Syntax of Hindi: Head to Head and DP Movement
LING 462 Final Project

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Contents

1 Introduction

According to India's 2011 census, Hindi is spoken by 528,347,193 monolinguals, 139,207,180 bilinguals, and 24,160,696 trilinguals as a native language (Government of India 2011). This is not to mention the many native speakers living outside of India. All my relatives, including my parents, are fluent. However, I am only bilingually receptive, making this paper quite valuable for me personally.

In this paper I will explore Head-to-Head movement and DP movement. Basic data indicates the tense is located on the right side of the VP. Therefore, it is likely that all verbs may raise. (Aldridge 2008) mentions that Hindi is a split-ergative language.

As I have yet to look into the cases of Hindi, my hypothesis is that the subject may receive case in the specifier of the TP, similar to English. Passive voice may also move the object to the same position to receive case.

I will first look into gender and plurality, cases, and the X-bar Theory/ Deep Structure. I will then look into movements, supplementing my analysis with papers.

I will collect data directly from my parents (see my Data Statement for more information).

2 Data Statement

Curation Rationale: To attain targeted data for this project, I fed standardized English sentences to the L1 speakers to translate. I then parsed the Hindi sentence on my own to attain the word-by-word translation, verifying with the L1 speakers for words I do not understand as well as at the end. As the L1 speakers are not aware of the cases for Hindi, I used (Spencer 2005) to figure them out.

Language Variety: My parents were born and raised in New Delhi, and speak standardized Hindi.

Speaker Demographic: There are two speakers represented (my parents). One who identifies as male and the other as female. Both are represented by the following description. Both are in their 40s and consider themselves as Asian Indian in the US. In India, they consider themselves North Indian, or Punjabi. They are from the upper middle class. They immigrated together to the US 22 years ago. Sometimes they forget some words in Hindi due to long usage of English in the US, but they can easily recall the best word when looking it up online. Hindi, Punjabi, and the Indian dialect of English are their native languages. However, upon immigration to the US, they switched to a more standardized US dialect of English.

Annotator Demographic: I am the annotator for all the data. I was born and raised in the US, considering myself Asian Indian American and from the upper middle class. My only native language is English, but I consider myself receptively bilingual in Hindi. I can understand a great amount of it, but not speak, read, or write it. This works well for me when doing word for word translations to English. I have an undergraduate level of training in linguistics syntax. I am in my early twenties.

Speech Situation: I received the written data at my own home in a comfortable setting. My parents directly type the sentence onto my computer, with synchronous interaction to make sure they understand the kind of sentence they are being asked for. I collected data for this project over the entire duration of the project.

3   Gender and Plurality

Hindi has two genders, masculine and feminine. Some words have a neutral gender, where the gender of the speaker is what helps with agreement with other words (masculine or feminine). Most nouns have a pre-defined masculine or feminine grammatical gender (1)-(4), in which it uses to have agreement with determiners, adjuncts, and sometimes predicates. However, sometimes speakers may use a noun, such as "I," which is pre-defined to be neutral, then the agreements with the noun will be matched by the gender of the speaker. If the speaker identifies as female, they take on the verb with a feminine agreement (5). If they are male, they use the masculine agreement (6). Non-binary tend to use the masculine plural agreement. Other nouns and verbs may also be neutral, in which words they must match with (whether masculine of feminine) always work.

(1) mera   dost   gaatta   hai
     my[MASC.SG] friend[MASC.NOM] sing[MASC.SG] be[SG.PRES]
     "My friend sings."

(2) meri   saheli   gaati   hai
     my[FEM] friend[FEM.SG.NOM] sing[FEM] be[SG.PRES]
     "My friend sings."

(3) mere   dost   gaatte   hain
     my[MASC.PL] friend[MASC.NOM] sing[MASC.PL] be[PL.PRES]
     "My friends sing."

(4) meri   saheliya   gaati   hain
     my[FEM] friend[FEM.PL.NOM] sing-FEM be[PL.PRES]
     "My friends sing."

(5) mai   gaati   hu
     I[NEUT.NOM] sing[FEM] be[SG.PRES]
     "I sing."

(6) mai   gaata   hu
     I[NEUT.NOM] sing[MASC.SG] be[SG.PRES]
     "I sing."

Looking at the above sentences, we can also see that plurality can be marked on the determiner, noun, verb, and tense. Though it seems according to (3) and (4), that the determiner or noun may be required for the plurality suffix but not both.

4   Cases

Hindi is a split-ergative language (Bhatt 2005). Below is information on cases (Spencer 2005).

Cases	Markers	Explanation
nominative	N/A	subject marker
ergative	ne	subject marker for transitive verbs in the perfect aspect
accusative	ko	direct object marker
dative	ko	subject marker
instrumental	se	"with," "using," "by"
genitive	kaa	possession marker
inessive	me	"in," "inside"
adessive	pe/par	"on," "at"
terminative	tak	"until," "till," "up to"
semblative	sa	"like," "similar to," "resemble," "-esque," "-ish"

Table 1: Cases in Hindi

The Nominative-Accusative system is the default system for Hindi. When a verb is both transitive and perfect, it marks the subject as ergative. However, the object is still marked as accusative. According to the native speakers I attained data from, the accusative marker is optional to explicitly state (7). The dative case is often used on subjects when a state, rather than an action, is being stated by the verb (11)-(12). The dative case is also often used to mark the receiver in ditransitive verbs (13).

Something to note: When the subject is nominative, the verb is not both transitive and only has the perfect aspect, then the verb agrees in gender with the subject (9)-(10). When the subject is ergative, the verb is both transitive and perfect, the verb agrees in gender with the object (7)-(8). (Aldridge 2008).

When the subject has dative case (11-12) the verb tends to agree in gender with the object.

(7) Usne   apna   khana   (ko) kha   liya
He[NEUT.ERG] his[NEUT] food[MASC] ACC eat[NEUT] have[NEUT]
hai
be[NEUT.PRES]
"He has eaten his food."

(8) Usne   roti   kha   lee   hai
He[NEUT.ERG] roti[FEM] eat[NEUT] have[FEM] be[NEUT.PRES]
"He has eaten roti."

(9) Woh   roti   khaata   tha
He[NEUT.NOM] roti[FEM] eat[MASC] be[MASC.PAST]
"He ate roti."

(10) Woh   apni   roti   khata   raha
He[NEUT.NOM] his[FEM] roti[FEM] eat[MASC.PERF] PROG[MASC]

tha
be[MASC.PAST]

"He had been eating his roti."

(11) Nanima   ko budapa   laga   hai
Grandma[FEM] DAT old-age[MASC] hit[MASC] be[NEUT.PRES]

"Grandma reaches old age."

(12) Kutte   ko bukh   lagi   hai
dog[MASC] DAT hungry[FEM] hit[FEM] be[NEUT.PRES]

"The dog is hungry."

(13) Wo   khana   kutte   ke paas   laya
He[NEUT.NOM] food[MASC] dog[MASC] DAT near[NEUT] bring[MASC]
tha
be[MASC.PAST]

"He brought the food to the dog."

5   X-bar Theory and Deep Structure

Let us first figure out the DP structure. In Hindi, it seems as there are no determiners such as "the" and "a" in English. Instead definiteness is usually figured out by context. If someone needs to make a distinction between the definite and indefinite, demonstrative determiners may be used. Quantifiers may also be used as well, as seen in (16)-(17).

(14) Billie   kaattee hai
cat[FEM.NOM] bite[FEM] be[NEUT.PRES]

"The/A cat bites."

(15) Yeh billie   kaattee   hai
this cat[FEM.NOM] bite[FEM] be[NEUT.PRES]

"This cat bites."

(16) Ek billie
one cat

"One cat."

(17) Kuch billi-yon
some cat-PL

"Some cats."

(18) Woh billie
that cat

"That cat."

(19) Yeh billiyan
     that cats
     "These cats."

Determiners are always placed before the noun, as seen in the above examples.

When using quantifiers and demonstrative determiners in the same sentence, the demonstratives always precede first, as seen in (21) and (23).

(20) Teen kutte   woh   gend   laaye   the
     three dogs[MASC.NOM] that[NEUT] ball[FEM] bring[NEUT] be[NEUT.PAST]
     "The three dogs fetched that ball."

(21) Woh   teen billiyan   oon se   khelti   hain
     that[NEUT] three cats[FEM.NOM] yarn with[INS] play[FEM] be[NEUT.PRES]
     "Those three cats play with the yarn."

(22) Sab   billiyan   kaattee   hain
     all[NEUT] cats[FEM.NOM] bite[FEM] be[NEUT.PRES]
     "All cats bite."

(23) Woh   sab   billiyan   kaattee   hain
     that[NEUT] all[NEUT] cats[FEM.NOM] bite[FEM] be[NEUT.PRES]
     "All those cats bite."

Possession can be indicated by use of the free genitive, as seen in (24) and (25).

