Predicate movement in Dutch and Hungarian
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1   Introduction

Hoekstra and Mulder (1990) have argued that the locative inversion construction in (1b) is derived by means of placing the predicative PP into the regular subject position, that is, SpecIP.[1] They claim that this movement is motivated by case theory: nominative case is transmitted through the PP and its trace to the subject in its base-generated position. In the current minimalist framework transmittance of case is not needed, given that case checking can be obtained by means of Agree. Hoekstra and Mulder's analysis can therefore only be maintained if it can be shown that the case features in English are strong, that is, force movement of some case bearing element into SpecIP. This is, however, clearly not the case. If the case features were strong, it would follow that also the direct object moves into its case position, Spec$v$P, so that this would wrongly predict that English is OV; after all, it is generally assumed that V-to-I does not apply in English.

(1)   a.   The baby carriage rolled down the hill.
       b.   Down the hill rolled the baby carriage.

Broekhuis (in prep.) has proposed to rephrase Hoekstra and Mulder's proposal such that the movement of the predicative PP is triggered not by the case feature but by the φ-features on I.[2] In this way, we maintain Hoekstra and Mulder's basic insight, based on earlier work by Moro (1997), that Locative Inversion in (1b) is possible due to the fact that the locational predicate *down the hill* and its external argument *the baby carriage* are in an agreement relation. The main difference is that, whereas Hoekstra and Mulder express this agreement relation by means of co-indexing, we assume that it is formally reflected by means of agreement in φ-features.

This agreement in φ-features between a predicate and its external argument is sometimes morphologically reflected, as in the case of adjectival agreement in the Italian copular construction in (2a), and is formally identical to object agreement in (2b) in the sense that both involve agreement in gender and number. The examples in (2) are taken from Burzio (1986).

(2)   a.   Maria è   malata.
             Maria is   ill$_{3sg.fem}$
       b.   Maria è   arrivata.
             Maria has   arrived$_{3sg.fem}$

This article assumes that the predicative agreement relation is not restricted to APs but holds cross-categorially. This means that also the predicative PP in (1) agrees with the DP in

[2] In Section 2.1 we will assume that the φ-features of the verb are situated on V (and not v). This enables us to follow e.g Hornstein (1995:ch.5) and Lasnik (1999) in assuming that object movement is also possible in English without predicting English to be OV: since object movement into SpecVP is followed by V-to-v movement, the original VO order is restored. See Broekhuis (in prep.) for more discussion and empirical evidence.

φ-features, even though in this case the agreement relation is not morphologically expressed. Furthermore, it is assumed that both the predicative and the object agreement relation are present cross-linguistically, despite the fact that these agreement relations have a morphological reflex in a limited number of languages only. In short, we will adopt the statements in (3) as axioms.

(3)   a.   **Axiom I**: A predicate agrees in φ-features with the DP it is predicated of.
       b.   **Axiom II**: V agrees in φ-features with its internal argument.

Hoekstra and Mulder's (1990) basic insight can now be rephrased in more current terms as in (4), which obviously constitutes the null hypothesis from the perspective of the Last Resort condition on movement. Given axiom (3a) and hypothesis (4), it is now correctly predicted that in (1) either the DP *the baby carriage* or the predicative PP *down the hill* can check (or value) and hence be attracted by the unchecked uninterpretable (or unvalued) φ-features on I.

(4)   **Null hypothesis**: If A and B agree in φ-features, both A and B can be the goal of some higher head H with unchecked φ-features, and, consequently, be a candidate for internal merge with H.

       From axiom (3a) and hypothesis (4), the statements in (5) follow as a corollary. Since the predicate is predicated of the subject of an unaccusative construction, and the subject can be a goal of the φ-features on both the verb and T, the predicate can be a goal of these heads as well; as a result, movement may involve either the subject or the predicate, as stated in (5a). Similarly, since the predicate is predicated of the object of a transitive construction, and the object can be the goal of the φ-features on the verb, the predicate can be a goal of the verb as well; as a result, movement may involve either the object or the predicate, as stated in (5b). The formulation in (5) leaves open the question under which conditions predicate movement applies instead of DP movement. This will be discussed later in this paper.

(5)   Predicate movement may target any checking position associated with uninterpretable/unvalued φ-features of H that is normally targeted by:
       a.   the nominative DP in an unaccusative construction;
       b.   the accusative DP in a transitive construction.

Given axiom (3b) and hypothesis (4), we may conclude that a verb phrase may target the same positions as its internal argument, unless the pertinent position is locally related to the head of the VP itself, since, of course, a VP cannot check (or value) the features of its own head. This means that if we phrase the corollaries from the perspective of the attracting head, we get the generalization in (6): (6a) is simply the standard assumption within the minimalist framework, (6b) is a reformulation of the two corollaries in (5), and (6c) is the corollary that follows from (3b) and (4).

(6)   Uninterpretable/unvalued φ-features on H may attract:
       a.   argument DPs
       b.   small clauses
       c.   verb phrases

The corollaries in (5)/(6b&c) show that adopting the axioms in (3) and hypothesis (4) extend the empirical scope of Hoekstra and Mulder's original insight considerably. Locative inversion, of course, illustrates movement type (5a). This article will reanalyze predicate movement in Dutch (Zwart, 1993/1997, and Koster, 1994) and movement of the verbal modifier in Hungarian as instantiations of movement type (5b).

2   Predicate movement in Dutch

Section 2.3 will discuss some consequences of hypothesis (4) concerning the placement of small clause predicates and verb phrases in Dutch. The discussion is phrased in terms of the Derivation and Evaluation framework developed in Broekhuis and Dekkers (2000), Dekkers (1999), and Broekhuis (2000/2003). This framework combines the minimalist program and Optimality Theory in the sense that (some version of) the computational system for human language (C_{HL}) developed within MP is taken to function as the generator of an OT-like system. Although space limitations do not permit to discuss this framework, sections 2.1 and 2.2 will introduce some theoretical assumptions underlying the analysis proposed later on the basis of a discussion of two characteristic properties of Dutch: the predominant OV-order and the verb-second phenomenon in main clauses.

2.1   Deriving the OV-nature of Dutch

Since object DPs always precede the verb(s) in clause-final position, Dutch is normally considered an OV-language. This OV-order is illustrated in (7a) for embedded clauses and in (7b) for main clauses with compound tenses. The OV-nature is somewhat obscured by the Verb-second phenomenon in main clauses, which will be discussed more extensively in section 2.2 and is illustrated in (7c).

