Global case splits

Issues in the syntax of case and agreement
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1 Introduction

We saw that Hungarian object agreement sometimes depends on the person of both the subject and the object. Case-marking, on the other hand, was straightforward: direct objects get ACC, subjects get NOM.[1]

? Do we see similar person effects in case-marking as well? (Yes, we do!)

(1) a. *bɨ chu-s-ath tsɨ parɨna:va:n*
I.NOM be.M.SG-1SG.SBJ-2SG.OBJ you.NOM teaching
'I am teaching you.'

b. *tsɨ chu-kh me parɨna:va:n*
you.NOM be.M.SG-2SG.SBJ I.DAT teaching
'You are teaching me.' (Wali & Koul 1997: 155, glosses adapted)

(2) a. *tsɨ chi-h-an su parɨna:va:n*
you.NOM be-2SG.SBJ-3SG.OBJ he.NOM teaching
'You are teaching him.'

b. *su chu-y tse parɨna:va:n*
he.NOM be.M.SG-2SG.OBJ you.DAT teaching
'He is teaching you.' (Wali & Koul 1997: 155, glosses adapted)

[1] Abbreviations: 1 = first person, 2 = second person, 3 = third person, ABL = ablative, ACC = accusative, DAT = dative, DM = Distributed Morphology, ERG = ergative, FUT = future, GEN = genitive, INF = infinitive, INV = inverse, IPFV = imperfective, M = masculine, NOM = nominative, OBJ = object, OBV = obviative, PASS = passive, PL = plural, PST = past, SBJ = subject, SG = singular.

2 Global case splits

Some case splits are *global* because a case alternation depends on properties of more than one argument (cf. Hungarian 1 ⟶ 2 vs. 3 ⟶ 2). We'll look at two examples (very much inspired by Keine 2010).

2.1 Kashmiri

Kashmiri is an Indo-European (Indo-Aryan) language. It is split-ergative (remember?). In the imperfective aspect, its case alignment is NOM-ACC. Personal pronoun objects alternate between zero-coded case (NOM) and a case that resembles DAT.

(3) a. *bɨ chu-s-ath tsɨ parɨna:va:n*
I.NOM be.M.SG-1SG.SBJ-2SG.OBJ you.NOM teaching
'I am teaching you.'

b. *tsɨ chu-kh me parɨna:va:n*
you.NOM be.M.SG-2SG.SBJ I.DAT teaching
'You are teaching me.' (Wali & Koul 1997: 155, glosses adapted)

(4) a. *tsɨ chi-h-an su parɨna:va:n*
you.NOM be-2SG.SBJ-3SG.OBJ he.NOM teaching
'You are teaching him.'

b. *su chu-y tse parɨna:va:n*
he.NOM be.M.SG-2SG.OBJ you.DAT teaching
'He is teaching you.' (Wali & Koul 1997: 155, glosses adapted)

(5) *su vuch-i təmis.*
he see-3SG he.DAT
'He will see him.' (Wali & Koul 1997: 156, glosses adapted)

It is worth noting that DAT on the direct object is a structural case and behaves like an ACC (Béjar & Rezac 2009). Arguments with this DAT can be passivised, for example, while indirect objects with syncretic DAT cannot.

(6) a. *su kariy tse me havaːlɨ*
he.NOM do.FUT.2SG.OBJ you.DAT I.DAT handover
'He will hand you over to me.'

b. *tsɨ yikh me havaːlɨ karnɨ təm'sɨndi dəs'*
you.NOM come.FUT.2SG.OBJ.PASS I.DAT handover do.INF.ABL he.GEN by
'You will be handed over to me by him.' (Wali & Koul 1997: 208)

SBJ ⟶ DO	1	2	3
1	—		
2	DAT	—	
3	DAT	DAT	DAT

Table 1 Distribution of inverse dative in Kashmiri

2.2 Sahaptin

Sahaptin is a Penutian language, a relative of Nez Perce. The language also shows a case alternation based on person, but unlike Kashmiri, the alternation is marked on the *subject*. Rigsby & Rude (1996) call two distinct forms of this the *inverse ergative* (INV.ERG) and the *obviative ergative* (OBV.ERG).

The INV.ERG appears on 3rd person subjects when their object is 1st or 2nd person (a participant).

(7) a. *ɨwínš i-q̓ínun-a yáamaš-na.*
man 3.NOM-see-PST mule deer-OBJ
'The man saw a/the mule deer.' (Rigsby & Rude 1996: 673)

b. *ɨwínš-nɨm=nam i-q̓ínu-ša.*
man-INV.ERG=2SG 3.NOM-see-IPFV
'The man sees you.' (Rigsby & Rude 1996: 677)

The obviative ergative appears when both the subject and the object are third person and it tracks the relative pragmatic status of the two arguments (Rigsby & Rude 1996, Zúñiga 2006).

