Abstract composite possessor case in Udmurt[*]

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1 Introduction

Observation:

In Udmurt (Uralic), the possessor bears genitive or ablative. The case values are in complementary distribution: According to the literature, genitive is the default possessor case; ablative occurs if the DP that contains the possessor functions as a direct object, cf. (1) (Csúcs (1988); Vilkuna (1997); Kel'makov & Hännikäinen (1999); Winkler (2001); Nikolaeva (2002); Koptjevskaja-Tamm (2003); Suihkonen (2005); Edygarova (2009)). **The case value of the possessor thus seems to depend on the external head** that selects the DP containing the possessor (DP selected by V or some other head).

(1)   *Possessor cases in Udmurt*:

    a.   so-len/*leš anaj-ez   siče ug   diśaśki
           he-GEN/ABL mother-3SG such NEG.PRES.3SG dress.sg
           'His mother does not dress in such a way.'   (Edygarova (2009, 105))

    b.   so-*len/leš eš-s-e   ažžiśko
           he-GEN/ABL friend-3SG-ACC see.PRES.1SG
           'I see his friend.'   (Edygarova (2009, 101))

Possessor case splits that depend on the nature of the external head exist in other languages as well, e.g., in Komi (Uralic) and in Daghestanian languages. In Bezhta (Daghestanian) the possessor receives the *direct genitive* if the entire DP is assigned nominative case; otherwise, the possessor gets the *oblique genitive*.

(2)   *Possessor cases in Bezhta (Kibrik, 1995, 20)*:

    a.   abo-s   is
           father-GEN_{dir} brother.NOM
           'father's brother'

    b.   abo-la   is-t'i-l
           father-GEN_{obl} brother-OBL-DAT
           'to father's brother'

In what follows, we concentrate on the case split in Udmurt.

Problems and Questions:

- Given a strictly derivational bottom-up syntax, the relevant information about the grammatical function (GF) of the DP containing the possessor is not available at the point of case assignment to the possessor in the DP. The decision which case to assign to the possessor thus seems to require **look-ahead**.
- **Why** is the alternative possessor case **ablative** and not some other case?

Claim:

According to the literature, it is the GF of the DP containing the possessor that is decisive for the case split. However, the term "direct object" is never precisely defined. By testing several possible interpretations of "direct object", we argue that **the case split in Udmurt does not depend on GFs**; rather, it is triggered by the case that the DP containing the possessor is assigned.

(3)   *Empirical generalization*:
        The possessor in Udmurt bears ablative if the XP immediately dominating the possessor bears the accusative marker. The possessor bears genitive elsewhere.

This new generalization facilitates a reanalysis of the case split in Udmurt that does not require look-ahead.

Main idea of the analysis: syntactic but no morphological case stacking

- Nominal elements in Udmurt bear two case slots (syntactic case stacking).
- Possessors are always assigned abstract genitive case in the DP.
- Additionally, the possessor can be assigned another structural case (nom, acc, gen).
- Morphologically, only one case slot can be realized by a marker. Thus, the two case values on the possessor fuse into a single feature set in the postsyntactic morphological component. This set is realized by the most specific matching marker.
- The combination of abstract genitive and accusative yields the representation of a semantic case. The most specific matching marker is the ablative marker, the default semantic case marker. **There is no abstract ablative on the possessor.**
- Crucial distinction for the analysis: abstract vs. morphological case (Legate, 2008).

Outline:

This paper . . .

1. discusses the locality problem that case assignment in Udmurt seems to pose,
2. determines the exact distribution of the ablative case,
3. presents a local analysis that derives the generalization,
4. discusses the theoretical and empirical consequences of the analysis.

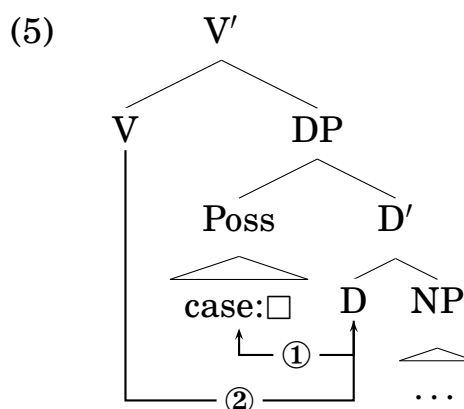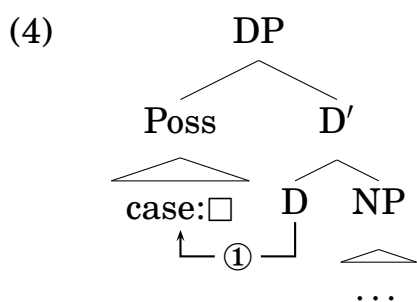## 2   A look-ahead problem

Two preliminary assumptions:
1. Syntactic dependencies neither involve look-ahead nor counter-cyclic operations.
2. The case values are only manipulated at the point of case assignment.

Under a strictly derivational model of grammar in which the structure unfolds step by step in a bottom-up fashion (e.g. in minimalism, cf. Chomsky 1995 et seq.), case assignment to the possessor in Udmurt faces a look-ahead problem:

Further assumptions:
* Case is assigned by functional heads to DPs under Agree (Chomsky, 2000, 2001). Agree involves valuation; prior to Agree, DPs do not bear a case value: [case:□]
* D assigns abstract case to the possessor. Preliminary assumption: In Udmurt, D assigns genitive or ablative, depending on the GF of the containing DP.
* GFs are determined by the position of the DP in the structure, i.e., a DP is a direct object if it is the sister of V.
* The information about the structural position of the entire DP is not available at the point of case assignment within the DP: the entire DP is merged into the structure only *after* case assignment to the possessor took place.

⇒ *Look-ahead* problem

(4)   DP
            ┌─────────┴─────────┐
          Poss   D′
        ┌────┴────┐   ┌────┴────┐
     case:□   D   NP
        └──①──┘   ⌒
                        · · ·

(5)   V′
            ┌─────────┴─────────┐
          V   DP
          │   ┌──────┴──────┐
          │   Poss   D′
          │   ┌────┴────┐   ┌────┴────┐
          │   case:□   D   NP
          │   └──①──┘   ⌒
          │   · · ·
          └────────②────────┘

Note:
It does not help to assign case to the possessor after the information about the grammatical function is available. This would result in a counter-cyclic derivation:

* If the DP is merged with its selecting head before the possessor is assigned case, the relevant information about the category of the selecting head is available. However, case assignment then involves two elements (the DP internal case assigner and the possessor) that are contained in the DP cycle, but the DP is already dominated by another cycle, i.e. the VP/V′ cycle. This violates the Strict Cycle Condition in (6).