(7)   a.   dat   Jan dat boek leest.
              that   Jan that book reads
       b.   Jan   heeft dat boek   gelezen.
              Jan   has   that book read
       c.   Jan   leest   dat boek t_{leest}.
              Jan   reads that book

Koster (1975) has argued that Dutch is not only predominantly OV at the surface, but also has an underlying OV-order. However, if Kayne (1994) is correct in claiming that cross-linguistically languages have the underlying order specifier-head-complement, Koster's conclusion must be wrong. The task is then to account for the obligatory OV-order in Dutch. Here we will summarize the proposal put forth in Broekhuis (2000/2003) since this will be taken as the starting point of section 2.3.

       In Dutch the object can occupy various positions in the clause. For example, it can occupy the position immediately preceding the clause-final verb, but it can also be placed more to the left, e.g. in a position preceding the sentential adverbs. The placement of the object in (8) depends on the information structure of the clause: in (8a) the object belongs to the focus of the clause, whereas in (8b) it belongs to the presupposition of the clause.

(8)   a.   dat   Jan waarschijnlijk   dat boek leest.
              that   Jan probably   that book reads
       b.   dat Jan dat boek waarschijnlijk leest.

If we adopt the more or less standard assumption that the object in (8b) is moved/scrambled across the adverbial phrase, these examples show that (in accordance with Kayne 1994) the object can be moved leftward. What we would like to claim here is that the preverbal placement of the object is likewise the result of leftward movement. Consider (9). According to the universal base hypothesis the object is base-generated in O_1, so that it should obligatorily move leftward into the position O_2. If the object is part of the focus of the clause,

it remains in that position, but if it is part of the presupposition of the clause it must be moved into the position O_3.

(9)   ..... O_3 advP O_2 V O_1

Given the inviolable Last Resort condition on movement, the movements of the object must be triggered. In Broekhuis (2000) it was claimed that the movement into O_2 is triggered by the φ-features on V (that is, object agreement), whereas the movement into O_3 is triggered by the case-features on v. The fact that the movement triggered by the φ-features is compulsory, whereas the movement triggered by the case features is sensitive to the information structure of the clause, is accounted for in an optimality theoretic fashion by assuming the constraint ranking in (10). The constraints AGREEMENT and CASE are part of a constraint family F that requires that a probe, that is, some uninterpretable formal feature F of head H be checked by moving its goal, that is, an element with the interpretable counterpart of F into its checking domain. The ranking of F with respect to the economy constraint STAY determines whether a certain feature will be checked *in situ* by Agree (STAY >> F) or whether movement of the goal into the checking domain of the probe is needed (F >> STAY). The constraint ALIGNFOCUS requires that the new information is placed in the right periphery of its clause.

(10)   Dutch: AGREEMENT >> ALIGNFOCUS >> CASE >> STAY

The rankings AGREEMENT >> STAY and CASE >> STAY thus indicate that the movements of the object normally takes place: the φ-features and case must be checked locally. The subranking ALIGNFOCUS >> CASE >> STAY predicts, however, that the movement triggered by the case features (movement into O_3) is blocked if the object is part of the focus of the clause. The subranking AGREEMENT >> ALIGNFOCUS >> STAY, on the other hand, expresses that the movement triggered by the φ-features cannot be blocked in the same way: the movement into O_2 is compulsory irrespective of the question whether the object is part of the focus or of the presupposition of the clause.

The ranking in (10) also makes a prediction about movement of the subject. The subranking ALIGNFOCUS >> CASE >> STAY predicts that as far as the case features are concerned movement into SpecIP depends on the information structure of the clause: these features only force movement of the subject into SpecIP when the subject is part of the presupposition of the clause. The passive example in (11) shows that, indeed, the subject need not be moved into subject position.

(11)   dat   waarschijnlijk   de koningin$_{IO}$ het boeket$_S$ aangeboden   wordt.
             that   probably   the queen   the bouquet   prt.-offered   be$_{pas.aux.}$
             'that the queen probably will be offered the bouquet.'

A problem arises with the subranking AGREEMENT >> ALIGNFOCUS >> STAY: this ranking wrongly predicts that subject agreement on the finite verb forces movement of the subject into SpecIP, irrespective of the question whether the subject is part of the presupposition or the focus of the clause. Broekhuis (2003) argues that this problem can be solved by assuming that it is not the *set* of φ-features that trigger movement, but the *individual* φ-features. Object agreement normally involves agreement in gender (and number), whereas agreement between subject and finite verb normally involves agreement in person (and number). By assuming the ranking in (12), the difference in movement behavior between subjects and objects is accounted for.

(12)   Dutch: $\text{AGR}_{\text{gender}}$ >> ALIGNFOCUS >> {CASE, $\text{AGR}_{\text{person}}$} >> STAY

The subranking $\text{AGR}_{\text{gender}}$ >> ALIGNFOCUS >> STAY accounts for the obligatory movement of the object into the preverbal position. The subranking ALIGNFOCUS >> CASE >> STAY accounts for the fact that that scrambling of the object and movement of the subject into SpecIP depends on the information structure of the clause. The fact that $\text{AGR}_{\text{person}}$ is also outranked by ALIGNFOCUS accounts for the fact that agreement between the subject and the finite verb does not force movement of the subject into SpecIP. Note that the precise position of $\text{AGR}_{\text{person}}$ cannot be determined on basis of the present data: for convenience, we assume in (12) that, just like CASE, it is ranked above STAY, but it may equally well be ranked lower than that. Also $\text{AGR}_{\text{number}}$, which we have left out in (12) for convenience, must be ranked somewhere below ALIGNFOCUS: because the number feature is involved in both subject and object agreement, placing $\text{AGR}_{\text{number}}$ above ALIGNFOCUS would incorrectly force both object and subject movement.

2.2   Verb-second

One of the most conspicuous properties of Dutch is the so-called Verb-second phenomenon, that is, the fact that in main clauses the finite verb is moved into the second position of the clause. Traditionally, it is assumed that V and I are base-generated in final position, so that Verb-second must be accounted for by assuming that the finite verb is subsequently moved into the I- and the (head-initial) C-position. Verb movement into C is excluded in embedded clauses since then the C-position is occupied by a complementizer like *dat* 'that' (Den Besten 1983). In current terms, this would amount to saying that the derivation of embedded clauses is as given in (13a), and that of main clauses as given in (13b). The Verb-second property follows from the assumption that in declarative main clauses some XP must be topicalized.