(8) *ɨwínš-in pá-tuxnana yáamaš-na.*
man-OBV.ERG 3INV-shot mule deer-OBJ
'The man shot a mule deer.' (Rigsby & Rude 1996: 676)

SBJ ⟶ DO	1	2	3
1	—		
2		—	
3	inverse ergative	inverse ergative	obviative ergative

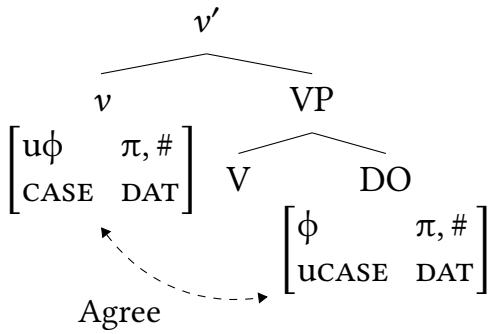
Table 2 Distribution of the inverse ergative with singular subjects in Sahaptin (Rigsby & Rude 1996).

3 Analysis

3.1 The timing of Case assignment

Global case splits (at least on the object) pose a problem for our system so far. W.r.t. Kashmiri, Case assignment is influenced by the agreement relations between the verb and its arguments. DAT in (9) is assigned *too early*.

(9)

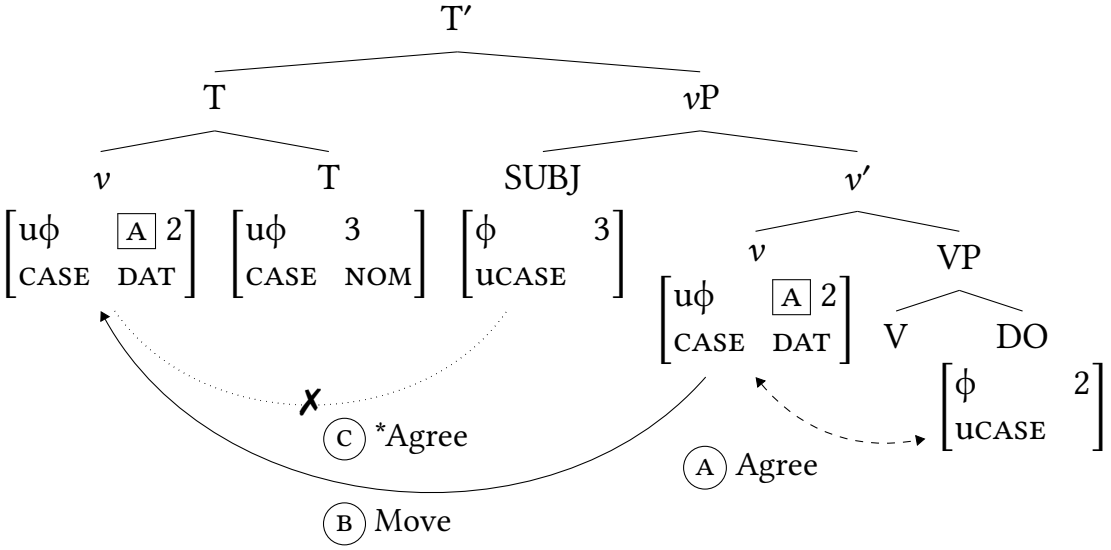


Rather, we want to delay DAT until we have have registered the person of the subject *and* the object: DAT is assigned in the shaded cells in Table 3.

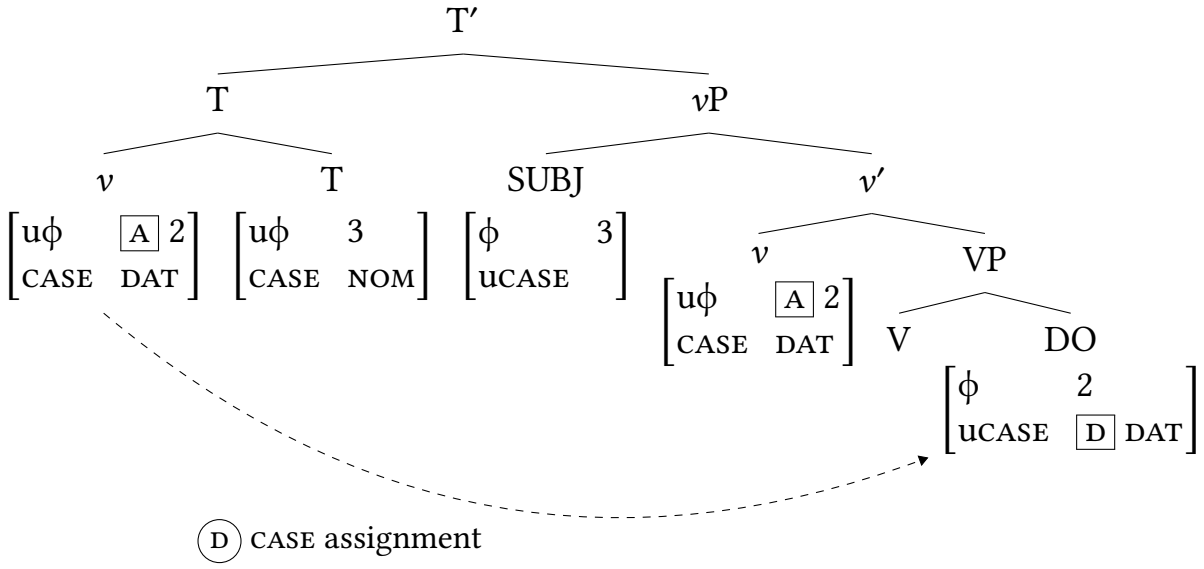
EA→IA	1	2	3
1	—	*v*: [1, 2]	*v*: [1, 3]
2	*v*: [1]	—	*v*: [2, 3]
3	*v*: [1]	*v*: [2]	*v*: [3]

