Is free postverbal order in Hungarian a syntactic or a PF phenomenon?[1]

1. Introduction

This paper aims to identify the source of the free postverbal constituent order attested in the Hungarian sentence. It will examine whether it is the consequence of a base-generated flat VP, it is the result of syntactic scrambling, or it is a PF phenomenon, the free linearization of a hierarchical syntactic structure.

The facts to be examined will support the latter hypothesis. In section 2 I introduce the basic facts of postverbal word order in Hungarian, and in section 3 I survey the major theories aiming to describe them. Sections 4 and 5 discuss two additional sets of phenomena to be addressed: postverbal adverbial adjuncts, and postverbal quantifiers. Section 6 will present a new proposal which can account for all the facts surveyed. Section 7 will demonstrate that the proposal can also explain further phenomena of Hungarian syntax: free extrapositon from NP, and the free mingling of matrix and embedded material in infinitival constructions.

2. Free constituent order in the postverbal section of the Hungarian sentence

As is well-known, the Hungarian sentence displays a strictly fixed word order preverbally,[2] and a free constituent order postverbally. In the neutral sentence in (1a,b), the fixed preverbal section includes a quantified expression, an adverb, and a verbal particle, whereas the free postverbal section includes two definite noun phrases. (For perspicuity's sake, the verb will be spelled in bold-face, and the quantifier and the adverb will be spelled in italics.)

(1) a. *Minden könyvet   idejében* vissza-**vittek** a fiúk a   könyvtárba.
      every   book-ACC in.time   back   took   the boys the library-to
      'The boys took back every book to the library in time.'
   b. *Minden könyvet idejében* vissza-**vittek** a könyvtárba a fiúk.

If (1) is negated, the verb moves up next to the initial negative particle, whereby the quantifier–adverb–particle string becomes part of the postverbal free-word-order section. In other words, V-movement across the particle, the adverb, and the quantifier liberates their order relative to one another and to the postverbal noun phrases:

(2) a. Nem **vittek**ᵢ *minden könyvet   idejében* vissza tᵢ a fiúk a   könyvtárba.

not took every book-ACC in.time back the boys the library-to

'The boys didn't take back every book to the library in time.'

b. Nem **vittek** vissza a könyvtárba *minden könyvet idejében* a fiúk.

c. Nem **vittek** *idejében* vissza a fiúk *minden könyvet* a könyvtárba.

Structural focus (to be spelled in capital letters), similar to the negative particle, also elicits V-movement into an adjacent functional head. V-movement to focus also frees up the order of the constituents that it crosses:

(3) a. RITKÁN **visznek**ᵢ *minden könyvet idejében* vissza tᵢ a fiúk a könyvtárba.
   rarely take every book-ACC in.time back the boys the library-to

   'Rarely do the boys take back every book to the library in time.'

b. RITKÁN **visznek** a fiúk *idejében* vissza a könyvtárba *minden könyvet*.

The focus projection can be iterated. In multiple focus constructions the V moves up into a functional head right-adjacent to the highest focus, liberating the order of all the constituents crossed, including the lower foci:

(4) a. *Mindenki* CSAK EGY KÖNYVET **vitt** vissza a könyvtárba.
   Everybody only one book-ACC took back the library-to

   'Everybody took back only one book to the library.'

b. MIÉRT **vitt** vissza *mindenki* CSAK EGY KÖNYVET a könyvtárba?
   why took back everybody only one book-ACC the library-to

   'Why did everybody take back only one book to the library?'

c. MIÉRT **vitt** vissza a könyvtárba CSAK EGY KÖNYVET *mindenki*?

d. MIÉRT **vitt** *mindenki* vissza a könyvtárba CSAK EGY KÖNYVET?

In fact, the different postverbal word order variants are not always equally unmarked, but markedness is independent of the grammatical categories or grammatical functions of postverbal constituents; it is determined by their phonological weight. A postverbal string of constituents is felt to be optimal if it observes Behaghel's (1932) Law of Growing Constituents, i.e., if lighter (shorter and unstressed) constituents precede heavier ones. (5a), severely violating the Law of Growing Constituents, is unacceptable (even if not ungrammatical). Its optimal variant is (5b):

(5) a.??MIÉRT **bukott** CSAK PÉTER *minden tantárgyból az idén* meg?

      why   failed   only Peter   every subject-from this.year PRT

      'Why did only Peter fail every subject this year?'

  b. MIÉRT bukott meg *az idén* CSAK PÉTER *minden tantárgyból*?