(13)   a. $[_{CP} \text{dat} [_{IP} ... [_{VP} ... t_V] \text{I+V}]]$
        b. $[_{CP} \text{XP}_i \text{C+I+V} [_{IP} ... [_{VP} ... t_V] t_{I+V}]]$

If we adopt the universal base hypothesis, according to which also V and I precede their complement, alternative derivations of Verb-second clauses become available. In subject-initial main clauses it would suffice to move V to I, as is illustrated in (14a), I-to-C only being required if some XP is topicalized, as in (14b).

(14)   a. $[_{IP} \text{S I+V} ... [_{VP} ... t_V ...]]$
        b. $[_{CP} \text{XP}_i \text{C+I+V} [_{IP} \text{S} t_{I+V} ... [_{VP} ... t_V ...]]]$

A convincing argument in favor of the claim that that the subject in subject-initial clauses does not occupy SpecCP (as the traditional view would have it) but SpecIP is that a clause-initial subject can be realized either as a full or as a reduced pronoun, whereas reduced object pronouns are excluded in clause-initial position. This difference between subjects and objects is illustrated in (15) and can be attributed to a ban on Topicalization of weak pronouns; if the clause-initial subject may occupy SpecIP, as in (14a), this difference between subject and object pronouns follows. This and more arguments can be found in Zwart (1997).

(15)   a.   Jij/Je   moet even   uitrusten.
                you   must for a moment rest
        b.   Jou/*Je   wil ik even   spreken.
                You   want I for a moment speak

If the finite verb occupies the I-position in subject-initial main clauses, the fact that the C-position is occupied by a complementizer is no longer sufficient to block verb movement in embedded clauses; just like in main clauses, the finite verb could in principle be placed into the I-position of the embedded clause so that it would precede its complements in that environment as well (in other words, Dutch would behave like Icelandic then).

(16) $[_{CP}$ dat $[_{IP}$ S I+V ... $[_{VP}$ ... t_V ...]]]

The obvious question to ask therefore seems to be: How can we block V-to-I in embedded clauses and allow it in main clauses? Zwart (1997), however, claims that this is actually the wrong way of putting the question, and that despite appearances V-to-I *is* obligatory in Dutch. That this is the case is suggested by Holmberg's (1986) Generalization, according to which scrambling of the object (= object shift) is only possible if the verb moves as well.

According to Zwart, the true difference between main and embedded clauses concerns the question of *what* moves in the two cases. He claims that V-to-I is essentially movement of the verb's formal features, and that the verb-second property follows from the fact that these features must be phonologically supported. The derivation of a subject-initial main clause like (17a) is therefore as sketched in (17b-d). The inflectional head I in (17b) attracts the formal features of the verb *koopt*, which results in the structure in (17c). Since the formal features must be phonologically supported, also the phonological features of the verb are moved to I, which results in (17d).

(17)   a.   Jan koopt   het boek.
            Jan buys   the book
       b.   Jan I het boek koopt
       c.   Jan FF(V)-I het boek koopt
       d.   Jan koopt-FF(V)-I het boek t_{koopt}

The derivation of embedded clauses like (18a) proceeds in a slightly different way. The derivation in (18b-c) is essentially the same as in (17b-c). The difference between the two derivations lies in the steps in (17d) and (18d): whereas the formal features in main clauses like (17) can only receive phonological support from the verb itself, in embedded clauses like (18) they can also receive phonological support by undergoing head-movement to the lexical complementizer *dat*. This movement to the complementizer voids the need of moving the phonological features of the verb and can also be used to account for the phenomenon of complementizer agreement found in many Dutch and German dialects.

(18)   a.   dat   Jan het boek   koopt.
            that   Jan the book   buys
       b.   dat Jan I het boek koopt
       c.   dat Jan FF(V)-I het boek koopt
       d.   FF(V) -I-dat Jan $t_{FF(V) -T}$ het boek koopt

Broekhuis (2000) revised Zwart's proposal such that we do not have to take recourse to feature movement. The basic idea is that I does not attract the formal features of the verb but the light verb *v*. The question whether *v*-to-I is visible therefore depends on the question whether V-to-*v* applies. If we now assume that *v* is an affix, we could introduce the constraint AFFIX (in effect, the familiar stray affix filter) that requires *v* to be phonologically supported. As a result, the derivation of main clauses must also involve V-to-*v*: if this movement did not take place, *v* would be moved to I in isolation. We illustrate this for a subject-initial main clause in (19). Whereas the candidate in (19a) satisfies AFFIX, (19b) violates it.

(19) a. $[_{IP}$ S I+v+V ... $[_{vP}$ ... t_{v+V} ... $[_{VP}$ ... t_V ..]]]]
      b. *$[_{IP}$ S I+v ... $[_{vP}$ ... t_{v+V} ... $[_{VP}$ ... V ..]]]]

In embedded clauses there is an alternative option of satisfying AFFIX, namely by moving I to the lexical complementizer *dat*, which again can be held responsible for the complementizer agreement found in many Dutch and German dialects. Given the unacceptability of (20a), this option is apparently preferred for Dutch. The preference for (20b) can be formally accounted for by taking recourse to Grimshaw's (1997) constraint NolexM, which forbids movement of lexical elements like V: movement of the functional head I is therefore preferred.

(20) a. *$[_{CP}$ dat $[_{IP}$ S I+v+V ... $[_{vP}$ ... t_{v+V} ... $[_{VP}$ ... t_V ..]]]]]
      b. $[_{CP}$ dat I+v $[_{IP}$ S t_{I+v} ... $[_{vP}$ ... t_{v+V} ... $[_{VP}$ ... V ..]]]]

2.3   Predicate movement in Dutch

According to Kayne's universal base hypothesis all languages have the underlying order specifier-head-complement, and thus have an underlying VO order. Section 2.1 has shown how we can account for the obligatory OV surface order found in languages like Dutch. By assuming the subranking AGR$_{gender}$ >> ALIGNFOCUS >> STAY the object is forced to move in order to check the φ-features of V locally; information structure considerations cannot block this movement. This proposal solves only one of a larger set of problems that Dutch poses for the universal base hypothesis. The following subsections will discuss two of these problems, and show how these can be solved by taking recourse to hypothesis (4).