(6) *Strict Cycle Condition (based on Chomsky, 1973, SCC)*:

    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.

$\Rightarrow$ *Counter-Cyclicity*

Solution 1: The assumption that all syntactic dependencies are local must be wrong. At least possessor case assignment in Udmurt must be non-local.

Solution 2: Case values are not only manipulated at the point of case assignment but additionally in a postsyntactic component.

> In what follows, we pursue solution 2. This is supported by the results that will be presented in the following section: The distribution of the ablative does *not* depend on the GF of the dominating DP, but rather on its case value, an information that is locally available on the possessor under a case stacking analysis.

3   Empirical background

3.1   Case splits and the structural position of the possessor

A case split on the possessor can be found in other Uralic languages as well (although the factors conditioning the split are different from those found in Udmurt), e.g., Hungarian, Finnish, Estonian, Komi (cf. König & Haspelmath (1998); Nikolaeva (2002); see also Deal (to appear) about a similar though different kind of alternation in Nez Perce).

The alternation is best studied in Hungarian in which nominative and dative alternate.

(7) *Two possessor cases in Hungarian* (Szabolcsi, 1994):

    a. (a) Mari   kalap-ja
       (the) Mari.NOM hat-POSS.3SG
       'Mari's hat'

    b. Mari-nak a   kalap-ja
       Mari.DAT the hat-POSS.3SG
       'Mari's hat'

Szabolcsi (1984, 1994) argues that the nominative and the dative possessor occupy different positions in the DP.

Evidence:

- The determiner *a(z)* obligatorily follows the dative possessor but precedes the nominative possessor, see (7).
- Extraction asymmetries: Only the dative possessor can be extracted out of the DP.

   (8)   *Possessor extraction in Hungarian (Szabolcsi, 1984)*:

        a. Mari-nak nem ismert-em [t′ t növér-é-t]
            Mari-DAT not knew-1SG   sister-POSS.3SG-ACC
            'I never knew any sister of Mari.'

        b. *Mari   nem ismert-em [t′ t növér-é-t]
            Mari.NOM not knew-1SG   sister-POSS.3SG-ACC
            'I never knew any sister of Mari.'

- Wh-possessors must be in the dative and precede the determiner:

   (9)   *Wh-possessors in Hungarian (Szabolcsi, 1994)*:

        a. *ki   kalap-ja
            who.NOM hat-POSS.3SG
            'whose hat?'

        b. ki-nek   a t kalap-ja
            who-DAT the   hat-POSS.3SG
            'whose hat?'

Conclusion (Szabolcsi, 1994):
The dative possessor is in a derived position that is the DP-counterpart of SpecC (an operator position that serves as an escape hatch for movement out of CP). It is moved to this position from a position lower down in the structure that is associated with nominative.

Is there also evidence for two different positions of genitive and ablative possessors in Udmurt? Answer: No.

- There is no element like the Hungarian determiner relative to which the two possessors align differently.
- There are no extraction asymmetries: Both the genitive and the ablative possessor can be extracted out of the DP, illustrated in (10) for extraposition and in (11) for topicalization.
- In contrast to Hungarian, wh-possessors can bear genitive or ablative, cf. (12).

(10)   *Extraposition of the genitive and ablative possessor in Udmurt*:

    a. man'eryz   sytše peres' Mikta-len
        manner.3SG such old   Mikta-GEN
        'Such is old Mikta's style.'   (Vilkuna, 1997, 224)

    b. valze   jusky   so-leš
        horse.ACC.3SG unharness.IMP.2SG s/he.ABL
        'Unharness his horse!'   (Vilkuna, 1997, 224)

(11)   *Topicalization of the genitive and ablative possessor*:

    a. Mon Masha-leš apaj-z-e   noku no öj   na pumital'l'a.
        1SG Masha-ABL sister-3SG-ACC never   NEG.PST.1SG yet meet
        'I never met Masha's sister.'

    b. Masha-leš noku no öj   na pumital'l'a apaj-z-e.
        Masha-ABL never   NEG.PST.1SG yet met   sister-3SG-ACC
        Lit: 'Masha's I never met sister.'   *Poss with abl*

    c. Masha-len   puny-jez zhug-em-yn   val.
        Masha-GEN dog-3SG beat-PARTC-INES AUX.PST.SG
        'Masha's dog was beaten'

    d. Masha-len   body-jen   puny-jez zhug-em-yn   val.
        Masha-GEN club-INSTR dog-3SG beat-PARTC-INES AUX.PST.SG
        Lit: 'Masha's was dog beaten with a club.'   *Poss with gen*

(12)   *Wh-possessors in Udmurt*:

    a. Mon Masha-leš apaj-z-e   jarat-is'ko.
        1SG Masha-ABL sister-3SG-ACC love-PRES.1SG
        'I like Masha's sister'

    b. Kin-leš apaj-z-e   jarat-is'ko-d?
        who-ABL sister-3SG-ACC love-PRES.2SG
        'Whose sister do you like?'   *wh-Poss with abl*

    c. Masha-len apaj-ez   Petyr-ez jarat-e.
        Masha-GEN sister-3SG Peter-ACC love-PRES.3SG
        'Masha's sister likes Peter.'

    d. Kin-len apaj-ez   Petyr-ez jarat-e?
        who-GEN sister-3SG Peter-ACC love-PRES.3SG?
        'Whose sister likes Peter?'   *wh-Poss with gen*

- In Udmurt, there is no evidence from extraction, word order or agreement that genitive and ablative possessors occupy different structural positions. Hence, we assume that the case split does not arise from a difference in positions of the possessor in the DP.

3.2   The functions of the ablative: the ablative as a default semantic case

- Udmurt has 15 cases, cf. (13). We divide them into structural and semantic cases.
- *Structural case*: assigned to a DP in a certain position in the syntactic structure independent of the theta-role of the DP in that position. *Semantic case*: encodes a semantic relation (theta-role assignment) between the DP and the governing head. Semantic cases are typical adjunct cases (Wunderlich & Lakämper (2001), compare the notion of theta-related case in Řezáč (2008); see also Chomsky (1986)).