(24) Meri mummy ki   billie
     my   mom   GEN cat
     "My mom's cat"

(25) Sally ki   billie
     Sally GEN cat
     "Sally's cat"

Looking at the examples above, we can conclude the rules for the DP are:

DP → (DP) D'

D' → D NP or D DP

(1) Tree for the DP subject in (21).

```
                    DP
                    |
                    D'
                   /  \
                  D    DP
                 Woh   |
                 that  D'
                      /  \
                     D    NP
                   teen   /\
                   three billiyan
                         cats
```

(2) DP tree for (24).

```
                 DP
                /  \
              DP    D'
              |    /  \
              D'  D    NP
             /  \ ki   /\
            D   NP GEN billie
          Meri  /\     cat
          my  mummy
              mom
```
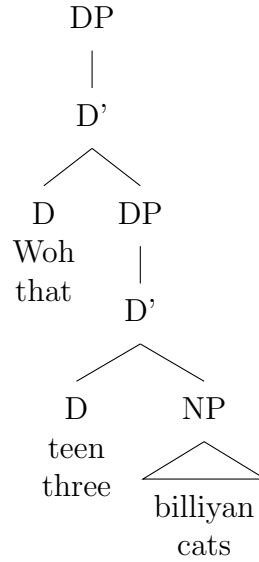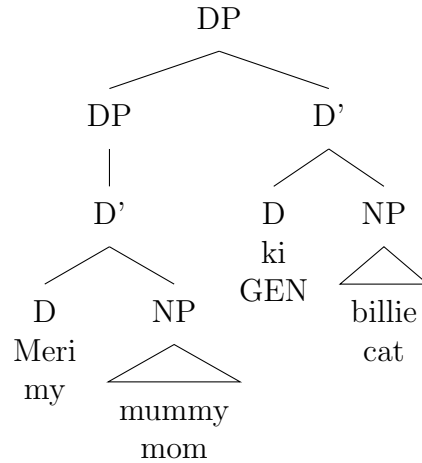
Examples (26)-(30) demonstrate use of adjectives and adverbs. Through all the examples, we can see that adjectives and adverbs always occur between the determiners and noun in the NP. Additionally, adverbs in the NP occur before the adjectives, as in (28) and (30). (29) also shows that adjectives can be stacked.

In the VP, adverbs seem to occur before the verb as in (28) and (29). (28) also shows evidence that adverbs may also stack, however it is seen in a form similar to a PP. Both 'buri' and 'tarah' must take the case of 'se.' Furthermore, take note that the adverb 'tarah,' following the adverb 'buri,' modifies 'buri,' and not the other way around.

Additionally, from these sentences and the ones above, we can infer that Hindi is a SOV language, as the object always occurs before the verb.

(26)   Woh teen sust billiyan   oon se   khelti   hain
        that three lazy cats[FEM.NOM] yarn with[INS] play[FEM] be[PRES]

7

"Those three lazy cats play with the yarn."

(27) Yeh   matlabi billie   kaattee   hai
this mean   cat[FEM.NOM] bite[FEM] be[PRES]
"This mean cat bites."

(28) Bahut khonkhaar billie   ne   mera haath   buri tarah se
very   fierce   cat[FEM] ERG my   hand[MASC] bad very ish[SEMB]
kaata   tha
bite[MASC] be[MASC.PAST]
"The very fierce cat bit my hand very badly."

(29) Sab badi kali   khonkhaar billiyan   dardnaak kaattee   hain
all   big   black fierce   cats[FEM.NOM] painfully bite[FEM] be[NEUT.PRES]
"All big fierce black cats bite painfully."

(30) Ajeeb   shant kutte   ne   tauliya   chori   kiya
strangely quiet dog[MASC] ERG towel[MASC] steal[NEUT] do[NEUT]
tha
be[MASC.PAST]
"The strangely quiet dog stole the towel."

We now have enough information to create the rules for the NP, AdjP, and AdvP.

NP → N'	AdjP → Adj'	AdvP → Adv'
N' → (AdjP) N'	Adj' → (AdvP) Adj'	Adv'→ Adv' (AdvP)
N' → N	Adj' → Adj	Adv' → Adv

(3) Here is the tree for the DP subject in (30).

```
                                         DP
                                          |
                                          D'
                                         / \
                                        D   NP
                                      ∅_Def  |
                                             N'
                                            / \
                                         AdjP   N'
                                          |      |
                                         Adj'    N
                                         / \   kutte
                                      AdvP  Adj'  dog
                                       |     |
                                      Adv'   Adj
                                       |    shant
                                      Adv   quiet
                                    Adjeeb
                                   strangely
```
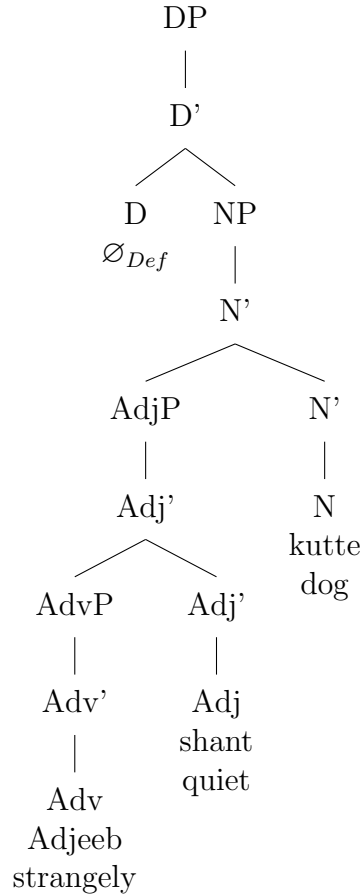
However, it seems that complements are not required to be right next to the verb as in English. This will be looked in to further after this paper written for class. However, it is most probable that due to the many overt case markings, Hindi allows the complement to move around adjuncts more freely in VPs. An example of the complement not next to the verb is shown in (31) and (34). (32)-(33) and (34)-(36) shows examples of the same sentence, moving around the adjuncts and complements. In (31), "kharide"/ "morning" will be treated as an adverb, similar to "yesterday" in English.

To fit this into the binary construction we have been making, we can infer that the complement DP receives it's case in the position right next to the verb. But then afterwards it is free to move in between the adjuncts.

(31)   Us   aadmi   ne   kapade   dukaan se   subah
       that person[NEUT] ERG clothes[MASC] shop   from[ABL] morning
       khareede   the
       buy[NEUT] be[NEUT.PAST]
       "That person bought clothes from the shop in the morning."

(32)   Us   aadmi ne   dukaan se   delhi mein   kapade khareede the
       that person ERG shop   from[ABL] Delhi in[INE] clothes buy   be[PAST]

"That person bought clothes from the shop in Delhi."

(33) Us aadmi ne   delhi mein dukaan se   kapade khareede the
     that person ERG Delhi in[INE] store   from[ABL] clothes buy   be[PAST]

"That person bought clothes in Delhi from the shop."

(34) Us aadmi ne jaldi   se   kapade mol   tol   se   khareede
     that person ERG quickly ish[SEMB] clothes bargain price by[INS] buy
     the
     be[PAST]

"That person bought clothes quickly for the bargained price."

(35) Us aadmi ne jaldi   se   mol-tol   se   kapade khareede
     that person ERG quickly ish[SEMB] bargain-price by[INS] clothes buy
     the
     be[PAST]

"That person bought clothes quickly for the bargained price."

(36) Us aadmi ne mol-tol   se   jaldi   se   kapade khareede
     that person ERG bargain-price by[INS] quickly ish[SEMB] clothes buy
     the
     be[PAST]

"That person bought clothes for the bargained price quickly."

We now have enough data to write out the VP, PP, and TP rules. The VP rules illustrated are for where the complement is generated directly next to the verb. The subject is generated in the specifier of the VP. Note that these are Deep Structure Rules. As for the PP, many of the cases we have looked in Hindi that do not pertain to the subject or the object act like PPs, so I will treat them as PPs. However using this method allows for adverbs to allow be generated as a complement. As seen through many of our examples, tense is located on the outer right. Note that the VP complement under the VP is to showcase stacked VPs.

VP → (DP) V'

V' → (Adv) V' or (PP) V'

V → (DP) V or (VP) V

PP → P'   TP → T'

P' → DP P or AdvP P   T' → VP T

(4) The Deep Structure TP tree for examples (34)-(35).

10

(4)