2.3.1   The placement of small clause predicates

SC predicates constitute a similar problem for Kayne's universal base hypothesis as objects: they are base-generated in complement position, that is, to the right of the verb, but obligatorily precede the clause-final verb in Dutch. This is illustrated in (21); the angled brackets indicate alternative placements of the predicative PP *uit bed* 'out of bed'.

(21) a. dat   de baby   <uit bed>   viel <*uit bed>.
          that the baby   out of bed   fell
      b. dat   Jan de baby   <uit bed>   duwde <*uit bed>.
          that Jan the baby   out of bed   pushed

In order to account for the placement of the predicate, Koster (1994) proposed that the clause contains a PredP between V and AGR$_O$, and that the SC obligatorily moves into the specifier of this projection in Dutch. According to Koster, SpecPredP may contain either predicative phrases or DPs. With respect to DPs, Koster follows De Hoop (1992) in claiming that DPs occupying SpecPredP must be part of a complex predicate: *de afwas doen* 'to do the dishes', *een klap geven* 'to give a blow/to hit', etc. In order to make the proposal in accordance with Last Resort, Koster claims that "small clause predicates have Case-like N-features that can only be checked by overt movement to [Spec, PredP]".

If Kayne's universal base hypothesis is correct, a proposal along the line of Koster (1994) seems unavoidable. We therefore adopt the proposal with only two alterations. The first is that we do not assume that the movement of SCs is triggered by case-like N-features; instead, we assume in accordance with hypothesis (4) that this movement is triggered by the agreement features of V. An important empirical reason for making this revision is the fact that SCs also move in unaccusative constructions like (21a); unaccusative verbs like *vallen* are normally assumed not to assign case, and we would therefore have no trigger for the

obligatory movement of the predicative PP. A more theory-internal reason for making this revision is that we are adopting here the standard assumption, according to which the case features are situated much higher, namely on the light verb v. The second alteration is directly related to the previous one: the idea that predicate movement is triggered by the agreement features on V voids the need of postulating the functional head Pred.

Let us now start by considering the question what the derivation of a transitive construction like (21b) might look like. The derivation starts with creating the SC configuration in (22a). In (22b) the SC is merged with V. The next step in the derivation is checking the φ-features of V. We have seen in section 2.1 that this must be done locally in Dutch, which means that either the DP or the SC must be placed in a local checking relation with V. Given the fact the SC must precede V, apparently only the option of moving the complete SC is available; cf. (22c). The next step is to add v and the external argument, as in (22d), and from this point onwards the derivation may proceed in the same fashion as regular transitive constructions: the case features on v attract the DP (provided, at least, that the latter is part of the presupposition of the clause), after which I is merged and the subject is moved into SpecIP. Recall that the OV order in Dutch follows from the fact that V-to-v only applies in main clauses; cf. the discussion in section 2.2.

(22) a. $[_{SC}$ DP PRED]
      b. $[_{VP}$ V $[_{SC}$ DP PRED]]
      c. $[_{VP}$ $[_{SC}$ DP PRED] V $[_{VP}$ t_V t_{SC}]]]
      d. $[_{vP}$ S v $[_{VP}$ $[_{SC}$ DP PRED] V $[_{VP}$ t_V t_{SC}]]]

At least two aspects in the derivation in (22) need more extensive discussion. The first concerns the movement of the complete SC in (22c). Hoekstra and Mulder (1990) assumed that in the English locative inversion construction the predicate PRED is moved into SpecIP in isolation, as in (23a). In (22c), on the other hand, it is assumed that movement of PRED must Pied Pipe the complete SC. This implies that in order to derive the locative inversion construction, the DP must be moved out of the SC before the predicate is moved into SpecIP. Given the fact that the DP can be moved separately to check the φ-features of V (cf. fn.2), this is indeed possible, as is shown in (23b). For detailed discussion of and empirical support for the Pied Piping option we refer to Broekhuis (in prep.).

(23) a. $[_{IP}$ PRED$_i$ I $[_{VP}$ V $[_{SC}$ DP t_{PRED}]]]
      b. $[_{IP}$ $[_{SC}$ t_{DP} PRED] I $[_{vP}$ v+V $[_{VP}$ DP t_V t_{SC}]]]

The second aspect concerns the fact that it is apparently not possible in Dutch to move the DP instead of the full SC. Broekhuis (in prep.) proposed a constraint CLOSEST, according to which V should attract the closest category that can check its φ-features. In the structure $[_{VP}$ V $[_{SC}$ DP PRED]], CLOSEST favors movement of the complete SC, because SC dominates DP. In short, the effect of CLOSEST is that movement of the more encompassing phrase is preferred. Note that CLOSEST, contrary to the Minimal Link Condition, must be viewed as a violable constraint, since otherwise we would wrongly block the locative inversion construction in (23b). The derivation that leads to this example is allowed because in English CLOSEST is outranked by ALIGNFOCUS, which forces the subject DP to be in the right periphery of the clause when it is part of the focus of the clause (see Broekhuis, in prep., for a detailed analysis).

The first three steps in the derivation of the unaccusative example in (21a) are identical to those of the transitive construction in (22a-c), and are given as (24a-c). From this point the two derivations diverge: in the transitive case the vP contains an external argument (cf. (22d)), whereas in the unaccusative case there is no external argument (cf. (24d)). After

stage (24d), the derivation of the unaccusative example is rather straightforward: I is added and the DP moves on to SpecIP in order to check nominative case.