(13)   *Case System in Udmurt*

Structural cases	Semantic cases	
nominative	dative	inessive
accusative	ablative	elative
genitive	caritive	illative
	adverbial	egressive
	instrumental	transitive
	approximative	terminative

- The ablative occurs in a vast variety of contexts. In addition to encoding possessors "[the ablative] is used to express comparison, cause, from what material something is done [sic], or as a verb government etc." (Edygarova, 2009, 108). It can also be assigned by postpositions and to adjuncts expressing origin and source, cf. (14).
- These contexts do not seem to form a natural class.
- The other semantic cases are much more restricted in their applicability (see Winkler (2001, 16ff.)): They only occur in contexts that are expected according to the semantic relation they express.
- Thus, the **ablative marker is the default semantic case marker in Udmurt**.

(14)   *Functions of the ablative (Edygarova (2009, 108), Winkler (2001, 22-23))*:

    a. vit'ton-leš uno
           fifty-ABL   more
           'more than fifty'   *comparison*

    b. so-leš   žad'-em
           he/she-ABL be tired-PRET2/3SG
           '(he) got tired with him'   *cause*

    c. basma-leš lešt-em   arberi-os
           cloth-ABL make-PART thing-PL
           'things which are made from cloth'   *material*

    d. mon so-leš   gožtet   bašt-i
           I   he-ABL letter.ACC get-1SG.PST
           'I got a letter from him.'   *source*

e. ta-leš   ažlo
   DEM-ABL before
   'before this' (temporal)   *postposition*

3.3 The distribution of the ablative

If there is no structural asymmetry between the ablative and the genitive when used as a possessor, the question arises as to what the correct generalization is that predicts which case is used. Traditionally, the generalization is that a possessor gets ablative if the DP which contains the possessor is the "direct object". However, the term "direct object" is ambiguous. There are basically three possible interpretations:

1. *Thematic role:*
   The possessor gets ablative if the XP immediately dominating the possessor DP has the macro-role patient.[1]
2. *Position in the tree:*
   The possessor gets ablative if the XP immediately dominating the possessor DP is selected by V.
3. *Case:*
   The possessor gets ablative if the XP immediately dominating the possessor DP is assigned accusative.

The occurrence of the ablative in (1-b) is compatible with any of these hypotheses. Therefore, we tested the hypotheses against data for which they make different predictions. In the end, only interpretation 3 will be compatible with the data.

Fact 1:
A possessor in a passivized subject receives genitive case. Since passivization does not change the thematic role of an argument, interpretation 1 is falsified by the data in (15).

(15)   *Possessor case in active-passive alternation*:
   a. Petyr Masha-leš   puny-z-e   zhug-i-z
      Peter Masha-ABL dog-3SG-ACC beat-1PST-3SG
      'Peter beat Masha's dog.'
   b. Masha-len/*-leš   puny-jez zhug-em-yn   val
      Masha-GEN/-ABL dog-3SG beat-PST-PART AUX.1PST
      'Masha's dog was beaten.'

---

[1]Dominance is to be understood non-reflexively in these definitions.

Fact 2:

A possessor in a passivized subject that is in the VP (is to the right of manner adverbs that mark the VP boundary) receives genitive case. This falsifies interpretation 2, since it would predict ablative case instead of genitive case.[2]

(16)   *Manner adverb*:

Tuzh zol   Masha-len puny-jez zhug-em-yn   val.
very strong Masha-GEN dog-3SG beat-PARTC-INES AUX.PST.SG
'Masha's dog was beaten brutally.'

Evidence that the manner adverbs in (16) are very low in the structure: In a sentence like (17) with a sentential adverb, a temporal adverb and a manner adverb, the manner adverb must be closest to the verb; none of the other adverbs can be placed after the manner adverb (S. Edygarova, p.c.).

(17)   *Adverb placement*:

Zhaljasa verano, (tolon)   Petyr (tolon)   puny-jez zol   zhug-i-z.
unfortunately   yesterday Peter yesterday dog-3SG strong beat-1PST-3SG
'Unfortunately, Peter brutally beat a dog yesterday.'

Fact 3:

The sole argument of a passivized verb can be fronted with the verb, stranding the low manner adverb and the passive auxiliary (VP-topicalization), cf. (18).

(18)   *VP topicalization*:

[Masha-len puny-jez zhug-em-yn]   tuzh zol   val.
Masha-GEN dog-3SG beat-PARTC-INES very strong AUX.PST.SG
Lit: 'Masha's dog beaten brutally was.'

Furthermore, the complex [sole argument + passivized verb] can be conjoined to the exclusion of the preceding manner adverb and the auxiliary in T. The adverb has scope over both conjuncts.

(19)   *VP coordination*:

Tuzh zol   [[Masha-len puny-jez zhug-em-yn]   no [Petyr-len kotshysh-ez
very strong Masha-GEN dog-3SG beat-PARTC-INES and Peter-GEN cat-3SG
tshyzh-em-yn]]   val.
kick-PARTC-INES AUX.PST.SG
Lit: 'that brutally [Masha's dog beaten and Peter's cat kicked] was.
'that Masha's dog was brutally beaten and Peter's cat was brutally kicked.'

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[2]Since Udmurt is a head-final language, it cannot be read off of the surface position of the internal argument relative to the verb whether the argument DP is still in the VP or whether it is moved out of the VP; it will precede the verb in any case.

These facts suggest that the DP containing the possessor can stay very low in the structure, presumably in the VP. But still it bears genitive. This falsifies interpretation 2.

Conclusion so far:
Only interpretation 3 is compatible with the empirical facts.

(20)   *Empirical generalization*:
         The possessor in Udmurt bears ablative if the XP immediately dominating the possessor bears the accusative marker. The possessor bears genitive elsewhere.

This generalization is also compatible with the following facts:

Fact 4:
A possessor contained in a DP that bears a case different from accusative receives genitive case. This was shown in (1-a) for nominative case. (21) shows this for dative (a semantic case) and (25) for genitive.

