has to be accessible. However, in recent minimalist approaches it is a goal to reduce globality and to model restrictions within small subparts of the derivation. In order to understand the problems, let me first summarize the main assumptions about structure-building and case assignment in recent developments of Minimalism:

(4) *General assumptions on structure building and case assignment*:
    a.   syntactic structure unfolds bottom-up
    b.   structure building (Merge) is feature driven (by c-selection features [●F●])
    c.   unvalued features [∗F:□∗] have to be valued by Agree (probe-goal approach)
    d.   DPs are assigned a case value by a c-commanding functional head
    e.   v assigns case to DP_{int} and selects DP_{ext}[2].

(5) *Structure of vP in transitive contexts*:

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[1]See Keine (this volume) and Keine (to appear) for another local approach to GCS.
[2]This assumption is crucial for the analysis I will present in this paper. It is, however, incompatible with an approach that dissociates the tasks of v and postulates two different heads for each - one head which checks the case of the internal argument and another one which introduces the external argument (cf. among others Kratzer 1996; Collins 1997; Harley 2009)

$①$: v assigns Case value F to DP_{int}

$②$: v selects DP_{ext}
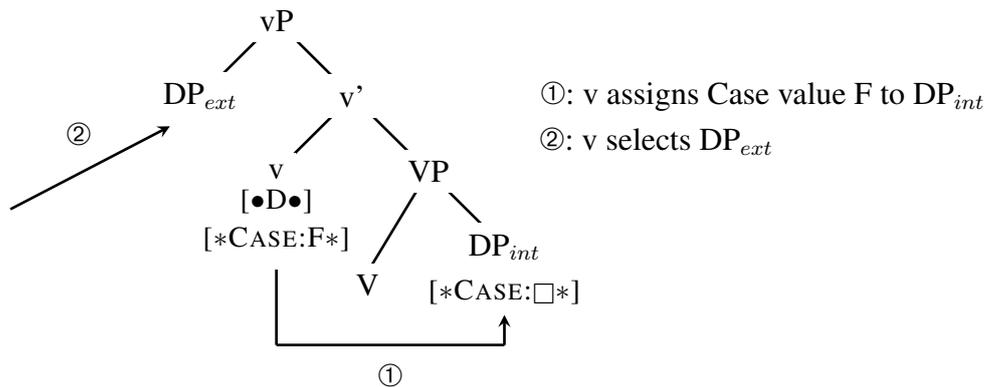
If GCS are derived in the same way, a dilemma arises. For concreteness, assume we want to derive GCS in a language like Yurok with the split on the internal argument. v can assign accusative to DP_{int} before DP_{ext} is merged ($① \succ ②$), but then case valuation requires **look-ahead**, because the case value of DP_{int} also depends on the properties of DP_{ext} which is not merged. Alternatively, DP_{ext} could be merged before v assigns case to DP_{int} ($② \succ ①$). There is no look-ahead problem anymore, but case valuation is **counter-cyclic** given the Strict Cycle Condition in (6).

(6)　　*Strict Cycle Condition (SCC, cf. Chomsky 1973)*:
　　　a.　No operation can apply to a domain dominated by a cyclic node α in such a way as to affect solely a proper subdomain of α dominated by a node β which is also a cyclic node.
　　　b.　Every projection is a cyclic node.

Apart from the look-ahead and the cyclicity problem a further issue arises: How can the case assigner v communicate with the features of both of its arguments? It must "know" about the properties of the coarguments in order to be able to decide which case to assign. Furthermore, the question arises how the case value on v is finally fixed (by a feature changing operation or an insertion rule that violates Inclusiveness).

　　Hence, none of the orders of operations on v is in accordance with the assumptions in (4). In the following sections I present an analysis which reconciles GCS with the derivational Minimalist framework.

3.　Analysis
3.1.　A change of perspective

In order to circumvent the look-ahead problem I propose to adopt a different perspective with respect to the GCS data. GCS has always been described such that the case value of an argument depends on the features of this argument and its coargument. It is this assumption which unavoidably leads to the look-ahead problem. I suggest to abandon this point of view and to characterize the date as follows:

Table 2: GCS in Yurok

person of DP_{ext}	case of DP_{ext}	person of DP_{int}	case of DP_{int}
1st/2nd	Nom	1st/2nd	Nom
3rd person	Nom	1st/2nd	Acc
1st/2nd	Nom	3rd	Nom
3rd	Nom	3rd	Nom

(7) *A different perspective on GCS*:
It is not case marking that depends on the properties of the coarguments. The properties of DP_{int} determine what properties DP_{ext} can have. This means that v's c–selection properties are restricted by the properties of DP_{int}.

Take Yurok as an example, where DP_{int} bears an overt case marker if it is higher on the person hierarchy in (8) than DP_{ext} (see the table below).

(8) *Person hierarchy in Yurok*:
1st/2nd $\succ$ 3rd

Under the new perspective GCS in Yurok can be described as follows: If DP_{int} is 1st/2nd person nominative, DP_{ext} has to be 1st/2nd person as well; if DP_{int} is 1st/2nd person accusative, DP_{ext} has to be 3rd person; if DP_{int} is 3rd person, there are no restrictions on the person of DP_{ext}. Thus, the person of DP_{ext} is the dependent feature now, but not the case of DP_{int} anymore. This change of perspective enables a local derivation of GCS if there is a way to let the first merged argument DP_{int} influence the properties of DP_{ext}, depending on the case and features of DP_{int}. To this end, two questions have to be answered: i) How can DP_{int} influence the nature of DP_{ext}? ii) What drives the occurrence of the overt case marker? My answers to these questions is that there is a repair operation, called *Maraudage*, which withdraws features originally provided for DP_{ext} depending on the features of DP_{int}. The overt case marker is a reflex of Maraudage which is realized postsyntactically.

3.2. *Theoretical background*

In this section I lay down the background assumptions for the analysis of GCS. I adopt a derivational theory in which syntactic structure unfolds bottom-up in accordance with the Stric Cycle Condition in (6). The syntactic operations Merge and Agree are feature driven ([•F•] triggers Merge, [∗F∗] triggers Agree, (cf. Sternefeld 2006; Heck & Müller 2007)). Agree is defined as in (9).

(9) *Agree (based on Chomsky 2000):*
Agree between a probe P and a goal G applies if
a. P c–commands G

b.   G is the closest goal to P
c.   P and G have matching feature values (Match = feature identity).
d.   Result: P and G check their matching features.

As Match is a prerequisite for Agree it has to apply before the actual Agree operation. This will become relevant in what follows.