TP
|
T'
├── VP
│   ├── DP
│   │   └── Us aadmi ne / that person ERG / **un-received case**
│   └── V'
│   ├── VP
│   │   └── V'
│   │   ├── PP$_{SEMB}$
│   │   │   └── P'
│   │   │   ├── AdvP
│   │   │   │   └── Adv'
│   │   │   │   └── Adv / jaldi / quickly
│   │   │   └── P / se / SEMB
│   │   └── V'
│   │   ├── PP$_{SEMB}$
│   │   │   └── P'
│   │   │   ├── DP
│   │   │   │   └── D'
│   │   │   │   ├── D / $\varnothing_{Def}$
│   │   │   │   └── NP
│   │   │   │   └── N'
│   │   │   │   └── N / mol tol / bargain price
│   │   │   └── P / se / SEMB
│   │   └── V'
│   │   ├── DP$_{ACC}$
│   │   │   └── D'
│   │   │   ├── D / $\varnothing_{Indef}$
│   │   │   └── NP
│   │   │   └── N'
│   │   │   └── N / kapade / clothes
│   │   └── V / kharede / buy
│   └── V / the / be$_{past}$
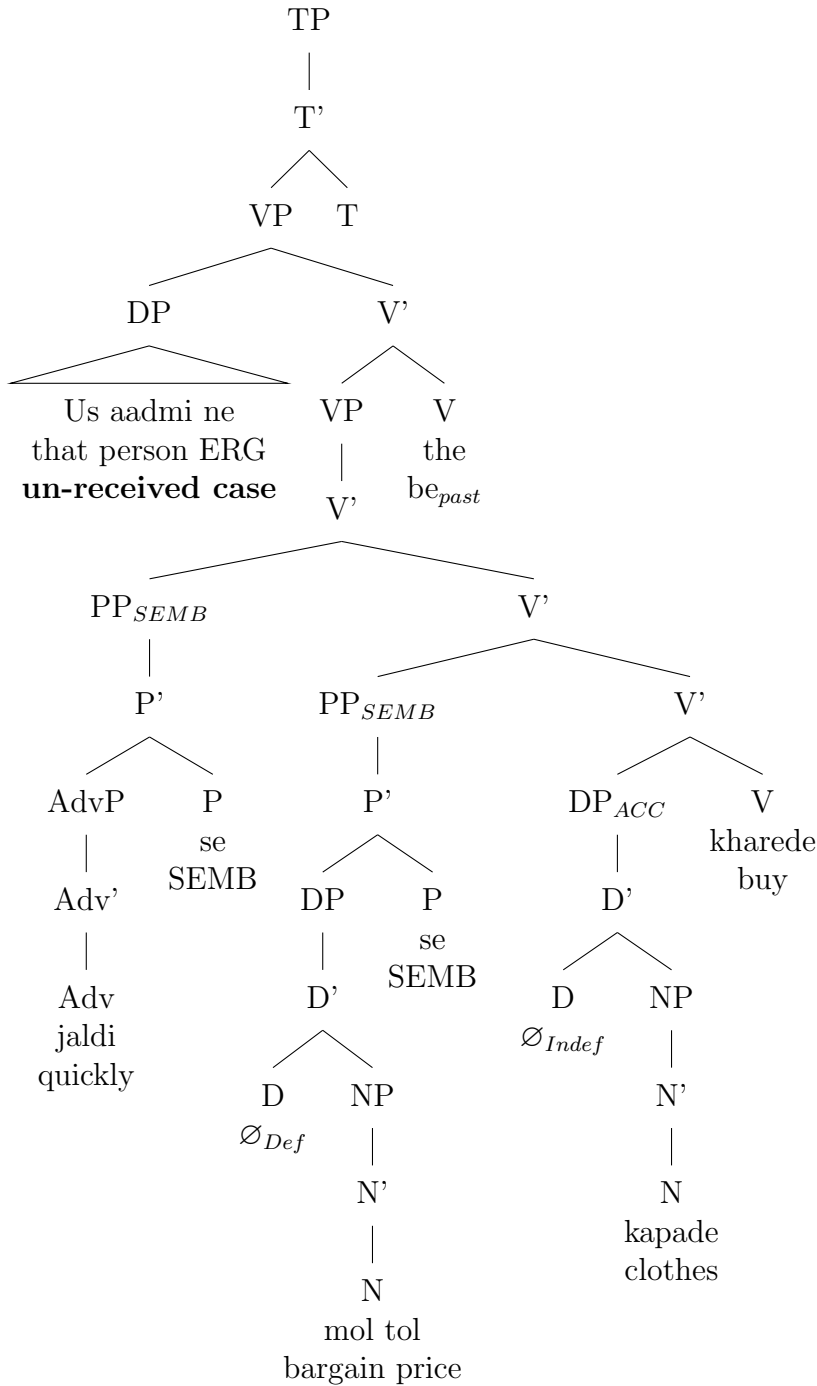
Notes for tree (4): As both the PPs for the semblative case receive case where they originate in deep structure, I have indicated that. The DP object, receives accusative case in its original place in deep structure as well. I have not assigned case yet for the subject, as that will be looked at later on with DP movement. The DP subject may also change where it generates, as it should usually be generated in the specifier of the voice VP, but we have yet to look into that. I have not yet indicated verb raising either,

as that will be looked at in Head-to-Head movement, and hence the T remains empty for now.

(5) The Deep Structure TP tree for (28).

(5)

```
                              TP
                              |
                              T'
                             /  \
                           VP     T
                          /  \
                        DP     V'
                       / | \   /  \
        Bahut khonkhaar billie ne  VP    V
        very fierce cat ERG        |    tha
        un-received case           V'   be_past
                                 /    \
                            PP_SEMB     V'
                               |       /  \
                               P'   DP_ACC   V
                             /   \    |    kaata
                          AdvP    P   D'    bite
                            |    se   /  \
                          Adv'  SEMB D    NP
                          /  \  mera  |
                      Adv'  AdvP  my  N'
                        |     |        |
                      Adv    Adv'      N
                      buri    |      haath
                      bad    Adv      hand
                           tarah
                           very
```
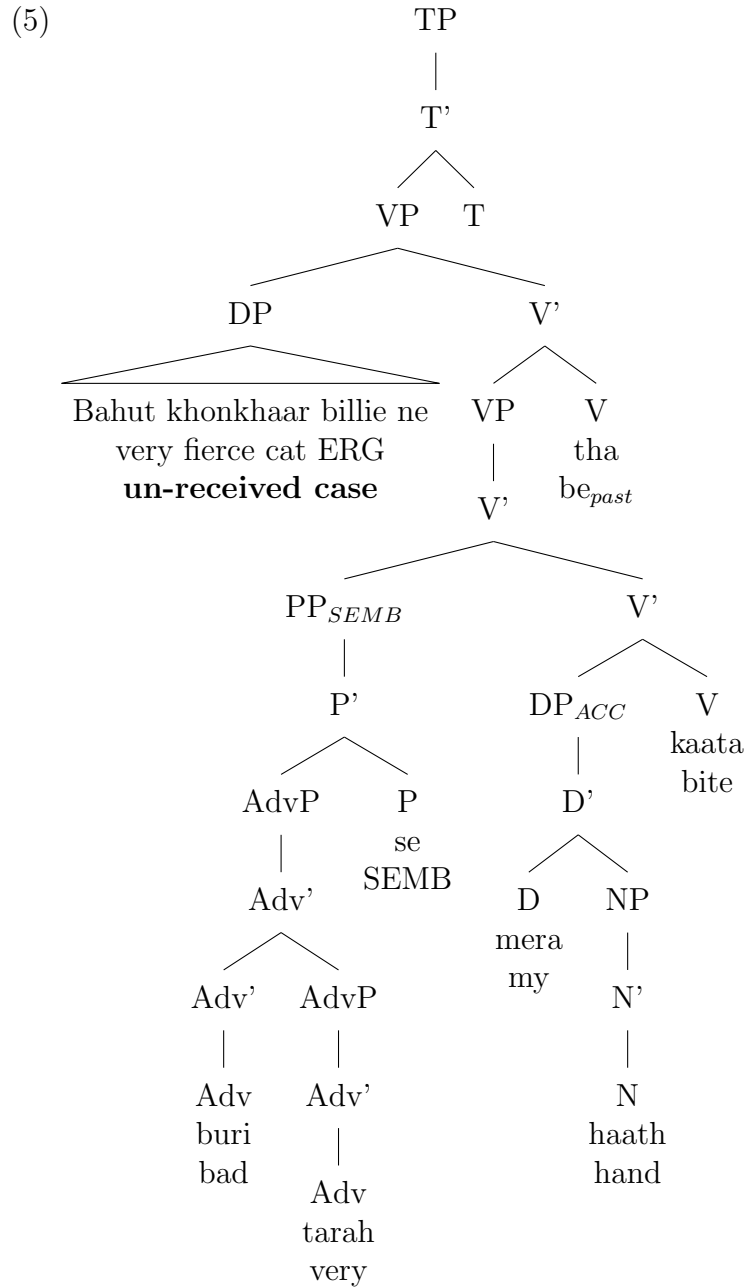
Notes for tree (5): See tree (4) notes.

Looking at a few data for embedded clauses and yes-no questions, we can figure out the rules for CP. Question particles and complementizers always occur at the beginning of a clause, covertly or overtly. Take note that with embedded clauses, (39)-(42), the

word order is not longer SOV, and is now SVO.

(37) Kya yeh roti hai?
Q this[NEUT] roti[FEM] be[NEUT.PRES]
"Is this roti?"

(38) Tumko chaawl pasand hain
you[NEUT.DAT] rice[MASC] like[NEUT] be[NEUT.PL.PRES]
"You like rice."

(39) Maine kaha tumko chaawl pasand
I[NEUT.ERG] said[NEUT.PAST] you[NEUT.DAT] rice[MASC] like[NEUT]
hain
be[NEUT.PRES]
"I said you like rice."

(40) Maine kaha ki tumko chaawl pasand hain
I[NEUT.ERG] said[NEUT.PAST] that you[DAT] rice like be[PRES]
"I said that you like rice."

(41) Kya tumko chaawl pasand hain?
Q you[NEUT.DAT] rice[MASC] like[NEUT] be[NEUT.PRES]
"Do you like rice?"

(42) Maine poocha kya tumko chaawl pasand hain
I[ERG] ask[NEUT.PAST] Q you[DAT] rice like be[PRES]
"I asked do you like rice."

Therefore, the CP rule for Hindi is:

CP → C'

C' → C TP

We can also update that the VP can take a CP complement.

