Case and connectivity in Moksha relative clauses

Mariia Privizentseva

1. Introduction

Inverse case attraction (ICA) is a phenomenon under which the head of a postnominal relative clause (RC) bears case assigned to a relativized element inside the relative CP. Example (1) shows ICA in Moksha Mordvin (Finno-Ugric): The head of the relative clause is marked for dative, even though it occupies the direct object position in the main clause and is expected to be marked for the genitive case in this position as shown in (2).

(1) $\text{GEN}_{ext} \leftarrow \text{DAT}_{int}$
Jalga-z'ə-**n'd'i**   [kona-**n'd'i** t'aš-n'ə-n']   mon   n'ɛj-sa.
friend-1SG.POSS.SG-DAT   which-DAT write-FREQ-PST.1SG   I[NOM] see-NPST.3SG.O.1SG.S
'I will see my friend to whom I have been writing.'

(2) Mon n'ɛj-sa   kurək jalga-z'ə-**n'/*n'd'i**.
I   see-NPST.3SG.O.1SG.S soon friend-1SG.POSS.SG-GEN/*DAT
'I will see soon my friend.'

RCs with ICA are attested in a number of languages; see Latin (Touratier 1980:147-211), non-standard Icelandic (Wood et al. 2017), Ingrian Finnish (Kholodilova 2013), Nez Perce (Deal 2016), and Koryak (Abramovitz 2021) among others. In this paper, I will present novel data from Moksha Mordvin. On the basis of these data I will argue that relatives with ICA are externally-headed, i.e., the head of the relative clause is outside of the relative CP. I will further argue that relatives with ICA are derived by the raising structure, according to which the head of the RC is first merged within the relative CP and then moves to its position in the main clause. This implies that raising derivation must be part of natural language syntax (Vergnaud 1974, Kayne 1994, i.a.). I also compare relatives with ICA and regular externally-headed relatives in Moksha and suggest that the raising derivation co-exists with the head-external generation (see Sauerland 1998, Bhatt 2002 for co-existence of several derivations for relative clauses). After this, I will consider the syntax of raising and suggest that it is best derived by projecting movement of the head noun phrase, which in turn follows from projection by selection approach to labeling (Chomsky 1995, Adger 2003) combined with the possibility of upward search (Baker 2008, Bjorkman & Zeijlstra 2019, i.a.).

I will proceed as follows. In section 2, I will present the evidence for relatives with ICA being externally-headed. In section 3, I will discuss connectivity effects and compare RCs with ICA and regular externally-headed RCs in Moksha. In section 4, I will present the implementation of raising.

2. RCs with ICA are externally-headed

In existing literature, virtually all possible RC structures were assigned to RCs with ICA. They were argued to be correlatives (Pittner 1995, Georgi & Salzmann 2017 and also Bianchi 1999, 2000), internally-headed relatives (Abramovitz 2021), or externally-headed relatives (Deal 2016). In this section, I will argue that relatives with ICA are externally-headed. My main argument comes from their semantic interpretation.

Since Grosu & Landman (1998) and Grosu (2002), three interpretations of relative clauses are standardly identified: appositive, restrictive, and maximalizing. Cross-linguistically, there are correlations between syntactic type of the RC and the set of possible interpretations. Correlatives can be only maximalizing (Grosu 2002, Lipták 2009, Brasoveanu 2012, Lin 2020); internally-headed relative clauses can be maximalizing or restrictive (Grosu 2002, 2012, Watanabe 2004 as well as Hanink 2021, Hucklebridge 2022), but not appositive (Lehmann 1984:278, De Vries 2002, Grosu 2012). Thus, if relatives with ICA have an appositive interpretation, they must be externally-headed.

The example in (3) shows that RCs with ICA can be appositive. This is ensured by a parenthetical.