(21)   *Dative assigning verb*:

         Petyr [Masha-len suzer-ez-ly]   akylt-e
         Peter Masha-GEN sister-3SG-DAT bother-PRES.3SG
         'Peter is bothering Masha's sister.'

Fact 5:
The subject of the complement clause of an ECM verb receives accusative case. A possessor contained in such a subject receives ablative case. This falsifies interpretation 2 (and interpretation 1 if one assumes that ECM subjects only receive a thematic role from the embedded verb).

(22)   *ECM construction in Udmurt*:

         Petyr [Masha-leš puny-z-e   tyloburdo-os-ty kutyl-e]   malpa
         Peter Masha-ABL dog-3SG-ACC bird-PL-ACC.PL catch-PRES.3SG think.PRES.SG
         'Peter believes Masha's dog to catch birds.'

Another way to express ECM constructions in Udmurt is to nominalize the embedded clause. In this context, the subject of the embedded clause receives ablative case if the clause gets accusative case. The embedded subject gets genitive elsewhere.

(23)   Petyr-len [Masha-leš pyny-z-e   vi-em-ez]   myn-ym ug
         Peter-GEN Masha-ABL dog-3SG-ACC kill-PARTC-3SG 1SG-DAT NEG.PRS.1
         jara
         please.CONG.SG
         'Peter's killing Masha's dog does not please me.'

(24)   mon [Petyr-leš Masha-leš   puny-z-e   vi-em-z-e]   adzdz-i
        1SG Peter-ABL Masha-ABL dog-3SG-ACC kill-PARTC-3SG-ACC see-1PST.1SG
        'I saw Peter killing Masha's dog.' (Lit. 'I saw Peter's killing Masha's dog.')

Fact 6:
A possessor of a possessor contained in a DP that bears accusative case receives genitive
case (see also Edygarova (2010, 177)). Only the structurally highest possessor bears
ablative.

(25)   Masha-len apaj-ez-len   puny-jez iz'-e
        Masha-GEN sister-3SG-GEN dog-3SG sleep-PRS.3SG
        'Masha's sister's dog is sleeping.'

(26)   Petyr Masha-len apaj-ez-leš   puny-z-e   zhug-i-z
        Peter Masha-GEN sister-3SG-ABL dog-3SG-ACC beat-1PRT-3SG
        'Peter beat Masha's sister's dog.'

In this section, we have argued that

  (i) the ablative and the genitive possessor occupy the same structural position (which
      we take to be SpecD)
 (ii) the ablative is the default semantic case marker in Udmurt
(iii) the decisive factor that governs the distribution of the ablative on the possessor is
      not the GF but rather the case value of the immediately dominating XP.

4   Deriving the generalization

We present an analysis of (iii) that crucially relies on case stacking and fact (ii), the default nature of the ablative marker.

The lexicon:

1. We assume that the cases in (13) are decomposed into the binary features [±obl(ique)] and [±obj(ect)] (cf. Bierwisch (1967)) that form a syntactic feature set.[3] This is shown in (28) for the three structural cases nominative, accusative, genitive.[4] The semantic cases consist of the syntactic feature set [+obl,+obj] *plus* a set of abstract semantic features ([±f], [±g], …).[5]

(27)   *Structural cases*
    NOM   [−obl,−obj]
    ACC   [−obl,+obj]
    GEN   [+obl,−obj]

(28)   *Semantic cases*
    ABL   [+obl,+obj][−f,−g,…]
    DAT   [+obl,+obj][+f,−g,…]
    INSTR   [+obl,+obj][−f,+g,…]
    …

Motivation for the assumption that semantic cases are more complex than structural cases: in various non-related languages, the markers of the semantic cases are added to a structural case marker, exemplified in (29) (Arkadiev 2006).

(29)   a.   *Case system of Romani*

	'pigeon'
Nom	golumbo
Acc	golumbo-s
Loc	golumbo-s-te
Dat	golumbo-s-ke
Abl	golumbo-s-tyr
Ins	golumbo-s-a

b.   *Case system of Naukan Eskimo*

	'dog'
Nom	aɣna-q
Erg/Gen	aɣna-m
Ins	aɣna-m-iŋ
All	aɣna-m-un
Loc1	aɣna-m-i
Loc2	aɣna-kun

2. All case bearing elements in Udmurt have exactly two case slots, e.g. D, N, A etc. Each slot can be filled by a syntactic or semantic case feature set (each consisting of a set of binary features). Consequently, these heads can receive up to two case values (= case stacking, cf. Merchant 2006; see section 5 for further discussion).

(30)   Case slots on the D head in the lexicon: [$]_c$ [$]_c$

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[3]Definition of the binary syntactic case features:
- [+obj]: a case that is (lexically) governed by a verb, assigned to its complement
- [−obl]: cases assigned to the core arguments of a verb in a given encoding system = nom, acc in a nominative-accusative language like Udmurt

[4]See also Halle (1997) for a case decomposition that characterizes genitive as oblique and structural.

[5]In Nanosyntax, semantic cases are also more complex than structural cases: privative case features are represented in a hierarchy in which the semantic cases dominate the structural cases, cf. Caha (2008, 2009).

This means that Udmurt exhibits syntactic case stacking similar to languages with overt stacking of case exponents:

(31)   *Case stacking in Huallaga Quechua (Plank (1995))*:

Hipash-nin-ta   kuya-: Hwan-pa-ta
daughter-3POSS-ACC love-1 Juan-GEN-ACC
'I love Juan's daughter.

3. Semantic cases fill two case slots on D: one slot is filled by the syntactic and the other one by the semantic case feature set of a semantic case. Structural cases only consist of a syntactic case feature set and thus fill only one of the slots on a functional head. Similar ideas have been put forward by Bejár & Massam (1999); Richards (2008). **Consequence: Only two structural cases can stack.**

The syntax:

1. D assigns genitive to a possessor in SpecD (but *never* ablative!); v assigns accusative to the internal argument, and T assigns nominative to the external argument.
2. Case assignment for structural and semantic cases is identical, both are assigned in the syntax. For the sake of concreteness, we follow Pylkkänen (2002); Řezáč (2008); Hole (2008) a.o. in that semantic cases are assigned by zero adpositions.
3. In order to model case concord, we assume that abstract case values are assigned to all case-bearing elements in the DPs via *Multiple Agree* (Hiraiwa (2001)).[6]
4. Case filter: Every DP must receive at least one abstract case feature set, i.e., only a single slot must be valued to fulfill the Case filter.