VP → (DP) V'

V' → (Adv) V' or (PP) V'

V → (DP) V or (VP) V or V (CP)

(6) CP Tree for (42)

```
                              CP
                              |
                              C'
                            /    \
                        C_−Q     TP
                        ∅_−Q      |
                                  T'
                                /    \
                              VP      T
                            /    \
                          DP      V'
                         /‾‾\    /    \
                       Maine   V      CP
                        I    poocha    |
                            ask_past    C'
                                      /    \
                                   C_+Q    TP
                                   kya      |
                                    Q       T'
                                          /    \
                                        VP      T
                                      /    \
                                    DP      V'
                                   /‾‾\    /    \
                                 tumko   VP      V
                                  you    |      hain
                                         V'    be_pres
                                       /    \
                                      DP      V
                                     /‾‾\   pasand
                                  chaawl    like
                                    rice
```

14
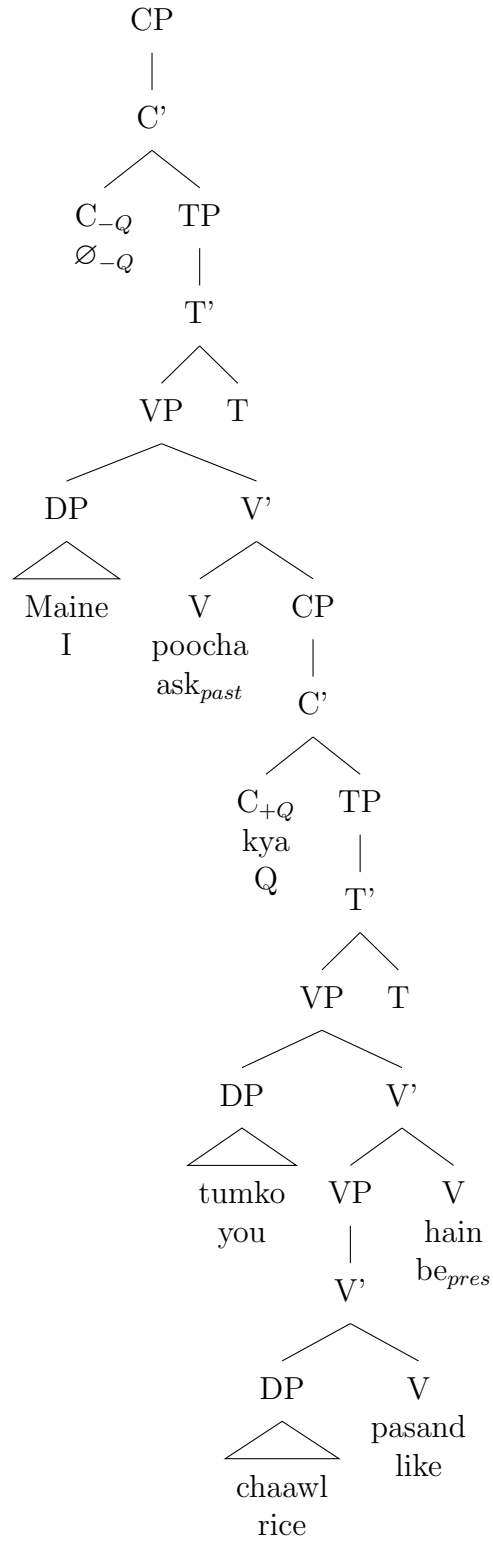
6 Movement

6.1 Head to Head Movement

To dive into Head to Head movement we must look at the placement of the main verb, voice, aspect, and tense.

Hindi usually has a 'be' tense word, though sometimes tense is shown on the verb before where it would have been, such as in (49). According to the native speaker I worked with, future tense is usually combined on the verb and only sometimes uses a tensed 'be,' (45).

The order of aspect in Hindi tends to be similar in English, in that when the perfect and progressive are both present, the perfect will appear first (48)-(49). Notice that in this case, the perfect aspect will also attach to the main verb.

(44)-(45) shows the perfect aspect. (46)-(47) shows the progressive aspect. In Hindi, the main verb always appears first, as opposed to last in English.

(43) Woh   roti   khata   hai
      He[NEUT.NOM] roti[FEM] eat[MASC] be[NEUT.PRES]
      "He eats roti."

(44) Usne   roti   kha   lee   hai
      He[NEUT.ERG] roti[FEM] eat[NEUT] have[FEM.PERF] be[NEUT.PRES]
      "He has eaten roti."

(45) Usne   roti   kha   lee   hogi
      He[NEUT.ERG] roti[FEM] eat[NEUT] have[FEM.PERF] be[NEUT.FUT]
      "He will have eaten roti."

(46) Woh   roti   kha   raha   hai
      He[NEUT.NOM] roti[FEM] eat[NEUT] PROG[MASC] be[NEUT.PRES]
      "He is eating roti."

(47) Woh   roti   kha   raha   tha
      He[NEUT.NOM] roti[FEM] eat[NEUT] PROG[MASC] be[MASC.PAST]
      "He was eating roti."

(48) Woh   roti   khata   raha   tha
      He[NEUT.NOM] roti[FEM] eat[MASC.PERF] PROG[MASC] be[MASC.PAST]
      "He had been eating roti."

(49) Woh   roti   khata   rahega
      He[NEUT.NOM] roti[FEM] eat[MASC.PERF] PROG[MASC.FUT]
      "He will have been eating roti."

Now we will take a look at voice. In Hindi, the passive appears directly after the main verb, before the other modal auxiliaries. We can see the Hindi has a sequence of

Main verb > Passive/Active > Perfect > Progressive > Tense

Notice in (53), that when the passive, perfect, and progressive are combined, the perfect aspect will combine with the passive. This maintains the order of precedence I have just listed.

Also notice that when the sentence is passive, the verb agrees in gender with the object, now in the subject position.

(50) Roti   khayi   jayegi
      Roti[FEM.NOM] eat[FEM] PASS[FEM.FUT]
      "The roti will be eaten."

(51) Roti   khayi   ja   chuki   thi
      Roti[FEM.NOM] eat[FEM] PASS[NEUT] have[FEM.PERF] be[FEM.PAST]
      "The roti had been eaten."

(52) Roti   khayi   ja   rahi   thi
      Roti[FEM.NOM] eat[FEM] PASS[NEUT] PROG[FEM]   be[FEM.PAST]
      "The roti was being eaten."

(53) Roti   khayi   jati   rahegi
      Roti[FEM.NOM] eat[FEM] PASS[FEM.PERF] PROG[FEM.FUT]
      "The roti will have been being eaten."

(7) Here is a Deep Structure tree for (49)

$$
\begin{array}{c}
\text{CP} \\
| \\
\text{C'} \\
\diagdown \\
\text{C}_{-Q} \qquad \text{TP} \\
\varnothing_{-Q} \qquad \diagup\diagdown \\
\qquad \text{VP}_{prog} \quad \text{T} \\
\qquad | \\
\qquad \text{V'} \\
\qquad \diagup\diagdown \\
\text{VP}_{perf} \qquad \text{V} \\
| \qquad \text{rahega} \\
\text{V'} \qquad \text{PROG}_{fut} \\
\diagup\diagdown \\
\text{VP}_{voice} \qquad \text{V} \\
\qquad \varnothing_{perf} \\
\diagup\diagdown \\
\text{DP} \qquad \text{V'} \\
\triangle \qquad \diagup\diagdown \\
\text{Woh} \quad \text{VP} \quad \text{V} \\
\text{He} \quad | \quad \varnothing_{active} \\
\text{V'} \\
\diagup\diagdown \\
\text{DP} \quad \text{V} \\
\triangle \quad \text{khata} \\
\text{roti} \quad \text{eat}_{perf}
\end{array}
$$
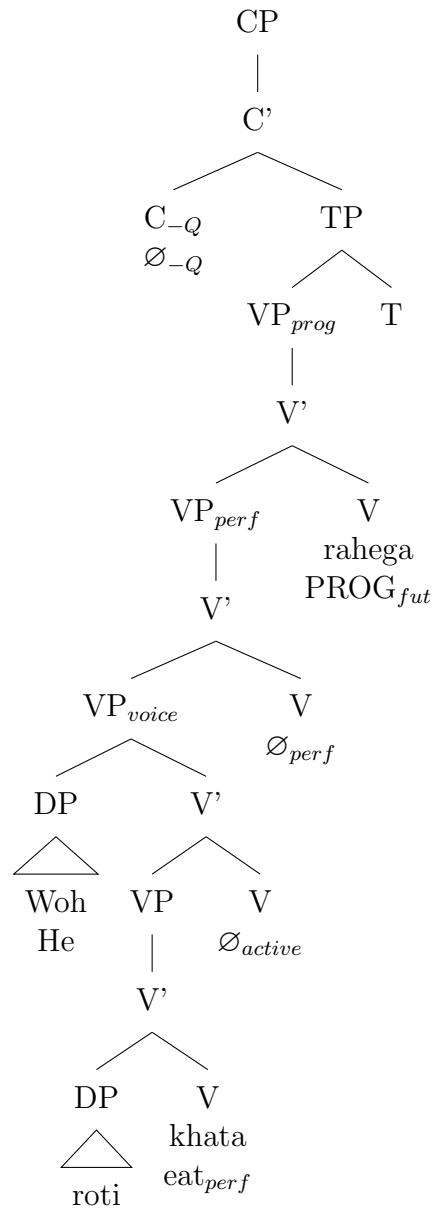
Notes for (7): Take note that we are finally able to generate the subject and the object in the correct places.