Table 3 Distribution of person features on *v*

(10) a.



a.



?

- How is Case assignment delayed?
- How is the spell-out of Case determined on an argument?

We can answer the first question straightforwardly and take one more step away from Chomsky 2000, 2001); see also Keine (2010), Georgi (2014), Heck & Müller (2007):

(11) **Order of Case assignment and agreement**
Languages differ in the order that Case assignment and agreement apply.

a. Case can precede agreement: [CASE ≺ ϕ]

b. Agreement can precede Case: [ϕ ≺ CASE]

The second answer is a bit more elaborate and we need a few more tools…

3.2 Morphological aspects

In Distributed Morphology (DM) (Halle & Marantz 1993, 1994, Halle 1997, Harley & Noyer 2003), bundles of features can be modified by so-called *impoverishment rules*.

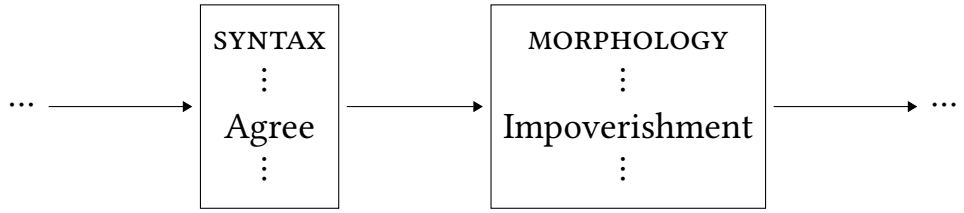
The general schema of such a rule is shown in (12):

(12) **Impoverishment**

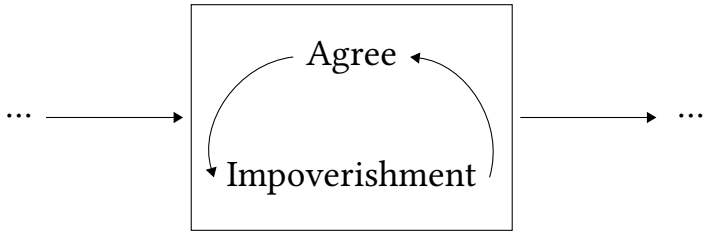
a. [gender] ⟶ ∅ / ____ [PL]

b. "Delete the feature [gender] in the context of [PL]."

We can model the variation in case-marking we saw above by **modifying Case on the assigning head before Case assignment**. This idea is worked out nicely in Keine (2010). Keine assumes that impoverishment rules can apply *in syntax* and not just post-syntactically, as is standardly assumed. This is illustrated in Figures 1a and 1b.



(a) Standard view of the order of syntax and morphology (Keine 2010: 1)



(b) Keine's proposed order of syntax and morphology (Keine 2010: 2)

If impoverishment can happen during the syntactic derivation, we can assume

- impoverishment rules triggered by certain values on v
- which modify the Case the head is about to assign
- this implies that [ϕ < CASE]!

? How do we model Case features?

We will not go into the possible semantics of Case features, but rather simply assume that Cases consist of sets of features I call [**A**], [**B**], [**C**], etc. (see Caha 2009, 2013, Harðarson 2016 for similar views).

So we'll think of distinct Cases as made up of sets as shown in (13):

(13) **Case features (in general?)**
NOM = [**A**] ACC = [**A**, **B**] DAT = [**A**, **B**, **C**]

These features can be impoverished in certain contexts, for example:

(14) **Impoverishment**
[**B**] $\longrightarrow \emptyset$ / v = [α, β]

Let's see how we can apply this.

3.3 Back to Kashmiri

In (15), we see a NOM object (1 ⟶ 2). This can be derived as follows.

(15) *bɨ* *chu-s-ath* *tsɨ* *parɨna:va:n*
I.NOM be.M.SG-1SG.SBJ-2SG.OBJ you.NOM teaching
'I am teaching you.' (Wali & Koul 1997: 155, glosses adapted)

NOM and DAT in Kashmiri are shown in (16). We'll assume that non-DAT in (15) is morphologically NOM. (17) shows how to spell out the Cases.