(3)   NOM_{ext} ← GEN_{int}

(3) $\text{NOM}_{ext} \leftarrow \text{GEN}_{int}$
Rovnaj kaftə **pr'istupn'ik-n'ə-n'**   [kona-t'n'ə-n'   meždu pročim
straight two criminal-DEF.PL-GEN   which-DEF.PL-GEN between others
kunda-z'ən']   Pet'ɛ   vor'gəd'-kšn'ə-s'-t'.
catch-PST.3PL.O.3SG.S Petja[NOM] run.away-AVR-PST.3-PL
'Exactly two criminals, who Petja, by the way, caught, were running away.'

Incompatibility with continuation in (4) further confirms that the reference of the noun phrase is fully determined in the main clause.

(4)   #Kolmə-c'ə pr'istupn'ik-s'   vor'gəd'-kšn'ə-s'   no Pet'ɛ
three-ORD   criminal-DEF.SG[NOM] run.away-AVR-PST.3[SG] no Petja[NOM]
iz'-əz'ə   kunda son'.
NEG.PST-PST.3SG.O.3SG.S catch PRON.3SG.GEN
'The third criminal was also running away but Petja did not catch it.'

Relatives with ICA can be restrictive as well. Example (5) denotes an intersection of a set of criminals arrested by Petja and a set of criminals that were running away.

(5) $\text{NOM}_{ext} \leftarrow \text{GEN}_{int}$
Koj   kona **pr'istupn'ik-n'ə-n'**   [kona-t'n'ə-n'   kunda-z'ən']   Pet'ɛ
INDEF which criminal-DEF.PL-GEN   which-DEF.PL-GEN catch-PST.3PL.O.3SG.S Petja[NOM]
vor'gəd'-kšn'ə-s'-t'.
run.away-AVR-PST.3-PL
'Some criminals that Petja caught were running away.'

Relatives with ICA also show other properties typical for externally-headed relatives. For instance, they allow for stacking as shown in (6).

(6) $\text{NOM}_{ext} \leftarrow \text{GEN}_{int}$
Pɛr'ɛkɛ-t'   [**kona-n'**   pid'-əz'ə   sas'ədə-z'ə]
pie-DEF.SG.GEN   which-GEN cook-PST.3SG.O.3SG.S neighbor-1SG.POSS.SG[NOM]
[**kona-n'**   min'   srazu   seva-s'k]   ul'-s'   kapsta-n'.
 which-GEN we[NOM] immediately eat-PST.3.O.1PL.S be-PST.3[SG] cabbage-GEN
'The pie that my neighbor cooked that we immediately ate was with cabbage.'

I thus conclude that RCs with ICA pattern with externally-headed relatives. Existing literature uses other properties of RCs with ICA such as extraposition, coordination, extraction, and obligatory left-peripheral position to diagnose the type of the relative clause. In Privizentseva (2022), I show that these diagnostics are also compatible with externally-headed analysis and in fact shed no light on the position of the head inside or outside of the relative CP. Due to space limitations, I will only briefly discuss extraposition of relatives with ICA and the possibility of extraction out of the relative CP here.
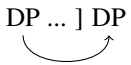
Starting with extraposition, data in (7) show that it is banned if the head shows case assigned inside the relative CP. Extraposition is possible for relatives with the regular external case.

(7) $\text{NOM}_{ext} \leftarrow \text{DAT}_{int}$
*** S't'ər'-n'ɛ-t'i**   tu-s'   kaftə n'ed'ɛl'a-t [**kona-n'd'i** maks-in'ə   kel'gəma
 girl-DEF.SG.DAT go-PST.3[SG] two   week-PL   which-DAT give-PST.3.O.1SG.S favorite
kn'iga-z'ə-n'].
book-1SG.POSS.SG-GEN
'The girl left for two weeks, whom I gave my favorite book.'

Abramovitz (2021) takes analogous data in Koryak as an indication that relative clauses with ICA are internally-headed. In fact, however, a ban on extraction is typical for raising relatives (Hulsey & Sauerland 2006, Takahashi & Hulsey 2009) and follows from the analysis of extraposition proposed in

Fox & Nissenbaum (1999). According to this analysis, the extraposed relative clause is late merged to the dislocated head noun that is then pronounced in its base position; see the derivation in (8).