Furthermore, I assume that both arguments of a transitive verb are checked against one and the same head (cf. the *two arguments against one head*-configuration in Anagnostopoulou 2003; Adger & Harbour 2007; Heck & Richards 2007; Béjar & Řezč 2007; Řezč 2008; Richards 2008a; Keine to appear). This head is v because it is the element that communicates with both DPs: it can check DP_{int} and it introduces DP_{ext}.[3] This solves the communication problem identified in the last section. Hence, apart from the subcategorization features for VP and DP, v provides two sets of probe features [∗F∗] – one for Agree with DP_{ext} and another one for Agree with DP_{int}:

(10)   v { [●V●] ≻ [●D●], [∗F∗]$_{ext}$, [∗F∗]$_{int}$ }   *(X ≻ Y means that X is discharged before Y)*

A derivation can only converge if all probe features are checked (cf. *Full Interpretation*, Chomsky 1995).

Moreover, I propose that v in languages which show scale effects has expectations about what features the arguments with which it agrees will have: DP_{int} should be lower on the scale than DP_{ext} - this is the (morphologically) unmarked combination in these languages. In order to distinguish the location of features on the scale, I follow Béjar (2003); Béjar & Řezč (2007) and assume that person and animcacy features are complex objects which are bundles of privative features. (11) gives an example for the decomposition of person features:

(11) $\underbrace{\underbrace{\underbrace{1st\,person}_{[speaker]\hat{=}[Speak]}\quad 2nd\,person}_{[participant]\hat{=}[Part]}\quad 3rd\,person}_{[person]\hat{=}[\pi]}$

There is a general person feature [π], a speech act participant feature [Part], and a feature for the speaker. 1st person is thus encoded by three privative features because it is the speaker, a speech act participant and a person value. As 3rd person is neither the speaker nor a speech act participant, it is encoded by a single feature, [π].

(12)   1st: $\begin{bmatrix} [\pi] \\ [Part] \\ [Speak] \end{bmatrix}$ 2nd: $\begin{bmatrix} [\pi] \\ [Part] \end{bmatrix}$ 3rd: $\begin{bmatrix} [\pi] \end{bmatrix}$

The following correlation arises from this decomposition: Values which are high on a scale are encoded by a superset of privative features compared to values which are lower on the same scale. This can be generalized to other features like animacy, definiteness, etc. except that

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[3]In order to ensure Agree under c-command between v and DP_{ext} to be possible I assume that the features of v percolate to v′.

the privative features must have different meanings. In order to capture generalization across languages and different features later on I name the features by letters. Person features, for example, are decomposed as in (13):

(13)   *Encoding of person features*:
      a.   [C] = general person feature
      b.   [B] = participant feature
      c.   [A] = speaker

The decomposition applies to goals and probes. In a language with a case split depending on a binary person scale like Yurok probes and goals bear the following features:

(14)   *Person values in Yurok (1st/2nd $\succ$ 3rd)*:
      a.   3rd person: [C]
      b.   1st/2nd person: [BC]

The feature [A] is not relevant because at least with respect to the case split, the language does not distinguish between 1st and 2nd person.

I claimed that what is special in GCS languages is that v has expectations about the nature of DP_{int} and DP_{ext}. The former should be lower on a scale than the latter. This expectation can be encoded in the two probe feature sets on v which agree each with one of the arguments: The set for DP_{int} contains a subset of features of the set provided for DP_{ext}. In the case of Yurok, v looks as follows before the derivation starts:

(15)   v $\{[*BC*]_{ext}, [*C*]_{int}\}$ *(DP$_{ext}$ expected to be 1st/2nd, DP$_{int}$ to be 3rd).*

Probe features have to be checked if the derivation is to converge. In addition, I assume that certain goal features have to be checked as well, formulated in the constraint FEATURE CHECKING (cf. the *Person Licensing Condition* in Béjar & Řezč (2007)).

(16)   FEATURE CHECKING (FC):
      Certain goal features have to be checked (person, animacy, obviation, etc; depending on the relevant scale in a given language).
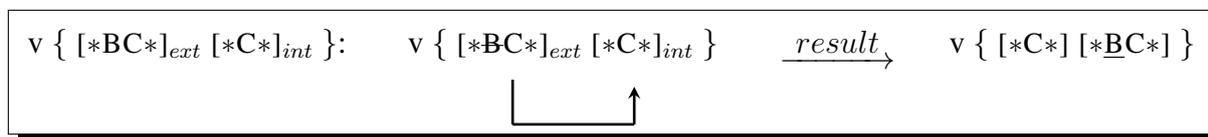
Taken together, these assumptions have the following consequences. Because of incremental structure building, DP_{int} agrees first with v. If DP_{int} is atypical in that it possesses more features than v provides for it (viz., if DP_{int} is higher on a scale than expected), it cannot check all of its features and violates FC. Take Yurok as an example; v is repeated in (17).

(17)   *v in Yurok*: v $\{[*BC*]_{ext}, [*C*]_{int}\}$

v expects DP_{int} to be 3rd person [C], but if it is 1st or 2nd person [BC], the feature [B] of the goal could not be checked and FC would be violated. I propose that there is a repair strategy, called *Maraudage*, which can apply in order to avoid the violation of FC (see also Georgi et al. (2009) for the application of Maraudage to Basque agreement displacement and to operator islands):

(18)   *Maraudage*: Features on v can be displaced from probe set$_A$ to probe set$_B$.

This means that features which were originally provided for checking with DP$_{ext}$ are displaced from set $[* \ *]_{ext}$ into set $[* \ *]_{int}$ in order to fulfill FC for DP$_{int}$:

v $\{$ $[*BC*]_{ext}$ $[*C*]_{int}$ $\}$:   v $\{$ $[*BC*]_{ext}$ $[*C*]_{int}$ $\}$ $\underrightarrow{result}$ v $\{$ $[*C*]$ $[*\underline{B}C*]$ $\}$

Note that Maraudage cannot apply freely at any time. It is a repair strategy which can only take place if it is necessary to fulfill FC, but it is usually prohibited. Whether Maraudage takes place or not has different consequences for what remains in set $[* \ *]_{ext}$ on v. If it applies, only [B] remains in set $[* \ *]_{ext}$ and therefore, DP$_{ext}$ cannot be 1st or 2nd person [BC]; if it were, [B] of DP$_{ext}$ could not be checked because the probe feature [B] had been checked by DP$_{int}$ after Maraudage. Hence, FC is violated. In this way, the restrictions on DP$_{ext}$ are brought about. If Maraudage does not apply, DP$_{ext}$ can be 1st/2nd person because [BC] remains in set $[* \ *]_{ext}$.

In order to guarantee a local derivation of GCS, FC is checked at each derivational step. Because of this fact, there is a stage in the derivation at which v′ has been built and at which FC applies. But at this stage DP$_{int}$ is the *only* argument in the structure and can trigger Maraudage *before* DP$_{ext}$ is merged. DP$_{ext}$ has to cope with the remaining features. Hence, DP$_{ext}$ depends on the properties of DP$_{int}$.

