The passive and the structure of the verbal complex in Hindi-Urdu

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Abstract

The locus and derivation of passive participial morphology has been a subject of increasing interest. This paper offers an analysis of the analytic passive in Hind-Urdu, with particular focus on the syntactic and morphological properties of the passive participle and passive auxiliary. Evidence from the formation of the passive in clauses with modals, light verbs, and negation prompt a revision of our current understanding of the structure of the clause-final verbal complex. I draw on the resources provided by the Distributed Morphology framework (Halle 1990, Halle and Marantz 1993, Embick and Noyer 2001, Embick 2004, and related work) to analyze the interaction between the syntax of functional heads and the morphological manifestation of passive voice in Hindi-Urdu. This approach provides new insight into the well-known complex predicate construction in Hindi-Urdu, in dialog with recent work on verb sequences crosslinguistically (Wurmbrand 2004, Folli and Harley 2004, 2007). The paper argues that a restricted set of readjustments within the post-syntactic component better captures the core properties of the passive and offers new opportunities for the analysis of the verbal complex.

Keywords: passive, light verb, modal, Distributed Morphology, Hindi-Urdu,

1. Introduction

The Hindi-Urdu analytic passive employs a participial form of the main verb (homophonous with the perfective participle) alongside a passive auxiliary, as in (1):

(1) yeh kavitaa Radheshyaam-dwaaraa **likh-ii**   **ga-yii**   hai

this poem.F Radheshyaam-by   write-PFV.F PASS-PFV.F be.PRS.SG

'This poem has been written by Radheshyaam.' (Hook 1979:121 from Bhatt 2003)

The formation of the passive participle seems less straightforward when we consider passives of clauses containing additional verbal elements. Active voice clauses with complex predicates of the VSTEM-VLIGHT variety (Bashir 1993, Butt and Geuder 2001, Butt and Ramchand 2001) such as in (2), and those with modals (3), appear quite similar in that the main verb in its uninflected root form precedes the so-called 'light verb' or modal.

(2) Hum mez haTaa   le-te   hain

We   table remove   take-PRS be

'We are removing the table (completely)'.[1]

(3) Hum mez haTaa   sak-te   hain

We   table remove can-PRS   be

'We can remove the table'[2]

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[1] Complex predicate structures in Hindi-Urdu take several forms, and have been associated with aspectual interpretations (Butt 1995) and meanings ranging from completion, inception, benefaction, force, suddenness, etc. (Hook 1974) to accomplishment/achievement (Butt and Ramchand 2001).

[2] I will restrict the discussion here to the modal *sak* 'can/be able', whose properties generally overlap with other modals like *paa* 'manage' that also combine with verb stems. I won't address

However, in the passive voice, the two types of constructions appear quite different. In complex predicates it is the light verb that appears in participial form, not the main verb.

(4) mez   **haTaa di-i   jaa-egii**

   table.F remove give-PFV.F PASS-FUT.F

   'The table will be removed (for someone else)' (Hook 1979:120 from Bhatt 2003)

Contrast this with constructions with the modal *sak* 'can', in which it is the main verb that appears in passive participial form.

(5) mez   **haTaa-ii   jaa   sak-tii   hai**

   table.F remove-PFV.F PASS can-HAB.F   be

   'The table can be removed.' (Bhatt 2003:3)

This contrast seems surprising given the similarity between (2) and (3) – we might expect their respective passives to be identical. Furthermore, complex VSTEM-VLIGHT predicates and modal constructions pattern together with respect to a number of syntactic and distributional tests, as we will see in section 2 below. Crucially, these tests differentiate the behavior of modal and light verbs on the one hand from auxiliaries on the other.

In what follows, our task will be to provide an explanation for the contrast in (4)-(5) that follows from an understanding of the syntax and morphology of the passive in Hindi-Urdu. In particular, I will propose an analysis of the formation of passive participle following Embick's account of the passive participle in English (Embick 2000, 2003, 2004) couched in the Distributed Morphology (DM) framework (Halle 1990, Halle and Marantz 1993, Embick and Noyer 2001, Embick 2004, and related work). Importantly this will require revisions to current

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here the modal verbs like the invariant *caahiye* 'should' that combine with the non-finite form of the main verb.

conceptions of the structure verbal complex in Hindi-Urdu, further supported by the interaction of sentential negation with the passive morpheme, the passive auxiliary, and other verbal elements. In particular, this approach provides new insight into the well-known complex predicate construction in Hindi-Urdu, in dialog with recent work on verb sequences crosslinguistically (Wurmbrand 2004, Folli and Harley 2004, 2007). The paper ultimately argues that a restricted set of readjustments within the post-syntactic component better captures the core properties of the passive and offers new opportunities for the analysis of the verbal complex.

This paper is structured as follows: in section 2 I explore the similarities in the behavior of modals and light verbs with respect to a range of tests which shed light on the contrasts in their passives. In section 3 I propose an account of the Hindi-Urdu passive participle and passive auxiliary that arrives at an explanation for the contrast in (4) and (5). Section 4 focuses on the interaction between sentential negation and the passive that results in revisions to current understanding of the hierarchy of functional heads of the verbal complex. In Section 5 I present a final set of puzzles that finds a solution in the account proposed here.

2. The properties of light verbs and modals

To better understand why the contrast in (4) and (5) is so informative, in this section I will examine a range of tests which group modals and light verbs together, excluding auxiliaries. While the properties of complex predicates of the VSTEM-VLIGHT variety have been explored extensively in the literature on South Asian languages (Hook 1974, Mohanan 1994, Butt 1995, Butt 2003, Davison 2005), the syntactic and morphological properties of modals are somewhat less discussed (e.g. Verma 1974, Auwera 2001). Our analysis of the verbal complex should

provide explanation for the ways in which modals and light verbs pattern together, while simultaneously accounting for the differences with respect to formation of the passive.

