The Structure of the Hungarian VP revisited[1]

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1. Introduction

The question whether Hungarian sentence structure conforms to the hierarchical structure assigned, for example, to the English sentence was first examined in detail in the framework of the early Government and Binding Theory. As I will recapitulate in section 2, the analysis of Hungarian facts with the tools of that framework led to the conclusion that the subject and the object are structurally equally prominent, i.e., they mutually c-command each other.

In the past two decades, new tools have been added to the machinery of grammatical analysis, which warrant a reexamination of the old model. The innovations, among them V-movement, the VP-internal subject hypothesis, the split VP, and a more constrained version of Scrambling, will be surveyed in section 3. Section 4 will discuss some newly discovered facts of Hungarian relevant to the configurationality issue, involving the different behavior of the unaccusative and unergative subclasses of intransitive verbs. Section 5 will examine if Hungarian facts displaying a subject–object symmetry can be derived from a sentence structure containing a hierarchical, split VP. Section 6 asks the question whether the flat or the hierarchical model of the Hungarian VP is more adequate – without reaching a conclusive answer.

2. Historical background

2.1. *The theoretical framework in 1979*

The time when the structure of the Hungarian sentence was first examined in detail in the generative framework (see É. Kiss 1978, 1981, 1983, 1987, Horvath 1981, 1986) was the period of the emergence of the Government and Binding Theory (Chomsky 1981). In the generally accepted sentence model of those days, the subject was generated external to the VP; endocentricity was not a requirement, i.e., the sentence bore the label S/S'; multiple branching trees were acceptable; and heads were not allowed to move. A typical sentence of an SVO language looked as follows:

(1)

```
        S
      /   \
    NP     VP
         / | \
        V  NP  PP
              /  \
             P    NP
```
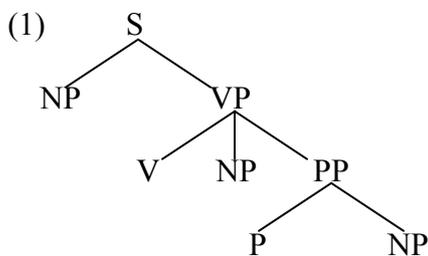
The transformations performed on this structure, and the relations interpreted on it were assumed to be constrained by universal principles. The facts of a language were

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expected to fall out from the interaction of the underlying structures, the operations affecting them, and the universal principles constraining the operations. If the same operations, constrained by the same principles, led to different outputs in two languages, it meant that the structures on which they were performed were different. In the case of Hungarian, both movement rules and interpretive rules yielded outputs which were systematically different from those attested in English. The universality of the operations and principles could only be maintained if the Hungarian sentence was assigned a flat propositional component, in which both the subject and the object were sisters to the V, following it in an arbitrary order.

The following facts of Hungarian appeared to be incompatible with the structure represented in (1).

2.2. *Facts of Hungarian arguing for a subject-object symmetry*

(i) In structure (1), the subject, external to the VP, and the object, internal to it, are predicted to occupy different word order positions. In Hungarian, on the other hand, the subject and the object can appear in the same slots. If the preverbal position is VP-external, then either the subject or the object, or both, can be external to the VP, and either or both of them can also be internal to it. A [+human] argument is preferred in external position, whether it be the subject or the object. E.g.

(2) Jánost   elütötte egy villamos.
   John-ACC hit   a   tram-NOM
   'A tram hit John.'

(ii) In structure (1), the V+object complex is a possible target of transformations; the subject+V complex, on the other hand, is not – in accordance with the principle that syntactic operations such as movement or deletion can only target constituents. In Hungarian, a V+subject string is just as easily deletable as a V+object string – see (3a). If the principle requiring that syntactic operations target constituents is indeed universal, then we must conclude that the V-initial string of the Hungarian sentence forms a constituent – possibly a VP – whether the subject and the other arguments of the V have been externalized or have been left inside the VP.[2] The reconstruction of the elided constituent in (3b) clearly shows that the subject is internal to it, in accordance with the the parallelism requirement on ellipsis (cf. Fox 1995).

(3)a.[TopP Ilinek [FP A   VIRÁGOT [VP hozta Ede]]], [TopP Évának pedig [FP A KÖNYVET
      Ili-DAT the flower-ACC brought Ede-NOM Eve-DAT however the book-ACC
   [VP 0]]]
   'For Ili, Ede brought the flowers, and for Eve, the books.'
  b. [TopP Ilinek [FP A VIRÁGOT [VP hozta Ede]]], [TopP Évának pedig [FP A KÖNYVET
    [VP hozta Ede]]]
   'For Ili, Ede brought the flowers, and for Eve, Ede brought the books.'
cf. c.*[TopP Ilinek [FP A VIRÁGOT [VP hozta Ede]]], [TopP Évának Ede pedig [FP A

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[2] In my early papers, I labelled the node dominating the V and the postverbal arguments an S, claiming that it contains no VP. In other words, I assumed that the propositional component of the Hungarian sentence (the equivalent of S in (1)) is non-distinct from a VP.

KÖNYVET [$_{VP}$ hozta]]]

The complex consisting of the preverbal focus and the VP can also be deleted – see (4), hence it must also represent a constituent (to be analyzed as an FP by Brody (1990)).

(4)[$_{TopP}$ A virágot [$_{FP}$ ILINEK [$_{VP}$ hozta   Ede]]], és [$_{TopP}$ a bonbont   szintén [$_{FP}$ 0]]
        the flower-ACC Ili-DAT   brought Ede   and   the bonbon-ACC too
    'The flowers, Ede brought for Ili, and the bonbon, too.'

(iii) Assuming that the semantic composition of a sentence proceeds parallel with its syntactic composition, the idiomatic part of a sentence of structure (1) cannot consist of the subject and the verb, with the object representing the non-idiomatic variable. There are many Hungarian examples in which this prediction is not borne out, e.g.:

(5)a. Jánosra [rájár a   rúd].
       John-at goes the shaft
       'The shaft is going against John [it is hard on him].'
   b. Jánost   [eszi a   fene   Éva után].
      John-ACC eats the plague Eve after
      'The plague is eating John for Eve [John is mad about Eve].'

Notice that in the Hungarian examples, the generalizations concerning the parallelism of syntactic and semantic composition can be maintained if we identify the external argument with the topic.
(iv) In English and many other languages, the extraction possibilities of the subject are more limited with respect to locality than those of the object. (In Italian, where the subject is not obligatorily externalized, this is only true of the external subject; the VP-internal subject has the same extraction possibilities as the object – see Rizzi (1982).) This was derived in the Government and Binding Theory from the Empty Category Principle, requiring that a trace be properly governed – by a (potentially non-local) lexical governor, or by a local antecedent. The trace of a VP-external subject is not lexically governed, hence it must be locally antecedent-governed. In Hungarian, no subject-object asymmetry can be attested in this respect – presumably because both subject and object traces are lexically governed in the VP:

(6)a. Az egyetlen ember, **aki** nem tudom, mikor láthatja **t** Jánost,   Mari.
      the only   person who not know-I when can.see   John-ACC Mary
      '*The only person who I don't know when can see John is Mary.
   b. Az egyetlen ember, **akit**   nem tudom, mikor láthat   Mari **t**, János.
      the only   person whom not know-I when can.see Mary   John
      'The only person whom I don't know when Mary can see is John.'