3.3.   *Exponence*

In this subsection I address the question what drives the (non-)occurrence of the overt case marker. The context described in the abstract example in the box above (DP$_{int}$ is 1st/2nd person, DP$_{ext}$ is 3rd person) is exactly the one in which an overt case marker shows up. Thus, I take the overt case marker to be the indicator that Maraudage has taken place. I suggest that whenever Maraudage takes place, a diacritic "_" is generated and it is added to a feature [F] on v: [$\underline{F}$]. Let us assume for the moment that it attaches to the marauded feature, as in the shaded box above. As case is expressed on the arguments and not on the verbal head, this diacritic is passed on (copied) to the argument that checks the marauded feature via Agree. The overt case marker is then the morphological realization of this diacritic on a DP. This can be modeled in a post–syntactic, realizational model of morphology, like Distributed Morphology (*DM*, Halle & Marantz (1993), Halle & Marantz (1994), Harley & Noyer (1999)). In DM, syntax operates solely on feature bundles, but lacks any phonological elements. After the syntactic computation, vocabulary items (VI) are inserted into terminal nodes of the syntactic structure. VIs pair morpho–syntactic features with phonological information and are inserted in accordance with the *Subset Principle* and *Specificity*. This means that the most specific vocabulary item which matches the features of a terminal node is inserted into this node. In GCS languages, there is a VI which is sensitive for the diacritic generated by Maraudage:

(19)   *Vocabulary items:*

         a.   /X/ $\leftrightarrow$ [$\underline{F}$]

    b. $(\emptyset \leftrightarrow [\quad])$

If the diacritic is present on an argument the first VI is inserted because it is more specific than the second. If there is no diacritic only the second VI is a subset of the terminal node. Alternatively, there could be no zero morpheme and no VI is inserted.

    Remember that GCS languages differ in the location of the split: It can either show up on DP_{int} (accusative) or DP_{ext} (ergative). We have seen in Yurok that an accusative pattern arises when the diacritic is generated in the set to which the marauded feature is displaced, hence set $[* \ *]_{int}$. It is then transferred to DP_{int} via Agree. I propose that an ergative pattern arises if the diacritic is generated in the set $[* \ *]_{ext}$ from which it is of course transferred via Agree to DP_{ext}. Thus, the difference between an ergative and accusative alignment of the split lies in the location in which the diacritic is generated. Put differently, either a language marks the situation that a feature has been "stolen" from a set (= $[* \ *]_{ext}$) or that a feature has been added to a set that it did not provide originally (= $[* \ *]_{int}$).

I will briefly summarize how the problems discussed in the last section are solved by the new analysis of GCS. First, v agrees with both arguments which solves the communication problem. Furthermore, the properties of DP_{int} influence the properties of DP_{ext} under the new perspective on the data such that a cyclic incremental derivation is possible which avoids look-ahead. Case assignment is in accordance with the Strict Cycle Condition because the "assignment" (the generation and transfer of the diacritic which leads to postsyntactic spell-out of a case affix) takes place when only DP_{int} but not DP_{ext} is merged in the structure. However, as we saw in our Yurok example, an overt case marker does not always appear when DP_{int} is high on the hierarchy (viz. 1st/2nd person) person. The application of Maraudage thus has to be further restricted which will be discussed in the following section.

4.   Sample derivations

In the following subsections I will go through the derivations for Yurok, Tauya, Umatilla Sahaptin, and Fore. In the former three languages the split depends on a binary Silverstein scale whereas in the latter it depends on a tripartite scale. The variation between GCS languages is shown to arise from a parameter on the application of Maraudage, the decomposition of features and the locus of morphological realization of the diacritic as discussed above.

4.1.   Binary scale effects
4.1.1.   Yurok and Umatilla Sahaptin

In this subsection I go through the derivation of binary scale effects in detail. The first example is Yurok. We already saw that DP_{int} bears an overt case marker if it is higher on the person scale in (20) than DP_{ext} (see the table below).

(20)   *Person hierarchy in Yurok:*
        1st/2nd $\succ$ 3rd

Table 3: GCS in Yurok

	person of DP_{ext}	case of DP_{ext}	person of DP_{int}	case of DP_{int}
pattern 1	1st/2nd	Nom	1st/2nd	Nom
pattern 2	3rd person	Nom	1st/2nd	Acc
pattern 3	1st/2nd	Nom	3rd	Nom
pattern 4	3rd	Nom	3rd	Nom

The split is driven by a binary scale that only distinguishes speech act participants from non-participants, hence, only the general person feature [C] and the participant feature [B] play a role for GCS. v expects DP_{ext} to be higher on the person scale than DP_{int}.

(21)   *Person values in Yurok (1st/2nd ≻ 3rd)*:

    a.   3rd person: [C]

    b.   1st/2nd person: [BC]

(22)   *v in Yurok:*

    v $[[*BC*]_{ext}, [*C*]_{int}]$

I propose that there are two parameters in GCS (and also in non-GCS) languages: The first is whether Maraudage applies obligatorily or optionally. The second concerns the violability of FC.

(23)   *Parameters*:

    a.   Maraudage: optional or obligatory

    b.   FC is violable i) only if the application of Maraudage can be avoided in this way or ii) it is always violable when Maraudage is not an option.

In Yurok Maraudage has to be optional because we do not see an overt case marker whenever DP_{int} is 1st(2nd person. If DP_{ext} is 1st/2nd person, too, DP_{int} is zero marked for case. In a derivational system like the one adopted here, however, the properties of DP_{ext} play no role at the stage of the derivation v′ when the decision is made whether Maraudage applies or not. Hence, Maraudage must be optionally and the patterns which are not attested but predicted by this optionality have to be filtered out.

In sum, there are six possible derivations if all combinations of DP_{int} and DP_{ext} are taken into account, but only four of them are attested, see Table 3. In the first scenario DP_{int} is 3rd person [C]. When v merges with VP it can agree with DP_{int}. Then FC is checked at the v′-stage and as v expected DP_{int} to be 3rd person [C] FC is fulfilled. Maraudage is not necessary and therefore prohibited. Hence, no diacritic is generated and no overt case marker will show up whenever DP_{int} is 3rd person. [BC] remains for checking with DP_{ext}.

(24)   *Stage of the derivation = v′ (checking indicated by a strike-through))*:

	v		DP_{int}	
1	$[*BC*]_{ext}$, $[*\text{C}*]_{int}$		[C̶]	no Maraudage

Two options arise by the choice of DP_{ext} in this context. If DP_{ext} is 1st/2nd person [BC] it can check all of v's remaining features such that FC and Full Interpretation are fulfilled. This derives pattern 3 in Table 3 (see option 1' in (26)). If, however, DP_{ext} is 3rd person [C], [∗B∗] of v cannot be checked and this violates Full Interpretation. But the derivation has to converge because the pattern 3-3 without overt case marking is attested (see pattern 4 in table 3). The crucial observation is that if both arguments are 3rd person [C], it is already clear before the derivation starts that [∗B∗] can never be checked because neither DP_{int} nor DP_{ext} possesses a feature [B]. I suggest that such a situation can be detected in the numeration and a repair mechanism applies in roder to avoid the crash:

(25)   *F-deletion:*[4] A probe feature [∗F∗] can be deleted on a head α in the numeration if it is impossible to check F in the first place, because none of the arguments of α possesses a matching feature F (where F is a variable over the privative values A, B, and C).