(24)   a.   [$_{SC}$ DP PRED]
       b.   [$_{VP}$ V [$_{SC}$ DP PRED]]
       c.   [$_{VP}$ [$_{SC}$ DP PRED] V [$_{VP}$ t_V t_{SC}]]]
       d.   [$_{vP}$ v [$_{VP}$ [$_{SC}$ DP PRED] V [$_{VP}$ t_V t_{SC}]]]
       e.   [$_{IP}$ DP I [$_{vP}$ v [$_{VP}$ [$_{SC}$ t_{DP} PRED] V [$_{VP}$ t_V t_{SC}]]]]

Of course, the movement of the subject into SpecIP takes place only when the subject is part of the presupposition of the clause; otherwise ALIGNFOCUS will block this movement. Observe that in (24e) it is the DP that must move into SpecIP and not the entire SC; this follows from the fact that movement of the DP results in checking of both the case and agreement features on I, whereas movement of the SC will leave the Case features of I unchecked.[3]

2.3.2   Extending the analysis: VP-movement

This section extends the proposal in 2.3.1 concerning predicate movement to periphrastic verb constructions by arguing that also VPs can be involved in the checking of φ-features. Consider the Dutch examples in (25). In both structures the DP complement of the main verb *lezen* has moved into the preverbal position, as required by the subranking AGR$_{gender}$ >> ALIGNFOCUS >> STAY. The two examples differ, however, in that in (25b) the VP has moved into the position preceding the auxiliary, whereas in (25a) the VP remains in its original place. Apparently, the latter is excluded in (Standard) Dutch.

(25)   a.   *dat   Jan heeft [$_{VP}$ dat boek   gelezen [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]]
            that   Jan has   that book read
       b.   dat Jan [$_{VP}$ dat boek gelezen [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]] heeft t_{VP}

The question we have to address now is: What is the trigger of this movement of the VP in (25b)? What we want to explore here is the possibility that auxiliaries have uninterpretable φ-features that must be checked by the internal argument of the main verb, or, under (4), some phrase that agrees with it. That at least some auxiliaries have these features is clear from the Italian example in (26), where the passive auxiliary *stata* exhibits object agreement (that is, agreement in gender and number) with the internal argument of the main verb *accusata*, viz. *Maria*. Here we will assume that all auxiliaries share this property.

(26)   Maria è   stata   accusata.
            Maria has been$_{fem,sg.}$ accused$_{fem,sg.}$

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[3] Broekhuis (in prep.) has shown that the proposal concerning the English Locative Inversion construction can be extended to a number of other constructions, which are discussed in Rochemont and Culicover (1990) under the general denominator of Preposing around *be*. Similarly the preverbal position in Dutch is not reserved to predicative PPs: all SC predicates must occupy this position, irrespective whether they are PPs, as in (21), or APs or NPs, as in (i). We will assume without illustrating this any further that the placement of the predicates in examples like (i) can be accounted for in the same way as the placement of the PP in (21).

(i)   a.   dat   Jan de muur <geel>   verfde <*geel>.
            that   Jan the wall   yellow   painted
       c.   dat   Jan Peter   <een goed taalkundige> vindt <*een goed taalkundige>.
            that   Jan Peter a good linguist   considers

The fact that the word order of (25b) is preferred to that of (25a) now follows from the constraint AGR$_{\text{gender}}$. The subranking AGR$_{\text{gender}}$ >> ALIGNFOCUS >> STAY requires that the gender feature of the auxiliary *heeft* 'has' be checked locally, and this requirement is satisfied in (25b) only.

Recall that section 2.3.1 has proposed a constraint CLOSEST, which favors movement of the more encompassing phrase which could check the features of the attracting head H, and which is responsible for the fact that in Dutch constructions with a SC, the complete SC must be moved into the preverbal position. The adoption of this constraint would lead us to expect that in Dutch periphrastic verb constructions it is also the more encompassing phrase, viz. the VP, that is moved into the position in which the gender feature of the auxiliary is checked. Example (25b) shows that it is indeed possible to move the VP into this position. The same is illustrated by the slightly more complex example in (27a). The relevant part of the derivation of this example starts out with the VP structure in (27b). Since in Dutch the gender feature of V must be checked locally, either the SC or its DP subject must move into the checking domain of V. The constraint CLOSEST correctly favors movement of the full SC, as in (27c). In (27d) the auxiliary *heeft* is merged, whose gender feature must be checked locally. Now the option is between moving the DP, the SC or the VP. It is clear that CLOSEST favors movement of the VP, as in (27e), and example (27a) shows that this is indeed an acceptable option. For completeness' sake, note that we make use of auxP for notational convenience only and that this does not substantiate any theoretical claim; the label auxP can be replaced by the label VP without any consequences.

(27)   a.   dat   Jan de stoep   schoon geboend heeft.
              that Jan the pavement clean   scrubbed has
         b.   [$_{VP}$ geboend [$_{SC}$ de stoep schoon]]
         c.   [$_{VP}$ [$_{SC}$ de stoep schoon] geboend [$_{VP}$ t_{geboend} t_{SC}]]
         d.   [$_{auxP}$ heeft [$_{VP}$ [$_{SC}$ de stoep schoon] geboend [$_{VP}$ t_{geboend} t_{SC}]]]
         e.   [$_{auxP}$ [$_{VP}$ [$_{SC}$ de stoep schoon] geboend [$_{VP}$ t_{geboend} t_{SC}]] heeft t_{VP}]

So far the predictions seem to be confirmed. A problem is, however, that the derivations of the examples in (25b) and (27a), are not the only possible ones. This is clear from the fact that they alternate with the orders in the primed examples in (28). At first sight, the primed examples seem to involve movement of a phrase smaller than VP; it seems that these examples can be analyzed as in the primed examples. If these analyses are indeed correct, (28a&b) constitute a problem for the earlier assumption that CLOSEST forces movement of the VP.

(28)   a.   dat Jan dat boek heeft gelezen.
         a′. dat Jan [$_{auxP}$ dat boek heeft [$_{auxP}$ [$_{VP}$ $t_{\text{dat boek}}$ gelezen [$_{VP}$ t_{gelezen} $t_{\text{dat boek}}$]]]]
         b.   dat Jan de stoep schoon heeft geboend.
         b′. dat Jan [$_{auxP}$ [$_{SC}$ de stoep schoon] heeft [$_{auxP}$ [$_{VP}$ t_{SC} geboend [$_{VP}$ t_{geboend} t_{SC}]]]]

In order to solve this problem with respect to CLOSEST, we want to maintain that, despite appearances, the primed examples in (28a&b) do involve VP movement. One argument in favor of this concerns the position of the VP-adverbs. Since VP-adverbs modify the projection of the main verb, the null hypothesis is that they are generated in their vicinity; this means that they are generated as part of the complement of, and therefore to the right of the auxiliary verbs. In the phonetic realization of the Dutch clause, however, the VP-adverbs normally precede the auxiliary; the examples in (29) further show that their placement does not depend on the position of the main verb.