Partial extraction also affects subjects and objects in parallel ways in Hungarian, irrespective of the surface position of the extraction site:

(7)a. **Melyik diáknak**   gondolod, hogy megjelent **t a   cikke**?

which student-DAT think-you that appeared   the paper-his-NOM
or: **Melyik diáknak**   gondolod, hogy **t a cikke** megjelent?
  '*Which student do you think that a paper of appeared?'

  b. **Melyik diáknak**   gondolod, hogy megjelentették **t a   cikkét**?
   which student-DAT think-you that published-they   the paper-his-ACC
or: **Melyik diáknak**   gondolod, hogy megjelentették **t a cikkét**?
  'Which student do you think that they published the paper of?'

In cases (i)-(iv), the predictions based on the assumption that the subject is external to the VP all failed to be borne out in Hungarian. If, on the other hand, both the subject and the object are generated inside the VP, and either of them is allowed to be externalized, then the Hungarian facts surveyed fall out. Then neither the subject, nor the object is predicted to have an invariant surface position; the VP and the FP are predicted to be be deletable irrespective of which of the arguments have been left in the VP and which of them have been externalized; and the VP with the internal arguments is predicted to constitute a unit of semantic composition. Since the subject is generated in a lexically governed position, it is predicted to have the same extraction possibilities as the object.

      What facts (i)-(iv) argue for is merely the VP-internal base position of the subject in the Hungarian sentence. The relative prominence of the subject and the object within the VP can be clarified on the basis of further evidence. For example:
(v) The postverbal word order in the Hungarian VP is free. If certain orders were more marked than others, or if some of the orders were associated with special interpretations, it would not be implausible to regard them as derived orders. However, e.g. the word order variants in (8) are equally unmarked.

(8)a. Nagyon   összeszedte   magát   János a vizsgára.
     very.much together-pulled himself-ACC John the exam-for
      'John pulled himself together very much for the exam.'
  b. Nagyon összeszedte János magát a vizsgára
  c. Nagyon összeszedte a vizsgára magát János.
  d. Nagyon összeszedte a vizsgára János magát.

The word order variation demonstrated in (8) could actually also be derived from a hierarchical VP with a fixed word order, by various reordering rules (see e.g. Horvath 1981, 1986). In the Government and Binding Theory, the number of steps in a derivation did not increase the „cost" of a derivation. Nevertheless, grammars with fewer rules were valued higher, therefore, a grammar which did not need any scrambling rule was preferable, after all.
(vi) Hungarian displays no Superiority effect. If a transformation, e.g., wh-movement, has more than one potential targets in the sentence, the Superiority principle predicts it to operate on the most prominent target. E.g.

(9)a. **Who**   [**t** said what]?
  b.***What** did [who say **t**]?

In Hungarian, there are two types of multiple questions. In type A, all the wh-phrases are preposed into scope positions; in type B, only one of them is preposed, the rest remain in situ. In type A questions, subject and object wh-phrases can be preposed in any order. In type B questions, either the subject or the object can be preposed – that is, subject and object wh-phrases behave identically in both question types:

(10)a. **Ki kit**   vert meg?   (11)a. **Ki** vert meg **t** kit?[3]
    who whom beat PRT   who beat PRT   whom
    'Who beat whom?'   'Who beat whom?'
  b. **Kit ki** vert meg?   b. **Kit** vert meg ki **t**?

Assuming that the Superiority principle is universal, examples (10) and (11) indicate that the subject and the object of the Hungarian sentence are equally prominent, i.e., they are sisters to each other.
(vii) In English, a variable cannot bind a pronoun on its left. E.g.

(12)a. Who$_i$ t$_i$ loves his$_i$ mother?   (13)a. Everyone$_i$ loves his$_i$ mother.
  b.*Who$_i$ does his$_i$ mother t$_i$ love?   b.*His$_i$ mother loves everyone$_i$.

The impossibility of binding in the (b) examples, called the Weak Crossover effect, used to be derived from the so-called Leftness Condition (Chomsky 1976), saying that a variable cannot be the antecedent of a pronoun on its left. Interestingly, the Weak Crossover effect does not show up in the Hungarian equivalents of (12)-(13):

(14)a. Ki$_i$ szereti t az pro$_i$ anyját?   (15)a. Mindenki$_i$ szereti az pro$_i$ anyját.
    who loves   the his mother-ACC   everyone loves the his mother-ACC
    'Who loves his mother?'   'Everyone loves his mother.'
  b. Kit$_i$ szeret t az pro$_i$ anyja?   b. Mindenkit$_i$ szeret az pro$_i$ anyja.
    whom loves   the his mother   everyone-ACC loves the his mother
    'Who does his mother love?'   'His mother loves everyone.'

Assuming the Leftness Condition, if the subject had a fixed position in the Hungarian VP, being either the left sister or the right sister of a V' node, then either the (a) or the (b) sentences in (14) and (15) should not allow the bound reading of the pronoun. The simultaneous grammaticality of the (a) and the (b) sentences falls out if we assume a flat VP with an arbitrary argument order. (Then a structure of type (14) or (15) always has a potential source in which the pronoun is on the right of the variable.)
     Another explanation of the Weak Crossover effect is based on the Bijection Principle (Koopman and Sportiche 1991), stating that an operator cannot bind two variables. If the wh-trace c-commands the pronoun, as in (16a), it argument-binds the pronoun, hence the wh-operator has to bind only its own trace. If, on the other hand, the wh-trace cannot A-bind the pronoun for not c-commanding it, as in (16b), the wh-operator is left with two variables to bind, in violation of the Bijection Principle.

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[3] The two questions have different interpretations. Type A questions require a pair-list answer. A type B question with its singular wh-pronouns presupposes that there was a single beater and a single victim. A type B question can only be formed if the two wh-phrases haved identical domains; thus e.g. *Ki mondott mit?* 'Who said what?' is ungrammatical, whichever wh-phrase is preposed.

(16)a. for which x [x loves x's mother]
    b.*for which x [x's mother loves x]

The grammaticality of the Hungarian equivalent of (16b) suggests that in Hungarian, not only the subject can bind the genitive specifier of the object, but also the object can bind the genitive specifier of the subject, that is, the subject and the object mutually c-command each other in a flat VP.
(viii) In English, Binding Principle C determines different coreference possibilities for the genitive specifiers of subjects and objects. The genitive specifier of a subject can be coreferent with an object pronoun (see 17a), however, the genitive specifier of an object cannot be coreferent with a subject pronoun, which c-commands it (see 17b).