Thus, in case of two 3rd person arguments, [∗B∗] is deleted in the numeration and the derivation converges: v provides only [∗C∗] because [∗B∗] has been deleted in the numeration and DP_{ext} being 3rd person possesses only the feature [C] (see 1" in (26)). Hence, FC and Full Interpretation are fulfilled and pattern 4 is derived.

(26)   *Stage of the derivation = vP:*[5].

	DP_{ext}	v
1'	[B̶C̶]	[∗B̶C̶∗]$_{ext}$, [∗C̶∗]$_{int}$
1"	[C̶]	[∗C̶∗]$_{ext}$, [∗C̶∗]$_{int}$

In the second scenario DP_{int} is 1st/2nd person [BC]. At the v'-cycle, v provides fewer features in the set [∗ ∗]$_{int}$ than DP_{int} needs to check an Maraudage can apply. But as Maraudage is optional there are two ways to continue the derivation. Assume first it does not take place. FC is then violated by DP_{int} because [B] is not checked. A violation of FC usually leads to the crash of the derivation which is needed to filter out some candidates that can be generated (see the tables below), but here it must not. Therefore, I proposed that FC is minimally violable if this avoids the application of Maraudage, see parameter b.i) in (23). Without Maraudage, [∗BC∗] remain on v for checking with DP_{ext} (see 2a in (27)). The second option is to apply Maraudage at the stage v' and to displace [∗B∗] from [∗ ∗]$_{ext}$ to [∗ ∗]$_{int}$. As a consequence only [∗C∗] remains in set [∗ ∗]$_{ext}$ (see 2b in (27)). Unchecked features are put in a box, a marauded feature is indicated as F̶ in its original set.

(27)   *Stage of the derivation = v':*

	v	DP_{int}	
2a	[∗BC∗]$_{ext}$, [∗C∗]$_{int}$	[B̲ C̶]	no Maraudage
2b	[∗B̶C∗]$_{ext}$, [∗B̲C∗]$_{int}$	[B̲C]	Maraudage

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[4]See Heck & Müller (2003) for arguments that access to elements in the numeration is not another instance of look-ahead.

[5]Note that the checking of feature [C] in [∗ ∗]$_{int}$ originates from checking with DP_{int} at the v'-level, relevant in this table is only checking of the features of DP_{ext} and of the features in set [∗ ∗]$_{ext}$

Maraudage generates a diacritic on v. In Yurok which has an accusative case marking pattern it is generated in the set $[* \;\; *]_{int}$ and transmitted via Agree to DP_{int} (cf. section 3.3).

Afterwards, DP_{ext} is merged. As DP_{ext} can be 1st/2nd person or 3rd person and two derivations survive at level v′, there are 4 possible derivations:

(28)   *Stage of the derivation = vP*:

	DP$_{ext}$	v	
2a'	[~~BC~~]	[∗~~BC~~∗]$_{ext}$, [∗~~C~~∗]$_{int}$	pattern 1 in Table 3
2a"	[~~C~~]	[∗ B ~~C~~∗]$_{ext}$, [∗~~C~~∗]$_{int}$	crash, *Full Int.
2b'	[B ~~C~~]	[∗~~B~~/~~C~~∗]$_{ext}$, [∗~~BC~~]$_{int}$	crash: *FC
2b"	[~~C~~]	[∗~~B~~/~~C~~∗]$_{ext}$, [∗~~B~~C∗]$_{int}$	pattern 2 in Table 3

If no Maraudage applied at the v′ cycle (cf. 2a in (27)), [∗BC∗] remains for checking with DP$_{ext}$ at the vP cycle. If DP$_{ext}$ is 1st/2nd person [BC] (see 2a' in (28)), FC is fulfilled and pattern 1 in Table 3 is derived: If both arguments are 1st/2nd person, no overt case marker shows up on DP$_{int}$. If DP$_{ext}$ is 3rd person (see 2a" in (28)), the derivation crashes because [∗B∗] remains unchecked and violates Full Interpretation (which means that there is no pattern in which DP$_{int}$ is 1st/2nd person, DP$_{ext}$ is 3rd person and there is no overt case marker on DP$_{int}$).

If 2b in (27) is continued, only [∗C∗] remains for checking with DP$_{ext}$; [∗B∗] has been marauded at the v′ level. Now, if DP$_{ext}$ is 3rd person, it can check its feature [C] and pattern 2 in Table 3 is derived: If DP$_{int}$ is 1st/2nd person and DP$_{ext}$ is 3rd person an overt case marker must show up (derivation 2a" with the same features for the arguments and without Maraudage crashes). However, if DP$_{ext}$ were 1st/2nd person [BC], [B] could not be checked. In this case the violation of FC leads to the crash of the derivation because Maraudage is not an option and therefore, FC cannot be violated (see the second parameter). Hence, there is no pattern in which both arguments are 1st/2nd person and DP$_{int}$ bears an overt case marker.

The VI for the overt case exponent in Yurok is given below (it attaches only to singular arguments, hence the context restriction; [D] means that it realizes the diacritic on an item of category D and not on v):

(29)   *Case exponent in Yurok*:
       -*ac* ↔ [_] / [D, sg]

Finally, I summarize the local derivation of GCS in Yurok. Whether Maraudage takes place or not (and hence whether there will be an overt case marker or not) primarily depends only on the properties of DP$_{int}$: An atypical DP$_{int}$ which has more features than v expects it to have triggers Maraudage. The properties of DP$_{int}$ do not play a role in the derivation afterwards. It is indirectly represented by the number of features which remain in the set [∗ ∗]$_{ext}$ on v. Some of the derivations which can be generated crash at the vP-cycle because of the properties of DP$_{ext}$. The reason is that DP$_{ext}$ is the second merged argument and therefore has to cope with what features are left for it after the v′-cycle is completed. At no point does v have access to the properties of both of its arguments at the same time. The derivation of patterns 1 to 4 is thus local and cyclic.

Another language with a binary split is Umatilla Sahaptin (Penutian). In this language DP$_{ext}$ bears an ergative marker (=INV.ERG) if DP$_{int}$ is higher on the person scale than DP$_{ext}$.