(29) a. dat   Jan dat boek   nauwkeurig   gelezen   heeft.
          that   Jan that book   meticulously   read   has
      b. dat Jan dat boek nauwkeurig heeft gelezen.

Of course, example (29a) can readily be derived if the VP-adverb is pied piped by the movement of the VP. If (29b) does not involve VP-movement, the word order in this example can only be derived by moving the adverb in isolation. This, however, seems to go against Last Resort, since there does not seem to be any trigger that would motivate this movement. This leads to the conclusion that (29b) is also derived by VP-movement. The derivation of (29b) is roughly as indicated in (30); we have ignored the subject for simplicity.

(30) a. [nauwkeurig [$_{VP}$ gelezen dat boek]]
      b. [$_{VP}$ dat boek gelezen [nauwkeurig [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]]]
      c. [$_{XP}$ gelezen [$_{VP}$ dat boek $t_{gelezen}$ [nauwkeurig [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]]]]
      d. [$_{auxP}$ heeft [$_{XP}$ gelezen [$_{VP}$ dat boek $t_{gelezen}$ [nauwkeurig [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]]]]]
      e. [$_{auxP}$ [$_{VP}$ dat boek $t_{gelezen}$ [nauwkeurig [$_{VP}$ $t_{gelezen}$ $t_{dat\ boek}$]]] heeft [$_{auxP}$ t_{heeft} [$_{XP}$ gelezen t_{VP}]]]

Several questions remain to be answered, such as: what does XP stand for in the derivation in (30), and why is the movement of the participle into X optional? Unfortunately, space limitations make it impossible to address these questions here. We refer to Broekhuis (in prep.) for some suggestions.

3   Hungarian

This section discusses the distribution of the so-called verbal modifiers (VM) in Hungarian. Section 3.1 starts with a discussion of some of the core data and the analysis of these data provided by É. Kiss (2002; to appear). É. Kiss' analysis is built on the assumption that the VMs and focused phrases compete for the same position. Section 3.2 argues that this cannot be correct, and that the more traditional approach according to which the two types of movement are triggered by different features is more to the point. More precisely, we will argue that movement of the VM can be considered another illustration of hypothesis (4) in that it is triggered by the φ-features on V, which are of course no plausible triggers for movement of focused phrases. Finally, section 3.3 will provide an account for the complementary distribution of VMs and focused phrases.

3.1   Core data and previous analysis

This sections provides some of the core data and discusses the account for these data given in É. Kiss (2002; to appear). Consider the examples in (31). The examples in (31a&a′) show that in neutral sentences VMs, like the particle *el* 'away', must precede the finite verb. However, if one of the constituents is assigned (identificational) focus, which is indicated by means of small capitals in (31b&b′), that phrase must be placed immediately in front of the finite verb, whereas the VM must follow it.

(31) a.   János   *el*   ment.
           János   away went
      a′. *János ment *el*.
      b.   JÁNOS ment *el*.
      b′. *JÁNOS *el* ment.

A more or less standard way of accounting for these data, which É. Kiss (2002:4.2) partly attributes to Brody (1990/1995), is to assume that on top of VP, (at least) two functional

projections can be found: Asp(ect)P and F(ocus)P. SpecAspP is considered the landing site for the VM, which is often aspectual in nature, and SpecFP is the landing site for constituents acting as identificational focus. The verb moves into the head positions of these phrases. The derivation of the examples in (31a&b) is therefore as indicated in (32).

(32) a.   János [$_{AspP}$ el ment [$_{VP}$ ... t_{ment} ... t_{el} ...]]
      b.   [$_{FP}$ JÁNOS ment [$_{AspP}$ el t_{ment} [$_{VP}$ ... t_{ment} ... t_{el} ...]]]

É. Kiss (2002) dismisses this type of analysis by pointing out that it wrongly predicts that the verbal modifier (VM) must be right-adjacent to the finite verb in the focus construction;[4] the examples in (33b&c) show that the VM *be* can be placed much more to the right. É. Kiss therefore suggests that the focused phrase and the VM compete for the same position.

(33) a.   János *be*   mutatta   Pétert   Marinak.
           János VM   introduced Peter-acc Mary$_{dat}$
           'János introduced Peter to Mary.'
      b.   PÉTERT mutatta János *be* Marinak.
      c. $^{(?)}$PÉTERT mutatta János Marinak *be*.

É. Kiss (to appear) gives shape to this suggestion by assuming that both VMs and focused constituents target Koster's (1994) PredP, and, indeed, the presupposition that VMs are predicates doesn't seem to be too far-fetched. Firstly, it has been argued by many people that particles are actually SC predicates (one of the most ardent proponents of this view being Den Dikken, 1995). Secondly, a cursory inspection of the other constituents that can be placed into the position preceding the finite verb shows that this position is normally occupied by predicative elements. In (34) to (36), a number of representative examples are given, taken from Komlósy (1985). In (34) the element preceding the finite verb is a predicative locational phrase,[5] in (35) a predicative adjective, and in (36) a nominal predicate.

(34) a.   Péter *laposra*   verte Jánost.
           Peter flat-on   beat John$_{acc}$
           'Peter beat John to pulp.'
      b.   János *az asztalra*   tette a könyvet.
           John the table-on   put   the book$_{acc}$
           'John put the book on the table.'

(35) a.   Mari   tegnap   *beteg* volt.
           Mary   yesterday ill   was
           'Mary was ill yesterday.'
      b.   János *okosnak* tartja   Pétert.
           John clever$_{dat}$ consider Peter$_{acc}$
           'John considers Peter clever.'

(36) a.   János tavaly   *katona* volt.
           John   last year soldier was
           'John was a soldier last year.'

---

[4] This prediction actually does not follow from Brody's (1990/1995) proposals but only from the specific implementation of some of his ideas by É. Kiss herself, notably the idea that the VM moves into SpecAspP.
[5] Synchronically seen, the locational phrases in (34a&b) are case-marked DPs, but in other constructions they can also be postpositional phrases; cf. example (46b) below.

The fact that also bare main verbs can occupy the position preceding the finite verb is, of course, also in line with the idea that this position is designated to predicative elements.

(37)   Mari   *venni*   akar egy autót.
            Mary   buy$_{inf}$ want a car$_{acc.}$
            'Mary wants to buy a car.'

A potential problem is that also bare nouns may function as a VM, that is, target the same position as the predicative elements discussed above: it is not easy to see why the noun phrases in (38), which are again taken from Komlósy (1985), should be considered predicates instead of regular (non-specific) arguments of the verbs.