(16) **Case features in Kashmiri**
NOM = [**A**] DAT = [**A**, **B**]

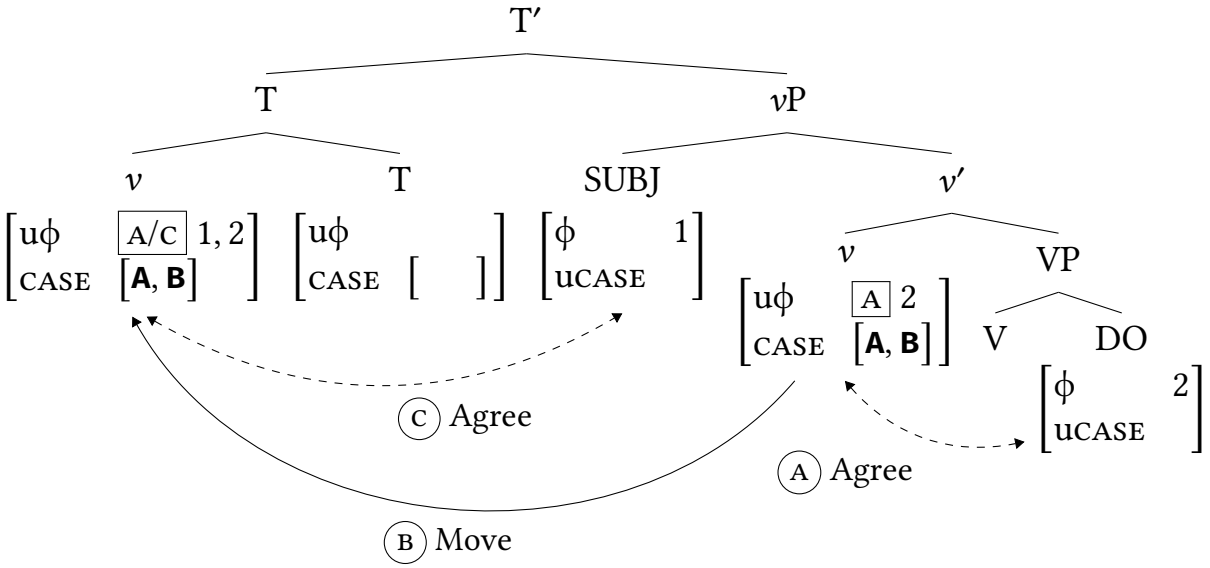
(17) **Vocabulary insertion rules**
a. [**A**] ↔ *bɨ* 'I.NOM', *tsɨ* 'you.SG.NOM', *su* 'he.NOM'
b. [**A**, **B**] ↔ *me* 'I.DAT', *tse* 'you.SG.DAT', *təmis* 'he.DAT'

Finally, the impoverishment rule in (18) applies if *v* is valued by two sets of person features, shown as [α, β], and deletes the features [**B**].

(18) **Impoverishment in Kashmiri**
[**B**] ⟶ ∅ / *v* = [α, β]