(30)   *Person hierarchy in Umatilla Sahaptin:*
       1st/2nd ≻ 3rd

(31)   *GCS in Umatilla Sahaptin (Rigsby & Rude 1996:676, 677):*

    a.   ɨwnš i-tuxnana   yamaš-na
         man 3NOM-shot mule.deer-OBJ
         'The man shot a mule deer.'   *3rd sg → 3rd*

    b.   n=aš   -q'inu-ša   awnš-in-aman.
         1SG.NOM=1SG 3-see-IMPV men-DU-OBJ.PL
         'I see the two men.'   *1st → 3rd*

    c.   ɨwnš-nɨm=nam   i-q'nu-ša
         man-INV.ERG=2SG 3NOM-see-IMPV
         'The man sees you.'   *3rd sg → 2nd*

    d.   ɨwnš-nɨm=naš   i-wynawi-yawan-a
         man-INV.ERG=1SG 3SG-arrive-APPL-PST
         'The man came to me / my place.'   *3rd sg → 1st*

    e.   Čw=nam paaman -yk-ša?
         NEG=2SG 3PL.OBJ 3-hear-IMPV
         'Don't you hear them?'   *2nd → 3rd*

This leads to the following attested patterns:

Table 4: Person/case combinations in Umatilla Sahaptin

	person of DP_{ext}	case of DP_{ext}	person of DP_{int}	case of DP_{int}
Pattern 1:	1st/2nd	Abs	1st/2nd	Abs
Pattern 2:	3rd	Erg	1st/2nd	Abs
Pattern 3:	1st/2nd	Abs	3rd	Abs
Pattern 4:	3rd	Abs	3rd	Abs

Obviously, the patterns in Umatilla Sahaptin are exactly the same as those in Yurok (compare Table 3): There is an overt case marker whenever DP_{int} outranks DP_{ext} on a binary person scale. The derivations are thus exactly the same. The only difference between the two languages is the location of the split: aIn YUrok it shows up on DP_{int} whereas it appears on DP_{ext} in Umatilla Sahaptin. In section 3.3 I proposed that this difference is handled by a parameter which concerns the emergence of the Maraudage diacritic: The diacritic emerges in the set $[* *]_{int}$ in Yurok (attached to the marauded feature), but it emerges in the set $[* *]_{ext}$ (attached to the remaining features in this set) in Umatilla Sahaptin and is consequently passed on to DP_{ext} in the latter.

(32)   *Case exponent in Umatilla Sahaptin:*[6]
    /nɨm/ ↔ [_] / [D, sg]

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[6]As in Yurok, the marker only attaches to singular arguments, hence the context restriction.

4.1.2. Tauya

Tauya differs minimally from Yurok and Umatilla Sahaptin. In this language DP$_{ext}$ bears an ergative marker whenever DP$_{int}$ is high on the binary animacy hierarchy (human).

(33)   *Animacy hierarchy in Tauya:*
       human $\succ$ non-human

(34)   *GCS in Tauya (MacDonald 1990:120, 121, 316):*
       a.   ya-ni/*Ø   fanu Ø-yau-e-ʔa
            1SG-ERG/*ABS man 3SG-see-1/2-IND
            'I saw the man.'   *hum → hum*
       b.   ya-Ø   pai yau-e-ʔa
            1SG-ABS pig see-1/2-IND
            'I saw the pig.'   *hum → non-hum*

Table 5: Animacy/case combinations in Tauya

	animacy of DP$_{ext}$	case of DP$_{ext}$	animacy of DP$_{int}$	case of DP$_{int}$
Pattern 1:	hum/non-hum	Erg	hum	Abs
Pattern 2:	hum/non-hum	Abs	non-hum	Abs

Although the presence of the overt case marker only depends on the properties of DP$_{int}$ in Tauya th split is not a local split as in Hebrew. In Hebrew the overt case marker occurs on the same argument whose properties (definite or indefinite) are relevant for the split, namely DP$_{int}$. In Tauya, however, the overt case marker shows up on the coargument (DP$_{ext}$) of the argument whose properties are decisive for the split (DP$_{int}$: human or non-human). The presence of the case marker in Tauya still depends on the properties of the coargument and Tauya thus exemplifies a global split.

Tauya patterns with Umatilla Sahaptin in that the split is realized on DP$_{ext}$. It differs from Umatilla and Yurok in that the relevant feature is animacy and not person. Because of this we first need to decompose animacy: [C] is a general animacy feature (animacy as opposed to person, number, ...) and [B] means [+human]. Hence, a human argument is [BC] and a non-human one is only [C].

(35)   *Representation of animacy features*
       a.   [C] encodes a non-human referent
       b.   [BC] encodes a human referent

(36)   *v in Tauya:*
       v [[∗BC∗]$_{ext}$, [∗C∗]$_{int}$]

In order to capture the observation that Maraudage takes place *whenever* DP_{int} is high on the animacy scale, Maraudage in Tauya must be *obligatory* if DP_{int} wants to check more features than v provides for it (cf. the first parameter in GCS languages (see (23))).

In the first scenario DP_{int} is non-human [C]. v provides[$*C*$] for DP_{ext} and hence Maraudage is not necessary at the v′-stage. The derivation converges no matter if DP_{ext} is human or non-human. In the former case v provides enough features for checking (namely [BC]), in the latter case the feature [$*B*$] in the set [$* *$]$_{ext}$ is deleted in the numeration (cf. (25)) and [$*C*$] is checked by DP_{ext}. This derives pattern 2 in Table 5.

In the second scenario DP_{int} is human and wants to check more features than v provides for it. As Maraudage is obligatory in Tauya, [$*B*$] is displaced to set [$* *$]$_{ext}$ which leads to the generation of a diacritic in the set [$* *$]$_{ext}$ from which the feature is taken away, just as in Tauya. The diacritic will be passed on to DP_{ext} by Agree and is realized by a case affix. Consequently, only [$*C*$] remains for checking DP_{ext} on v. If DP_{ext} is non-human [C] it can check its feature and the derivation converges and half of pattern 1 in Table 5 is derived. If, however, DP_{ext} is also human [BC], [B] cannot be checked because v only provides [$*C*$] after Maraudage and the derivation should crash, but the pattern does exist. To avoid a violation of FC I suggest that in Tauya the looser condition for the violability of FC is active (see the second value of the second parameter in (23)): FC is always violable if Maraudage is not an option. This means that a derivation with two human arguments does not crash although feature [B] of DP_{ext} cannot be checked because at the stage of the derivation where DP_{ext} is merged Maraudage cannot apply anymore - all feature of the set [$* *$]$_{int}$ are already checked by DP_{int}. Therefore, FC can be violated in Tauya. this derives the second half of pattern 1 in Table 5. Hence, there is always an overt case marker when DP_{int} is human, regardless of the features of DP_{ext}.

4.2. *Tripartite scale effects*

In this section I turn to languages in which the case split depends on a tripartite scale. These include Fore, Kashmiri and Awtuw. I concentrate on Fore (Trans-New Guinea) here. In Fore DP_{ext} bears an overt case marker if DP_{int} outranks DP_{ext} on the tripartite animacy scale in (37) (see the table below).