(17)a. John$_i$'s mother loves him$_i$.
    b.*He$_i$ loves John's$_i$ mother.

In the case of operators, e.g. wh-phrases, the variable in the base-generated position of the wh-phrase participates in the binding relation:
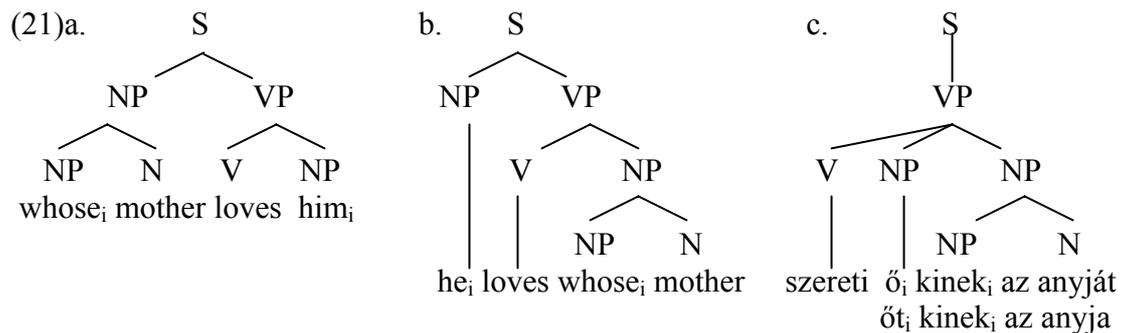
(18)a. for which x, x$_i$'s mother loves him$_i$
    b.*for which x, he$_i$ loves x'$_i$ mother

In Hungarian, coreference is excluded in both the (a) and (b) cases:

(19)a.*János anyja   szereti őt/pro$_i$.   (20)a.*Kinek$_i$ az anyja   szereti őt/pro$_i$?
      John's mother loves   him   whose the mother loves him
      'John's mother loves him.'   'Whose mother loves him?'
    b.*Ő/pro$_i$ szereti János$_i$ anyját.   b.*Kinek$_i$ az anyját   szereti ő/pro$_i$?[4]
      he loves   John's mother-ACC   whose the mother-ACC loves   he
      'He loves John's mother.'   'Whose mother does he love?'

According to Binding Principle C, an R-expression must be free, i.e., it must not be coindexed with a c-commanding argument. In English, the structural relation between the genitive specifier of the subject and the object (21a) is different from the structural relation between the subject and the genitive specifier of the object (21b). In the former case, there is no c-command between the coindexed constituents. In the latter case, on the other hand, the subject c-commands (hence binds) the genitive specifier of the object, in violation of Binding Principle C. If the Hungarian sentence had the same structure as the English one, Binding Principle C would role out coreference in the same cases. The fact that coreference is impossible between any argument and the genitive specifier of any of its coarguments only falls out from structure (21c), in which all arguments of the V, including the subject, mutually c-command each other.

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[4] Hungarian is pro-drop language, hence the variants with an overt pronoun sound unnatural – except perhaps (19b), with the overt pronoun pronounced as a contrastive topic.

(21)a.
```
            S
          /   \
        NP      VP
       /  \    /  \
      NP   N  V    NP
   whose_i mother loves him_i
```

b.
```
            S
          /   \
        NP      VP
        |      /  \
        V     V    NP
                  /  \
                 NP   N
    he_i loves whose_i mother
```

c.
```
            S
            |
            VP
          / | \
         V  NP  NP
            |   / \
                NP  N
   szereti ő_i kinek_i az anyját
           őt_i kinek_i az anyja
```

It was evident already in the early eighties that Hungarian grammar also has areas which display a subject-object asymmetry; however, the syntactic tools of Government and Binding Theory did not provide any means for the structural representation of these phenomena.

2.3. *Facts of Hungarian arguing for an argument hierarachy*
(ix) Anaphoric binding is only licensed in Hungarian if the antecedent precedes the anaphor in the following thematic hierarchy:
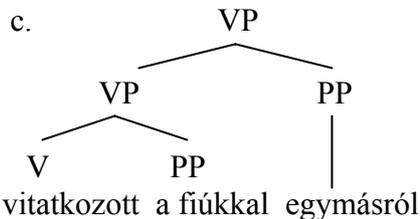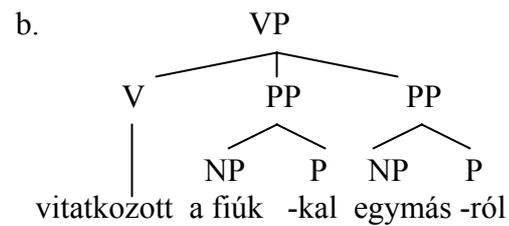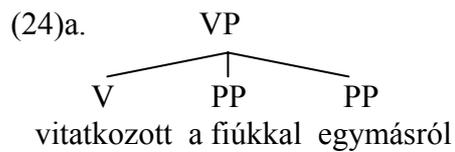
(22) *Thematic hierarchy:*
agent > theme/beneficiary > instrument > location

For example:
(23)a. Péter sokáig vitatkozott a   fiúkkal   egymásról.
        Peter long   argued   the boys-with each-other-about
        'Peter long argued with the boys about each other.'
    b.*Péter sokáig vitatkozott a   fiúkról   egymással.
        Peter long   argued   the boys-about each-other-with
        '*Peter long argued about the boys with each other.'

If the instrumental and the delative noun phrases mutually c-command each other, as is represented in structure (21c), then Binding Principle A predicts that either can bind the other, contrary to fact.[5] However, the grammaticality of (23a) and the ungrammaticality of (23b) could not be derived from a hierarchical structure, either. The instrumental and delative NPs mutually c-command each other in the hierarchical structure allowed in the Government and Binding framework (see 24a). If they are PPs, as some claim, then there is a mutual 'almost c-command relation' between them (see 24b). If we assume that the delative is an adjunct adjoined to the VP, the c-command relation will be the opposite of what we want: the delative will be the more prominent constituent (see 24c).

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[5] In Hungarian, lexical case endings are bound morphemes similar to structural case endings, therefore I categorize all case-marked noun phrases as NPs. If they were to be PPs, then the structural relation between the binder and the anaphor would be what many authors call 'almost c-command'. A reviewer has raised the possibility that the instrumental noun phrase may be an NP, and the delative may be a PP. That assumption (lacking independent evidence) would still not eliminate the problem of mutual c-command e.g. in the case of a dative antecedent and an instrumental anaphor.