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(8) Here is a Deep Structure tree for (53).

```
                              CP
                              |
                              C'
                         ┌────┴────┐
                        C_{-Q}      TP
                        ∅_{-Q}    ┌──┴──┐
                               VP_{prog}  T
                                  |
                                  V'
                              ┌───┴───┐
                           VP_{perf}   V
                              |       rahegi
                              V'    PROG_{fut}
                          ┌───┴───┐
                      VP_{voice}   V
                          |      ∅_{perf}
                          V'
                      ┌───┴───┐
                     VP        V
                      |       jati
                      V'    PASS_{perf}
                  ┌───┴───┐
                 DP        V
                /△\      khayi
               Roti      eat
```
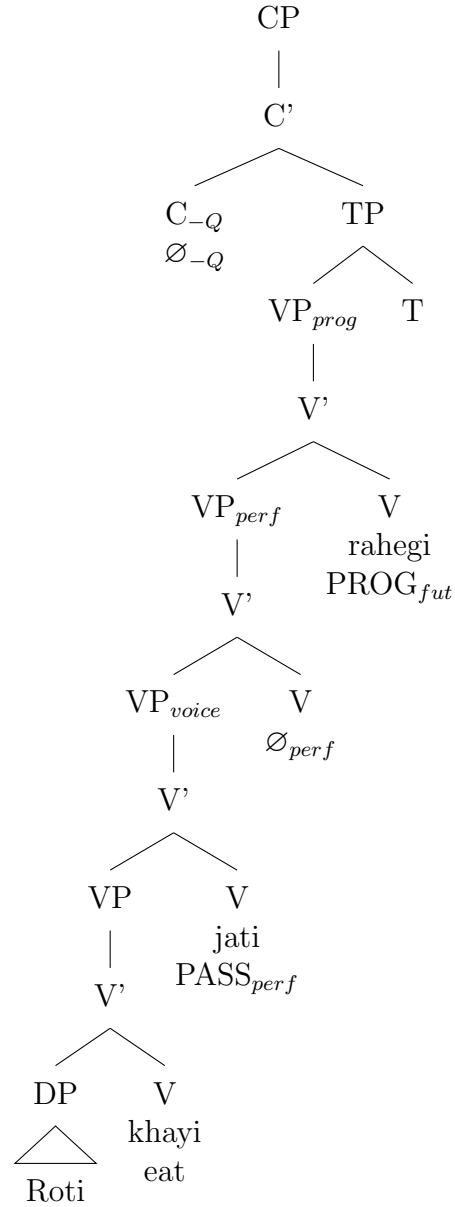
Notes for (8): see (7).

All the examples we have seen so far, do not give evidence of V → T movement. It cannot be seen easily in the physical form, as the tensed verb/ auxiliary is directly next to where the T node would be. Adjuncts tend to appear before the main verb, so that should have no affect on it either. Let us look at a few examples of negation and modal auxiliaries.

(54)   Woh   roti   nahi khaata   hai
      He[NEUT.NOM] roti[FEM] NEG eat[MASC] be[NEUT.PRES]
      "He does not eat roti."

(55)   Usne   roti   nahi khayi   hai
         He[NEUT.ERG] roti[FEM] NEG eat[FEM] be[NEUT.PRES]
         "He has not eaten roti."

(56)   Tum   kasrat   zaroor   karo
         You[NEUT.NOM] exercise[NEUT] must[NEUT] do[NEUT.PRES]
         "You must exercise."

(57)   Tumko   roti   pasand   nahi honi   chahiye
         You[NEUT.DAT] roti[FEM] like[NEUT] NEG do[FEM] should[NEUT]
         "You should not like roti."

It seems that negation does not affect the placement of where tense is, as it appears before any instance of tense (54-55). Modals auxiliaries also do not affect placement of tense, if present (56). If the modal auxiliary is at the end of the sentence, where tense is located, there is no tense (57).

Recall to when we were looking at embedded clauses at the end of the X-bar theory section. Due to the word order changing from SOV to SVO, the head T of the main clause is left at the far right of both the clauses. I will show example (42) once again as (58) to re-illustrate it. (42/58) may also be written as (59) to help further illustrate that a tensed verb or a tensed 'be' does not move to the T head.

One problem with this analysis, is that the stacked VPs will also be predicted to be shown after the CP as well. I show a tree for (60) to indicate that. However, I will look more into this problem later, after this paper.

(58)   Maine   poocha   kya tumko   chaawl   pasand
         I[NEUT.ERG] ask[NEUT.PAST] Q   you[NEUT.DAT] rice[MASC] like[NEUT]
         hain
         be[NEUT.PRES]
         "I asked do you like rice."

(59)   Maine   poocha   tha   kya tumko   chaawl
         I[NEUT.ERG] ask[NEUT] be[MASC.PAST] Q   you[NEUT.DAT] rice[MASC]
         pasand   hain
         like[NEUT] be[NEUT.PRES]
         "I asked do you like rice."

(60)   Maine   poocha   rahi   hun   kya tumko
         I[NEUT.ERG] ask[NEUT] PROG[FEM] be[NEUT.PRES] Q   you[NEUT.DAT]
         chaawl   pasand   hain
         rice[MASC] like[NEUT] be[NEUT.PRES]
         "I am asking do you like rice."

(9) Deep Structure Tree for (60).

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(9)

```
                                    CP
                                    |
                                    C'
                                   /  \
                                  C    TP
                               ∅_{-Q}   |
                                        T'
                                       /  \
                                    VP_{be}  T
                                      |
                                      V'
                                     /  \
                                 VP_{prog}  V
                                    |      hun
                                    V'    be_{pres}
                                   /  \
                              VP_{voice}  V
                                / \      rahi
                              DP   V'    PROG
                             /\   /  \
                         Maine  VP    V
                           I    |   null_{active}
                                V'
                               /  \
                             CP     V
                            /  \  poocha
                  kya tumko chaawl pasand hain  ask
                       do you like rice
```
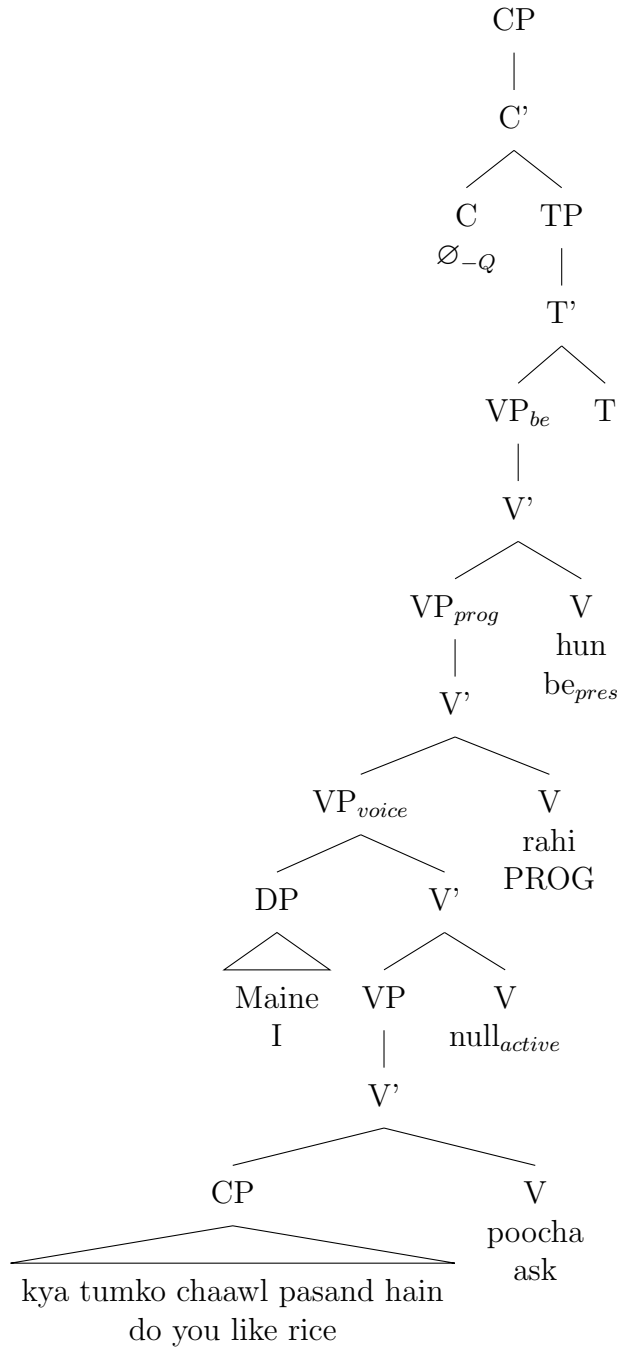
Hindi also does not have subject-auxiliary movement, or T → C movement. This further supports that there is no evidence of verb raising in Hindi.

In conclusion, Hindi does not show evidence for Verb Movement (V → T). Possibly it always has verb raising or never does. If we are to follow along with (Carnie 2012), in that all languages have a physical and logical form, and therefore always have movement whether overt or covert, then we are to say that Hindi does have some type of verb

movement. However, whether it is covert or overt does not matter as it has no affect on the physical form.

(Bhatt 2005, pp. 772) also mentions this, claiming that due to the head-final nature of Hindi, it would be "string-vacuous." String-vacuous is when we assume there is movement despite there being no change in the physical form.

From here on out, I will just assume that Verb Movement is covert in Hindi, for the sake of drawing trees.

6.2   DP Movement

Looking at Hindi sentences that do not involve CP complements (embedded clauses), we can say that main active and transitive verbs always assigns accusative case to their DP complement. As the subject DP is generated in the specifier of the voice VP, it must still receive case. The subject can be nominative, ergative, or dative.

Previously, I had been placing the generation of the subject in the specifier of the voice VP, just like English. This should continue to be true, as that is the only place where it may receive its agent theta role.

Some may hypothesize then, that the subject may just receive it's case there. It does seem to have no affect on the physical form. However, since we must consider both nominative and ergative case, that may not be the case. (We shall ignore dative case until later).

The nominative and ergative case cannot be assigned by the VP indicating voice, as that does not seem to be the feature in distinguishing which case to use. The feature in distinguishing them is whether the verb is in the perfective aspect. Therefore, subjects must have some kind of movement to attain their case there, in the specifier of the perfective VP. If the head verb is perfect, then it receives ergative case, otherwise is receives nominative in the imperfective. This still gives the same realization of the physical form.

However, it is not just the perfective aspect that distinguishes between the nominative and ergative case. If a transitive verb is both perfect and progressive, the subject will be nominative. We saw this earlier in (49/61). When it is passive as well, the object which may not longer receive accusative case like English, is not able to receive the ergative case by movement (51/62) and (53/63). I have reiterated the examples below. We also know that it is only transitive verbs that can receive the ergative case.