(38)   a.   János   *újságot*   olvas a kertben.
            John   newspaper$_{acc}$ read   the garden-in
            'John is reading a newspaper/newspapers in the garden.
       b.   Péternek *víz*   ment a szemébe.
            Peter$_{dat}$ water   went the eye-poss-into
            'Water got into Peter's eye(s).'

In sum, the data above show that the set of VMs, that is, the set of elements that can occupy the position preceding the finite verb in neutral sentences, consists of the elements listed in (39). The question we have to ask is whether the similarity between them is indeed that they are all predicative phrases, as claimed by É. Kiss, or whether they have something else in common. Section 3.2 will argue that the elements in (39) have in common that they carry φ-features, and that these features are responsible for the fact that these phrases can be moved into the position preceding the finite verb. In this way, the Hungarian data discussed in this section receive a similar account as the Dutch data discussed in section 2.3.

(39)   a.   bare nouns (38)
       b.   particles (31) and other predicative phrases (34) - (36)
       c.   bare main verbs (37)

    É. Kiss' (to appear) assumption that focused constituents are also placed in SpecPredP leads her to the conclusion that these elements are also predicates, and much of her paper is devoted to providing a (semantic) motivation for this claim. Given that movement of the VM can also be blocked by wh-phrases, we should conclude that the wh-phrase *ki* 'who' in (40b) is a predicate as well.

(40)   a.   JÁNOS <*el>   ment <el>.
            János away   went
       b.   Ki   <*el>   ment <el>?
            who away   went

    Negation also blocks movement of the VM. In order to account for this fact, É. Kiss claims that in examples like (41) the verb must be interpreted as information focus, which we take to refer to the new information in the clause, and that this voids the need of moving the VM into SpecPredP.

(41)   János   <*el>   nem <*el>   ment <el>.
            János   away   not   went

There are at least two objections to this account of (41). The first is that information focus on the verb does not void the need of VM movement in affirmative clauses; apparently the presence of negation is crucial for blocking movement of the VM. The second objection is related to the claim that VMs, focused constituents and wh-phrases are all predicative phrases. It is not clear why information focus on the verb in negative clauses blocks movement of VMs into SpecPredP only; the examples in (42) show that Focus and Wh-movement *is* possible in negative sentences.

(42) a. JÁNOS nem jött el.
          János   not   come VM
          'It was János that didn't come.'
      b. Ki   nem jött el.
          who   not   come VM
          'Who didn't come?'

In Section 3.3, we will argue that it is not necessary to assume that focused constituents and *wh*-phrases are predicates by providing an analysis which straightforwardly accounts for the complementary distribution of these phrases and the VMs in the position preceding the finite verb. From this analysis the fact that also negation blocks movement of the VM follows straightforwardly. But before doing this, we first have to discuss the question what triggers the movement of the VMs in (39) in the first place.

3.2   What do the verbal modifiers have in common?

Section 1 has shown that hypothesis (4) and the axioms in (3) predict that not only the subject and the object, but also SCs and VPs may be involved in checking the φ-features of I and V. Broekhuis (in prep.) has argued that in this way we are able to account for Locative Inversion and the constructions referred to as Preposing around *be* by Rochemont and Culicover (1990): these constructions involve movement of a SC or VP into SpecIP. Section 2 has argued that this prediction is also borne out in Dutch, where SCs and VPs can be involved in checking the φ-features of V. If we now consider the set of elements that can be used as VMs in (39), we see that we are also dealing with nominal phrases, SCs and verb phrases. This suggests that the movement process that, in neutral sentences, leads to the placement of the VM in the position preceding the finite verb falls into the same class as the English and Dutch movement processes discussed above. In short, we should be able to also handle the Hungarian data by taking recourse to the hypothesis (4).

An important question is, of course, whether the Hungarian movement is of the English or of the Dutch type, that is, whether movement of the VM is triggered by the φ-features on I or by those on V. The fact that the VM can be a direct object unambiguously shows that the latter is the case. Example (43), which is again taken from Komlósy (1985), illustrates this.

(43)   János *újságot*   olvas a kertben.
          John   newspaper$_{acc}$ read   the garden-in
          'John is reading a newspaper/newspapers in the garden.'

The conclusion that it is the φ-features on V that trigger movement of the VM makes a straightforward prediction: a VM can also be the (bare noun) subject of the clause provided that it is an internal argument, that is, when the verb is unaccusative, but not when it is an external argument, that is, when the verb is unergative. This prediction is confirmed by the facts in (44).

(44) a.   Péternek *víz*   ment a szemébe.
            Peter_{dat}   water   went the eye-poss-into
            "Water got into Peter's eye(s)."
      b.   *Fiú   nevetett.
            boy   laughed
      b′.   Nevetett egy/a fiú.
            laughed   a/the boy
      b″.   Egy/A fiú nevetett.

In (44a), again taken from Komlósy (1985), the verb is unaccusative and the nominative bare noun phrase *víz* 'water' can be placed in the position preceding the finite verb. In (44b) the verb is intransitive and the bare noun cannot precede the finite verb; the subject must be preceded by an article, in which case it can either follow the finite verb, as in (44b′), or precede it as a topic, as in (44b″).

The fact that verbal particles like *el* in (31a) and small clause predicates like those given in (34) to (36) can be placed into the same position as the nominal arguments follows from axiom (3a) according to which these elements have the same φ-features as the noun phrase they are predicated of. According to axiom (3b) the same holds for example (37) where a verb phrase is placed in front of the finite verb.

There are still many questions to answer. For example, one may ask why only bare noun objects/subjects can act as a VM, that is, why only bare nouns can be moved into the position preceding the finite verb. If the uninterpretable φ-features on V trigger this movement, there must be some independent reason why (45b) is unacceptable under its neutral reading when the article is present.

(45) a.   János   adott   Marinak *(egy) könyvet.
            János_{nom.} gave_{3sg} Mary_{dat.}   a   book_{acc.}
      b.   János (*egy) könyvet adott Marinak.

Similarly, we have to ask why only bare verbs can act as verbal modifiers (cf. (37)). Note that these two questions cannot be answered by saying that we are dealing with head movement, since it is clear that the pertinent position can be filled by complex phrases as well. This is illustrated in (46). In (46a) a full locational DP is placed in the position of the VM, so that this example shows that there is no general ban on having full DPs in this position. That a more complex phrase can be used to fill this position is also shown by (46b&c) which involve a PP and a modified AP, respectively.