3. Former theories of free word order

The question on which level of the derivation the freedom of postverbal word order originates has been given different answers in the literature.

The most trivial way of predicting free postverbal order is to assume a flat VP, in which only the initial position of the head is fixed; the arguments and adjuncts are base-generated as sisters to it and to one another in an arbitrary order. Such is the VP-structure implicit in the work of Brassai (1863-65), and I also argued for such a VP in É. Kiss (1987, 1994, 2002, etc.) In the most recent version of this theory, É. Kiss (2006), I assume the Hungarian sentence structure in (6). The structure is intended to account not only for the freedom of postverbal order, but also for the fact that in the predicational part of the sentence, the V is preceded either by a verbal particle or by a focussed constituent, but not both of them. In the proposed structure, the verbal particle is one of the postverbal complements in the flat VP. Verbal particles and focus-marked constituents are both claimed to have the feature [+predicative], thereby representing potential, alternative fillers of the specifier of PredP.

(6) $[_{TopP} XP_j [_{PredP} XP_i [_{VP} V t_i t_j XP^*]]]$ (É. Kiss 2006)

The structure in (6) correctly predicts the fixed word order of the preverbal section and the free word order of the postverbal section of the Hungarian sentence; however, it leaves the subject–object–adverbial asymmetries attested e.g. in anaphora unexplained.[3]
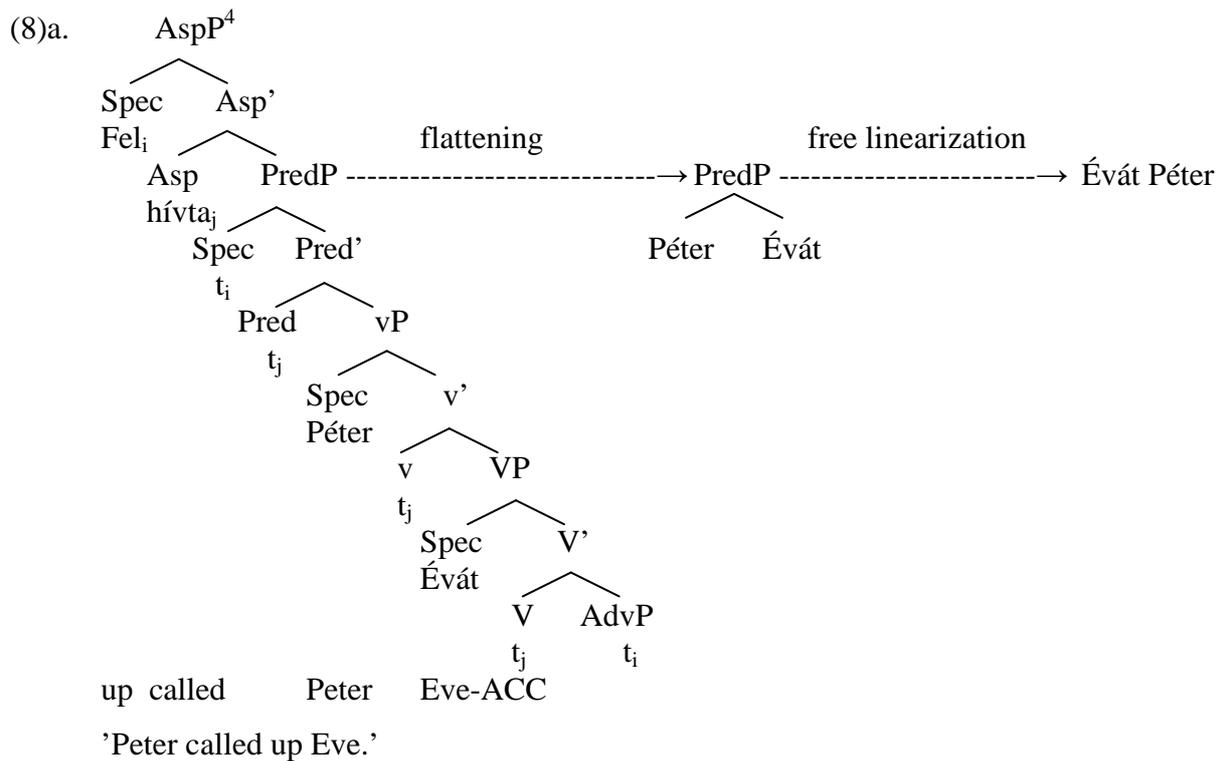
In most partially free word order languages, e.g., in Japanese, free word order is derived from a hierarchical VP via Scrambling. This solution has been adopted to Hungarian by Surányi (2006); see also É. Kiss (2008c). The VP-adjunction of internal arguments, followed by V-to-T movement across them, not only yields the different postverbal argument orders attested but also correctly predicts binding possibilities unexpected in a standard hierarchical VP. However, in most languages Scrambling is a kind of internal topicalization, only affecting [+specific] complements across languages (cf. e.g., Karimi (2001) about Persian, Kornfilt (2001) about Turkish, Dayal (2001) about Hindi, as well as the German facts in