In contrast to auxiliaries, modals and light verbs both inflect for all tenses and aspects, while the main verb they accompany remains in the invariant stem form.

(6) Vo   xat   likh   paR-aa / paR-eega

    He.NOM letter write fall-PERF.M.SG / fall-FUT.F.SG

    'He fell to writing a letter'/ 'He will fall to writing a letter'

(7) Vo   xat likh   sak-aa / sak-eega

    He.NOM letter write can-PERF.M.SG / can-FUT.M.SG

    'He could write a letter' / 'He will be able to write letter'

(8) Vo xat   likh paR/sak rah-aa   he

    He letter write can/fall   PROG-M.SG be.3SG

    'He is falling to write a letter'/ 'He is being able to write a letter'.

Hindi-Urdu is a split-ergative language by aspect. In a transitive clause in the perfective aspect, the subject is suffixed with an ergative case marker (-*ne*) and primary verbal agreement must be with the nominative direct object when present.[3] It is the transitivity properties of the tensed verb that determine whether or not the clause will be ergative. In the case of both modals and light verbs it is the properties of the modal or light verb (not the main verb) that determine whether ergative case appears on subjects in active voice. For instance, a transitive verb like *likh* 'write' would normally require ergative case on its subject, as in (9) below. However, when *likh* is part of a complex predicate with the light verb *paR* 'fall', it is *paR* which determines the case

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[3] If no nominative (unmarked) argument is present, the verb will exhibit default agreement, 3rd person masculine singular.

for the subject – nominative *vo*, not ergative *us-ne*. Main verb *likh* can also be paired with a light

verb that does require ergative on its subject, such as *le* 'take' in (11).

(9) Us-ne (*vo)   xat   lıkh-aa

    He-ERG he.NOM letter.M.NOM write-PERF.M.SG

    'He wrote a letter.'

(10) Vo   (*us-ne) xat   likh   paR-aa

    He.NOM he-ERG letter write fall-PERF.M.SG

    'He fell to writing a letter'

(11) Us-ne (*vo)   xat   likh   li-yaa

    He-ERG he.NOM letter   write   take-PERF.M.SG

    'He wrote a letter completely.'

Similarly, in (12) it is the properties of the modal *sak* 'can' that determines the nominative form

of the subject pronoun, not the properties of the main verb *likh*, which would normally require

ergative case.

(12) Vo   (*us-ne) xat   likh sak-aa.

    he.NOM   he-ERG letter write can- PERF.M.SG

    'He could write a letter'. (Koul 2008)

In a diagnostic utilized by Butt and Ramchand (2001) to help define the category 'light verb',

modals and light verbs pair together with respect to the position of postverbal sentential

negation, which intervenes between the main verb stem form and the modal/light verb (Butt and

Ramchand 2001).[4]

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[4] There seems to be some disagreement in the literature over negated V-V sequences as in (13).

Although some, including Butt (1995) state that these are unavailable, many others (including

(13) Nadya xat   likh   nahiiN leg-ii.

    Nadya letter write NEG   take.FUT-FSG

    'Nadya will not be able to write a letter'

(14) Nadya xat   likh   nahiiN   sak-ti   he

    Nadya letter write NEG   can-PRES.FSG be.PRES

    'Nadya can't write a letter.' (Butt and Ramchand 2001:22)

In sum, complex predicates and modal verb constructions share a number of characteristics. Light verbs and modal verbs tend to pattern together and to be easily differentiated from tense and aspect auxiliaries. However, returning to our initial puzzle repeated in (15) and (16), the passive morpheme attaches to the light verb in light verb constructions but to the main verb stem with modals.

(15) mez   **haTaa di-i**   **jaa-egii**

    table.F remove give-PFV.F PASS-FUT.F

    'The table will be removed (for someone else)'

(16) mez   **haTaa-ii**   **jaa sak-tii**   hai

    table.F remove-PFV.F PASS can-HAB.F   be

    'The table can be removed.'

Butt and Ramchand 2001) report these negations as grammatical, and native-speakers I consulted uniformly agree. Kumar (2006) claims that negated V-V sequences have special semantic requirements: they must be in the future imperative or subjunctive moods, or somehow otherwise express "doubt".

Notice also that the passive auxiliary *jaa* follows the light verb *de* 'give' in (15), but precedes the modal *sak* 'can' in (16). In the account of the passive to follow, this difference will be crucial in explaining which verb appears in participial form.

3. An account of the passive in Hindi-Urdu

There are two key parts of the formation of the passive that require analysis. The first is the suffixation of the passive morpheme, attaching to the stem form of a verb to create a participle. The second is the positioning of the passive auxiliary in a relatively rich collection of clause-final verbal elements.

   The Hindi-Urdu verbal complex appears on the right edge of the clause and is strictly ordered. A handful of items, including adverbs and negation, may intervene between members of the verbal string, supporting a structure in which each verbal element is hosted in a separate functional head (Folli and Harley 2008). Although a few marked variations will be of interest to us below, the unmarked order of the verbal complex is in (17). The main verb is the only required element.