(8) a. Movement of the head phrase

[MC [... DP ...] DP]

b. Late adjunction of the relative CP and realization of the lower copy

[MC [... DP ...] [~~DP~~ [CP rel.pron ...]]]

Under this analysis the ban on extraposition does not require for the final position of the head noun to be in the relative CP, but follows from the derivational path of the head noun. As I will argue in the next section, RCs with ICA are derived by raising, so that the head noun phrase is first merged within the relative clause. Consequently, the head cannot be merged into the main clause before merging with the relative CP as it would be required by the analysis of extraposition sketched above.

Turning now to the extraction out of the relative CP, the data in (9) show that CP-internal material can be placed to the left of the head noun.

(9) NOM$_{ext}$ ← DAT$_{int}$
Bibl'iat'eka-stə [**jalga-z'ə-n'd'i/*ø**   [kona-n'd'i   mon   sɛv-in'ə
library-EL   friend-1SG.POSS.SG-DAT/*NOM   which-DAT I[NOM] take-PST.3.O.1SG.S
kn'iga-t'   __]] kelk-si   luv-əm-s.
book-DEF.SG.GEN   love-NPST.3SG.O.3SG.S read-INF-ILL
'My friend for whom I took the book from the library loves to read.'

Since relative clauses are a textbook example of island structures (Ross 1967), one might suggest that the phrase that is to the left of the head must remain within the relative CP and be positioned in one of the split-CP projections (see Abramovitz 2021). If so, the data above then strongly argue that relatives with ICA are internally-headed. Data in (10) show that there is in fact evidence that the displaced phrase is outside of the relative CP. In this example it precedes not only the head of the relative clause but also further main clause material and is therefore outside of the relative CP.
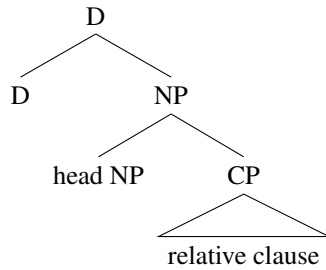
(10) NOM$_{ext}$ ← GEN$_{int}$
Bibl'iat'eka-stə mon   ar's'-an   [čtə [**kn'iga-t'**   kona-n'
library-EL   I[NOM] think-NPST.3[SG]   that   book-DEF.SG.GEN which-GEN
sɛv-əz'ə   __   Kat'ɛ] ašč-i   stol-sə].
take-PST.3SG.O.3SG.S   Katja   be-NPST.3[SG] table-IN
'I think that the book that Katja took from the library is on the table.'

These data reveal the possibility of extraction out of relatives with ICA and add up to the numerous examples in the literature showing that extraction out of a relative clause is possible under certain conditions (see Erteschik-Shir 1973, McCawley 1981, Engdahl 1997, Cinque 2010, Kush et al. 2013, Sichel 2018, Vincent 2021), but is compatible with the position of the head noun both inside and outside of the relative CP.
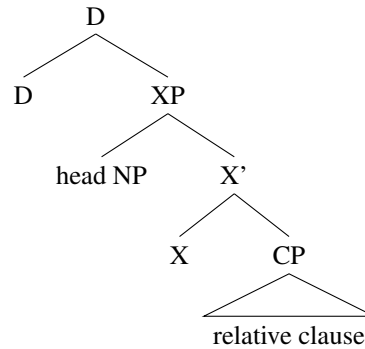
To sum up, RCs with ICA share their properties with regular externally-headed relative clauses and similarities to internally-headed relative clauses can in fact follow under CP-external position of the head noun as well.

In existing literature, at least two different structures were proposed for externally-headed RCs: The head noun phrase may have a regular DP structure as in (11) or the NP may be in the specifier of an additional functional projection; see (12).