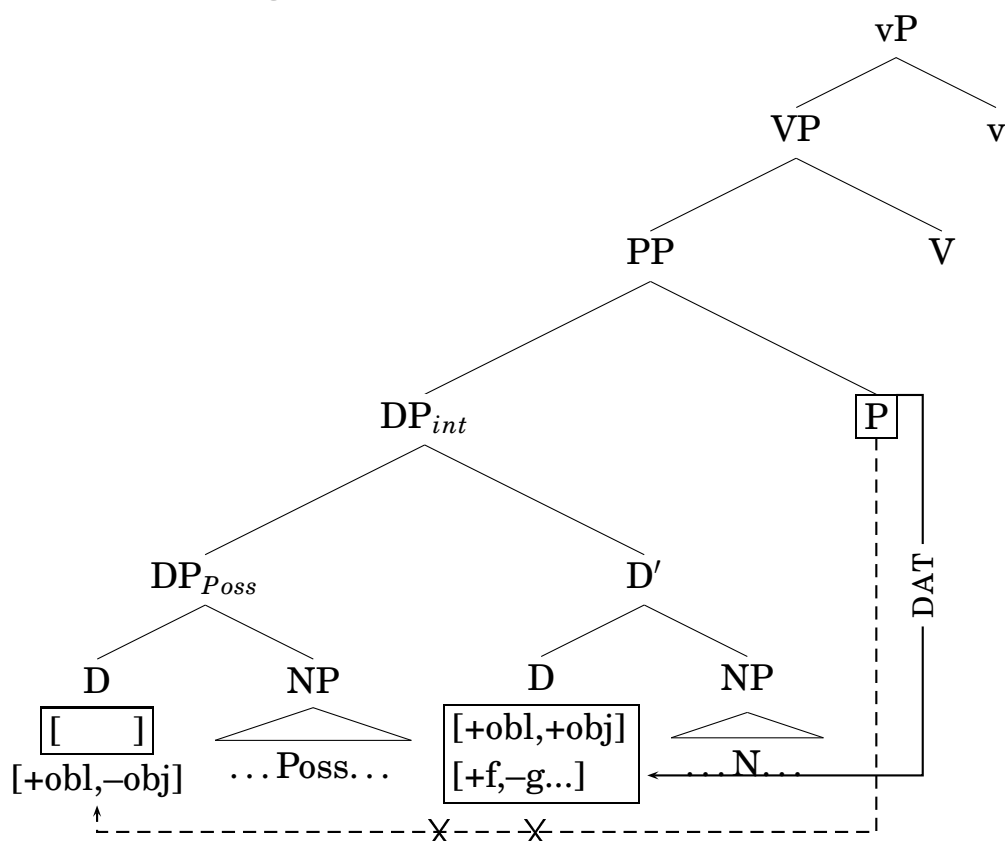Case assignment in clauses with a possessor proceeds as follows:
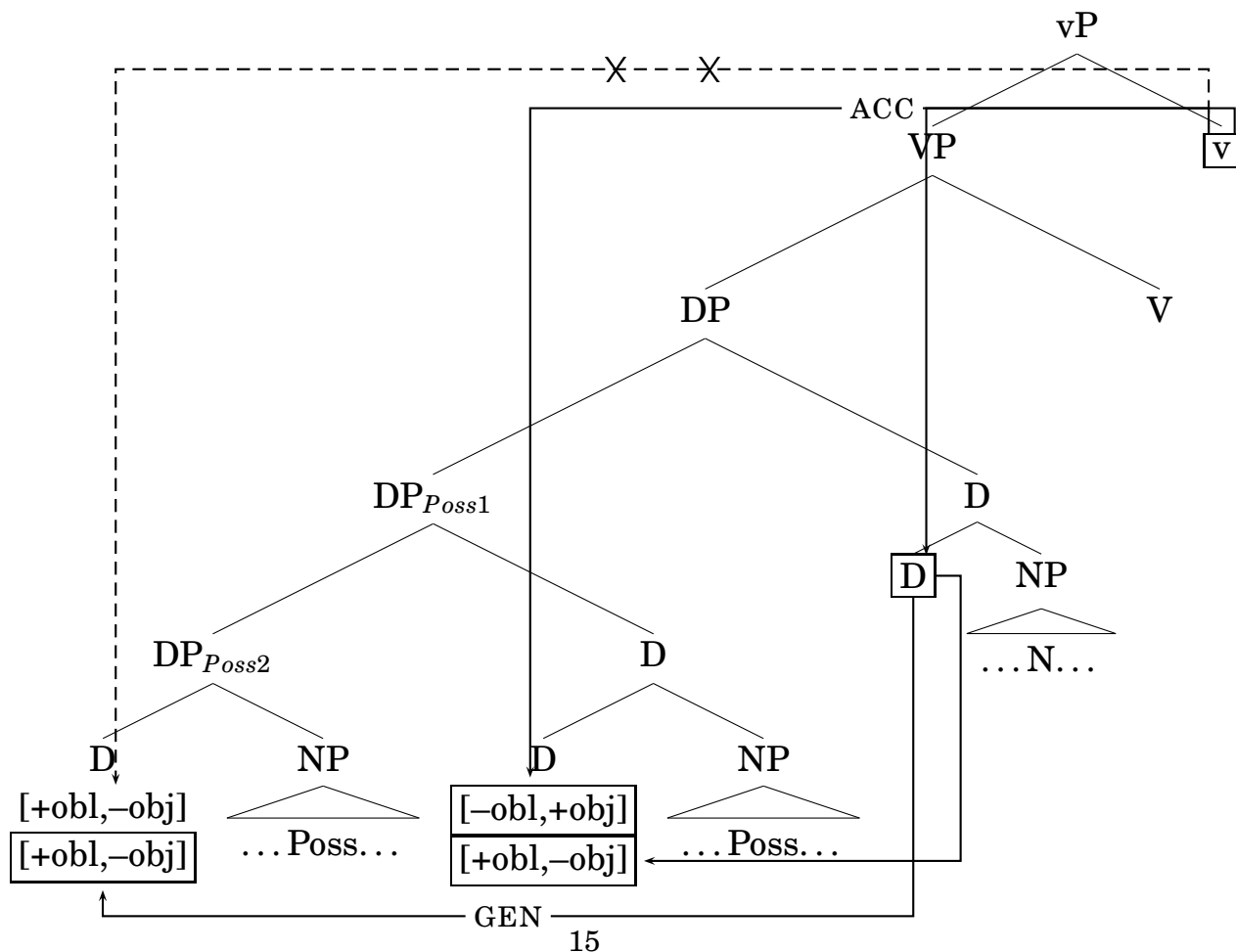
(32)   *Genitive case assignment in the DP*