(37)   *Animacy hierarchy in Fore:*
        human ≻ animate ≻ inanimate

(38)   *GCS in Fore (Scott 1978:116):*

   a.   Yagaa-wama w   aegye.
         pig-ERG   man hit
         'The pig hits the man.'   *anim → hum*
   b.   Yagaa w aegye.
         pig man hit
         'The man hits (or kills) the pig.'   *hum → anim*

The only difference between binary and tripartite scale effects is the decomposition of features: Three privative features are needed for tripartite scales and two privative features for binary

Table 6: Animacy/case combinations in Fore

	animacy of DP_{ext}	case of DP_{ext}	animacy of DP_{int}	case of DP_{int}
Pattern 1:	hum	Abs	hum	Abs
Pattern 2:	anim	Erg	hum	Abs
Pattern 3:	inanim	Erg	hum	Abs
Pattern 4:	hum	Abs	anim	Abs
Pattern 5:	anim	Abs	anim	Abs
Pattern 6:	inanim	Erg	anim	Abs
Pattern 7:	hum	Abs	inanim	Abs
Pattern 8:	anim	Abs	inanim	Abs
Pattern 9:	inanim	Abs	inanim	Abs

scales. In Fore, [C] is a general animacy feature (as opposed to person, number, ...), [B] encodes [+anim[ate]] (as opposed to [–animate]), and [A] means [+human]. The following encodings result:

(39)   *Representation of animacy features:*

     a.   [C] encodes inanimates.

     b.   [BC] encodes animates.

     c.   [ABC] encodes humans.

Of course, the content of v differs, too. v still expects DP_{ext} to be higher on the scale and hence to have more features than DP_{int}, but the set $[* *]_{int}$ can contain up to three features.

(40)   *Lexical entry of v in Fore:*
     v $[[*ABC*]_{ext}, [*C*]_{int}]$

The case split in Fore is global, hence Maraudage must apply optional. With these settings the patterns in Fore are derived in exactly the same way as those in Yurok and Umatilla Sahaptin, except for the fact that there are more combinations of DP_{int} and DP_{ext} which can be generated. Let me go through some of them. If DP_{int} is inanimate [C], Maraudage need and cannot apply. Every DP_{ext} which merges with the resulting v′ can check its features and the derivations converge (if DP_{ext} possesses less features than v provides for it, deletion applies in the numeration, cf. (25)). This derives patterns 7-9 in Table 6. If DP_{int} is animate [BC] or human [ABC], Maraudage can apply optionally. In general, if it does not apply DP_{ext} has to check all of the features in $[* *]_{ext}$ which are not deleted by (25) in order to fulfill Full Interpretation. If Maraudage does apply, DP_{ext} has to match exactly the remaining features. If it has more features, FC would be violated; if it had fewer features, probe features would remain unchecked and this time these features cannot be deleted in the numeration because DP_{int} provided the matching features. For example, if DP_{int} is animate [BC] and Maraudage applies to $[*B*]$, DP_{ext} has to be inanimate [C] because an animate and human DP_{ext} could not check their feature [B] and FC is violated; if Maraudage does not apply, $[*ABC*]$ remains on v and DP_{ext} can be animate

[BC] ([∗A∗] deleted in the numeration) or human [ABC]. An inanimate could not check [∗B∗] and the derivation crashes ([∗B∗] cannot be deleted because DP_{int} provides [B]). This derives the remaining patterns in Table 6.

5. Other case marking strategies
5.1. Non-GCS languages

Although the present system might seem to be designed for the relatively small number of languages with GCS, it can also handle languages with local case splits (LCS) and non-split systems. The crucial difference is that Maraudage has to apply obligatorily in these languages and therefore, the overt case marker shows up more often than in GCS languages.

I begin with local case splits, exemplified by Hebrew, cf. (2). In Hebrew, DP_{int} bears a case marker if it is definite (a pronoun, a name or a definite noun). In any other configuration, it is zero-marked (nominative, absolutive):

(41)   *Definiteness hierarchy in Hebrew:*
        definite ≻ indefinite

Table 7: Definiteness/case combinations in Hebrew

	definiteness of DP_{ext}	case of DP_{ext}	definiteness of DP_{int}	case of DP_{int}
Pattern 1:	def/indef	Nom	def	Acc
Pattern 2:	def/indef	Nom	indef	Nom

First, definiteness is decomposed into privative features. [C] is a general definiteness feature (animacy as opposed to person, number, ...) and [B] means [+definite]. Hence, the following feature bundles for definites and indefinites arise:

(42)   *Representation of definiteness features*
        a.   [C] encodes an indefinite referent
        b.   [BC] encodes a definite referent

(43)   *v in Hebrew:*
        v [[∗BC∗]$_{ext}$, [∗C∗]$_{int}$]

Hebrew is like Yurok in that the split shows up on DP_{int}. It differs from Yurok and Umatilla Sahaptin in that the split is not global because the appearance of the case marker does not depend on the properties of DP_{ext}, only on those of DP_{int}: Every time a human DP_{int} is present, Maraudage has to apply which is reflected in overt case marking. In this respect Hebrew patterns with Tauya. For this reason Maraudage in Hebrew must be obligatory as in Tauya.

If DP_{int} is indefinite [C], Maraudage need not and cannot apply. DP_{ext} can be definite or indefinite, v provides enough matching features for DP_{ext}, viz. $[*BC*]_{ext}$. If both arguments are definite [C], deletion of $[*B*]$ on v must take place in the numeration just as in Yurok and Umatilla Sahaptin, cf. (25). This derives pattern 2 in Table 7.

If, however, DP_{int} is definite [BC], FC cannot be fulfilled at the v′-level for DP_{int} because v provides only $[*C*]_{int}$. As Maraudage is obligatory in Tauya, $[*B*]$ is marauded and a diacritic is generated in the set $[* *]_{int}$, which is then passed on to DP_{int} via Agree (to derive the accusative case marking pattern). As a consequence, only $[*C*]$ remains for checking with DP_{ext}. If DP_{ext} is indefinite [C], all features of v are checked, FC and Full Interpretation are fulfilled and half of pattern 1 in Table 7 is derived. But if DP_{ext} is definite [BC], [B] of the argument cannot be checked. However, remember that the losser condition on FC is active in Hebrew which says that FC is always violable if Maraudage is not an option. As all features in set $[* *]_{int}$ have already been checked by DP_{int}, Maraudage cannot apply and FC is violable. This derives the second half of pattern 1 in Table 7.

Although Tauya was classified as a global split above, Tauya and Hebrew are treated alike in the present system, namely as local splits with obligatory Maraudage. Differences with respect to the location of the overt case marker on either DP_{ext} (Tauya) or DP_{int} (Hebrew) are handled in exactly the same way as in languages with global splits (and optional Maraudage): The diacritic generated when Maraudage applies can be attached to features in $[* *]_{ext}$ or $[* *]_{ext}$. In this way a pattern like in Tauya falls out nicely from the system, although it seemed to be a special case at first sight, because it appears to be in between local and global splits, having properties of both. It is now a local split with a different locus of case realization, a parameter which is expected to occur when looking at global splits.