(61)   Woh   roti   khata   rahega
       He[NEUT.NOM]   roti[FEM]   eat[MASC.PERF]   PROG[MASC.FUT]
       "He will have been eating roti."

(62)   Roti   khayi   ja   chuki   thi
       Roti[FEM.NOM]   eat[FEM]   PASS[NEUT]   have[FEM.PERF]   be[FEM.PAST]

21

"The roti had been eaten."

(63) Roti khayi jati   rahegi
Roti[FEM.NOM] eat[FEM] PASS[FEM.PERF] PROG[FEM.FUT]
"The roti will have been being eaten."

One way to take this into account, is to propose a moving method where the DP hops to collect features until it reaches the specifier of the TP where it will receive the correct case according the the features the DP attained along the way. Recall the VP sequence we found earlier. The "be" auxiliary may optionally appear between the Progressive and Tense.

Main verb > Passive/Active > Perfect > Progressive > Tense

I propose that just as the voice VP assigns the agent theta role to the subject, a transitive or non-transitive feature, as well as a voice feature, will also be assigned, as it can easily be attached with its theta grid. Afterwards, the DP may hop to the specifier of the perfect aspect VP, where it may receive a perfect or imperfective feature. Once again, the DP will hop to the specifier of the progressive aspect VP, where it may receive a progressive or non-progressive feature. Last of all, it will move to the specifier of the TP, to finally receive its case from tense, according to the features the DP brings along.
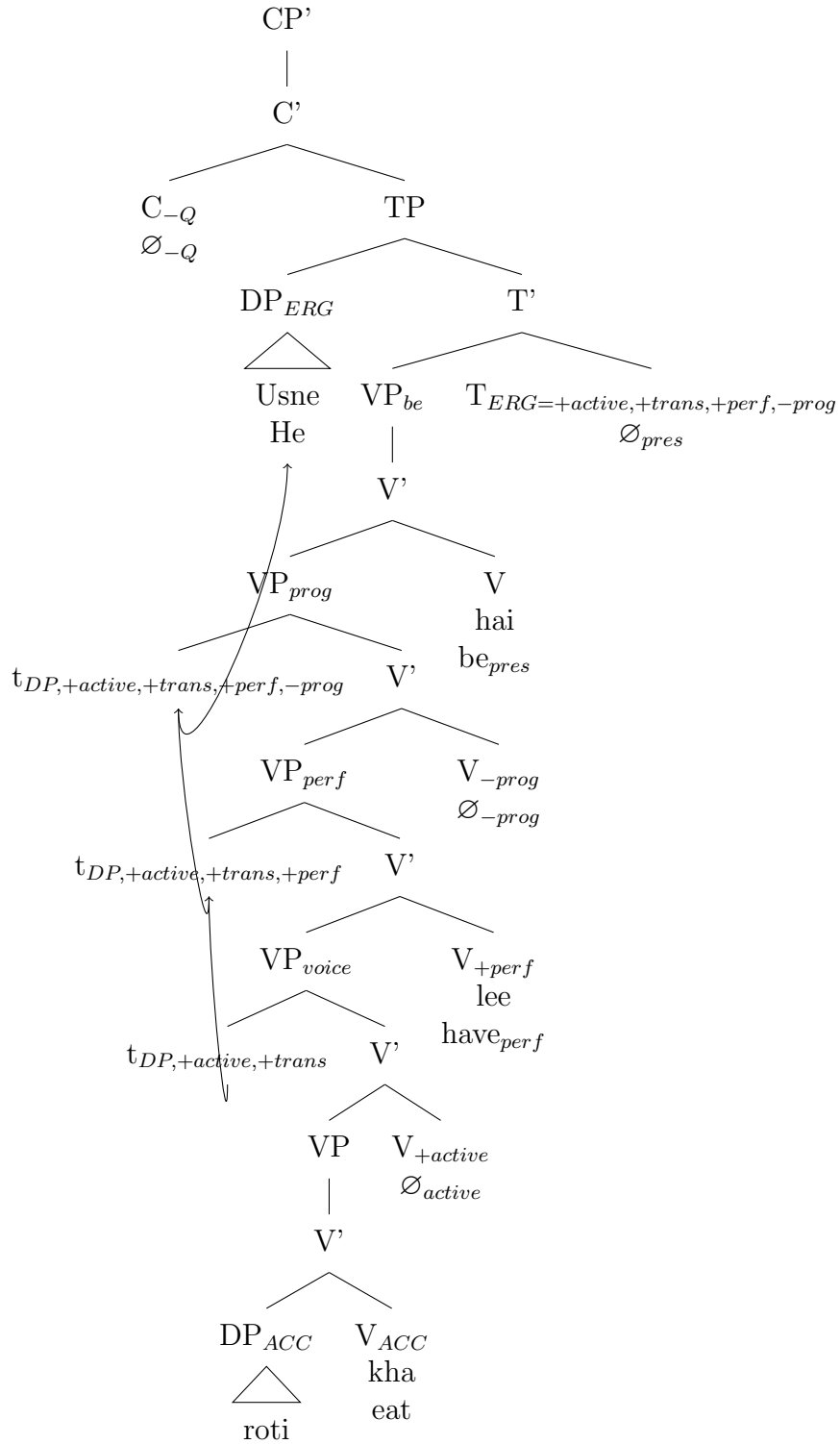
I will now draw the tree for (44/64) with covert V $\rightarrow$ T movement, and overt DP movement.

(64) Usne   roti kha lee   hai
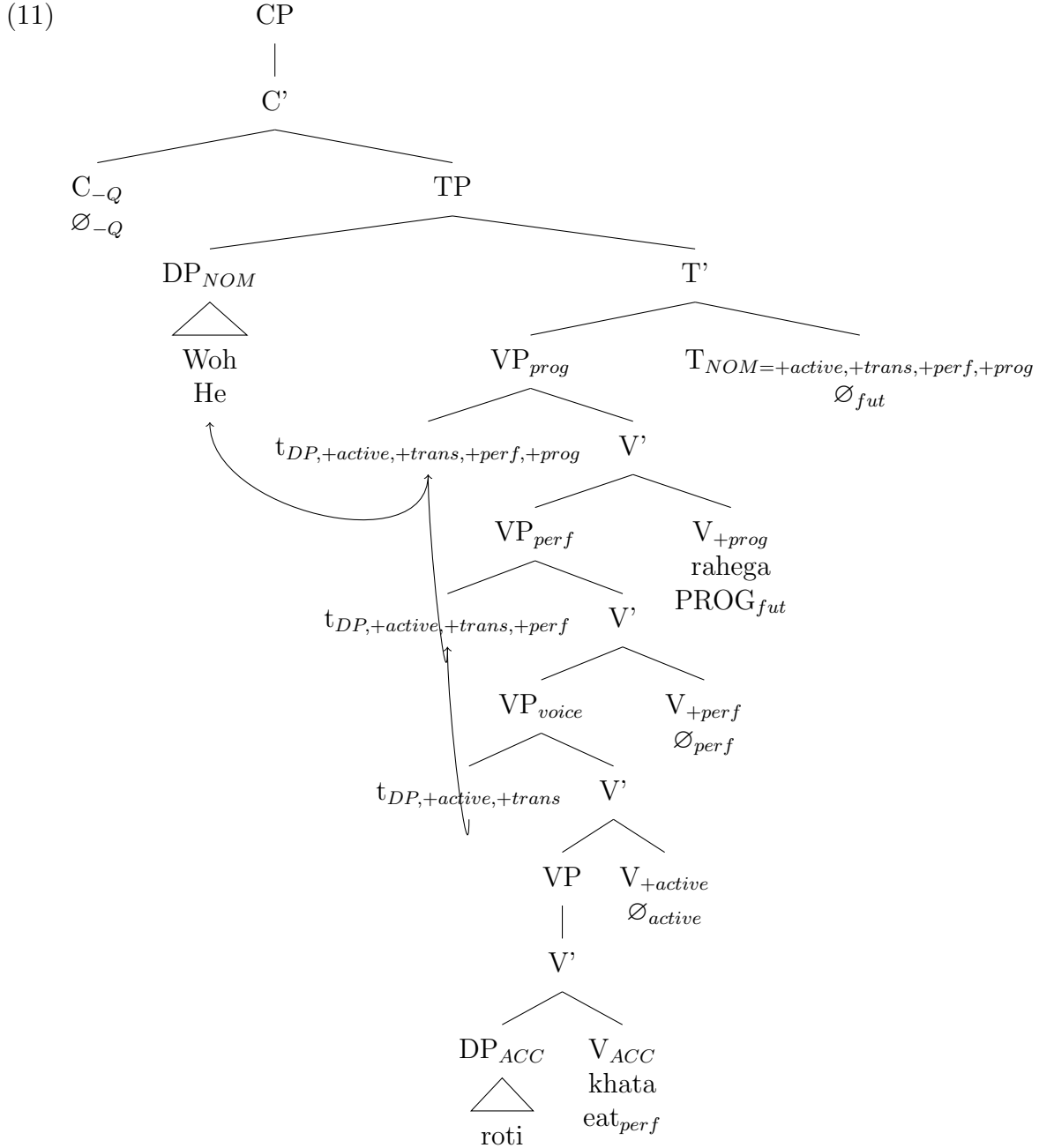He[NEUT.ERG] roti[FEM] eat[NEUT] have[FEM.PERF] be[NEUT.PRES]
"He has eaten roti."