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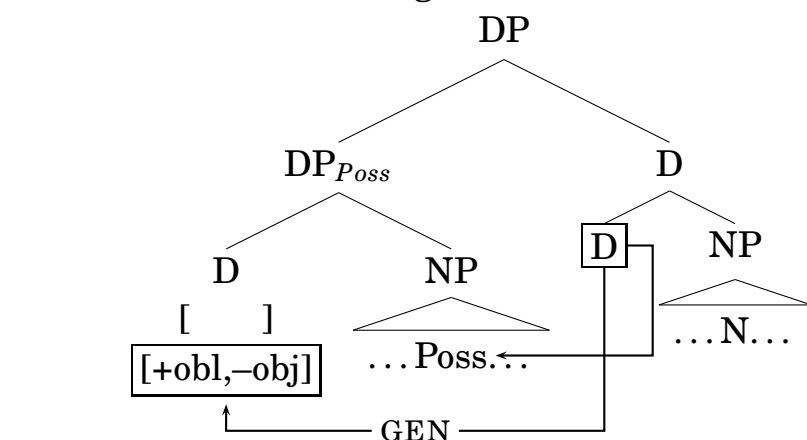
[6]Two related proposals on concord that would also be compatible with our analysis: (i) case is assigned to the sister node δ of a case assigner and, unless blocked by independent principles, the case value on δ then spreads downward in the domain dominated by δ (see Matushansky (2008); Bjorkman (to appear); Erlewine (2012) for such a proposal). (ii) Concord involves feature-sharing (cf. Frampton & Gutman, 2006; Schoorlemmer, 2009).

(33)   *Nominative case assignment*

```
                                    TP
                                  /    \
                               vP        [T]
                             /    \
                        DP_ext      v'
                        /    \     /  \
                  DP_Poss    D'   v ... DP_int
                   /   \    /   \
                  D    NP  D     NP
            [+obl,−obj]        [    ]
            [−obl,−obj] ...Poss... [−obl,−obj] ← ...N...
                   ↑_____ NOM _____
```
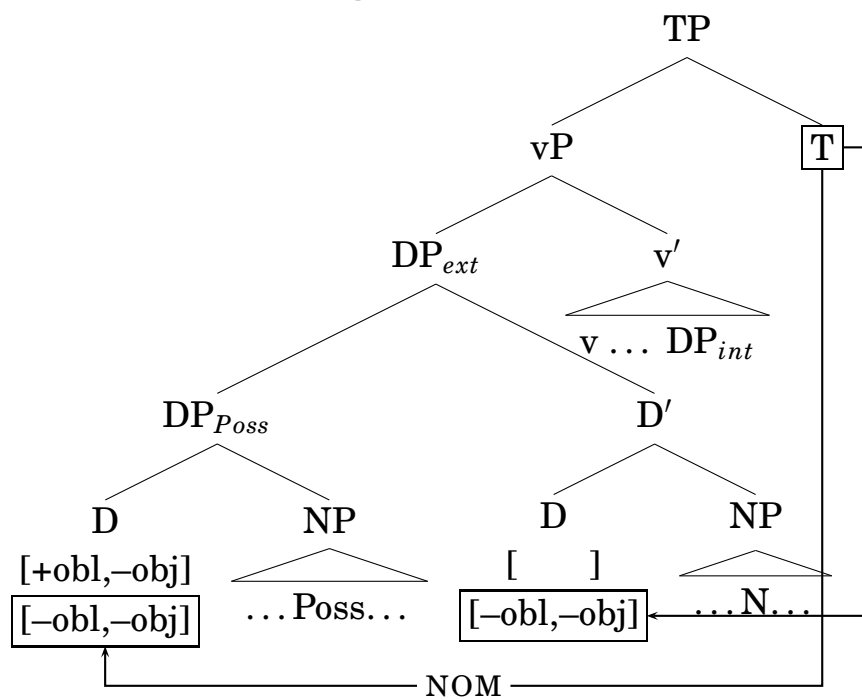
(34)   *Accusative case assignment*

```
                                    vP
                                  /    \
                               VP        [v]
                             /    \
                        DP_int      V
                        /    \
                  DP_Poss      D'
                   /   \      /   \
                  D    NP    D     NP
            [+obl,−obj]        [    ]
            [−obl,+obj] ...Poss... [−obl,+obj] ← ...N...
                   ↑_____ ACC _____
```