In languages without case splits, an argument A always shows the same case marker. Let us see how such non-split systems can be integrated into the present account. Maraudage has to apply anytime, regardless of the nature of DP_{int}. In German, for example, DP_{int} of a transitive verb always bears accusative case (apart from lexically determined case which is demanded by certain verbs and overwrites the default accusative). This can be derived when v looks as follows:

(44)   v $\{ [*(A)(B)C*]_{ext}, [* *]_{int} \}$

First, the probe set $[* *]_{int}$ has to be empty in order to ensure that Maraudage is an option even when DP_{int} bears only [C], the unmarked value of a feature (person, animacy, etc.). This is in accordance with what was said above: In general the features in $[* *]_{int}$ are a subset of those of $[* *]_{ext}$ and this is also true if $[* *]_{int}$ is empty. Secondly, Maraudage has to apply obligatorily as in all languages without global splits, cf. Tauya and Hebrew with a local split. This is all that has to be said to derive the omnipresence of the overt case marker: As $[* *]_{int}$ is empty and Maraudage is obligatory, Maraudage has to apply regardless of whether DP_{int} is encoded by [C] or more features and a diacritic is generated on v – in the case of German it is generated on the marauded feature, in non-split ergative languages it is generated in the probe set $[* *]_{ext}$ – again as before in the split languages. The nature of DP_{ext} is of no importance, just as in the LCS languages with the looser condition on the violability of FC: There is only

a single derivation α at the v'-cycle and hence, FC is generally violable if Maraudage is not an option because there is no alternative derivation β which could converge and express a certain feature combination of DP_{int} and DP_{ext}. As the reader may verify, it does not matter whether $[* \ *]_{ext}$ contains $[*A*]$ and $[*B*]$ besides $[*C*]$, the outcome is always the same. In the worst case, if $[* \ *]_{ext}$ contains more features than $[*C*]$, the deletion rule in (25) applies in some cases before the derivation starts.

We have seen that the approach developed for the apparently "exoctic" global case splits can also account for local case splits (which depend on the properties of DP_{int}) and case patterns in non-split languages with the parameters in (23).

5.2.   *Burzio's Generalization*

The aim of this subsection is to show that Burzio's Generalization falls out from the analysis developed for languages with case splits. Stated in more modern minimalist terminology, Burzio (1986) states about languages with a nominative-accusative case marking pattern that a v head which does not select an external argument can also not assign accusative case to the internal argument. Hence, there is a dependency between the ability to assign case and the selection of an argument.Exactly this dependency is encoded in my analysis of case splits: Overt case marking is a reflex of Maraudage from set $[* \ *]_{ext}$ to $[* \ *]_{int}$. If Maraudage does not take place, no diacritic is generated and thus no overt case VI can be realized.

First, consider an intransitive verb. The sole argument of intransitives bears nominative which is usually not overtly marked. Assume that v in an intransitive context provides only a single probe feature set as there is only a single argument in the structure (a second probe feature set could never be checked and would violate Full Interpretation). If there is only a single probe set, Maraudage is logically impossible - there is no other set from which features could be displaced and hence, no diacritic is generated can be spelled out.[7] Second, in passive clauses the accusative marked internal argument of a transitive verb becomes the sole argument of an intransitive verb, bearing nominative. Passive is brought about (at least) by argument reduction. This can be implemented in the present framework by deletion of the c-selection feature $[\bullet D\bullet]$ on v before the derivation starts. Assume that argument reduction also deletes the external probe set $[* \ *]_{ext}$ on v, which seems reasonable, because without an external argument this set could not be checked anyway - it depends on the presence of $[\bullet D\bullet]$. The result is again a v which only possesses a single probe feature set when the derivation starts. Again, Maraudage is then precluded and the sole argument cannot bear an overt case marker (accusative).[8]

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[7]Strictly speaking, Burzio's generalization only makes a statement about unaccusative verbs which do not select an external argument. The present account also explains why intransitives in general - including unergatives - do not assign accusative case.

[8]This section shows how Burzio's generalization can be made follow from my account for the languages in which it is indeed valid. There are of course exceptions to Burzio's generalizations, e.g. in Ukrainian or Czech where the sole argument of an intransitive can still bear accusative case after passivization. Variation can be derived by assuming for example that argument reduction does not absorb the probe feature set $[* \ *]_{ext}$, but only the c-selection feature in these languages. But it is not the aim of this section to account for all the exceptions of Burzio's generalization.

5.3. Direction marking

In this subsection I show that direction marking also falls out from the analysis proposed in the last sections. In languages with a direct-inverse distinction, the verb bears an inverse marker if DP_{int} is higher on a scale than DP_{ext}, which is not expected. The verb in a direct context is usually zero-marked. Thus, direction marking differs from Global Case Splits only in the locus of the exponent: Whereas GCS languages use dependent marking, direction is marked on the verbal head (cf. Nichols 1986). But both are global in the sense that the properties of two coarguments seem to determine whether an overt marker occurs or not. Therefore, direction marking can be analysed in exactly the same local and cyclic way as GCS (Zñiga 2006; Drellishak 2008).

In Nocte (Sino-Tibetan, Aissen (1999)) the direct, zero marked verb form is used when DP_{ext} is higher on the person scale than DP_{int} and if both are 3rd person and non-coreferent; the inverse marker *–h* is attached to the verb when DP_{int} is higher on the person scale than DP_{ext}.

(45) *Person scale in Nocte*:
 1st $\succ$ 2nd $\succ$ 3rd

(46) *Person hierarchy effects in Nocte (Das Gupta 1971:21)*
 a. hetho-min
  teach-1PL
  'I will teach you.'   *1st $\rightarrow$ 2nd*
 b. hetho-o
  teach-2
  'You will teach them.'   *2nd $\rightarrow$ 3rd*
 c. hetho-h-ang
  teach-INV-1
  'You/he will teach me.'   *2nd/3rd $\rightarrow$ 1st*
 d. hetho-h-o
  teach-INV-2
  'He will teach you.'   *3rd $\rightarrow$ 2nd*

In contrast to e.g. Yurok, the person scale is tripartite in Nocte, which leads to the following privative feature bundles (see (13) for the meaning of the features):

(47) *Representation of person features*:
 a. [C] encodes 3rd person
 b. [BC] encodes 2nd person
 c. [ABC] encodes 1st person

Note that the abstract patterns of Nocte are the same as those of Fore which can be seen due to the abstract feature decomposition, although in Nocte person is the relevant category and in Fore it is animacy:[9]

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[9]The gaps in Nocte arise because these are reflexive contexts which are of course absent in Fore as the features in Fore encode animacy and not person.

(48)   *Patterns of Fore and Nocte:*

Fore		Nocte	
ergative	Ø	inverse	Ø
[BC]–[ABC]	[ABC]–[ABC]	[BC]–[ABC]	–
[C]–[ABC]	[ABC]–[BC]	[C]–[ABC]	[ABC]–[BC]
[C]–[BC]	[BC]–[BC]	[C]–[BC]	–
	[ABC]–[C]		[ABC]–[C]
	[BC]–[C]		[BC]–[C]
	[C]–[C]		[C]–[C]

The patterns of Nocte can thus be derived as in Fore. The only difference is that the diacritic in Nocte is spelled out on v, whereas it is realized on an argument in Fore. This is indeed expected in the present analysis because the diacritic emerges on v. Its absence on arguments in direction marking languages like Nocte can be handled by saying that the diacritic is not passed on to an argument via Agree in direction marking languages or that it is passed on, too, but that it is simply not spelled out on arguments, just as it is not spelled out on v in GCS languages.