   (17) Main Verb (Light Verb) (Passive auxiliary) (Modal) (Progressive Aux) (Be Aux).
As in Embick's (2004) treatment of the English passive participle, I propose that the passive morpheme, which is homophonous with perfective aspectual morphology in Hindi-Urdu, is hosted in an Aspect head. This head takes as its complement an unsaturated vP. I will follow Bhatt (2005) in the claim that the agreement in gender and number on aspectual heads takes place in the syntax via the operation AGREE, in which the unvalued features on Tense head probe the c-command domain and interact with the features of the highest available (non-case-marked) nominal, simultaneously co-valuing any Aspect heads in the verbal complex (see also

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Chung 2004). I will assume here that the passive auxiliary *jaa* instantiates a dedicated functional head I will called PASS, which immediately dominates the Aspect head containing passive morphology.[5] Above the passive auxiliary is another Aspect head containing the sentential aspectual morpheme or auxiliary, and finally the tense head, hosting the tensed *be* auxiliary when present. The structure of the passive sentence in (1), repeated here, would then be as in (18).

(1) yeh kavitaa Radheshyaam-dwaaraa **likh-ii**   **ga-yii**   hai

     this poem.F Radheshyaam-by   write-PFV.F Pass-PFV.F be.PRS.SG

     'This poem has been written by Radheshyaam.' (Hook 1979:121 from Bhatt 2003)

(18) [[[[[yeh kaviita likh √P] v vP] –ii AspP] gay PASSP] -ii AspP] hai TP]

          this poem.F write   -PFV.F   PASS   -PFV.F   be

Now the task is to determine how the dependent morphemes become suffixed to the appropriate stems. The passive morpheme in the lower Aspect head can undergo the form of Morphological Merger (Marantz 1988) called Lowering (Embick and Noyer 2001) to adjoin to the head of its complement. This process of Lowering is represented by the arrow in (22). So the derivation of

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[5] I use PASSP as a label for the head containing the passive auxiliary here for convenient reference. One might wonder whether this head could be VoiceP in the sense of Collins (2005) (not to be confused with the transitivizing, external-argument introducing head which both Collins and I call v). However, the Voice head in his analysis does not host the passive auxiliary (see also Merchant (2007), who makes crucial use of this point). There is no active voice auxiliary counterpoint to the passive auxiliary in Hindi-Urdu. My primary interest here is the position of this head in relation to other functional heads in Hindi-Urdu; I am making no particular claims about the crosslinguistic nature of voice auxiliaries or the phrases they project.

the passive particle proceeds as follows: the root will move into the v head in the syntax, and then the passive morpheme will Lower at become suffixed to the verb post-syntactically.[6]

(19)   [[[ᵥP] √Root +v+PASS ᵥP] _____ AspP] ….

We now have an account of basic passives in Hindi-Urdu, to be applied to light verb and modal constructions. Light verbs have frequently been analyzed in the literature as an instantiation of a v head (Butt 2003, Folli and Harley 2008; for various formulations and complexities see Butt and Ramchand 2001, Butt and Geuder 2001, Davison 2005).[7] Assuming this approach, the passive of a light verb construction like (4), repeated here, will be one in which the Aspect head containing the passive morpheme dominates a v head containing the light verb.

(4) mez   **haTaa di-i   jaa-egii**

    table.F remove give-PFV.F PASS-FUT.F

    'The table will be removed (for someone else)'

(20) [[[[mez   haTaa √P] diᵥP] -i AspP] jay PassP] -egii TP]

        table.F remove   give -PFV.F PASS   -FUT.F

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[6] Hindi-Urdu is a language without empirical evidence for systematic V-to-T movement in the syntax (Bhatt 2003, Kumar 2003, Bhatt and Dayal 2007). Given its head-final nature, V-to-T would nearly always be string-vacuous (Bhatt 2005). This issue is discussed further in section 4.

[7] For instance, Butt and Geuder (2001) and Butt and Ramchand (2001) propose an analysis of the VSTEM-VLIGHT complexes in which the light verb is in a V head taking as a complement a Result Projection, RP, headed by the main verb. The account proposed here functions in precisely the same way assuming the two verb forms end up in vP.

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'The table will be removed (for someone else)'

In the passive in (4), this means that the light verb intervenes between the main verb and the Aspect head containing the passive morpheme. If the derivation proceeds in the same way as in (19) above, the root will raise into the v head during the syntax, forming an internally complex v head (Kumar 2006, Bhatt 2003, Deoskar 2006, see also Harley 2008). This analysis of complex predicates is further supported by evidence from constituency tests indicating that the main and light verb cannot be separated (Butt 1995, Poornima and Koenig 2009, see also section 5 below). Just as in (19), the passive morpheme will undergo Lowering post-syntactically, adjoining to the head of its complement (v). It will then lean to the left, appearing suffixed crucially to the light verb and not the main verb in (23). Ultimately then, in the light verb construction, the main verb will remain in its stem form, the light verb will be in passive participial form, and the passive auxiliary will follow the light verb in the verbal string.

Folli and Harley (2008) observe that the *faire infinitif* (FI) construction in Italian fails to passivize, and suggest that perhaps light verbs cannot appear in the passive at all. If, they claim, the formation of the passive involves the exchange of an agentive vP for a non-agentive one, and if light verbs are in fact instantiations of external-argument selecting vPs, we would not expect to see a passive of a light verb. Crucially, on their account the *faire par* construction can appear in the passive because it consists of main verb *fare*, not light verb *fare*. Hindi-Urdu offers strong empirical evidence that light verb constructions are in general passivizable, in precisely the same way that main verbs are. Unless we wish to give up a set of independently motivated assumptions about the location of light verbs in Hindi-Urdu, or to claim that light verbs in passives are in fact main verbs (neither of which seem desirable), we must understand light verbs at least in Hindi-Urdu to be able to head an agentive vP in which the agent argument does not

appear (see Embick 2003, 2004, following Kratzer 1994, 1996). Further, the account proposed here suggests that the formation of the participle is the process of Lowering of passive morphology onto the v head, leading us to expect to see light verbs appear in passive participial form.