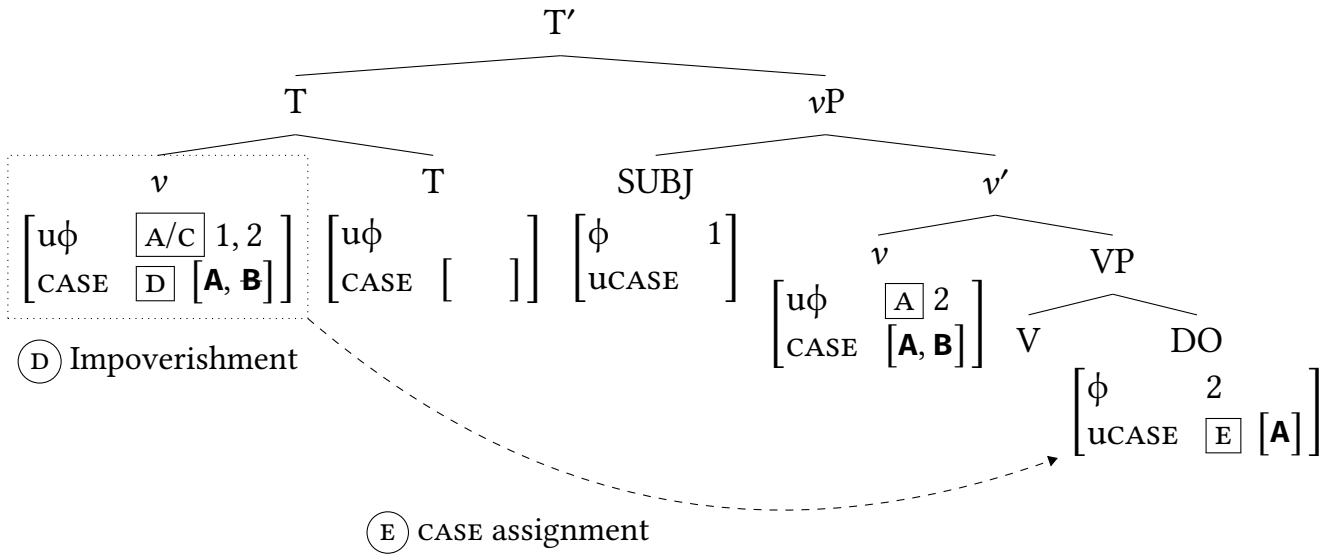
3.3.1 Direct configurations

(19) a. 1 ⟶ 2



The two sets of ϕ-features on *v* match the context for the impoverishment rule in (18): impoverishment applies and deletes [**B**] in (D). *v* thus only assigns [**A**] to the object.

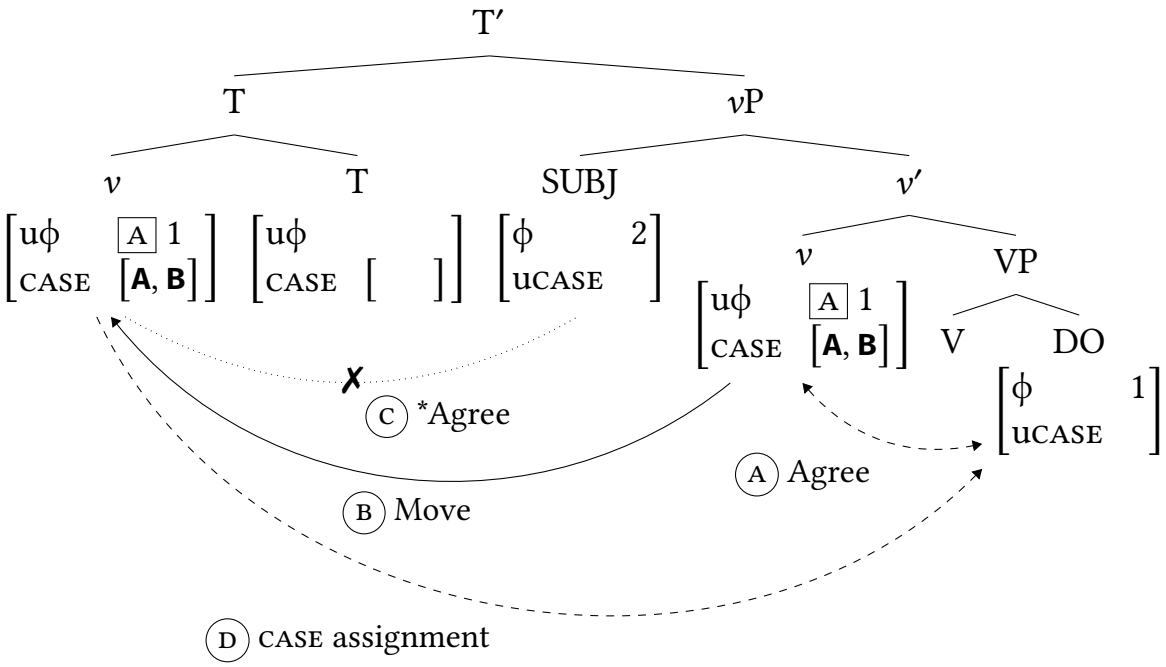
b. 1 ⟶ 2 (cont'd)



And, following the insertion rules in (17), Case on the DO is spelled out as NOM.

3.3.2 *Inverse configurations*

(20) 2 ⟶ 1



Because *v* has a single set of ϕ-features, no impoverishment takes place, and the feature set [**A**, **B**] is assigned to the direct object. Given the insertion rule in (17b), this form will be spelled out as a dative pronoun.

3.4 Sahaptin

(21) a. *x̣ʷíɬsaat-in pá-tuyayč-a áswani-na.*
old.man-OBV.ERG INV-lecture-PST boy-OBJ.SG
'The old man lectured the boy.'

b. *hulí-in pá-wilapx̣ʷ-ša łáɬ-x̣na.*
wind-OBV.ERG INV-blow.up-IPFV dust-OBJ.SG
'The wind is blowing up the dust.' (Rigsby & Rude 1996: 677)

The subjects of (21a,b) have different thematic roles and different levels of volitionality, yet they can both appear in the obviative ergative (see also Deal 2010: 102f. on similar examples from Nez Perce, where the ergative-marked subject lacks "characteristic properties of agents, e.g. animacy and volition").

So we can say that T assigns ERG to the subject, and *v* assigns Case to the object. We can use the following features.