Diesing (1992)). This is not the case in Hungarian, where non-specific indefinites also participate in postverbal free word order. Observe (7), in which a non-specific bare plural has been preposed in front of both the subject and a manner adverb presumably adjoined to VP:

(7) [$_{\text{FocP}}$ CSAK ÍRÁSBAN   vizsgáztatnak [$_{\text{VP}}$ nagy évfolyamokat [$_{\text{VP}}$ *szívesen* [$_{\text{VP}}$ a tanárok]]]]
          only   writing-in   examine   great classes-ACC   gladly   the teachers
    'It is only in writing that teachers examine great classes gladly.'
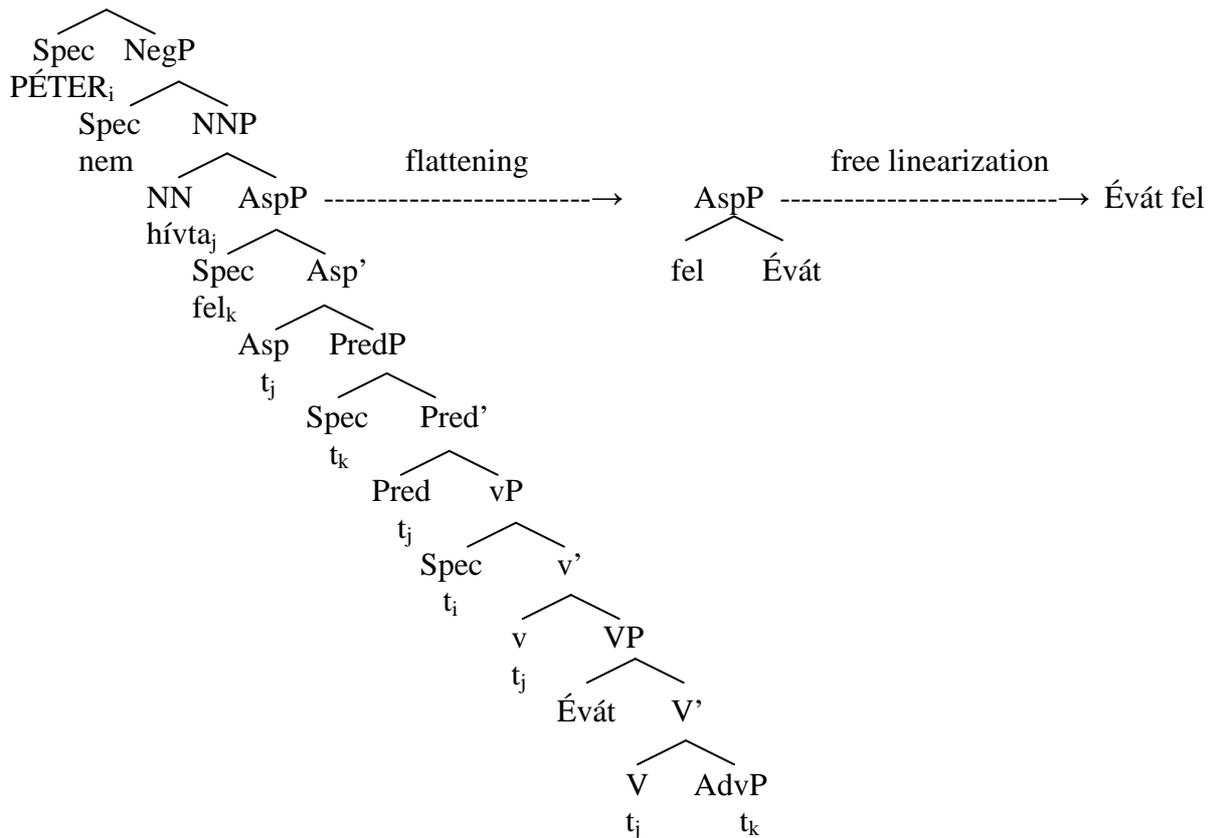