(10) Deep Structure Tree with DP Movement for (64)

(10)

CP'
|
C'
├─ C$_{-Q}$
│ $\varnothing_{-Q}$
└─ TP
    ├─ DP$_{ERG}$
    │   Usne
    │   He
    └─ T'
        ├─ VP$_{be}$
        │ |
        │   V'
        │   ├─ VP$_{prog}$
        │   │   ├─ t$_{DP,+active,+trans,+perf,-prog}$
        │   │   └─ V'
        │   │   ├─ VP$_{perf}$
        │   │   │   ├─ t$_{DP,+active,+trans,+perf}$
        │   │   │   └─ V'
        │   │   │   ├─ VP$_{voice}$
        │   │   │   │   ├─ t$_{DP,+active,+trans}$
        │   │   │   │   └─ V'
        │   │   │   │   ├─ VP
        │   │   │   │   │ |
        │   │   │   │   │   V'
        │   │   │   │   │   ├─ DP$_{ACC}$
        │   │   │   │   │   │   roti
        │   │   │   │   │   └─ V$_{ACC}$
        │   │   │   │   │   kha
        │   │   │   │   │   eat
        │   │   │   │   └─ V$_{+active}$
        │   │   │   │ $\varnothing_{active}$
        │   │   │   └─ V$_{+perf}$
        │   │   │   lee
        │   │   │   have$_{perf}$
        │   │   └─ V$_{-prog}$
        │   │ $\varnothing_{-prog}$
        │   └─ V
        │   hai
        │   be$_{pres}$
        └─ T$_{ERG=+active,+trans,+perf,-prog}$
            $\varnothing_{pres}$

Notes for (10): The only instance in which an agent DP may receive ergative case it when it fulfills the features: +active, +trans, +perf, -prog.

(11) Deep Structure Tree with DP Movement for (61)

(11)

$$
\begin{array}{c}
\text{CP} \\
\mid \\
\text{C'} \\
\diagdown \diagup \\
\text{C}_{-Q} \qquad \text{TP} \\
\varnothing_{-Q}
\end{array}
$$

CP
C'
C$_{-Q}$ $\varnothing_{-Q}$
TP
DP$_{NOM}$
Woh
He
T'
VP$_{prog}$
T$_{NOM=+active,+trans,+perf,+prog}$ $\varnothing_{fut}$
t$_{DP,+active,+trans,+perf,+prog}$
V'
VP$_{perf}$
V$_{+prog}$ rahega PROG$_{fut}$
t$_{DP,+active,+trans,+perf}$
V'
VP$_{voice}$
V$_{+perf}$ $\varnothing_{perf}$
t$_{DP,+active,+trans}$
V'
VP
V$_{+active}$ $\varnothing_{active}$
V'
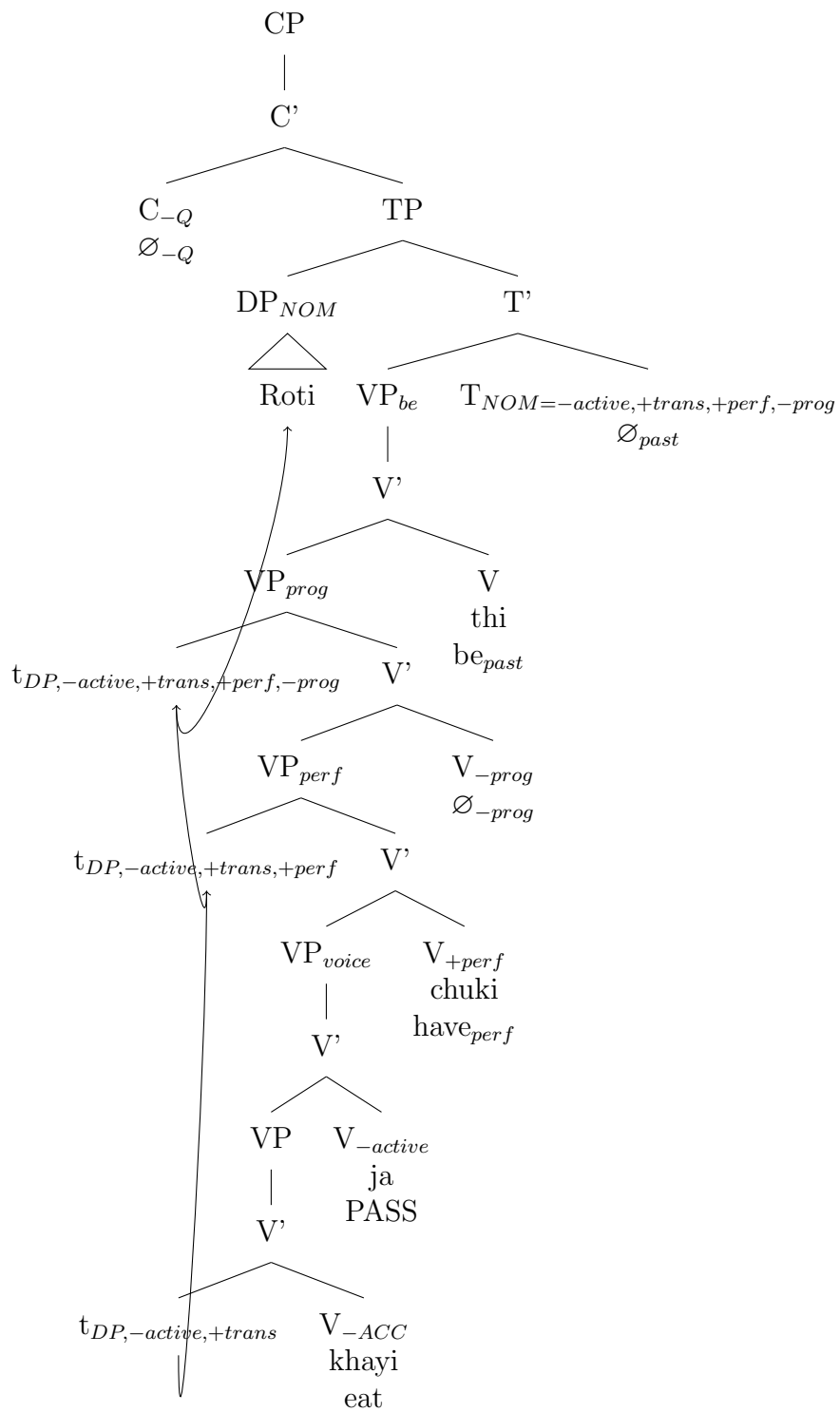DP$_{ACC}$ roti
V$_{ACC}$ khata eat$_{perf}$

Notes for (11): An agent DP may receive nominative case whenever it does *not* fulfill these features: +active, +trans, +perf, -prog.

(Bhatt 2005) also says that the ergative case is directly licensed by the perfective aspect projection. He mentions that "ergative case is assigned by Tense in association with transitive v and Perfective Aspect" (Bhatt 2005, pp.767). And that other combinations will lead to the assignment of the nominative case.

Now we must take into account when sentences are passive. We know from earlier that the object of the transitive must take on the nominative case, as the verb can no longer assign the accusative to its complement. From the theta grid, the passive/-active and +trans feature may be directly assigned where the DP object is generated. From there is may move in a similar way to the subject DPs, hopping through the specifier of the perfective aspect VP, progressive aspect VP, and TP. There it will always receive the nominative case, as from the get go the DP has the feature -active.

(12) Deep Structure Tree with DP Movement for (62)

(12)

CP
|
C'

C$_{-Q}$ TP
$\varnothing_{-Q}$

DP$_{NOM}$ T'

Roti   VP$_{be}$ T$_{NOM=-active,+trans,+perf,-prog}$
                     $\varnothing_{past}$

V'

VP$_{prog}$ V
                     thi
                     be$_{past}$

t$_{DP,-active,+trans,+perf,-prog}$ V'

VP$_{perf}$ V$_{-prog}$
                     $\varnothing_{-prog}$

t$_{DP,-active,+trans,+perf}$ V'

VP$_{voice}$ V$_{+perf}$
                chuki
                have$_{perf}$

V'

VP   V$_{-active}$
      ja
      PASS

V'

t$_{DP,-active,+trans}$ V$_{-ACC}$
                          khayi
                          eat

For dative case, it seems that certain verbs that indicate state more over action are able to assign dative case; therefore it must be linked to their theta grid, along with their theta role. This is similar to how dative quirky case is assigned to objects in Icelandic (Carnie 2012). Therefore, dative case for these subjects is already present in the place where they are generated, the specifier of the voice VP. Then, as I have mentioned earlier, it shall move through the VP specifiers I have mentioned above until it reaches the specifier of the TP. However, it will not be there to receive case, as it already has the dative case. Instead, it shall move for the sake of fulfilling the EPP.