(11) Head has a regular DP structure   (12) Head is in Spec,XP

The structure in (12) emerged due to the raising derivation, where the head NP moves out of the relative clause: Since movement typically targets specifier positions, the head occurs in the specifier of some projection (XP). Analyses differ with respect to the identity of the X head. It can be an extended C projection (Bianchi 1999, 2000) or some nominal head (Bhatt 2002, Deal 2016). Independently of the exact nature of this projection, it breaks down the spine of nominal projections, so that the NP is not D's complement, but a specifier of D's complement. In the rest of this section, I will show that such structure of the head DP makes incorrect predictions for nominal inflection and RCs with ICA must be thus assigned the structure in (11).

The evidence comes from morphological exponence on the head noun. Nouns in Moksha are marked for definiteness:

(13) kodamə bd'ə   pin'ə-**n'd'i**   (14) t'ɛ pin'ə-**t'i**
     how   INDEF dog-DAT   this dog-DEF.SG.DAT
     'to some dog'   'to this dog'

Data in (15)-(16) show that heads of RCs with ICA bear a regular definiteness inflection.

(15)   a.   NOM$_{ext}$ ← DAT$_{int}$
         T'ɛ pin'ə-**t'i**   [kona-n'd'i   maks-ən'   jar̥ca-ma] ašč-i   dvor-sə.
         this dog-DEF.SG.DAT   which-DAT give-PST.1SG eat-NZR   be-NPST.3[SG] yard-IN
         'This dog that I gave food is in the yard.'

      b.   NOM$_{ext}$ ← DAT$_{int}$
         Kodamə bd'ə   pin'ə-**n'd'i** [kona-n'd'i   maks-ən'   jar̥ca-ma] ašč-i   dvor-sə.
         how   INDEF dog-DAT   which-DAT give-PST.1SG eat-NZR   be-NPST.3[SG] yard-IN
         'Some dog that I gave food is in the yard.'

Definiteness is often associated with the D head and can appear on the noun via Lowering or head movement. Both these operations target heads of one projection line (Travis 1984, Baker 1988, Embick & Noyer 2001). This means that under Lowering definiteness is predicted to appear on the X head, not on the noun if the structure in (12) is assumed.

The argument can be generalized to be independent from specific operations such as head movement or Lowering that derive the realization of definiteness in a given position. This can be done by showing that definiteness in Moksha is generally not realized in the structural position occupied by the noun in (12); i.e., on (NP) specifiers of the main projection line. The data come from DPs that contain an NP modifier as in (16). The NP modifies the noun and arguably appears in a specifier of some nominal projection, that is, in the same structural position as the head of the relative clause under the structure with XP in (12). The example below shows that the definiteness exponents cannot be present on NP modifier of the noun, so it is also not expected to appear on the RC heads in (12), contrary to the data.

(16) Son n'ɛj-əz'ə   [[s'en'əm sel'mə**(-*s'/*t'n'ə)**]   s't'ər'-n'ɛ-**t'**].
     she see-PST.3SG.O.3SG.S   blue   eye-(*DEF.SG/DEF.PL) girl-DIM-DEF.SG.GEN
     'She saw the girl with these blue eyes.'

I conclude that relatives with ICA have the following structure: [$_{DP}$ D [$_{NP}$ NP [$_{CPrel}$ ...]]].

3. Connectivity effects

   In this section, I will turn to the CP-internal syntax of relatives with ICA. On the basis of connectivity effects and a comparison to regular externally-headed relatives as in (17), I will argue that relative clauses with ICA must be analyzed by raising.

(17)   Jalga-z'ə-**n'**   [kona-**n'd'i** t'aš-n'ə-n']   mon   n'ɛj-sa
        friend-1SG.POSS.SG-GEN   which-DAT write-FREQ-PST.1SG I[NOM] see-NPST.3SG.O.1SG.S
        kurək.
        soon
        'I will soon see my friend to whom I have been writing.'