   In É. Kiss (2008a,b) I have sought to account for postverbal free word order in the framework of Phase Theory. I assume two phases in the derivation of a clause: a lexical phase and a functional phase. The head positions of both phases are filled by V-movement. When the V is raised into the head of the functional phase, the hierarchical structure constituting the domain of the functional phase is claimed to be flattened – as the silent copies of the V and their projections are deleted. In this framework, the major postverbal constituents become sisters to one another at the syntax/semantics/phonology interface. If the interface representation of the clause is visualized as a three-dimensional tree, its postverbal section consists of multiple branches spreading from a single node, which are not ordered, and can be linearized at will in the course of spell-out.

   This approach can account both for the subject–object asymmetries and the subject–object symmetries attested in the language. The vP is subjected to semantic interpretation twice: first as the hierarchical domain of the lexical phase, then as part of the flattened domain of the functional phase. Observe example (8a), a neutral sentence. In PredP, the lexical phase, the vP is still hierarchical; however, once the verb has been removed into the head of the functional phase, PredP collapses and becomes freely linearizable.

(8)a.　　　AspP[4]

```
              AspP⁴
             /    \
          Spec    Asp'
          Felᵢ   /    \
               Asp     PredP ---------------------------→ PredP ----------------------→ Évát Péter
              hívtaⱼ   /    \           flattening        /    \        free linearization
                    Spec    Pred'                      Péter    Évát
                    tᵢ     /    \
                        Pred    vP
                        tⱼ     /   \
                            Spec    v'
                            Péter  /  \
                                  v    VP
                                  tⱼ  /   \
                                   Spec    V'
                                   Évát   /  \
                                        V    AdvP
                                        tⱼ    tᵢ
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up　called　　　Peter　　Eve-ACC

'Peter called up Eve.'

In non-neutral sentences, the functional projection also includes an NNP (Non-Neutral Phrase)[5], and a FocP and/or a NegP. The V moves into the NN head, thereby reversing the 'particle, verb' order of neutral clauses. The head of the functional phase of a non-neutral clause is the V in NN (the highest overt head in the series of functional projections), and the phasal domain subject to flattening is AspP – see (8b). (Both neutral and non-neutral sentences can also involve a TopP.)

(8)b. FocP

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         FocP
        /    \
     Spec    NegP
    PÉTER_i  /   \
          Spec    NNP
          nem    /    \
               NN      AspP  ----------------------→   AspP  --------------------------→  Évát fel
             hívta_j  /   \        flattening         /    \     free linearization
                   Spec    Asp'                      fel    Évát
                   fel_k   /   \
                        Asp     PredP
                        t_j    /    \
                            Spec     Pred'
                            t_k     /    \
                                 Pred     vP
                                 t_j     /   \
                                      Spec    v'
                                      t_i    /   \
                                           v      VP
                                          t_j    /   \
                                              Évát    V'
                                                     /   \
                                                    V     AdvP
                                                   t_j     t_k
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'It was Peter who called up Eve.'

Grammatical phenomena which are indicative of a hierarchical structure, e.g., the anaphoric relation licensed in (9a) as opposed to (9b), are interpreted on the hierarchical domain of the lexical phase. Grammatical phenomena indicative of a flat structure, e.g., the lack of weak crossover effect in (10), are interpreted on the flattened domain of the functional phase, where the objec variable c-commands (A-binds) the genitive specifier of the subject (for details, see É. Kiss 2008a).

(9) a.[PredP Fel   hívták [vP a   fiúk [vP egymást]]]

           up   called   the boys   each-other-ACC

    'The boys called up each other.'

   b.*[PredP Fel hívták [vP egymás [VP a fiúkat]]]

    'Each other called up the boys.'

(10) [FocP Kit_i   szeret [PredP [DP az pro_i anyja]   t_i?]]

          whom loves   the his   mother-NOM

    'Who does his mother love?'