(24)a.
```
        VP
    ┌────┼────┐
    V   PP    PP
vitatkozott a fiúkkal egymásról
```

b.
```
           VP
    ┌───────┼───────┐
    V      PP       PP
    │     ┌──┐     ┌──┐
    │    NP  P    NP  P
vitatkozott a fiúk -kal egymás -ról
```

c.
```
            VP
        ┌───┴───┐
       VP       PP
    ┌───┴───┐   │
    V      PP   │
vitatkozott a fiúkkal egymásról
```

This problem also existed in English, in the case of double object and double PP constructions – see Barss and Lasnik (1986). It was precisely this problem which led to the layered VP hypothesis of Larson (1988). In the early eighties, the assumption of a lexical structure (different from phrase structure), encoding the thematic argument hierarchy, offered a way out.

(x) Anaphoric binding between non-coarguments displays a combined effect of thematic prominence and linear precedence; binding is possible if the binder precedes the anaphor thematically and/or linearly. For the case of non-coarguments, the notion of 'thematic prominence' has to be formulated as follows:

(25) A constituent A is thematically more prominent than a constituent B if A precedes B or the constituent containing B in the thematic hierarchy in (22).[6]

(26)a. A   barátnők ajándékot   küldtek egymás   szüleinek.
    the friends   present-ACC sent   each other's parents-DAT
    'The friends sent presents to each other's parents.'
    b. Egymás szüleinek ajándékot küldtek a barátnők.

(27)a. A   barátnőknek ajándékot   küldtek egymás   szülei.
    the friends-DAT present-ACC sent   each other's parents
    'Each other's parents sent presents to the friends.'

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[6] The binding of pronouns in Weak Crossover configurations is similarly constrained (see É. Kiss 1991). Binding is blocked if the pronoun precedes its binder both in linear order and in the thematic hierarchy (see iv). If the binder precedes the bound element only in one respect (thematically – see (ii), or linearly – see (iii)), binding is still possible.
(i) Ki$_i$ hívta fel az pro$_i$ anyját?
    who called up his   mother-ACC
    'Who called up his mother?'
(ii) Az pro$_i$ anyját ki$_i$ hívta fel?

(iii) Kit$_i$ hívott fel az pro$_i$ anyja?
    whom called up his   mother-NOM
    'Who did his mother call up?'
(iv)??Az pro$_i$ anyja kit$_i$ hívott fel?

b.*Egymás szülei ajándékot küldtek a barátnőknek.

(27b) is ungrammatical because the antecedent is neither thematically more prominent than the anaphor, nor precedes it linearly.[7]

(xi) Only the subject can be represented by an ungoverned PRO. The assumption that the subject is lexically governed by the V is not utterly incompatible with the claim of PRO being ungoverned; merely PRO always has to be removed from the VP into Spec,TopP. Since Topicalization can be iterated in Hungarian, nothing precludes the possibility of a PRO subject being externalized. A more important question is why an object can never be a PRO. Obviously, thematic prominence also figures in Control; it is the thematically most prominent argument, having the grammatical function 'subject', that can be represented by a PRO.

(xii) Marácz (1989) noticed a further interesting case of subject-object asymmetry. Whereas either a subject or an object pronoun is in disjoint reference with the genitive specifier of its coargument, the disjoint reference effect – derived from Binding Brinciple C – becomes sensitive to thematic prominence if both the binder and the bound element are lexical noun phrases. Compare with (19a,b):

(28)a. János anyja   szereti Jánost.
        John's mother loves   John
    b.??János szereti János   anyját.
        John   loves   John's mother

The contradiction between the subject-object symmetry attested in the case of R-expressions bound by pronouns, and the subject-object asymmetry attested in the case of R-expressions bound by R-expressions was resolved by the adoption of Reinhart's binding theory (1983). According to Reinhart, binding by an R-expression falls outside the realm of Binding Theory; that is why apparent violations of Binding Principle C such as *Only Nixon voted for Nixon* sound acceptable.

2.3. *Summary: Hungarian sentence model in the Government–Binding framework*
    The Hungarian sentence model of the nineteen eighties was intended to account for both the facts enlisted in (i)-(viii), showing the parallel behavior of the subject and the object, and the facts enlisted in (ix)-(xii), displaying a subject-object asymmetry. The model was based on the following assumptions:

(29)a. All the arguments of the verb, including the subject, are generated in the VP,
        and any of them can be externalized transformationally (via Topicalization).
    b. The subject and object are sisters to each other and to the V in a head-initial
        flat VP.
    c. Control, anaphoric binding, pronominal binding, and coreference between
        lexical noun phrases are constrained by a thematic argument hierarchy.

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[7] In the case of co-arguments, linear precedence cannot make up for the lack of thematic precedence – recall the ungrammaticality of (23b). This fact is derived in É. Kiss (1991:255) from the „thematic" (or lexical structure) equivalent of Binding Principle C, saying that an anaphor cannot be thematically more prominent than its antecedent.

Assumption (29a) predicts facts (i)-(iv), assumption (29b) predicts facts (v)-(viii), whereas assumption (29c) accounts for phenomena (ix)-(xii). Assumption (29a) was a novel assumption in the early eighties. As for (29b), various versions of a flat VP, or flat sentence structure appeared repeatedly in the literature of the early nineteen eighties – see e.g. Farmer (1980) and Hale (1983). Assumption (29c) was based on the independently motivated hypothesis emerging from the work of Hale (1983), Marantz (1981), Vergnaud and Zubizarreta (1982), and others that the arguments of a predicate constitute a thematically based configurational structure (called lexical structure by Hale (1983)), which is independent of phrase structure. The typological distinction between a non-configurational language like Warlpiri or Hungarian, and English was claimed to find its origins in the nature of the relationship between phrase structure and lexical structure. In languages like English, there is an identity relation between the two structures, whereas in Hungarian, a configurational lexical structure is mapped on a flat VP (see Hale 1983). Theta-role assignment was assumed to take place in lexical structure, hence, naturally, lexical structure was the level on which tematically motivated phenomena were interpreted.