(22) ERG = $[\mathbf{A}, \mathbf{B}]$ OBJ = $[\mathbf{A}, \mathbf{B}, \mathbf{C}]$

(23) **Vocabulary insertion rules**

a. $[\mathbf{A}, \mathbf{B}]$ ↔ *-nɨm* (INV.ERG)

b. $[\mathbf{B}]$ ↔ *-in* (OBV.ERG)

c. $[\mathbf{A}, \mathbf{B}, \mathbf{C}]$ ↔ *-na* (OBJ), *ína* 'I.OBJ', …

d. $[\mathbf{A}]$ ↔ ∅

We see a case alternation on the subject in Sahaptin, so our impoverishment rules target features on T — impoverishment can apply before T assigns ERG.

(24) **Impoverishment rules**

a. $[\mathbf{A}]$ → ∅ / T = [3]

b. $[\mathbf{A}, \mathbf{B}]$ → ∅ / T = [PART]

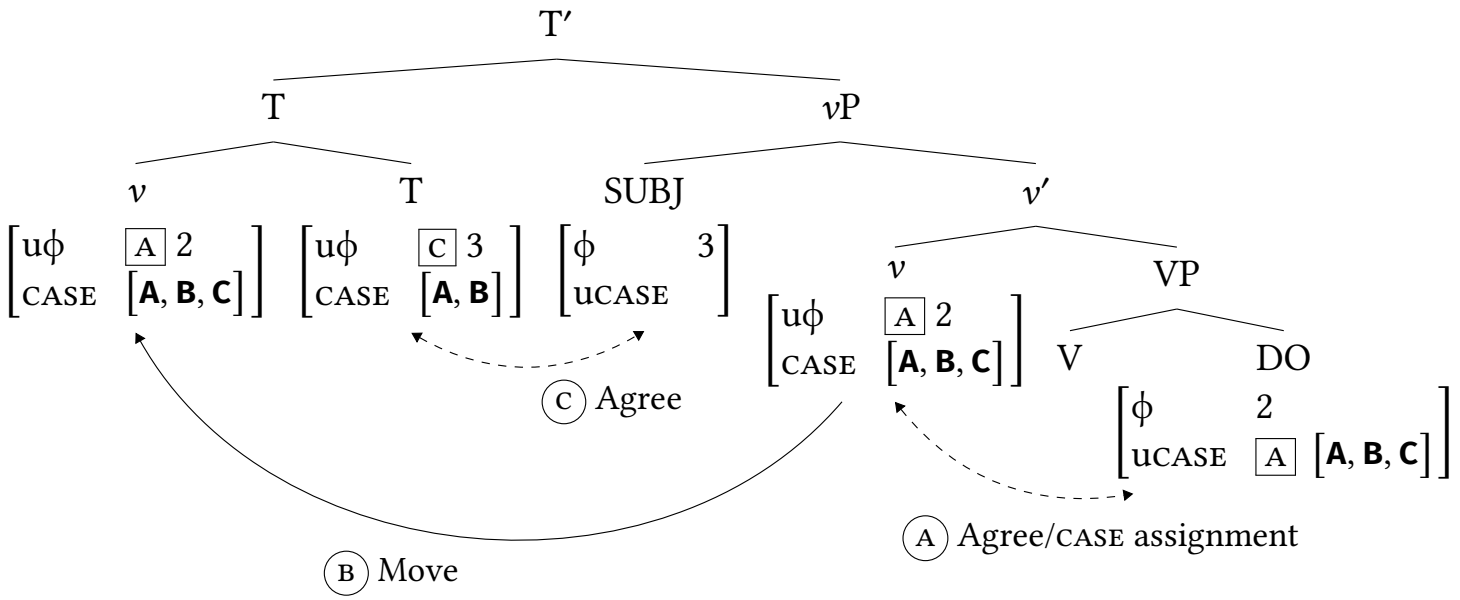
(25) a. *ɨwínš-nɨm=nam i-q̇ínu-ša.*
man-INV.ERG=2SG 3.NOM-see-IPFV
'The man sees you.'

b. *hulí-in pá-wilapx̣ʷ-ša łáɬx̣-na.*
wind-OBV.ERG INV-blow.up-IPFV dust-OBJ.SG
'The wind is blowing up the dust.'

c. *ín=aš á-q̇ínu-ša payúwii-na łmáma-an*
I-1SG 3.ABS-see-IPFV sick-OBJ old.woman-OBJ
'I see the sick old woman.'