Postverbal free word order, nevertheless, cannot be solely the result of domain flattening having taken place in the functional phase of the derivation. If postverbal free word order were nothing but the free linearization of sister nodes, then postverbal scope-bearing elements would all mutually c-command one another, and would all have identical scopes. Thus in a structure like (8b), postverbal quantifiers and adverbials would all have scope over AspP. In fact, however, postverbal quantifiers and adverbial adjuncts can also participate in the free postverbal order while having scope over NegP or FocP.

The facts to be accounted for will be summarized in sections 4 and 5.

4. The word order position and scope of adverbial adjuncts

Preverbal adverbial adjuncts have scope over the sentence part that they precede and c-command. However, they can also follow the V, in which case their order among the postverbal constituents is free, and their scope is independent of their relative position within the postverbal string. (For further details of the placement of adverbial modifiers in the Hungarian sentence, see É. Kiss (2008b).)

In example (11), *figyelmesen* 'attentively' is a predicate adverbial, whereas *szerintem* 'in my opinion' is a sentence adverbial. The positions of preverbal adverbials correspond to their selectional/subcategorizational requirements and to their relative scope, assuming a right-branching structure; hence *szerintem* must precede *figyelmesen*.

(11) a.[*Szerintem*   [János [*figyelmesen* [$_{AspP}$ el-**olvasta** a   könyvet]]]]

     according.to.me   John   attentively   PRT-read the book

     'In my opinion, John read the book attentively.'

   b. János *szerintem figyelmesen* [$_{AspP}$ el-**olvasta** a könyvet]

   c.* János *figyelmesen szerintem* [$_{AspP}$ el-**olvasta** a könyvet]

Postverbally, on the other hand, the word order of *figyelmesen* and *szerintem* is free. Their relative order does not affect the interpretation of the sentence: *figyelmesen* invariably takes scope over AspP, and *szerintem* invariably takes scope over the whole proposition:

(12) a. János el-**olvasta** *figyelmesen* a könyvet *szerintem*.

   b. János el-**olvasta** a könyvet *szerintem figyelmesen*.

   c. János el-**olvasta** *szerintem* a könyvet *figyelmesen*.

d. János el-**olvasta** *figyelmesen szerintem* a könyvet.

Whereas in (11a) the structural positions of the two adverbs are determined by their lexical selectional properties, and their scopes follow from their structural positions, the variants in (12a-d) represent problems for the analysis.

   In the theory presented in É. Kiss (2008a), it is the phasal domain c-commanded by the phasal head (the V) that is subjected to flattening and to free linearization at the syntax/semantics/phonology interface – however, in (12) neither *szerintem*, nor *figyelmesen* is part of the phasal domain. A predicate adverbial can become part of the phasal domain only in an extended functional phase, in which AspP is subsumed by a FocP projection, with the V (representing the phasal head) raised to the NN head. In such constructions, e.g. that in (13), the V moving from Asp to NN crosses the predicate adverbials preceding AspP, whereby they surface in the domain c-commanded by the V, to be flattened and to be linearized freely in PF. Since they are part of the presupposition, they undergo stress reduction. Observe the two postverbal predicate adverbials in (13a-c). Their position in the postverbal sentence part is free; they are understood to have scope over AspP, and they are destressed.

(13) a. [$_{FocP}$ CSAK 'JÁNOS [$_{NNP}$ **olvasta** [$_{AspP}$ el   a   könyvet *végig   figyelmesen*]]]
           only   John   read   PRT the book   end.till   attentively
        'It was only John who read the book through attentively.'
    b. [$_{FocP}$ CSAK 'JÁNOS [$_{NNP}$ **olvasta** [$_{AspP}$ el *figyelmesen végig* a könyvet]]]
    c. [$_{FocP}$ CSAK 'JÁNOS [$_{NNP}$ **olvasta** [$_{AspP}$ el *figyelmesen* a könyvet *végig*]]]

Whereas the word order and interpretation of the examples in (13) do not contradict the hypothesis that free postverbal order is the consequence of the deletion of the silent copies of the verb and their projections at the syntax/semantics/phonology interface, the examples in (12a-d) are not compatible with this framework. First, both postverbal adverbials in (12a-d) outscope the flattened phasal domain. Second, the two postverbal adverbials have different scopes (*figyelmesen* has scope over AspP, *szerintem* has scope over TopP). If they were sister nodes c-commanding each other at the syntax/semantics interface, the interpretive component would not be able to recognize their scope difference.

5. The word order position and scope of quantifiers