The theta grid for "mila" (to get) is shown below, as well as is used in (65). "Mila" is always associated with a dative subject.
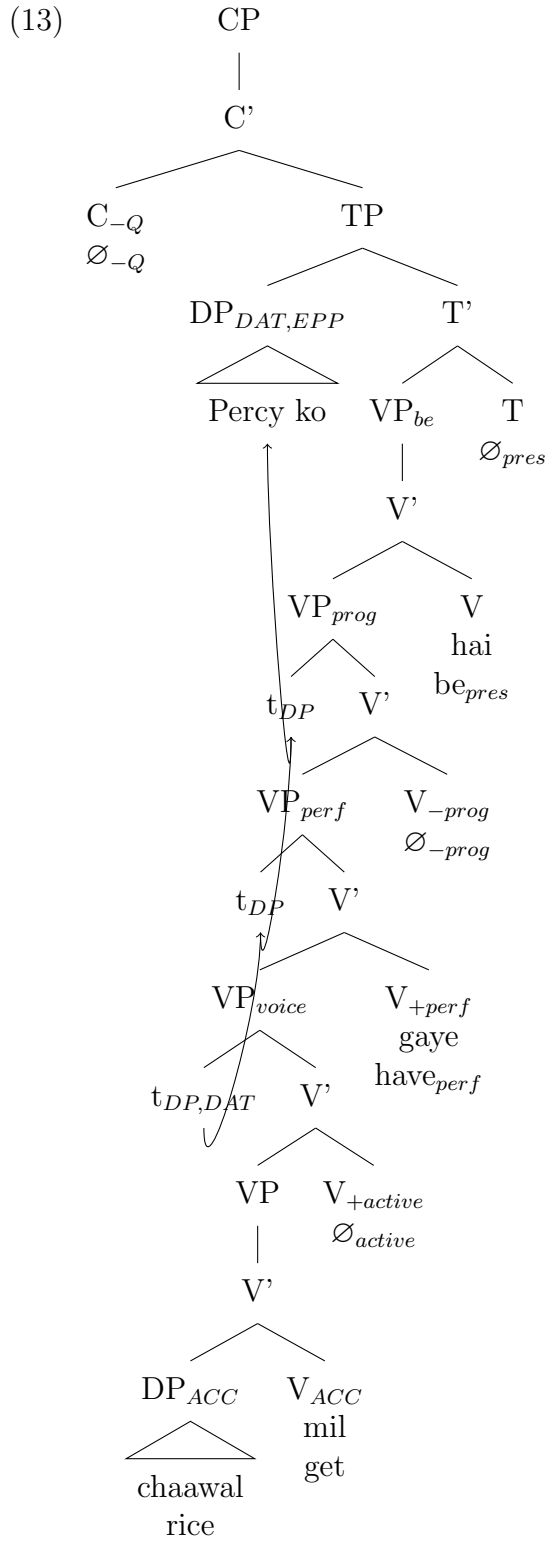
(65) [Percy   ko]$_i$ chaawal$_j$ mil   gaye   hai
      Percy[MASC] DAT rice[MASC] get[NEUT] have[NEUT.PERF] be[NEUT.PRES]
      "Percy has gotten rice."

mila: to get

Agent	**Theme**
DP	DP
i	j
Dative Case	

Table 2: Theta grid for mila

(13) Deep Structure Tree with DP Movement for (65)

(13)

CP
|
C'
├── C$_{-Q}$
│ $\varnothing_{-Q}$
└── TP
     ├── DP$_{DAT,EPP}$
     │   Percy ko
     └── T'
          ├── VP$_{be}$
          │ |
          │   V'
          │   ├── VP$_{prog}$
          │   │   ├── t$_{DP}$
          │   │   └── V'
          │   │   ├── VP$_{perf}$
          │   │   │   ├── t$_{DP}$
          │   │   │   └── V'
          │   │   │   ├── VP$_{voice}$
          │   │   │   │   ├── t$_{DP,DAT}$
          │   │   │   │   └── V'
          │   │   │   │   ├── VP
          │   │   │   │   │ |
          │   │   │   │   │   V'
          │   │   │   │   │   ├── DP$_{ACC}$
          │   │   │   │   │   │   chaawal
          │   │   │   │   │   │   rice
          │   │   │   │   │   └── V$_{ACC}$
          │   │   │   │   │   mil
          │   │   │   │   │   get
          │   │   │   │   └── V$_{+active}$
          │   │   │   │ $\varnothing_{active}$
          │   │   │   └── V$_{+perf}$
          │   │   │   gaye
          │   │   │   have$_{perf}$
          │   │   └── V$_{-prog}$
          │   │ $\varnothing_{-prog}$
          │   └── V
          │   hai
          │   be$_{pres}$
          └── T
                $\varnothing_{pres}$

However, in Hindi, passive verbs that force the direct object to move to the specifier of the TP to receive case can not only receive nominative, but can also preserve their

accusative case. Only some dialects of Hindi, including standardized Hindi, can preserve the accusative case in passive sentences. (Kidwai 2020)

When the direct object takes on the nominative case, the emphasis is on the direct object. On the other hand, when the direct object takes on the accusative case, the emphasis is on the subject of the sentence, whether it is or not included in the sentence. Below I show example (51/62/66) taking on the nominative case, and (67) which takes on the accusative case.

(66) Roti   khayi   ja   chuki   thi
     Roti[FEM.NOM] eat[FEM] PASS[NEUT] have[FEM.PERF] be[FEM.PAST]
     "The roti had been eaten."

(67) [Roti   ko]ᵢ khaya   ja   chuka   tha
     Roti[FEM] ACC eat[MASC] PASS[NEUT] have[MASC.PERF] be[MASC.PAST]
     "The roti had been eaten."

At this point, I believe it is left up to the speaker on whether they would like to emphasize the direct object or the subject. Hence, the speaker may optionally override the theta grid and push the accusative case onto the direct object DP to emphasize its role as an object and not be subject-like, despite the verb still being unable to assign the accusative case. From its generation as the complement of the main verb, it then continues to move up to the specifier of the TP to fulfill the EPP, as the speaker chose to speak in the passive and leave out the subject, or make it an adjunct.

After checking with the L1 speaker, it seems that verbs in the passive that preserve the accusative case always take on the masculine agreement, no matter the gender of the object forced subject.

Here is the theta grid for passive "khana" (to eat), where the speaker pushes the accusative case onto the direct object for continued emphasis on the subject. I have also applied it to (67).
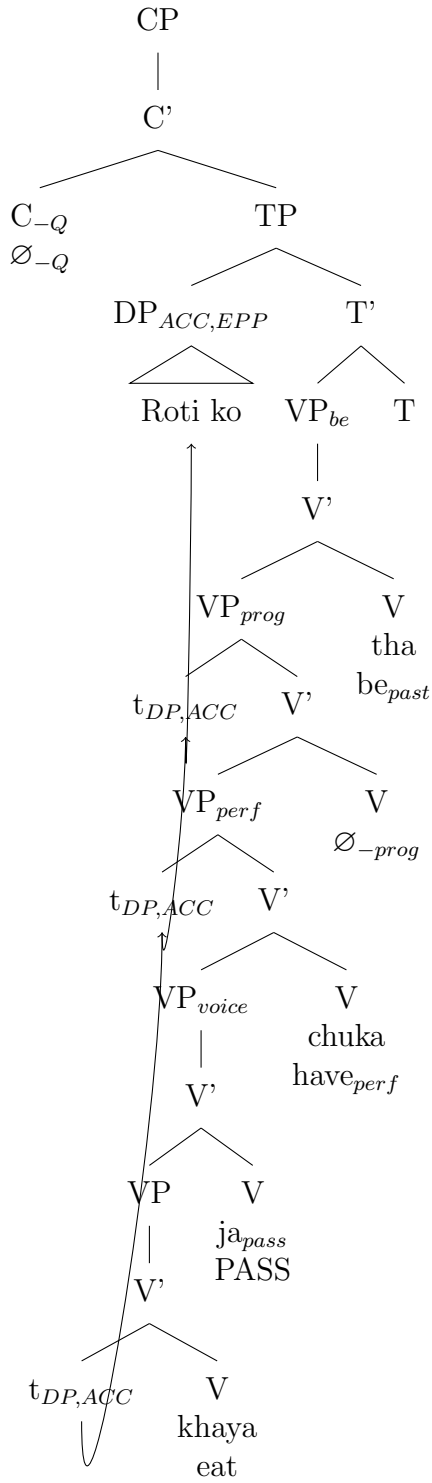
khana: to eat

Theme
DP
i
Accusative Case

Table 3: Theta grid for khana

(14) Deep Structure Tree with DP Movement for (67)

(14)

CP
|
C'
C$_{-Q}$ TP
∅$_{-Q}$

DP$_{ACC,EPP}$ T'

Roti ko   VP$_{be}$ T

V'

VP$_{prog}$ V
tha
be$_{past}$

t$_{DP,ACC}$ V'

VP$_{perf}$ V
∅$_{-prog}$

t$_{DP,ACC}$ V'

VP$_{voice}$ V
chuka
have$_{perf}$

V'

VP   V
ja$_{pass}$
PASS

V'

t$_{DP,ACC}$ V
khaya
eat

As for intransitive and ditransitive verbs, that may be looked at after this paper. However, they should be relatively straightforward as there should not be an ergative case.

7 Conclusion

At the beginning of this paper, I hypothesized that all verbs will raise in Hindi. However, we found out that Hindi does not have evidence to prove whether all verbs raise or no verbs raise, as the tense feature is always generated directly next to the T. Whether Hindi's raising is covert or overt is unknown, and has no effect on the physical form.

While I did conclude that subjects move to the specifier of the TP just as I had hypothesized, there were a lot more parts to it I had not foreseen. To get to the specifier of the TP, the subject/ passive object starting out with its voice and transitivity feature, must move to attain perfect and progressive features. This way, upon reaching the specifier of the TP, it will have gained enough features to know whether to receive nominative or ergative case. In the case of dative subjects and preserving accusative case in passive subjects, these cases are attached directly to the theta grid, and movement follows to fulfill the EPP.

Going through the X-bar Theory at the beginning, I had run into instances of possible scrambling between adjuncts and complements in the VP. From conversation with the L1 speakers, the subject may also be possibly scrambled. The instance of CP appearing after the verb (60), forcing the word order to be SVO could also be an instance of scrambling or maybe even a special movement. This would be quite interesting to look into in the future.

Investigating into more DP Movement analysis for intransitive and ditransitive verbs would also help complete my analysis. Taking some time to read other papers on the DP movement for Hindi, or Urdu with a similar syntax, may also be beneficial in rounding out my analysis and moving forward.

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