3.   Theoretical and methodological changes in the generative syntax of the 1990s
    In the past 15 years generative syntactic theory has been transformed considerably, and the status of assumptions (29a-c) has also become different. The assumption in (29a) has become part of the generally accepted system of hypotheses constituting Universal Grammar. The subject is now universally assumed to be generated in the VP. What is more, the extraction of the subject into a designated VP-external position (e.g. Spec,IP) is not considered a theoretical necessity any longer; the Agree relation between a feature of Infl and the subject does not necessarily involve any Attract (Move) operation (Chomsky (2000, 2001a, 2001b)). At the same time, topic positions have been identified in the left periphery of the sentence (cf. Rizzi 1997), allowing the externalization of any one, or any ones, of the arguments of the verb.
    (29b) did not belong to the generally accepted assumptions of the Government and Binding framework, but it was not considered as an inconceivable option, either. It involves two distinct components: multiple branching, and a mutual c-command relation between the subject and the object. The free relative order of the subject and the object is a consequence of their sisterhood. Whereas multiple branching was allowed in the early Government and Binding Theory, since then mainstream generative syntax has discarded it (see Kayne 1994). Obligatory binary branching has not been adopted by every version of generative theory though – see e.g. Brody (1998). The assumption of a flat phrase structure, with the subject and the object sisters to each other, is only marginally present in current thinking – cf. e.g. Gillon & Shaer (2005). In the free word order theory of Fanselow (2005), arguments are merged in a random order into a binary branching structure, i.e., a binary-branching free word order structure is base-generated.
   In earlier versions of the theory, free surface order could also be derived from a hierarchical structure by Scrambling, a rule optionally reordering constituents without altering the meaning in any way. In current theory, movement cannot be optional; it is triggered as a last resort. Therefore, Scrambling has had to be

reinterpreted; it is now generally understood as a kind of inner topicalization, moving presupposed material to the left edge of the VP or IP – see e.g. Holmberg (1999) on Scandinavian, Frey (2000) on German, Dayal (2003) on Hindi, and Karimi (2003) on Persian.

Assumption (29c), i.e., the notion of a lexical structure, has been preserved - as a separate level of representation, or as part of regular syntax. The arguments realizing the theta-roles assigned by a lexical head are ordered; and their hierarchy determines the order in which they are merged into the projection of the given lexical item in syntax.

Whereas syntactic theory has become more constrained in various respects, it has also developed new tools. The possibility of verb movement – unknown until Baker (1988), Chomsky (1986), Pollock (1989) and Belletti (1988) – allows the derivation of the head-initial verbal projection serving as input to operator movement from a standard verb phrase with an SVO underlying order.

The structure of the verb phrase in Universal Grammar has also changed (see Larson (1988), and Chomsky (1993, 1995)). The verb phrase is now assumed to comprise two layers; the verb and its theme are dominated by a VP, whereas the agent is generated in the specifier of a higher abstract *v* expressing causation. Here is a version of a layered VP-structure:

(30)

```
        vP
       /  \
    Subj   v'
          /  \
         v    VP
             /  \
           Obj   V
```
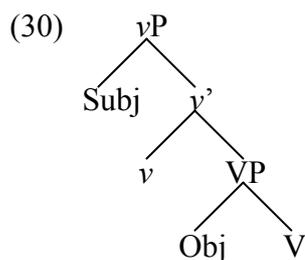
In this framework, unergative verbs, i.e., intransitives taking an agent subject, and unaccusative verbs, i.e., intransitives taking a theme subject (in fact, an underlying object), project different structures; thus unaccusatives presumably only project a VP (see e.g. Levin and Rappaport Hovav 1994).

4. Further facts of Hungarian to be accounted for

Not only the theoretical background and the machinery of syntactic analysis have changed since the time of the formulation of the flat VP hypothesis, but new facts of Hungarian have also come to light. As has been demonstrated in the work of Laczkó (1995), Alberti (1997), É. Kiss (2004) and Bene (2005), the unaccusative–unergative distinction is present in Hungarian grammar, and has important syntactic and morphosyntactic consequences. Several properties of intransitive verbs can only be predicted if unaccusatives, taking a theme argument, and unergatives, taking an agent argument, are distinguished:

4.1. *Only unergatives license a non-selected reflexive object*

Unaccusatives do not license a non-selected reflexive object – as demonstrated in detail by Bene (2005). An internal argument/theme – whether it be the object of a transitive verb, or the subject of an intransitive one – is an indispensable ingredient of

a telic predicate. A telic event is measured out by the change-of-state or change-of-location of the internal argument, and the inherent endpoint of the event is marked by the attainment of its resultant state or resultant location. Unergative verbs do not select an internal argument, therefore, they cannot be telicized – unless they are supplied with a nonselected internal argument and a secondary predicate predicating the resultant state or resultant location of this non-selected element (see 31a). An unaccusative verb, on the other hand, cannot be associated with a non-selected object (see 31b).

(31)a. János betegre táncolta magát
     John sick   danced himself-ACC
     'John danced himself sick.'
   b.*János betegre este magát.
     John sick   fell himself-ACC
     '*John fell himself sick.'

In the Minimalist framework, adopting the layered VP hypothesis, the ungrammaticality of (31b) follows from the fact that the internal argument position of the unaccusative verb is taken; the subject is generated there. That is, the VP headed by *esik* has no open position for a non-selected object. In the case of unergatives, like *táncol* 'dance' in (31a), on the other hand, the internal argument position in the specifier of the VP is generated empty, hence it is available for a non-selected reflexive object. Whereas the layered VP theory provides a straightforward explanation of the distribution of grammaticality in (31), a non-structural, thematic explanation is also at hand; *esik* 'fall' – unlike *táncol* 'dances' – selects a theme argument, hence its theta-grid has no place for a pseudo-theme.

4.2. *The -t/tt participle suffix cannot merge with unergatives*[8]

Participle phrases derived by the suffix *-t/tt* function as attributive modifiers, and their most prominent argument, represented by a PRO controlled by the matrix noun phrase, must be the internal argument. Hence unaccusative VPs, whose most prominent argument is the internal argument, are possible inputs to derivation by *-t/tt*:

(32) a [PRO$_i$ meg-sült]   sütemény$_i$
    the   PRT baked$_{intr}$ cake
    'the baked cake'

The *–t/tt* participial suffix can also appear on transitive verbs. In such cases, too, the PRO argument of the participle, controlled by the matrix noun phrase, must be represented by the internal argument/theme. However, the verb bears no passive morphology; in fact, present-day Hungarian does not even have a passive voice. Bene (2005) argues that the *-t/tt* suffix subcategorizes for a VP, and it also accepts the VP projection of a transitive verb, provided the *v*P projection subsuming it is suppressed. The agent of the verb can only appear as an optional adjunct. For example:

---

[8] The discussion of adjectival participle phrases adopts ideas of Laczkó (1995), Alberti (1997), and, and Bene (2005).

(33) a [$_{VP}$ (cukrász   által) PRO$_i$ meg-sütött] sütemény$_i$[9]
     the   (confectioner by)   PRT baked$_{tr}$ cake
     'the cake baked by the confectioner'

In the case of unergatives, the suppression of the *v*P layer leaves the participle without any argument, which renders it ungrammatical:

(34)*a [$_{VP}$ dolgozott] cukrász
      the   worked   confectioner

Thus, the distinction of the VP and *v*P projections of verbs appears to facilitate the morphosyntactic analysis of –*t/tt* participial phrases, as well. At the same time, it could also be assumed that the –*t/tt* participle is constrained by a thematic licensing condition requiring that its subject (i.e., its most prominent argument) be the theme argument. In the latter framework, transitive verbs would have to be granted the possibility of suppressing their agent theta role.