Let us now turn to the modal construction. As we have observed in (5), repeated here, a modal like *sak* 'can' follows the passive auxiliary in the verbal string, in contrast to the light verb, which precedes the passive auxiliary.

(5) mez   **haTaa-ii**   **jaa**   **sak-tii**   hai

    table.F   remove-PFV.F   PASS   can-HAB.F   be

   'The table can be removed.' (Bhatt 2003:3)

Notice that this means that the modal will never be in the appropriate configuration with the Aspect head hosting the passive morphology such that that morphology can Lower onto the modal; the modal will always be too high in the structure to appear in passive participial form.

(21)   [[[[mez   haTaa $_{\sqrt{P}}$] v $_{vP}$] -ii $_{AspP}$] jaa $_{PassP}$] sak $_{ModP}$] -tii $_{AspP}$]   hai $_{TP}$]

      table.F remove   -PFV.F   PASS   can   -HAB.F   be

      'The table can be removed'

In (21) the derivation proceeds as follows: in the syntax the main verb *haTaa* 'remove' raises into the v head. The passive morpheme now undergoes Lowering to adjoin to v, and can therefore only attach to the main verb, not to the modal. As a result, the main verb will be in participial form, the passive auxiliary will appear in stem form, and the modal will host sentential aspect (Lowered, we assume, from the higher Aspect head).

At this point, we have formulated an account of the initial contrast in (4)-(5): that the passive morpheme affixes to the light verb in light verb constructions and to the main verb in modal

constructions. This analysis has drawn on widely supported accounts in the literature concerning the position of light verbs, the nature of complex predicates, and the morphological mechanics of participle formation. We can now make use of this analysis to approach more marked passive voice structures in Hindi-Urdu. Interestingly, there exists a marginally grammatical passive in which the modal does appear in participial form. This is in the marked instance in which the order of the modal and passive auxiliary is reversed, as in (22):

(22) ?? [us-ke   jaa-ne-se   pahle] baat   kar sak-ii   ga-ii

       he.OBL-GEN   go-INF.OBL-INSTR before talk.F do can-PFV.F PASS-PFV.F

       'Before he left, talking could be done.) (based on Hook 1979:88)

       (compare with: baat k-ii jaa sak-ii)

In (22), the order of elements in the verbal string has changed, and this has in turn affected where morphological components appear. The modal precedes the passive auxiliary, and the modal is suffixed with passive morphology, not the main verb *kar* 'do', as would normally be the case. One way of analyzing (22) is to assume that in this scenario the order of the functional projections hosting elements of the verbal string has been radically revised. The lower Aspectual projection containing the passive morpheme would need to dominate the modal projection, which would in turn be dominated by the passive auxiliary. Of course, an approach like this would then prompt a number of questions. First, the modal would now intervene in the proposed selectional relation between the Aspect head containing passive morphology and unsaturated vP. If it is this particular configuration that is defining of the passive, as Embick (2004) suggests, (22) would represent a serious disruption of this structure. Second, this would prompt us to ask what motivates this reorganization of the functional heads producing the verbal complex, and whether other reorderings might be possible. For instance, could it be that the passive auxiliary

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and a light verb could exchange positions? Or perhaps the passive auxiliary and the progressive auxiliary could be reordered? But as (23) shows, these are impossible.

(23) a. *mez   haTaa ga-ii   de-gii

　　　　table.F remove PASS-PFV.F   give-FUT.F

　　　　'The table will be removed (for someone else)'

　　b. *mez   haTaa-ii   rah-ii   jaa   he

　　　　table.F remove-PFV.F   PROG-F PASS AUX

　　　　'The table will be removed (for someone else)'

A more conservative alternative is to claim that in the marked case in (22), the modal is in fact actually behaving like a light verb, appearing in the v head.

(24) [[[[baat   kar ᵥₚ] sak ᵥₚ] -ii ₐₛₚₚ] jaa ₚₐₛₛₚ] -ii ₐₛₚₚ]   ₜₚ]

　　　　talk.F   do   can   -PFV.F   PASS   -PFV.F

The derivation of (22) would then be quite similar to the derivation of the passive in the light verb structure above. The main verb *kar* would form a complex head with the modal in v in the syntax. Then, post-syntactically, the passive morphology would lower onto the head of its complement, leaning left and attaching to *sak*. The passive auxiliary is in its normal position, and in this case is suffixed with sentential aspect morphology. In this approach, all of the structures and processes of the passive are maintained. The potential for the modal verb to be inserted into the light verb's typical position in the syntactic structure is also broadly consistent with the similarities we have already seen between the two types of verbal material in section 2.

4. The passive and negation

Up to this point our approach to the formation of the passive participle in Hindi-Urdu has relied on the post-syntactic morphological process of Lowering. If the Aspect head containing the passive morpheme selects for an unsaturated vP, then it is the (rightmost) stem form in the v head that should be suffixed with the Lowered passive morpheme and therefore appear in passive participial form. This has led to a successful account of participial forms of main verbs and light verbs. What now becomes pressing is the question of overt material that could potentially intervene between verbal heads within the vP and the Aspectual and auxiliary heads above vP. In Hindi-Urdu, negation is potentially just such an intervener, appearing either immediately preceding or immediately following the main verb as in (25a) and (b).

(25) a. Bacca sota hai.

   Child sleep be.PRS

   'The child sleeps'.

   b. Bacca nahiiN sota (hai)[8]

   Child NEG   sleep be.PRS

    'The child does not sleep'.

   c. Bacca sota nahiiN (hai)

    Child sleep NEG   be.PRS

    'The child does not sleep'.