The first diagnostic comes from idioms and is based on the assumption that parts of an idiom must be base generated as a constituent (Bach 1974, Chomsky 1980:149-153, and McCawley 1998:57). If so, the ability of the head noun to build an idiom with a material from the relative CP and/or with a material from the main clause, show whether the head noun is base generated there. I will use idiom *pan'žəms potmə* that translates as 'to open up / to tell everything' and has the literal meaning 'to open guts/insides'. Example (18) shows that if the head of the RC forms an idiom with the CP-internal material, then the head must be marked for internal case, i.e., for case assigned in the relative clause.

(18) $NOM_{ext} \leftarrow GEN_{int}$
        Potmə-nc/*c   [kona-n'   Vas'ɛ   **pan'ž-əz'ə**
        gut-3SG.POSS.SG.GEN/*NOM   which-GEN Vasja[NOM] open-PST.3SG.O.3SG.S
        ava-ncti   __] kunarə af   maks-i   pokoj.
        wife-3SG.POSS.SG.DAT   long.ago NEG give-PST.3[SG] rest
        'Everything that Vasja revealed to his wife was worrying him for a long time.'

In (19), the head forms the idiom with the main clause predicate. It then can be marked only for the external case, i.e., the case assigned in the main clause.

(19)   **Potmə-nc/*c**   [kona   kunarə af   maks-i   pokoj]
        gut-3SG.POSS.SG.GEN/*NOM   which[NOM] long.ago NEG give-PST.3[SG] rest
        Vas'ɛ   **pan'ž'-əz'ə**   ava-ncti
        Vasja[NOM] open-PST.3SG.O.3SG.S wife-DEF.SG.DAT
        'Vasja revealed to his wife everything that was worrying him for a long time.'

The second diagnostic comes from anaphor binding. According to condition A of the binding theory, anaphors must be bound by a local c-commanding object (Chomsky 1981, 1986). Example (20) shows that the anaphor in the head noun can be bound inside the relative CP only if the head has internal case. The possibility of logophoric binding is here excluded because its antecedent is inanimate (see Charnavel & Sportiche 2016, Charnavel 2019, and Charnavel & Bryant 2022).

(20) $NOM_{ext} \leftarrow DAT_{int}$
        Es'$_i$ luv-ij-ənzə-n'd'i/*ø   [kona-t'n'ə-n'd'i   t'ɛ   **kn'iga-s'$_i$**
        self read-PTCP.ACT-3SG.POSS.PL-DAT/*NOM   which-DEF.PL-DAT this book-DEF.SG[NOM]
        maks-i   nad'əja-ma __] uč-ij̊-t'   pe.
        give-NPST.3[SG] hope-NZR   wait-NPST.3-PL end
        'Its$_i$ readers whom this book$_i$ gave hope are waiting for the continuation.'

Unlike idioms, anaphor binding in by the main clause material is possible independently of the case on the head noun:

(21) $GEN_{ext} \leftarrow DAT_{int}$
        Es'$_i$ mašina-ncti/^{OK}nc   [kona-n'd'i   put-f   lama jarmak]
        self car-3SG.POSS.SG.DAT/^{OK}GEN   which-DAT put-PTCP.RES many money[NOM]
        Vas'ɛ$_i$ dagə pet'-əz'ə.
        Vasja[NOM] again repair-PST.3SG.O.3SG.S

'Vasja$_i$ again repaired his$_i$ car that a lot of money was invested into.'

The third diagnostic comes from condition C: R-expressions must be free throughout the derivation (Chomsky 1981). Coreference between the proper name in the head of the RC and the personal pronoun in the relative CP is not allowed if the head is marked for internal case:

(22)   NOM$_{ext}$ ← GEN$_{int}$
    Puškin-ən'$_j$ kn'iga-**nc**   [kona-n'   **son$_{i/*j}$**   t'ɛšt'-əz'ə
    Pushkin-GEN book-3SG.POSS.SG.GEN   which-GEN PRON.3SG[NOM] write-PST.3SG.O.3SG.S
    __   Pavləfskɛj dača-sə]   ašč-i   bibl'iat'eka-sə-nək.
    Pavlosk's country.house-IN be-NPST.3[SG] library-IN-1PL.POSS
    'Pushkin's book that he wrote in Pavlovsk's country house is in our library.'