4.3. *The -va/ve stative participle suffix cannot merge with unergatives*[10]

The -*va/ve* participle phrase, functioning as an adverbial of state, is combined in its most frequent usage with the raising predicate *van* 'be', yielding a construction resembling in some respects the English passive – without the verb bearing any passive morphology. The PRO argument of this type of participle phrase, too, must be represented by the theme/direct internal argument.

A plausible way of deriving stative participle phrases from transitive and unaccusative verb phrases in a unified fashion – while excluding the possibility of deriving them from unergative verb phrases – is, again, to assume that the -*va/ve* suffix subcategorizes for a VP in the layered verb phrase framework. Observe a stative participle phrase embedded in a raising construction. The participle phrase has been derived from a transitive verb phrase, with the *v*P layer removed. The -*va/ve* participle denotes the resultant state of the theme, brought about by a previous action.

(35) A hagyma meg van sütve (a   szakács által).
     the onion PRT is   baked the cook   by
     'The onion is baked (by the cook).'

If the *v*P layer containing the agent subject is not deleted, the output is sharply ungrammatical:

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[9] In the language of newspapers, the -*t/tt* suffix can also merge with the *v*P projection of transitive verbs. Apparently, in „journalese", it is often important to clearly distinguish anteriority and simultaneity, and -*t/tt* participles are used to express the former, whereas -*ó/ő* participles are used to express the latter. The following journalese sentence is ungrammatical in Standard Hungarian:
(i)?*a [PRO$_i$ süteményt sütött] cukrász$_i$
    the   cake-ACC baked$_{tr}$ confectioner
    'the confectioner having baked a cake'

[10] For previous analyses in a similar vein, see Laczkó (1995), Alberti (1997), and Bene (2005).

(36)*A   szakács (hagymát)   sütve van.
     the cook   onion-ACC baked is

Here is a -*va* participle phrase derived from an unaccusative verb phrase:

(37) A   hagyma meg van sülve
     the onion   PRT is   baked$_{intr}$
     'The onion is in a baked state.'

Similar to -*t/tt* adjectival participles, -*va/ve* adverbial participles expressing a resultant state, combining with the raising predicate *van* 'be', require that their most prominent argument, represented by PRO, be the internal argument/theme. A plausible way of expressing this generalization in the layered VP framework would be to claim that the -*va/ve* suffix subcategorizes for a VP. [11] At the same time, the generalization can also be formulated as a thematic constraint on the subject of stative adverbial participle phrases. In fact, when we predicate a state, the subject of predication will have a theme theta role by definition, which excludes unergatives as potential inputs to stative participle formation. It is a question, again, how to get rid of the agent in the case of transitive verbs. Whereas in a configurational framework we have to suppress the *v*P layer, in a thematic framework we must stipulate the suppression of the agent - without any passive morphology appearing on the V.

4.4. *Postverbal argument order might not be completely free*
      Whereas the subject and the object can indeed follow the verb in any order, as noticed in the early analyses of Hungarian, the [+/-definite] feature of noun phrases might play a role in determining their postverbal word order. According to Varga (1981), definite, hence unstressed, noun phrases tend to precede indefinite, hence stressed, noun phrases in the postverbal section of the sentence. (It is unclear if this is a prosodic, syntactic, or discourse-motivated constraint.) Crucially, if the postverbal subject and the postverbal object are equally indefinite, the subject–object order sounds to some speakers more unmarked than the opposite order. Observe the mild grammaticality differences of the following examples:

(38)a. Fogott egyszer egy halász   egy aranyhalat.   indef Subj > indef Obj
        caught once   a   fisherman a   goldfish-ACC
     b.?Fogott egyszer egy aranyhalat   egy halász.   ?indef Obj > indef Subj

---

[11] Another -*va/ve* adverbial participle suffix derives adverbials with a manner reading. This suffix is combined with the highest lexical projection of the given verb, i.e., with a *v*P in the case of transitives and unergatives – hence the subject PRO of this type of manner phrases can also be an agent:
(i) János$_i$ [PRO$_i$ egy kutyát   vezetve] sétált   az utcán.
    John   a   dog-ACC leading walked the street-on
    'John walked in the street leading a dog.'
This type of –*va/ve* participle cannot appear in the raising construction under consideration.
     It would seem appealing to assume that there is only a single –*va/ve* participle suffix, and the manner or stative reading of the –*va/ve* phrase depends on whether the suffix has been merged with a *v*P or a VP projection. Bene (2005) refutes this possibility by examples in which a –*va/ve* participle derived from an unaccusative VP has a manner reading.

caught once   a   goldfish-ACC a   fisherman

c. Fogott egyszer a   halász   egy aranyhalat.   def Subj > indef Obj
   caught once   the fisherman a   goldfish

d.Fogott egyszer egy aranyhalat a   halász.   indef Obj > def Subj
   caught once   a   goldfishthe the fisherman

e.?Ki -fogta egy halász   az aranyhalat.   ?indef Subj > def Obj
    PRT caught a   fisherman the goldfish

f. Ki -fogta az aranyhalat egy halász.   def Obj > indef Subj
   PRT caught the goldfish   a   fisherman

g. Ki -fogta a   halász   az   aranyhalat.   def Subj > def Obj
   PRT caught the fisherman the goldfish

h.?Ki -fogta az aranyhalat a   halász.   ?def Obj > def Subj
   PRT caught the goldfish   the fisherman

Unfortunately, the marginality of the sentences marked by „?" is very mild even according to those informants who find them somewhat degraded. Others do not see any difference in the acceptability of these sentences.

If we accept the grammaticality judgments specified in (38a-h), we might attempt to account for them in a configurational framework involving a layered verb phrase. For simplicity's sake, I assume that the verbal particle is located in the specifier of a PredP projection, and the V is moved first to *v* and then to Pred.

(39) [PredP Ki [Pred' fogta$_i$ [$_{vP}$ a halász [$_{v'}$ t$_i$ [VP az aranyhalat [$_{V'}$ t$_i$]]]]]]

(38a,c,e, and g) represent the underlying order. (38e), displaying an 'indefinite subject, definite object' order, is marked as „?". Its markedness might mean that Hungarian grammar contains Scrambling (in fact, a verb-phrase-internal topicalization rule, which – similar to clause-level Topicalization – targets definite or specific noun phrases, and is obligatory (for some speakers) in the case of a base-generated indef NP > def NP order.