In passive clauses, negation similarly either immediately precedes or follows the main verb, potentially appearing between the main verb and the passive auxiliary, as in (26b).

(26) a. yeh kavitaa Radheshyaam-dwaaraa nahiiN likh-ii   ga-yii   (hai)

      this poem.F Radheshyaam-by   NEG   write-PFV.F PASS-PFV.F be.PRS.SG

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[8] The present tense auxiliary is optional in the presence of sentential negation.

b. yeh kavitaa Radheshyaam-dwaaraa likh-ii   nahiiN ga-yii   (hai)

this poem.F Radheshyaam-by   write-PFV.F NEG   PASS-PFV.F be.PRS.SG

'This poem has not been written by Radheshyaam.'

Recent investigations into negation in Hindi-Urdu have concluded that NEG is a head in the language (Mahajan 1990a, Dwivedi 1991, Kumar 2006), though they differ in the precise placement of that head with respect to other functional heads as well as how the verbal string itself is ultimately composed. This paper will make use of negated passives and the account of the passive proposed here to argue for a NEG head somewhat lower than is often claimed. More importantly, I will also argue that the extensive syntactic head movement required to derive the licit ordering of the elements of the verbal string is unnecessary and empirically unmotivated. The examination of negation in the passive to follow supports a view in which the majority of the operations necessary to compose grammatical clause-final verbal complexes in Hindi-Urdu can be understood as limited post-syntactic manipulations of morphemes, as opposed to extensive head-to-head movement and adjunction operations in the syntax.

      Both Mahajan (1990b) and more recently Kumar (2006) locate the NEG head just below TP and would require a kind of roll-up head-to-head movement as well as subsequent readjustment of individual verb forms to achieve the correct string order. The tree in (27) places a high NEG head into a tree representing the analysis of the passive proposed above.

    (27)

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        Asp            Pass
       /   \
     vP      Asp
    /  \
         …
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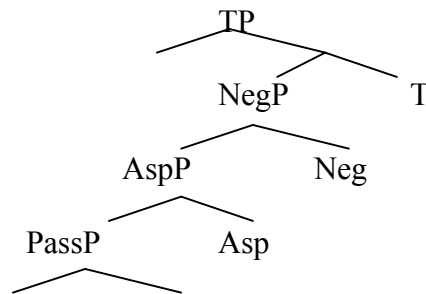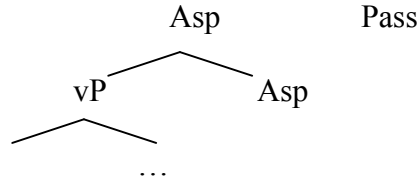
The first grammatical order of the verbal string, in which negation precedes the main verb (Neg-V-Pass-Aux) would require multi-step derivation. Kumar (2006) provides some information as to how this derivation would proceed, and I have filled in additional details as needed in (28).

(28)

    (i)   V moves to v, v moves, incorporates Asp, and <u>left</u> adjoins to Pass

    (ii)   V+v-Asp+Pass incorporates Asp

    (iii)   V+v-Asp+Pass-Asp <u>right</u> adjoins to Neg

    (iv)   Neg+V+v-Asp+Pass-Asp <u>left</u> adjoins to any aux in T

The second possible order, in which negation follows the main verb (V-Neg-Pass-Aux) would require a derivation via steps like those in (29).

(29)

    (i)   V moves to v, v moves, incorporates Asp and <u>left</u> adjoins to Pass

    (ii)   V+v-Asp+Pass incorporates Asp

    (iii)   V+v-Asp+Pass-Asp <u>right</u> adjoins to Neg

    (iv)   Neg+V+v-Asp+Pass-Asp <u>left</u> adjoins to any aux in T

    (v)   Post-syntactically: Neg and V are re-ordered

The sheer complexity (and unregulated nature) of this movement process may be one reason to seek an alternative approach, but in any case it is not clear that V-to-T movement is required in

Hindi-Urdu (Bhatt 2003, Kumar 2003, Bhatt and Dayal 2007).[9] There is certainly not a great deal of empirical evidence to support systematic V-to-T movement, leaving open the possibility that the NEG head is in fact lower in the structure, as it appears to be given its unmarked positions adjacent to the main verb.

   A second possibility proposed in the literature is to locate NEG lower, between vP and Aspect (Dwivedi 1991, Bhatt and Dayal 2007). In this account the main verb may optionally move over negation into the aspectual projection, or may stay within the vP. There is no systematic V-to-T. The tree in (30) shows this placement of the NEG head in an active-voice clause.

   (30)

```
                          TP
                       /      \
                    AspP        T
                   /    \
                NegP     Asp
               /    \
             vP      Neg
            /  \
          VP    v
         /  \
             V
```
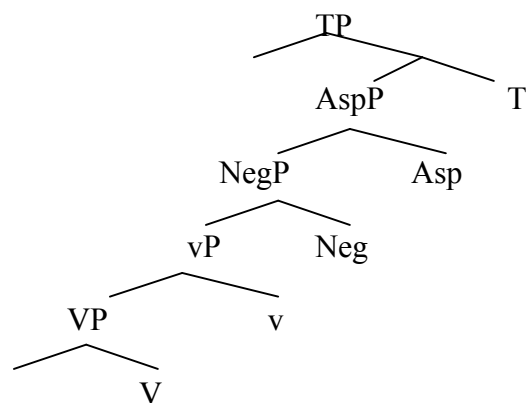
Two issues arise given the account of Hindi-Urdu aspectual morphology and the passive pursued here. First, this positioning predicts that the NEG head should block Lowering of

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[9] Though Kumar 2006 requires V-to-T movement in Hindi-Urdu in both scenarios, Kumar 2003 claims that head movement out of the vP in the syntax is only required to obtain the Neg-V-Aux configuration. Bhatt (2005) suggests that V+Asp may string-vacuously combine with T, but that a covert T is present even when inaudible. In any case, V-to-T would nearly always be string vacuous in head-final Hindi-Urdu except in cases such as the production of the Neg-V order.