14

(35)   *Dative case assignment*

vP
VP v
PP V
DP$_{int}$ P
DP$_{Poss}$ D′
D NP D NP
[   ] ...Poss... [+obl,+obj] ...N...
[+obl,−obj] [+f,−g...]
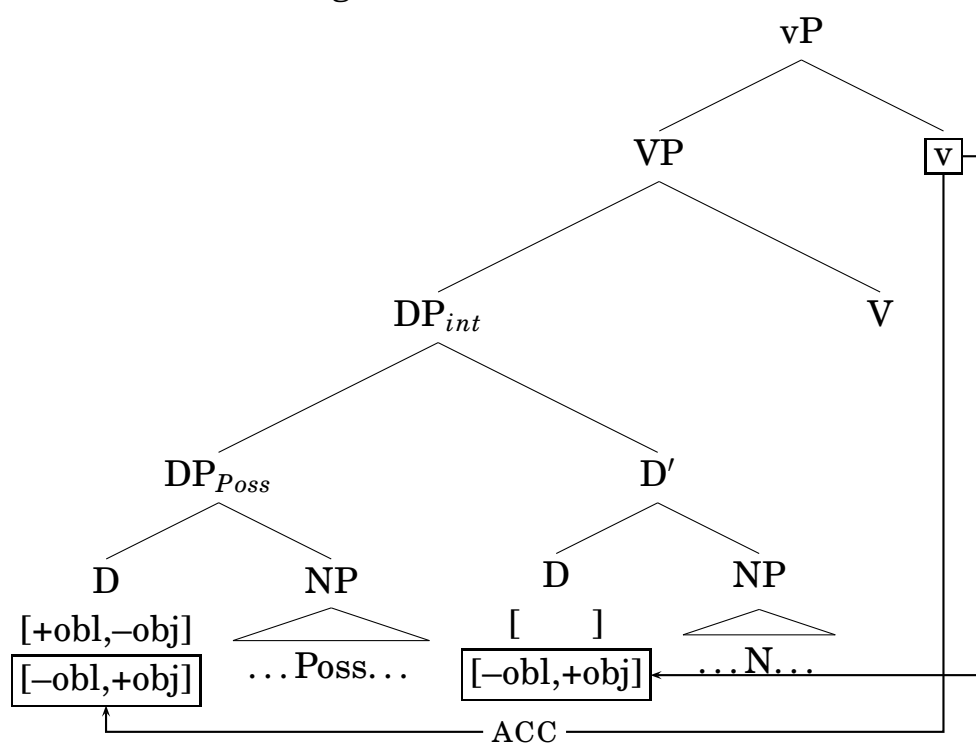
DAT

(36)   *Double Possessors: Genitive Case Assignment*

vP
ACC VP
v
DP V
DP$_{Poss1}$ D
D NP
DP$_{Poss2}$ D ...N...
D NP D NP
[+obl,−obj] ...Poss... [−obl,+obj] ...Poss...
[+obl,−obj] [+obl,−obj]

GEN

15

Udmurt exhibits syntactic case stacking. However, it does not allow for overt case stacking, with consequences for the morphological realization.

The morphology

- Case features are realized postsyntactically by the most specific matching marker (*Subset Principle*; see Halle & Marantz (1993, 1994)).
- The case vocabulary items (VIs) are exclusively specified for positive values of the binary features, see (37) (cf. Zwicky (1977); Wunderlich (1996); Harley & Ritter (2002); Nevins (2003)).
- The default nature of the ablative marker is represented as follows: the ablative VI is underspecified for semantic features.
- Udmurt has a filter which excludes the co-occurrence of two case exponents.
- In order to obey the filter, the two case slots on D have to fuse into one. Fusion is a set-building operation which unifies the features of the two case slots into one. The results of fusion are shown in (38).

(37)   *Vocabulary items in Udmurt*:

    [+obl+obj+f] ↔   (DAT)
    [+obl+obj]   ↔ <leš>   (ABL)
    [+obl]   ↔ <len>   (GEN)
    [+obj]   ↔ <e>   (ACC)
    [ ]   ↔ <Ø>   (NOM)

(38)   a. *gen+dat*

    [+obl, −obj] + [   ] $\xrightarrow{fusion}$ [+obl, −obj]   (=genitive VI)

    b. *gen+nom*

    [+obl, −obj] + [−obl, −obj] $\xrightarrow{fusion}$ [+obl, −obl, −obj]   (=genitive VI)

    c. *gen+gen*

    [+obl, −obj] + [+obl, −obj] $\xrightarrow{fusion}$ [+obl, −obj]   (=genitive VI)

    d. *gen+acc*

    [+obl, −obj] + [−obl, +obj] $\xrightarrow{fusion}$ [+obl, −obl, +obj, −obj]   (=ablative VI)

    e. *nom+acc*

    [−obl, −obj] + [−obl, +obj] $\xrightarrow{fusion}$ [−obl, −obj, +obj]   (=accusative VI)

- Recall that only structural cases can stack and thus fuse. Any combination of a semantic case and the genitive is excluded already in the syntax. Thus, the genitive case is realized on possessors in a DP with a semantic case, see (40-a).
- Since the nominative has only negative feature values, it will never have an impact on the realization of the case features, see (40-b).

- Since fusion is a set-building operation, identical feature values, as in (40-c) with two genitive case features, are deleted. Result: the genitive VI is inserted once.
- Fusion of abstract accusative and genitive creates a new case value which is both [+obl] and [+obj]. These features must be realized by a semantic case VI. However, since two structural cases have been combined, there are no semantic features ([±f], [±g], …) in the newly created feature structure. Hence, only the default semantic case VI can be inserted, which is the ablative VI, see (40-d).

Note:
The analysis presented above naturally accounts for the case pattern with multiple possessors where only the highest possessor can receive ablative case. Lower possessors will receive genitive twice which leaves no slot left for the accusative case to be assigned, which in turn does not create a context where the ablative marker can be inserted.

Interim conclusion:
- Udmurt allows for stacking of two structural cases in the syntax.
- Due to a morphological restriction, the case slots must be fused postsyntactically.
- In the case of a combination of abstract genitive and abstract accusative features, the case morpheme can only be realized by the ablative marker.
- In all other combinations of the genitive and another structural case, fusion results in a feature structure that must be realized by the genitive marker.
- **The ablative case on possessors is not an abstract syntactic case** but the most specific matching VI if abstract genitive and accusative fuse.
- gen+acc stacking: In the morphology, a new feature representation arises that was not present in the syntax: [+obl,+obj] (cf. Trommer 2006; Müller 2006; Georgi 2012).

5 Discussion of the consequences

5.1 Theoretical issues

Look-ahead and counter-cyclicity revisited
- New generalization: The possessor gets ablative if the DP containing it bears the accusative marker.
- Crucial assumptions: syntactic case stacking + postsynt. fusion of case feature sets
- The possessor is always assigned genitive but it may receive the case from the external head which selects the DP; no look-ahead in case assignment.
- Due to case stacking, all the relevant information (the case of the possessor and of the DP containing it) is locally available on the possessor.
- Since the determination of the case marker is postponed to the morphological component, counter-cyclic assignment of abstract ablative in the syntax is not required.

Locality of case assignment without locality restrictions
- In principle, the case assigner can be far away from the case assignee.
- However, since the number of case slots of a case assignee is limited and since the case slots are filled as soon as possible, the case assigners that are introduced later, i.e., which are farther away from the case assignee, cannot assign case anymore.
- Thus, the system restricts itself; locality of case assignment is not the result of absolute locality domains (like phases), but it is probably compatible with them.