   Similar correspondences between head marking and GCS languages can be found elsewhere. For example, direct/inverse marking in Ojibwe (Algonquian) is based on obviation features and corresponds to the abstract patterns of Yurok and Umatilla Sahaptin: In a context with two 3rd person arguments, there is a binary scale (proximate $\succ$ obviative) and an overt marker occurs (inverse marker on the verb in Ojibwe, case marker on an argument in Yurok/Umatilla Sahaptin) only if DP_{int} outranks DP_{ext} on this scale (Rhodes 1976; Dryer 1992; Fadden 2000). If obviation features are decomposed into bundles of privative features ([C] as a general obviation feature and [B] meaning [+topic]), the pattern can be derived as in Yurok.

5.4.   *Predictions about exponence*

The diacritic which is generated by Maraudage and which is realized postsyntactically arises as a consequence of Maraudage on v and can be passed on to an argument that checks features with v. Several morphological marking strategies are thus expected to occur in languages:

1. marking on the verb (head):   = *inverse marking*
2. marking on an argument (dependent):   = *GCS*
3. marking on both the verb and an argument (double):   =*inverse+GCS, Arizona Tewa*
4. marking on both arguments of a transitive verb: *Nez Perce*

Indeed, all of these possibilities are attested. The first two options have already been encountered: Either the diacritic is only spelled out on the head where it emerges (= head-marking, direct-inverse languages) or only on an argument to which it is tranferred (= dependent-marking, GCS languages). The third option is one in which the diacritic is spelled out on an argument *and* the verb. Arizona Tewa (Kiowa-Tanoan) exhibits this pattern. The relevant scale is 1st/2nd $\succ$ 3rd[10]. Transitive verbs in Arizona Tewa bear a portmanteau prefix which encodes person and

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[10]If both arguments are 3rd person, animacy becomes the relevant factor: anim $\succ$ inanim.

number of DP_{ext} and DP_{int}. There are two sets of prefixes, active and passive prefixes (Kroskrity (1985:308), Zñiga (2006:182))

(49)   *Active prefixes, implies 3rd person DP_{int}*:

DP_{ext}		1sg	1du	1pl	2sg	2du	2pl	3sg	3du	3pl
		d-	ʼn	ʼ:-	nː-	den-	obːn-	mn-	den-	dː-

(50)   *Passive prefixes*:

DP_{int} ＼ DP_{ext}	1	2	3
1	–	d-	d-
2	w-	–	
2sg			wː-
2du			wːbn-
2pl			wːb-
3sg			ʼː-
3du			ʼːbn-
3pl			ːb-

If DP_{ext} is higher on the person scale than DP_{int}, the active prefixes are attached to the verb. But if DP_{int} outranks DP_{ext} the passive prefix are attached instead and crucially, DP_{ext} also bears the case suffix -*d*. Hence, the diacritic is spelled out on DP_{ext} by *d* and prefixes selection is sensitive to the diacritic on v.[11] Thus, there is GCS and inverse marking at the same time, but both arise from a single Maraudage operation in the present analysis.

(51)   *Verbal prefixes and case marking (Kroskrity (1985:311, 314), Zñiga (2006:182))*

    a.   Nɛ̓i kʷiy   d-tay.
           this woman 1SG¿3-know
           'I know this woman.'   *1st → 3rd*

    b.   Hę̓i sen-**di**   ʼų̀ wː-kɛgen-n.
           that man-OBL you 3¿2SG.PASS-help-COMP
           'That man helped you.'   *3rd → 2nd*

The fourth pattern can arise because nothing precludes that the diacritic is generated in *both* probe sets of v and passed on to both arguments. This is attested in Nez Perce.[12] In this language, both arguments of a transitive verb are zero marked if DP_{int} is a weak indefinite (a pattern called "Pseudo-Antipassive" by Woolford (1997)), otherwise the subject bears the ergative marker -*nim* and the object bears the objective case marker -*ne*.

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[11]Kroskrity argued that the alternation in Arizona Tewa is an active-passive alternation (cf. Kroskrity 1985:310f.), hence the labels given to the prefixes. Klaiman (1991), however, shows that the different encoding of arguments is indeed an instance of an inverse system and not an active-passive-alternation with argument reduction.

[12]I thank Stefan Keine for pointing out this example to me.

(52)   *Local case split in Nez Perce (Deal (2010:85), see also Crook (1999:238))*:
         Context: One house in Lewiston is red, and yesterday, John found that house.

    a.   Caan-nim paa-'yaax-na   ini-ne
            John-ERG 3/3-find-PERF house-OBJ
            'John found a (certain) house.'

    b.   Caan hi-'yaax-na   init
            John 3SUBJ-find-PERF house
            'John found a house.'
            Comment: "It's not referring to the red house or anything, it's just he just found a
            house that he's been looking for"

Thus, the pattern could be described as follows: There is a local case split in Nez Perce, depending on the location of DP_{int} on a binary definiteness scale definite $\succ$ indefinite. This follows if definiteness is decomposed into privative features, cf. the discussion of Hebrew above.

(53)   *Encoding of definiteness features*:

    a.   [C] encodes indefinites
    b.   [BC] encodes definites
    c.   Consequence: indefinite referent = [C], definite referent = [BC]

Obviously, v expects DP_{int} to be indefinite: v $[[*BC*]_{ext}, [*C*]_{int}]$. If DP_{int} outranks DP_{ext} on the definiteness hierarchy because it is definite [BC], Maraudage takes place obligatorily. This leads to the generation of the diacritic in *both* sets of v and it is passed on to the arguments where the overt case suffixes show up.

    Another option is that the diacritic is not realized at all, but this case is of no interest because if there is no overt reflex of Maraudage, we would not identify a hierarchy effect in the first place.

6.   Conclusion

In this paper I have provided a local analysis of global case splits in a strictly derivational framework. The local derivation is made possible by a change of perspective on the data: It is not the case value of an argument which is the dependent feature, but the properties of the external argument are dependent on the properties and case of the internal argument. I implemented this as follows: As the internal argument is the first argument in the structure in a derivational bottom-up syntax it can consume as many features as it needs to check its inherent features, even features which were originally provided for the external argument (by Maraudage). This is possible because both arguments are checked by the same head v. The external argument has to cope with the features which the internal argument left for it and it is thus restricted in its properties. Overt case marking is a reflex of Maraudage. Furthermore, I showed that the analysis developed for GCS can also derive local case splits, case assignment in non-split languages, as well as direction-marking which is the head-marking counterpart of GCS. Finally, Burzio's generalization can be accounted for.

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