An internal topic position above the verb phrase and below the clause-level functional projections has also be pointed out in other languages, e.g. in German (Frey 2000), and in Italian (Benincà and Poletto 2004). É. Kiss (1998) demonstrates that Hungarian AdvPs and AdjPs also have a topic position, e.g.:

(40)a. valószínűleg nagyon fáradtan az utazástól   (41)a. együtt   Péterrel
    probably   very   tired   the travel-from   together Peter-with
    'probably very tired with travelling'   'together with Peter'
   b. az utazástól$_i$ valószínűleg nagyon fáradtan t$_i$ b. Péterrel$_i$ együtt t$_i$

Under this assumption, (38f), displaying a 'def Obj > indef Subj' order, is correctly predicted to be grammatical, derived by verb-phrase-internal Topicalization. A 'def Subj > def Obj' string, on the other hand, does not license Topicalization; at least, the 'def Obj > def Subj' order is marked (for some speakers) – see (38h). If Topicalization is only elicited by an underlying 'indef NP > def NP' order, then, naturally, we do not expect it to take place in the case of a base-generated indef NP > indef NP string either; so the mild marginality of the 'indef Obj > indef Subj' order in

(38b) is not surprising. What is unexpected is the full grammaticality of (38d), in which an indefinite, nonspecific object, an unlikely target of Topicalization, precedes the definite subject. This construction could perhaps be derived in a different way. The indefinite object is presumably in situ, and the definite subject might have undergone rightward extraposition. Or the subject is represented by a pro in Spec,vP, and the lexical element coindexed with it is an adjunct, representing an afterthought. Evidence for this view would be provided by an intonation break before the subject; however, it is not attested.

There is also a more serious problem facing the verb-phrase-internal Topicalization hypothesis. Scrambling, or IP-internal Topicalization, has been claimed (e.g. by Kornfilt (2003) and Dayal (2003)) to block the [-specific] reading of bare plurals. Diesing (1992) presented similar data in a different terminology. In Hungarian, bare plurals only have a non-specific reading, still, they can also participate in verb-phrase-internal Topicalization:

(42)a. Nem látott gyerekeket   János az utcán.
        not   saw   children-ACC John the street-in
        'John did not see any children in the street.'
     b. Nem látott az utcán gyerekeket János.

In the framework under discussion, (42a,b), similar to (38d), must involve an object in situ and an extraposed subject (or an adjunct subject coindexed with a pro argument).

In the non-configurational framework, the mild differences in the grammaticality of (38a-h) – if they indeed exist – could be derived from a well-formedness constraint requiring that the postverbal order of elements correspond to their contextual salience. It is not implausible to assume that definites are contextually more salient than indefinites, and definite subjects are contextually more salient than definite objects. The full grammaticality of (38d) is a problem for this framework, as well.

5.   Can facts (v)-(xii) of Hungarian be derived from a layered vP?

As has been demonstrated in section 4, the newly discovered facts of Hungarian can be derived from a layered verb phrase – even if this is not the only possible derivation for them. The next question to answer is whether the facts of Hungarian on which the non-configurational analysis was based, discussed under (i)-(xii) in section 2, are also compatible with the hierarchical VP-structure in (30).

Actually, facts (i)-(iv), falling out from the VP-internal subject hypothesis and the assumption of a Topicalization transformation, are independent of the hierarchical or flat internal structure of the VP. Fact (v), the free postverbal order of arguments, has already been accounted for in the layered VP framework (recall the discussion of (38a-h)); it has been derived by verb-phrase-internal Topicalization. It is facts (vi)-(viii) whose compatibility with the structure in (30) still remains questionable.

The facts in (v) illustrated the parallel behavior of the subject and object with respect to Superiority. In the hierarchical framework under discussion, a multiple question in which wh-movement has targeted the object wh-phrase can be derived from an intermediate structure in which the object wh-phrase has undergone phrase-internal Topicalization. That is:

(43) [$_{FP}$ Kit$_i$ vert [$_{PredP}$ meg [$_{vP}$ t$_i$ [$_{vP}$ ki]]]]
   whom beat   PRT   who

The lack of Weak Crossover effect can be explained along the same lines; in cases like (44), the wh-object has undergone verb-phrase-internal Topicalization prior to wh-movement. The topicalized wh-object both precedes and c-commands the pronoun in the vP; that is why the pronoun can be bound by it. Although a wh-phrase is not a potential target of Topicalization, in this case it is not the wh-operator but the variable bound by it that has been adjoined to the vP.

(44) [$_{FP}$ Kit$_i$ szeret$_k$ [$_{vP}$ t$_i$ [$_{vP}$ az pro$_i$ anyja t$_k$ [$_{VP}$ t$_i$ t$_k$]]]]
         whom loves   the   mother-his
      'Who does his mother love?'

The hardest problem in the configurational framework is the problem of Binding Principle C. Recall that we attest disjoint reference not only between a subject pronoun and the genitive specifier of the object, but also between an object pronoun and the genitive specifier of the subject. Interestingly, the disjoint reference effect between a lexical subject and the genitive specifier of the object is much milder.
    We can derive these facts if we assume that the verb-phrase-internal Topicalization of an object pronoun is obligatory. Thus e.g. (45a) is derived from the intermediate structure in (45b):

(45)a.*Mindenkinek$_i$ az anyja   szereti őt$_i$.
       everyone's   the mother loves him
       'Everyone's mother loves him.'

b. vP
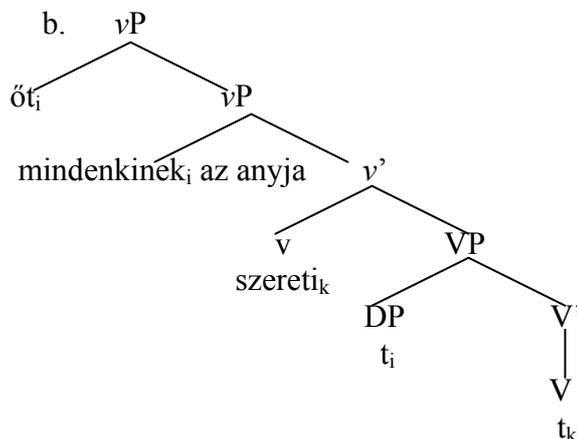
The object pronoun c-commands, hence binds the R-expression in the genitive specifier of the subject, i.e., Binding Principle C forces a disjoint reading upon them.
    If verb-phrase-internal Topicalization is not obligatory in the case of lexical objects (but see (38h)), then the possibility of coreference in structure (46) – the phenomenon discussed under (xii) in section 2 – is also predicted: the genitive specifier of the subject (or its trace) does not bind the object left in situ. Cf.

(46) [FP Miért szereti$_i$ [$_{vP}$ János anyja t$_i$ [$_{VP}$ Jánost t$_i$]]?
        why   loves   John's mother   John-ACC
    'Why does John's mother love John?'