Morphology as an autonomous component of grammar
- If the present analysis is on the right track, it suggests that morphology and syntax are different components of the grammar.
- The reason is that syntax and morphology may have conflicting constraints concerning the number of case slots: In Udmurt, the syntax allows for (limited) stacking, whereas the morphology does not.
- A repair mechanism (fusion) applies in order to reconcile the conflicting demands.

5.2   Cross-linguistic variation

- The analysis suggests that syntactic case stacking is widespread; however, it may be disguised by the morphological realization of stacked abstract cases.
- In fact, in many other languages, similar phenomena have been described as case stacking (referred to as *Suffixaufnahme*, cf. Plank 1995).
- Udmurt simply presents one of the four possible realization strategies that arises when there is syntactic but not overt case stacking.
- Prediction: Variation between languages results from the setting of two parameters (cf. Corbett (1995); Moravcsik (1995) for a similar typology of Suffixaufnahme):

  (i) restrictions on the number of cases that can stack (syntactically or overtly)
  (ii) morphological case stacking: yes or no

Parameter (i): There are (no) restrictions on the number of cases that can stack.

(39)   *Parameter (i): number of cases that can stack*
   a. *Number of cases limited*:
      (i) *limited to one*:
           no case stacking
      (ii) *limited to two*:
           in Kanyara and Mantharta languages (West Australia, Austin (1995))
           only two cases can stack overtly.
      (iii) *limited to three*
           . . .
   b. *Number of cases unlimited*: e.g. Martuthunira in (40).

- Setting (39-a-i) is trivial: Such a language does not have syntactic case stacking and hence, there can be no overt case stacking.
- Assumption: Udmurt represents an instance of the setting in (39-a-ii): Only two cases can stack in the syntax.
- Such a language-specific restriction is needed anyway: There are languages with overt case stacking that also have restrictions on the number of cases that can stack.

(40)   *Unlimited case stacking in Martuthunira (Pama-Nyungan, Corbett (2006, 135))*:

Ngayu   nhawu-lha [ngurnu   tharnta-a [mirtily-marta-a
1SG.NOM see-PST   that.ACC euro-ACC joey-PROP-ACC
[thara-ngka-marta-a]]]
pouch-LOC-PROP-ACC
'I saw that euro (hill kangaroo) with a joey (young kangaroo) in (its) pouch.'

Parameter (ii) on the realization of stacked abstract case values:

- A language exhibits syntactic case stacking (at least two cases can stack).
- Is there overt stacking? See the strategies in (41):

(41)   *Parameter (ii):*[7]
   a.   Realization of all cases: overt *case stacking*; e.g. Huallaga Quechua in (31).
   b.   Realization of only one case:
        (i)   *Case attraction*: the case value that is assigned last is realized; e.g. Rithangu in (42).
        (ii) *'Case maintenance' (first case realized)*: the case that is assigned first to an element is realized; e.g. languages without case stacking that do neither apply the allomorphy nor the case attraction strategy, e.g. German.
        (iii) *Allomorphy*: a "portmanteau" morpheme realizes all abstract cases at once; e.g. Udmurt, Beztha (and other Daghestanian languages).
        (iv) *Phonological repair*: Phonologically identical case markers are not tolerated; e.g. Jiwarli, Dyirbal.

- Rithangu (Pama-Nyungan, Schweiger (1995, 354f.)): The possessor bears genitive; the genitive marker is replaced by the case of the possessum if the latter is ablative, locative, allative or pergressive.

(42)   *Rithangu, case attration in the DP*:
   a.   n̲u-ŋu   d̲awal
        2SG-GEN country.NOM
        'your country'

---

[7]See Corbett (1995); Moravcsik (1995) for a similar though not identical typology of case stacking in the DP.

    b. waːn-i+nu+ra   n̠uː-kala-liʔ dawal-liʔ
        go-FUT+now+1SG 2SG-LIG-ALL country-ALL
        'I will now go to your country.'   *head=allative*

    c. yaka-nʔ-gu+n̄a+ra   l̥a-na   mad̠al̥uŋgu-y
        this=AUG=GEN=3SG=ACC=1SG spear-PST hook=spear-INS
        'I speared him with this [man's] hook spear.'   *head=instrumental*

- Case maintenance in (41-b-ii) is indistinguishable from the absence of syntactic case stacking: only a single case marker for the only/first abstract case assigned.

- Allomorphy in (41-b-iii): The stacked cases are realized by a marker M that does not correspond to any of the morphemes that would realize each of the abstract cases. Rather, M seems to be a kind of portmanteau morpheme that realizes all stacked cases (cf. Moravcsik (1995, 462) for the term portmanteau in this context).

- Indeed, the Udmurt pattern has been described as a special case of case stacking in the *typological* literature (cf. Corbett (1995); Kibrik (1995); Moravcsik (1995)). The present analysis is a formalization of this idea.

- Phonological repair in (41-b-iv): Case stacking is possible, but if the stacked case morphemes are phonologically identical, one of them is deleted (haplology effect), e.g. in Jiwarli (Pama-Nyungan, Austin 1995), Old Georgian (Kartvelian, Boeder 1995), Dyirbal (Pama-Nyungan, Schweiger 1995); see also Dench & Evans (1988)).

6 Conclusion

- Traditionally, the case split in Udmurt is described as being driven by the GF of the DP containing the possessor (i.e., its position in the tree). The choice of the possessor case in the DP thus seems to require look-ahead.

- We have argued that the case split does not depend on GFs, rather it is determined by the case value the entire DP is assigned.

- This generalization facilitates a reanalysis w/o look-ahead in terms of case stacking.

- The possessor is always assigned genitive in the DP and it is then assigned the case from the external head which selects the DP.

- Since there is only a single morphol. slot for a case marker in Udmurt, the two case features fuse into a single feature set in the postsyntactic morphological component.

- Only in case of a combination of genitive and accusative does a feature structure arise which is realized by the default semantic case VI, the ablative exponent. There is no abstract syntactic ablative case on the possessor.

- The distinction between abstract and morphological case is crucial for the analysis.

- From a typological perspective, Udmurt instantiates one of the various strategies to resolve the conflict that arises when there is syntactic but no morphological case stacking (sets of case features 'compete' for a single morphological case slot): fusion.

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