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passive/aspectual morphology to the verb when following the main verb, contrary to fact. (31)-

(32) show that the presence of postverbal negation does not block the suffixation of sentential

aspect morphology or formation of the passive particle.

(31) Main-ne **kha-yaa** nahiiN

    I-ERG   eat-PVF.M NEG

    'I have not eaten.'

(32) yeh kavitaa Radheshyaam-dwaaraa **likh-ii** nahiiN ga-yii   (hai)

    this poem.F Radheshyaam-by   write-PFV.F NEG   PASS-PFV.F be.PRS.SG

    'This poem has not been written by Radheshyaam.'

Second, NEGP would in this position intervene in the selectional relation between the Aspect

head containing the passive morphology and the unsaturated vP. Insofar as we wish to continue

to maintain this approach to the passive, this position is too low.

Here I propose a variation on the second account. Consider instead a structure in which NEG

is found between the Aspectual projection containing passive morphology and the functional

head hosting the passive auxiliary, as in (33).

(33)
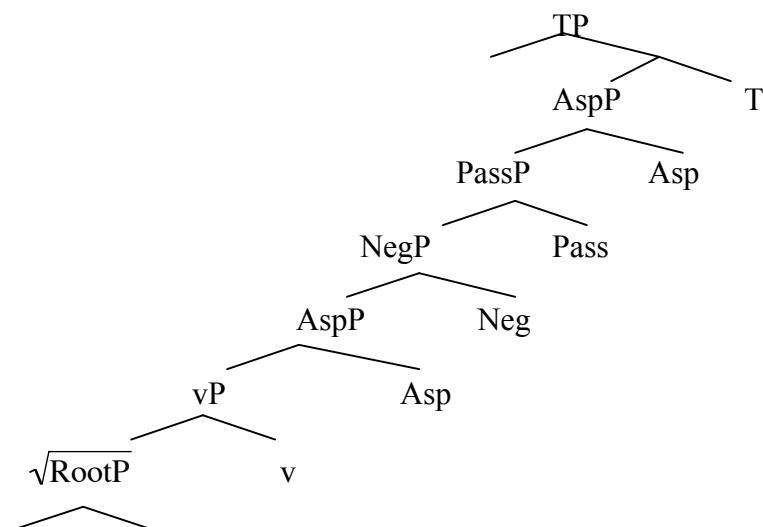
$\sqrt{\text{Root}}$

In this approach, V-Neg order is derived with only Root-to-v in the syntax; the passive

morphology then Lowers onto v post-syntactically. No systematic V-to-T movement is required.

Just as in the account in (30) (Dwivedi 1991, Bhatt and Dayal 2007), the verb may optionally

undergo head movement in the syntax up to the head of negation to create the Neg-verb string

order.[10] In both cases the string order of all other components of the verbal complex is

determined by the order of the functional projections in the syntax, not by rules particular to each

step of head movement and head-to-head adjunction.

In sum, this section has argued for a revised structure of the verbal complex in Hindi-Urdu,

based on investigation of the passive morpheme and passive auxiliary.

(34) TP > AspP > ModP > PassP > NegP > AspP > vP

This represents a departure from a range of other proposals (Mahajan 1990a,b, Dwivedi 1991,

Kumar 2003, 2006, Bhatt and Dayal 2007) in important respects. The Distributed Morphology

framework has provided a way to understand the formation of the passive participle. If the

selection for an unsaturated vP by an Aspect head containing the passive morpheme is at the core

of the passive (Embick 2004), then this configuration should not be interrupted. This motivates

locating the Neg head slightly higher than immediately dominating vP, though not as high as

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[10] In a complex predicate structure, the unmarked Neg-V order is derived via head movement to

Neg in the syntax, just as in a clause without a light verb. We must assume that the V-Neg order

in complex predicate structure requires Local Dislocation of the V and Neg following this head

movement (satisfying the requirement that the main verb and negation be string adjacent). Note

that under any of the above accounts negation in Hindi-Urdu, including the present one, the

emphatic postverbal order is basic (V-Neg) and the unmarked preverbal order derived (Neg-V).

some have suggested. In particular, it is the requirement, under this account, that the passive morpheme undergo Lowering onto the head of its complement which drives the revision of the structure of verbal functional heads.

The structure in (34) has a number of desirable consequences given the investigations above. First, the passive morpheme will attach to a light verb but not to a modal, since the modal is too high to be in the appropriate configuration for Lowering of the passive morpheme. Second, postverbal negation should not be expected block affixation of passive morphology to either a main verb or a light verb – the material in the v head will be the closest head of complement of Aspect. Finally, the passive auxiliary will be found preceding modals but following light verbs in an unmarked verbal string, and if a modal is present, the passive auxiliary won't be marked with sentential aspectual morphology since the modal will be closer to the higher Aspect head.

5. Reverse Complex Predicates

Interestingly, the structure in (34) allows us to approach another puzzle related to complex predicates in Hindi-Urdu. As Hook (1974) and others (recently Deoskar 2006 and Poornima and Koenig 2009) point out, in some complex predicates in Hindi-Urdu, the main and light verb can be reversed.