Example (23) shows that relatives with the external case show no connectivity to the relativized position with respect to Condition C.

(23)   **Puškin-ən'$_j$** kn'iga-**c**   [kona-n'   **son$_{i/j}$**
    Pushkin-GEN book-3SG.POSS.SG[NOM]   which-GEN PRON.3SG[NOM]
    t'ɛšt'-əz'ə   __   Pavləfskɛj dača-sə]   ašč-i   bibl'iat'eka-sə-nək.
    write-PST.3SG.O.3SG.S   Pavlosk's country.house-IN be-NPST.3[SG] library-IN-1PL.POSS
    'Pushkin's book that he wrote in Pavlovsk's country house is in our library.'

    The data presented in this section are summarized in the table below:

(24)   Connectivity in Moksha relative clauses

Diagnostics	RC with internal case (ICA)	RC with external case
1. Idioms in the relative clause	OK	*
2. Idioms in the main clause	*	OK
3. Anaphor binding in the relative clause	OK	*
4. Anaphor binding in the main clause	OK	OK
5. Condition C in the relative clause	*	OK

I would like to suggest that the data are best captured if RCs with ICA are derived by raising: The head noun is base generated in the argument position of the relative CP. It obligatorily gets its case there and moves to the main clause after.

(25)   Raising derivation for relatives with internal case
       [$_{DP}$ <u>head-INT.CASE</u> [$_{CP}$ rel.pron C$_{rel}$ ... __$_{head-INT.CASE}$ ...]]

The derivational path of the head accounts for the connectivity profile. First, under the assumption that parts of an idiom must be base generated together (Bach 1974, Chomsky 1980:149-153, and McCawley 1998:57), base merge position in the relative CP enables idioms there. A position in the main clause is a derived one, so the requirement for parts of an idiom to be base generated together is not met. Second, I assume that anaphors must be bound and binding applies in syntax (Reuland 2001, 2011, Hicks 2008, Murugesan 2022) throughout the derivation (Barss 1986, 2001). The base position in the relative CP then allows for binding by c-commanding CP-internal material. After movement, the head noun occupies the position in the main clause and can therefore be bound there as well. Finally, I assume that condition C also applies in syntax, that is, DPs cannot be c-commanded by a co-referent pronoun in syntax.[1] Under ICA, the head noun must be in the relative CP to get case, so condition C applies.
    Relatives with external case on the other hand are best accounted for by the head-external generation:

(26)   Head-external derivation for relatives with external case
       [$_{DP}$ <u>head-EXT.CASE</u> [$_{CP}$ rel.pron C$_{rel}$ ...]]

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[1] Obviation of condition C for A-movement and adjuncts of Ā-moved phrases can be derived by late merge; see Takahashi & Hulsey 2009.

The head of the relative clause was not inside the relative CP at any stage of the derivation and therefore cannot form an idiom with the CP-internal material, be bound, or evaluated for condition C there. The head is first merged in the main clause, so that it can form idioms with the main clause material.

This analysis supports the co-existence of two structures for relative clauses in one language (Sauerland 1998; Bhatt 2002; Harris 2008).
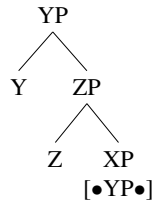
4. Projecting movement in raising RCs

The data so far have shown that the head of relatives with ICA must be outside of the relative CP, directly in the complement of the external D head, and that relatives with ICA are derived by raising. Since movement typically proceeds to a specifier position, the analysis that meets both empirical conclusions is surprisingly not trivial. What seems to be required is projecting movement of the head noun phrase in its landing site. One version of the derivation with projecting movement of the head was proposed in Donati & Cecchetto (2011), Cecchetto & Donati (2016), but for projection to succeed it requires the moved noun to be a syntactic terminal. Data on anaphor binding and condition C in the previous section show that it must be a phrase rather than just a terminal that moves from the relative to the main clause.