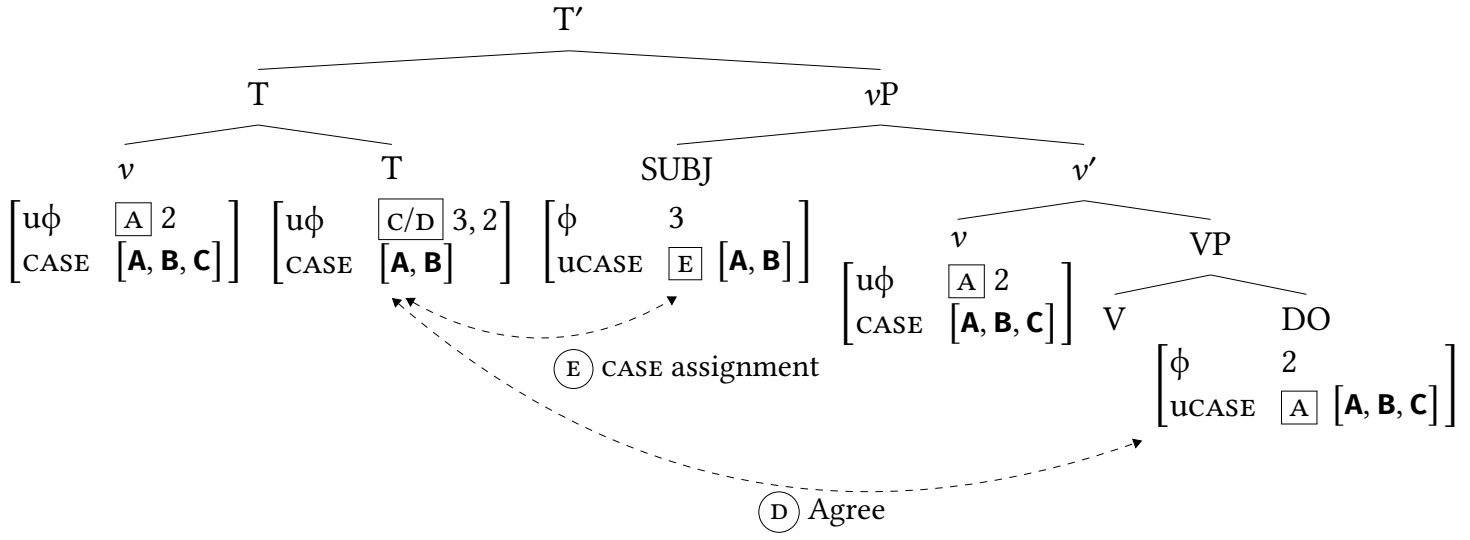
(26a) illustrates the first steps of deriving (25a).

(26) a. 3 ⟶ 2



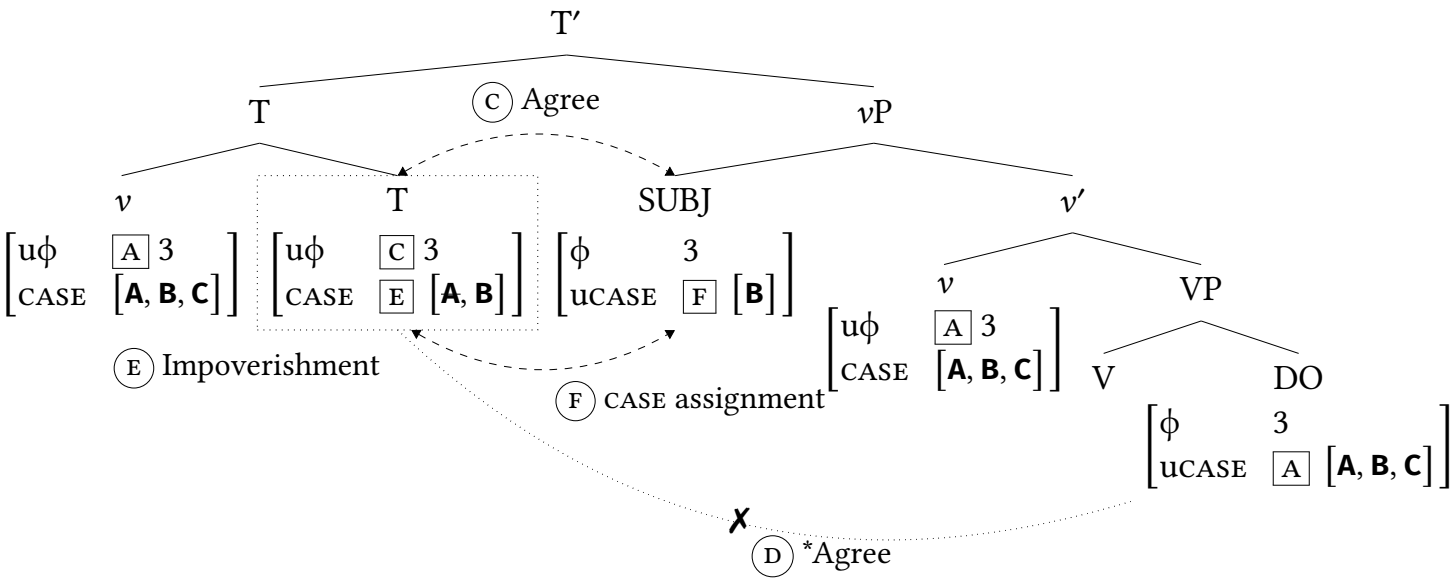
In (26b), after T has agreed with the subject and its ϕ-features are valued by the subject in (C), it enters an Agree relation with the object in (D): T ends up with the values [3, 2]. This value does not trigger any of the impoverishment rules in (24) and therefore T assigns its full set of CASE features to the subject. This will be spelled out as the inverse ergative.