(46) a.   János *az asztalra*   tette a könyvet.
            John   the table-on   put   the book-acc
            'John put the book on the table.'
      b.   János *az asztal alá*   tette a széket.
            John   the table under put   the chair-acc
            'Jon put the chair under the table.'
      c.   Mari   tegnap   *nagyon beteg* volt.
            Mary   yesterday very ill   was
            'Mary was ill yesterday.'

The fact that predicative DPs/PPs/APs can be used as VMs suggests that a bare verb functioning as VM must also be analyzed as a full VP. This, in its turn, implies that the complements of the verb are obligatorily removed from the VP before the phrase is moved into the position in front of the finite VP, a conclusion which was also reached by Koopman and Szabolcsi (2000: 39ff.). The fact that only bare verbs and, especially, bare nouns can

function as VM, of course, remains in itself as mysterious as ever; we do not have any new insights to offer here. But this does not affect the conclusion that the Hungarian data can be fruitfully approached by taking recourse to hypothesis (4).

3.3   The complementary distribution of the verb modifiers and focused phrases

One of the longstanding problems of Hungarian is the complementary distribution of VMs and focused phrases/wh-phrases/negation in the position preceding the finite verb. É. Kiss (to appear) tries to account for the complementary distribution of VMs and focused constituents by claiming that they both should be considered predicative elements which compete for the same position, SpecPredP. According to this logic wh-phrases should also count as predicative elements, which leads us to a definition of predication that is quite remote from everyday scientific use. This, we think, is undesirable and should only be pursued as a last resort, that is, if there is really no other option. Here we will show that there is such an option and, hence, that stretching the definition of the notion of predication is not needed.

The proposal we will give here builds on earlier proposals by Szendrői (2004) and Csirmaz (2004) that certain types of verbs, which they dub stress-avoiding verbs, normally do not take neutral, main sentential stress. The general idea is that since stress is assigned "to the leftmost phonological word in the leftmost phonological phrase of the intonational phrase", the finite verb will be assigned stress if it is not preceded by some other constituent in its intonational phrase (see Szendrői, 2004, for a more detailed discussion). Here, we will assume as a working hypothesis that *all* finite verbs are stress-avoiding. In other words, there is a constraint NO-STRESS-V_{finite} that forbids the assignment of neutral, main sentential stress to finite verbs.

(47)   NO-STRESS-V_{finite}: do not assign neutral, main sentential stress to finite verbs

This constraint favors placement of a VM, a focused constituent, a wh-phrase or the negation *nem* in front of the finite verb; if this does not happen the finite verb is in the position to which stress is assigned so that NO-STRESS-V_{finite} would be violated. Note in passing that Topicalization does not help to avoid a violation of NO-STRESS-V_{finite} since topicalized phrases are not part of the same intonational phrase as the verb. This is clear from the fact that topicalized elements can be followed by an intonation break.

It is important to stress that assuming the constraint in (47) does, of course, not imply that neutral, main sentential stress is never assigned to a finite verb; after all we are dealing with a violable constraint. When there is nothing that can be placed in the position preceding the finite verb, this verb *can* be assigned stress. This was already illustrated in (44b′), repeated here as (48); since the subject of an unergative verb cannot function as a VM, the verb *nevetett* must be assigned main sentential stress in this example, because it is the first element in its intonational phrase

(48)   Nevetett egy/a fiú.
             laughed   a/the boy

The constraint NO-STRESS-V_{finite} can be assumed to interact with the two other constraints that are relevant here: AGREEMENT, which forces local checking of the φ-features on V, and the economy constraint STAY. Since only bare noun objects can be placed into a local checking relation with this feature, we can safely assume that we are dealing with a weak ranking of AGREEMENT for Hungarian. Suppose the ranking is as given in (49).

(49)   NO-STRESS-V$_{finite}$ >> STAY >> AGREEMENT

This ranking predicts that movement of the VMs (which can all check the φ-features on V) is only allowed when it is needed to avoid a violation of NO-STRESS-V$_{finite}$. This is only the case when the finite verb is not preceded by a focused constituent, a wh-constituent or negation. From this the complementarity in distribution follows.

Of course, the above still does not fully explain all the facts concerning the placement of elements in the position preceding the finite verb. For example, it must still be accounted for why it is the focused or interrogative phrase that precedes the finite verb, and not the VM. A key observation in this respect is that the presence of negation does not block Focus and Wh-movement (cf. (42)), which unambiguously shows that these two movement types are independently needed and not solely motivated by satisfaction of the constraint NO-STRESS-V$_{finite}$. Focus and Wh-movement are simply obligatory, which follows from Broekhuis and Dekkers' (2000) claim that Full Interpretation forces application of all semantically motivated movements (≈ A′-movement); cf. Watanabe (1991) who shows that, despite appearances, *wh*-movement does apply (overtly) in so-called *wh*-in-situ languages. That negation must precede the finite verb is of course due to the fact that the head of NegP has scope over the VP.

Another question is, for example, why *Wh*-movement blocks focus movement of some other constituent. Here we will not discuss this question, but simply conclude that the ranking in (49) provides an adequate solution for the more limited problem we set out to solve, namely the fact that movement of the VM is possible only if the verb would otherwise end up as the first element in its intonational phrase.

3.4   Conclusion

This section has addressed a limited number of questions pertaining the distribution of the so-called VMs. We have argued that what these VMs have in common is that they can locally check the φ-features on V. The fact that the VMs can only appear in the position preceding the finite verb if this verb is not preceded by a focused constituent, a wh-phrase or negation follows from the constraint ranking in (49). Since we are dealing with the weak ranking STAY >> AGREEMENT movement of the VMs only applies when this avoids a violation of the constraint NO-STRESS-V$_{finite}$, which outranks STAY. This is only the case when the clause does not contain a focused constituent, wh-phrase or negation.

4   Conclusion

This paper has shown that in Dutch and Hungarian the uninterpretable/unvalued φ-features on V do not only attract argument DPs but also small clauses and verb phrases, thus lending support to the generalization in (6). Since (6) itself is a corollary of hypothesis (4) and the axioms in (3), the findings in this paper provide indirect support for these as well.

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