(35) Raam-ne   Leela-ko   tamaachaa maar di-yaa
     Ram-ERG Leela-DAT slap.M.SG hit   give-PFV.M
     'Ram slapped Leela.'

(36) Raam-ne   Leela-ko   tamaachaa de   maar-aa
     Ram-ERG Leela-DAT slap.M.SG give   hit-PFV.M
     'Ram slapped Leela.'

In (35), we see the typical order of verbal string elements: the main verb *maar* 'hit' precedes the light verb *de* 'give'. However, in (36) the main and light verb are reversed. Importantly, the light verb is still behaving as an aspectual functional head; in other words, the "main verb" meaning of the light verb (giving) does not surface in this construction. Notice, though, that in (35) the sentential aspectual morphology appears on the main verb, not the light verb. Further, when there is a mismatch between the subject case required by the main and light verbs, in the reverse construction it is the main verb, not the light verb, that determines whether or not the subject is marked ergative. Compare (37) with (38):

(37) Raam-ne bhaag di-yaa

Ram-ERG run give-PFV.M

(38) Raam (*-ne) de bhaag-aa

Ram -erg give run-PFV.M

'Ram ran (rapidly).'

The fact that the light verb seems to retain its basic semantic function in the reverse construction and does not take on "main verb" meaning suggests that it should still be an instantiation of the v head, not generated within the VP (see Wurmbrand 2004). Recall that the analysis proposed here claims that the main verb moves into the v head in the syntax, creating a complex head. If no further operations occur, the main and light verb retain their underlying order. However, the reverse complex predicate order could simply be generated if the two heads within the internally complex v undergo the post-syntactic operation Local Dislocation. Embick and Noyer (2001) define Local Dislocation as process following Vocabulary Insertion that exchanges a relation of linear adjacency for a relation of adjunction. Specifically, Local Dislocation can exchange a linearization such as [X∗[Z∗Y]] for one such as [[Z+X] ∗Y].

In the analysis of aspectual morphology pursued here, the dependent morpheme hosted in the Aspect Lowers on to the head of its complement. Under the DM framework, Lowering occurs prior to linearization and Vocabulary Insertion, and therefore precedes Local Dislocation. In order to arrive at the reverse complex predicate construction in which aspectual morphology appears suffixed to the main verb and not the light verb, the aspect morpheme Lowers onto the the internally complex v head, as in (39) (see Embick and Noyer's (2001) approach to English verbs with the prefix *dis-*).

(39)

```
         AspP
        /    \
      vP      Asp ⋯⋯⋯⟍
     /  \            ⬇
    /    \        v
   √────────\──v
```
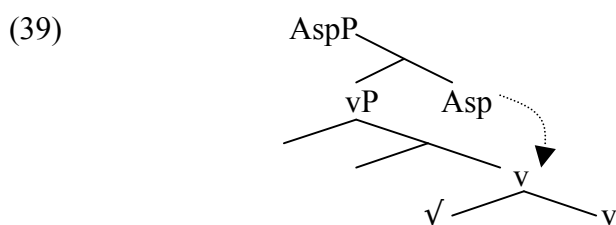
Following linearization of this structure, it is then possible for the two heads within v to undergo Local Dislocation, creating the reverse complex predicate construction. The aspect morpheme will simply lean to the left, causing it to be suffixed to the main verb, not the light verb.

This approach allows us to sidestep a problem Poornima and Koenig (2009) encounter in accounting for the properties of the reverse complex predicate. Poornima and Koenig (working within the HPSG framework) must claim that the main verb exhibits agreement with the nominative argument in the reverse complex predicate construction because the light verb in the reverse construction is a modifier, taking the main verb as its argument. Since in this head/modifier relation the main verb is the syntactic (though not the semantic) head, it is the main verb that will determine ergative case marking and will agree with the nominative argument. On the other hand, in the account we have assumed here, following Bhatt (2005), agreement in gender and number exhibited by aspectual morphology is part of a covaluating

relation between the Tense head and the Aspect head. For this reason we need no further explanation for the fact that it is the main verb that carries a suffix which agrees with the nominative (unmarked) argument. Whichever stem is rightmost in the head to which aspectual morphology happens to Lower will reflect the gender and number features of the nominative object, whether main or light verb.

Finally, the fact that the assignment of ergative case to the subject of the clause is determined by the properties of the main verb, not the light verb, in reverse complex predicates can be explained by assuming the relativistic morphological case-assignment mechanisms in Harley (1995) and Folli and Harley (2004, 2008) (see also McFadden 2004, Embick and Noyer 2007). Hindi-Urdu independently requires the stipulation that it is the rightmost verbal head, whether modal, light verb, or main verb, that determines ergativity, as we have seen above. If the rightmost verb is the main verb, then this it will be the properties of this verb that are relevant for determining the morphological realization of case.

Further evidence for the post-syntactic approach to the reverse complex predicate construction comes from constituency tests, which show that even in the normal order the main verb and light verb form a unit. For instance, as Butt (1995) shows, the main and light verb must scramble together, as in (40), and do not allow adverbial material to intervene, as in (41).

(40) a. Leela-ne   Shyam-ko   ciTThii **maar likh-ii**

   'Leela-ERG Shyam-DAT letter   hit   write-PFV.F

   Leela wrote a letter to Shyam.'

   b. Leela-ne **maar likh-ii** Shyam-ko.

   c. *Leela-ne **maar** Shyam-ko **likh-ii**

(41) a. Leela-ne   **kal**   saaraa din   gappoN main maar bitaay-aa

Leela-ERG yesterday all   day chat   in   hit   spend-PFV.M

'Leela spent all day yesterday chatting'

b. *Leela-ne saaraa din   gappoN main maar **kal** bitaay-aa

This supports the claim above that in the regular order the main and light verbs form a complex v head.