I would like to suggest that projection in the landing site is derived under projection by selection approach (see (27)) if search can apply upwards (Baker 2008, Zeijlstra 2012, Himmelreich 2017, Bjorkman & Zeijlstra 2019).
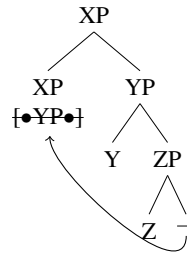
(27)   Projection by selection (Chomsky 1995, Adger 2003 as well as Stabler 1997):
        The item that selects is the item that projects.

Projecting movement then takes place in cases when movement is triggered by the merge feature on the moving syntactic object as sketched in (28)-(29). In this derivation, the merge feature on the XP probes upwards, finds its goal, and then ensures movement of the XP. Since the movement allows to check the merge feature on XP, XP also provides the label. Following Heck & Müller (2007), Merge features are indicated as $[\bullet F \bullet]$.

(28)   Base position

$$
\begin{array}{c}
YP \\
\diagup \diagdown \\
Y \quad ZP \\
\diagup \diagdown \\
Z \quad XP \\
[\bullet YP \bullet]
\end{array}
$$

(29)   Movement and projection

$$
\begin{array}{c}
XP \\
\diagup \diagdown \\
\underset{[\bullet YP \bullet]}{XP} \quad YP \\
\diagup \diagdown \\
Y \quad ZP \\
\diagup \diagdown \\
Z \quad \_
\end{array}
$$
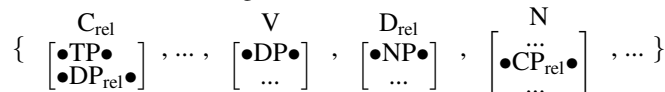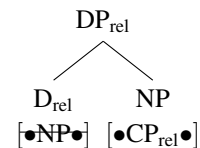
Raising relative clauses are then derived as follows. They start with the numeration in (30), where the head of the relative clause has a merge feature for the relative C. First, the relative pronoun (D_{rel}) is merged with the head NP as shown in (31).
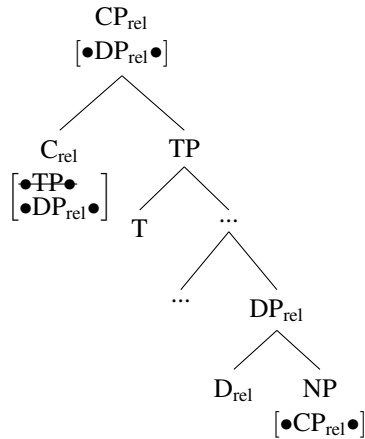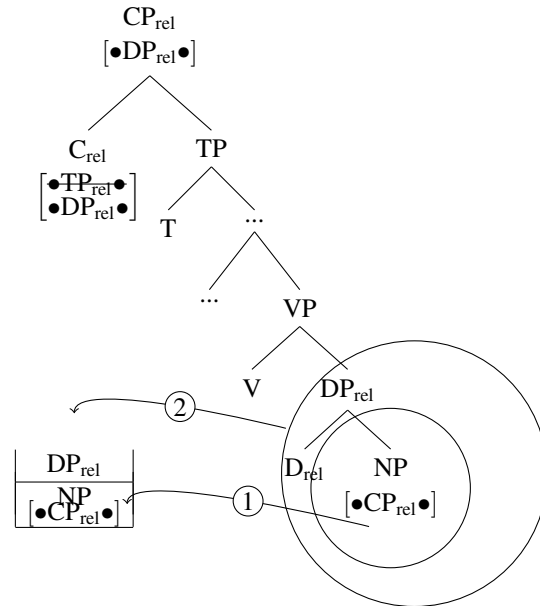
(30)   Numeration for raising relative clauses:

$$
\left\{ \begin{array}{c} C_{rel} \\ \begin{bmatrix} \bullet TP \bullet \\ \bullet DP_{rel} \bullet \end{bmatrix} \end{array}, \dots, \begin{array}{c} V \\ \begin{bmatrix} \bullet DP \bullet \\ \dots \end{bmatrix} \end{array}, \begin{array}{c} D_{rel} \\ \begin{bmatrix} \bullet NP \bullet \\ \dots \end{bmatrix} \end{array}, \begin{array}{c} N \\ \begin{bmatrix} \dots \\ \bullet CP_{rel} \bullet \\ \dots \end{bmatrix} \end{array}, \dots \right\}
$$