The facts of Hungarian discussed under (ix)-(xii) argued for a thematic argument hierarchy that was different from the the structural hierarchy of arguments in the canonical sentence model of Government and Binding Theory. In the framework under consideration, it is possible to generate a structural hierarchy that corresponds to the thematic hierarchy of arguments. Owing to the possibility of V-movement, adjuncts can be generated lower than arguments, and the indirect internal argument can be generated lower than the direct internal argument (see Larson 2004):

(47) [$_{vP}$ Subj [$_{v'}$ V$_i$ [$_{VP}$ DO [$_{V'}$ t$_i$ [$_{VP}$ IO [$_{V'}$ t$_i$ Adjunct]]]]]]

This structure correctly predicts the possible anaphoric relations of the constituents, e.g. the anaphora attested in (48), with the indirect internal argument (in the instrumental) binding the adjunct:

(48)a. János gyakran vitatkozott a   fiúkkal   egymásról.
        John often   argued   the boys-with each-other-about
        'John often argued with the boys about each other.'
    b. *János gyakran vitatkozott a   fiúkról   egymással.
         John often   argued   the boys-about each-other-with
        'John often argued about the boys with each other.'

As was shown under (x) in section 2, anaphoric binding between non-coarguments, and also Weak Crossover display a combined effect of thematic prominence and linear precedence: binding is impossible if the binder is neither thematically more prominent than the bound element, nor precedes it in linear order. For example:

(49)a.??Az pro$_i$ anyja   kit$_i$ hívott fel?
        the pro mother-his whom called up
        'Who did his mother call up?'
    b.*Egymás$_i$ szülei ajándékot   adtak a   barátnőknek$_i$.
        each-other's parents present-ACC gave the friends-DAT
        '*Each other's parents gave presents to the friends.'

Verb-phrase-internal Topicalization would be available in these constructions, as well, as a result of which the topicalized object wh-phrase would c-command the pronoun within the vP in (49a), and the topicalized dative noun phrase would c-command the anaphor within the vP in (49b). These possibilities do not save (49a,b); what counts is the surface precedence relation of the binder and the bound element, besides their base-generated structural relation (that is, besides their relative thematic prominence). It has to be assumed that Topicalization does not to feed anaphoric and pronominal binding. (This is contrary to the situation reported about German Scrambling in Frey (1993); in German, anaphoric and pronominal binding are interpreted on the output of Scrambling.) Neither does Hungarian verb-phrase-internal

Topicalization feed PRO selection (discussed in (xi) in section 2); the highest argument, to be represented by PRO in [-Tense] clauses, is identified prior to Topicalization.

That is, whereas in the 'flat VP' approach, Binding Principle C is to be interpreted on the flat phrase structure, and anaphoric and pronominal binding, and PRO-selection are to be relegated to a hierarchical argument structure, in the 'layered *v*P' approach, Binding Principle C is fed by verb-phrase-internal Topicalization, and anaphoric and pronominal binding, and PRO-selection are not. That is, no matter which framework we adopt, the amount of stipulation required remains invariant.

6.   Conclusion

The standard sentence model of the early Government and Binding Theory could not account for the parallel word order and coreference possibilities of the subject and the object in the Hungarian sentence. It could not fully predict the phenomena displaying an argument hierarchy, either – because the hierarchy manifested e.g. in anaphoric and pronominal binding differed from the structural hierarchy of arguments encoded in the standard configurational sentence structure. The Hungarian sentence model of the Government and Binding period that accounted for the largest amount of facts with the least amount of stipulations contained a head-initial flat VP. The argument asymmetries attested in certain areas of grammar were derived from a thematic argument hierarchy assumed to exist at a different level of representation called Lexical Structure.

The new technical possibilities of the 1990s have made it possible to derive the same facts of Hungarian from a sentence structure with a hierarchical, layered verb phrase subsuming both a VP and a *v*P. The equal prominence and the parallel syntactic behaviour of the subject and object are achieved by means of an operation called verb-phrase-internal Topicalization, or Scrambling. Whereas in the 'flat VP' model, the subject and the object were generated as sisters mutually c-commanding each other, now the object can be adjoined to the *v*P, thereby assuming a position – still in the A(rgument) domain of the clause – from which it c-commands the subject.

The set of linguistic phenomena accounted for has also been widened with new facts which can be elegantly treated in the layered *v*P framework. It has turned out that certain types of adjectival and adverbial participle suffixes select a VP (and refuse a *v*P) – that is, they can merge either with the projection of an unaccusative verb, or that of a transitive verb with the *v*P layer suppressed. The appearance of non-selected objects, on the other hand, is licensed only in the case of unergatives, i.e., intransitive verbs projecting a *v*P.

At the same time, these newly examined facts of Hungarian can also be accounted for in the former framework, assuming a flat VP and an independent thematic hierarchy of arguments. Thus we have two alternative VP-structures at our disposal, whose empirical coverage is roughly the same, i.e., which represent similar levels of descriptive adequacy. What could decide in favor of one or the other of the two VP-models is if one of them turned out to be more explanatory, corresponding more closely to the principles of Universal Grammar.

In the case of the model involving a layered *v*P, the status of verb-phrase-internal Topicalization appears to be problematic. In the Minimalist framework, movement rules are basically obligatory; they are performed as a 'last resort', in order to check

an uninterpretable feature of the attracting head. Optional movement is only acceptable if it yields a new reading of the given construction; for example, when it associates the given construction with a new discourse function or when it creates new scope relations. Phrase-internal Topicalization does not have either of these properties; it is not obligatory (unless it involves personal pronouns); it serves to check no morphological feature; and it does not result in a new reading (except that it alters the c-command relations of constituents, which is a necessary consequence of any movement). A further problem with the derivations in this framework is that they are not economical – as compared to the 'flat VP' model. The V-initial structure that serves as a basis for operator movement, generated in one step in the 'flat VP' model, can often be achieved only by several steps of pairwise merge, several instances of verb-phrase-internal Topicalization, and several steps of V movement.

The 'flat VP' approach is problematic for Universal Grammar because it does not conform to the generally accepted assumption that theta-roles are assigned to invariant structural positions across languages – formulated e.g. by Hale and Keyser (1993). At the same time, alternative views also exist. Neeleman (1994), for example, has put forward the following claim:

(50) A theta-grid must be projected. It can be projected hierarchically or
    morphologically.

Others maintain the existence of a lexical argument hierarchy in the Minimalist framework, as well. It is this hierarchy that determines the order in which arguments are merged into the verbal projection e.g. in English. Under this assumption, English-type languages encode argument hierarchy twice, first in the lexicon, and then in phrase structure – which seems redundant, and may not be a universal necessity. According to Fanselow (2003), German indeed differs from English in this respect: arguments are merged into a binary branching structure in an arbitrary order, restricted only by the following locality constraint:

(51) (Fanselow's (27))
    An argument A can be merged with a projection P only if the head of P (or a
    sublabel of the head) selects A as an argument.

Whereas in the early Government and Binding Theory, the flat VP theory seemed empirically clearly preferable to the hierarchical VP theory for Hungarian, the question which model is more adequate in the current framework is open.

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