The reverse construction is even more restricted – it seems that absolutely no material can intervene between the interposed light verb and main verb (Poornima and Koenig 2009). Compare (42b), featuring the normal order, in which the focus particle *bhii* may intervene between main and light verb, with (42c), the reverse order, in which *bhii* may not intervene.[11]

(42) a. us-ne   ciTThii **bhii** bhej diy-aa

    he-ERG letter   FOC send give-PFV.M

   'He sent a letter also (in addition to other things he sent)'

b. us-ne   ciTThii bhej **bhii** diy-aa

   'He also sent a letter (in addition to doing other things)'

c. *us-ne ciTThii di **bhii** bhej-aa

Since the morphological operation Local Dislocation requires string adjacency, this increased restriction is expected. In order to arrive at the conditions necessary for the reverse construction, there can be no intervening material in the first place – Local Dislocation will only operate over adjacent elements.

This post-syntactic approach to the reverse complex predicate construction has important similarities with Wurmbrand's (2004) approach to Germanic verbal complex re-ordering.

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[11] Poornima and Koenig (2009) also show that in neither normal nor reverse complex predicates can main verbs be coordinated.

Though the precise mechanisms of the two analyses differ (as do some of the basic empirical facts), the reasoning is quite similar. Given that these kinds of re-orderings do not have clear semantic effects, and that it would be hard to posit a feature-based motivation for optional re-orderings, the phenomena are well-suited to a post-syntactic analysis. Though, as Wurmbrand points out, understanding reverse complex predicate formation as a post-syntactic process does not explain its unpredictability, it does allow us to maintain the restricted nature of syntactic movement and its mapping to the semantics.

Finally, it seems that the reverse complex predicate construction is not available for all light verbs. For instance, Poornima and Koenig report that light verbs like *nikaal* 'remove' and *dal* 'put' do not appear in the reverse construction. The fact that the reverse construction is vocabulary-specific lends further support to its characterization as Local Dislocation. Because Local Dislocation operates after Vocabulary Insertion, it is sensitive to the properties of particular vocabulary items.

One mystery remains, for which previous accounts have no ready explanation: the reverse construction is incompatible with the passive.

(43) *kitaab jor-se   de   phekh-aa   gay-aa

    book   force-INSTR give throw-PFV.M   PASS-PFV.M

    'The book was thrown forcefully.'

In fact, it seems that the reverse construction is also incompatible with the progressive auxiliary.

(44) *Ali kitaab jor-se   de   phekh rah-aa   he

    Ali book   force-INSTR give throw PROG-PFV.M be

    'Ali is throwing the book forcefully.'

First, let us be clear that this incompatibility cannot be strictly morphological, in the sense that

the main verbs in sentences like (43) can certainly appear suffixed with the passive morphology when not in the reverse complex predicate construction. It also cannot be a strictly syntactic fact, since as we have seen light verb constructions in general are compatible with the passive, as well as the full range of aspects.

The approach to the passive advocated for in this paper provides a way of characterizing the conditions under which the reverse construction may appear. Since, as I have argued here, the passive morpheme is located in the Aspect head that immediately dominates the vP, we can claim that only certain types of Aspect heads are compatible with the reverse construction. That is, there is a specific set of conditions under which this particular Local Dislocation operation may take place (Embick 2007). These include the specific set of light verbs that participate in the reverse complex predicate (as discussed above) as well as the type of Aspect with which the reversal is compatible. If these conditions are not met, Local Dislocation will not occur. Given the facts in (43)-(44), the presence of Aspect heads containing passive or progressive features will not meet the conditions necessary for the Local Dislocation operation. Perfective Aspect heads, on the other hand, would be compatible with this operation. I will not develop a formal characterization of the conditions on Local Dislocation in this instance (though see Embick 2005, 2007 for examples); what is crucial for the present account is that this language-specific restriction concerning reverse complex predicate constructions can be characterized just in case we understand passive voice structures to arise when the passive morpheme in Aspect selects for an unsaturated vP. It is this approach that allows us to group together the passive and progressive in defining the context in which the reverse construction may not appear.

6. Conclusion

This paper has argued for a novel approach to the passive in Hindi-Urdu – one which relies on the post-syntactic morphological mechanisms advanced by the Distributed Morphology research program (Halle and Marantz 1993, Embick and Noyer 2001, Embick 2004, and related work). This investigation into the passive has prompted a revised understanding of the structure of the relatively rich clause-final verbal functional heads, which has in turn allowed us to provide an analysis for a series of unexplained puzzles.

The account pursued here has yielded a number of new results. We now have a clear explanation for the attachment point of the passive morpheme in complex verbal structures, such as those with modals and light verbs. The position of the passive auxiliary relative to other verb forms and to negation also proved to be an important diagnostic for the hierarchical structure of functional heads in the language. Perhaps most importantly, this account has advanced our understanding of complex predicates – a phenomenon of considerable interest in work on Indic languages like Hindi-Urdu.

The approach to the Hindi-Urdu passive and the verbal domain in this paper makes crucial use of post-syntactic morphological processes. In particular, it is the requirement, under this account, that the passive morpheme Lowers onto the head of its complement which drives our analysis. In a theoretical framework in which the passive is constructed in the syntactic component and adjacency is crucial to the attachment of dependent morphemes (Marantz 1988, 1989, Bobaljik 1994, Embick and Noyer 2001), the locus of passive morphology provides important information about the wider structure of the verbal complex.

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