(26) b. 3 ⟶ 2 (cont'd)



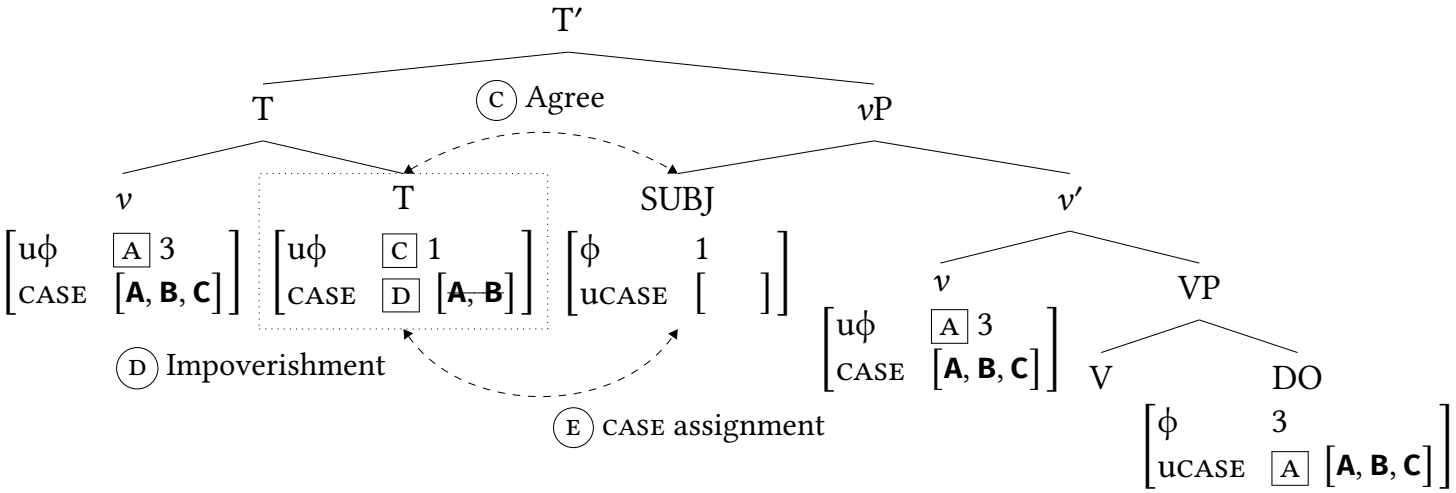
(27) shows the derivation of a clause giving rise to the obviative ergative on the subject. The first steps of the derivation are essentially as in (26a), so only the remaining steps are shown. Again, T agrees with the subject and is valued [3] in (C). Agreeing with the direct object does not change this value, and thus the features on T provide the right context for the impoverishment rule in (24a). [**A**] is deleted and the subject is assigned [**B**] only, which is spelled out as the obviative ergative.

(27) 3 ⟶ 3



Finally, (28) shows the relevant steps of the derivation of (25c), with a first person subject and a third person object. T's ϕ-features are fully valued after the Agree relation with the first person subject in (C) and provide the right context for the impoverishment rule in (24b) to apply in (D), deleting all Case features. The result is that the subject is unmarked for case.

(28) 1 ⟶ 3



4 Conclusions

- Person-hierarchy effects are found in case-marking as well as in agreement
- In languages with global case splits, agreement precedes (and can feed) case-marking
- In languages without, agreement precedes case: [CASE ≺ ϕ]
- The impoverishment rules we saw relied on how probes are valued by Cyclic Agree
- The patterns in the case alternations resemble the pattern of agreement in Hungarian
- The direct/inverse divide is found in both case-marking and agreement

5 Further reading

For more on global case splits, see Silverstein (1976), Malchukov (2008), Keine (2010), Georgi (2012). The analysis presented here is found in Bárány (2015, to appear); Keine (2010) was a very big influence on these ideas. He uses hierarchies and OT to derive the impoverishment rules that modify Case features.

Kashmiri is discussed by Béjar & Rezac (2009), Georgi (2012); the data are from Wali & Koul (1997).

Sahaptin is discussed by Keine (2010); the data are from Rigsby & Rude (1996). See also Rude (1997, 2009), Zúñiga (2006). Amy Rose Deal (2010) discusses mostly Nez Perce, but also mentions Sahaptin briefly.

Case decomposition is discussed by Jakobson (1971), Bierwisch (1967), Wunderlich (1997), Stiebels (1999), Wiese (1999), Kiparsky (2001), Morimoto (2002), McFadden (2004), Müller (2002, 2004), Keine & Müller (2008), Keine (2010), Caha (2009, 2013), Harðarson (2016).

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