(31)   Relative DP

$$
\begin{array}{c}
DP_{rel} \\
\diagup \diagdown \\
\underset{[\bullet NP \bullet]}{D_{rel}} \quad \underset{[\bullet CP_{rel} \bullet]}{NP}
\end{array}
$$

Then, the relative CP is built in a regular way; see (32). After Merge of C_{rel}, $[\bullet DP_{rel} \bullet]$ and $[\bullet CP_{rel} \bullet]$ have both located their goals. I suggest that copies of the two syntactic objects that are to be displaced are then subsequently merged to the workspace and organized there in a stack (Heck 2016, Heck & Himmelreich 2017), similarly to features on the heads. I assume that the upward search is given precedence over the downward search (Assmann et al. 2015, Bjorkman & Zeijlstra 2019), so that the head NP is copied first.
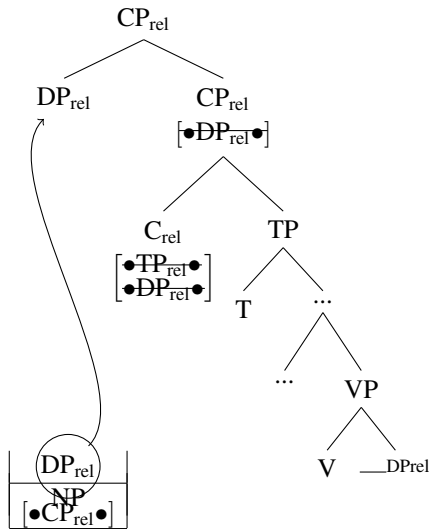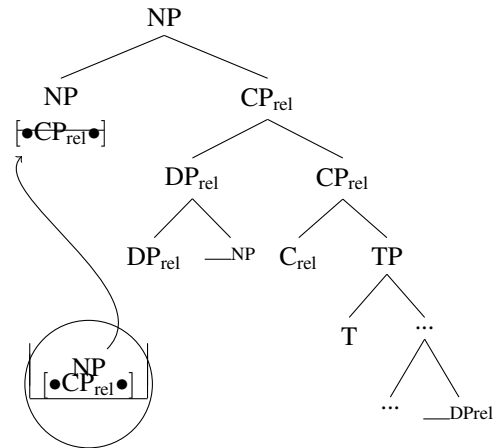
(32)   Relative CP

(33)   Search and copying

As DP$_{rel}$ is on the top of the stack, it is merged first; see (34). In the final step in (35), the head NP is merged with the relative CP. Since NP's merge feature is checked as a result of this merge step, it provides the label. After this, the NP can be combined with external D head and further main clause material in a regular way.

(34)   Merge of DP$_{rel}$

(35)   Merge of the head NP

Finally, a note on case marking on the head noun is in order. While raising derivation yields internal case (ICA) in Moksha, raising with external case is also attested in other languages (see, e.g., German). I would like to sugges that different orderings of [•CP$_{rel}$•] and a case probe underlie the difference in case marking. If the case probe precedes the merge feature, case is assigned in the relative CP before movement, i.e., case is internal. If the case probe follows the merge feature, case is assigned after movement, i.e., case is external. This accounts for a delayed valuation and the possibility of external case in raising relatives by ordering the feature lower in the feature stack and thus shielding it from the probing at earlier stages.

8

5. Summary

This study provides a detailed investigation of RCs with ICA in Moksha Mordvin. It shows that raising derivation is part of natural language syntax and must co-exist with head-external derivation. I then propose that raising syntax is best derived by projecting movement of the head noun phrase.

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