As is well-known (cf. É. Kiss 1991), quantifiers precede and c-command their scope in the preverbal section of the Hungarian sentence, i.e., their scope order corresponds to their linear order. For example:

(14) a. *Mindenki   több   cikket   is*   [gyorsan [$_{AspP}$ el-**olvasott** a   vizsgára]]
        everybody several papers-ACC even quickly   PRT read the exam-for
        'Everybody quickly read several papers for the exam.'   every > several

   b. *Több cikket is mindenki* [gyorsan [$_{AspP}$ el-**olvasott** a vizsgára]]
      'Several papers, everybody read quickly for the exam.' several > every

However, quantifiers can optionally also stand postverbally, where their word order is free, and their absolute and relative scope is independent of their word order position. The word order variants of (14a,b) listed under (15a-e), with one or both of the quantifiers in postverbal position, are scopally ambiguous: each of them has both the reading of (14a) and the reading of (14b):

(15) a. *Mindenki* gyorsan el-**olvasott** *több cikket is* a vizsgára.

   b. *Több cikket is* gyorsan el-**olvasott** a vizsgára *mindenki*.

   c. Gyorsan el-**olvasott** a vizsgára *mindenki több cikket is*.

   d. Gyorsan el-**olvasott** *több cikket is* a vizsgára *mindenki*.

   e. Gyorsan el-**olvasott** *mindenki* a vizsgára *több cikket is*.

The interpretations of these sentences do not follow from the phasal theory presented in É. Kiss (2008a). In these examples, the projection subject to flattening and free linearization at the syntax/semantics interface is PredP. However, the postverbal quantifiers in (15a-e) cannot be part of PredP, as they outscope it. They have scope over the AspP modified by *gyorsan* 'quickly', hence they must occupy positions c-commanding AspP.

  What the theory in É. Kiss (2008a) can handle in a straightforward way is postverbal quantifiers in the scope of a focus and/or negation. If an AspP with Q-raised quantifiers in front of it is extended by a focus and/or a negative particle, the verb is raised from Asp across the preposed quantifiers into the NN head, as a consequence of which the quantifiers crossed by the V will become part of the flattened phasal domain, where they will c-command each other. The phasal domain, representing the presupposition of the focus construction, undergoes stress reduction. The two destressed quantifiers are predicted – correctly – to have

scope over AspP, and to be interpretable in either scope order. Indeed, such examples, e.g., (16a,b), are ambiguous:

(16) a. A   SZINTAXIS- VIZSGÁRA **olvasott** el   *mindenki   több   cikket   is*.
　　　　the syntax　　　　exam-for　　read　　PRT everybody　several　papers　even
'It was for the syntax exam that everybody read several papers.' every>several, several>every
　　b. A SZINTAXIS-VIZSGÁRA **olvasott** el *több cikket is mindenki*.
'It was for the syntax exam that everybody read several papers.' every>several, several>every

　　In non-neutral sentences quantifiers can also have scope over FocP or NegP, and these wide-scope quantifiers can also stand either preverbally or postverbally. In preverbal position, they precede and c-command their scope, as expected, i.e., sentences with two or more preverbal quantifiers are never ambiguous:

/(17) a. *Mindenki   legtöbb   tárgyból* [_FocP_ KÉTSZER **bukott**   meg]
　　　　everybody   most　　subject-from twice　　failed　　PRT
　　　　'Everybody failed most subjects twice.'　　　　every > most > twice
　　b. *Legtöbb tárgyból mindenki* [_FocP_ KÉTSZER **bukott** meg]
　　　　'Most subjects, everybody failed twice.'　most > every > twice

These quantifiers can also stand postverbally, where they do not lose their stress – unlike postverbal quantifiers in the scope of focus and/or negation. Their postverbal position, however, is independent of their scope. Focus constructions containing both a preverbal and a postverbal wide-scope (stressed) quantifier are ambiguous. Both (18a) and (18b) have the same two readings:

(18) a. *Mindenki* KÉTSZER **bukott** meg *'legtöbb tárgyból*.
　　　　'Everybody failed most subjects twice.'　　every > most > twice
　　　　'Most subjects, everybody failed twice.'　　most > every > twice
　　b. *Legtöbb tárgyból* KÉTSZER **bukott** meg *'mindenki*.
　　　　'Everybody failed most subjects twice.'　　every > most > twice
　　　　'Most subjects, everybody failed twice.'　　most > every > twice

The variants in which both of the wide scope (hence stressed) quantifiers follow the verb are also ambiguous in the same way:

(19) a. KÉTSZER **bukott** meg 'mindenki 'legtöbb tárgyból.
        'Everybody failed most subjects twice.'   every > most > twice
        'Most subjects, everybody failed twice.'   most > every > twice
    b. KÉTSZER **bukott** meg 'legtöbb tárgyból 'mindenki.
        'Everybody failed most subjects twice.'   every > most > twice
        'Most subjects, everybody failed twice.'   most > every > twice

   Sentences containing a stressed postverbal quantifier are problematic for the theory in É. Kiss (2008a), deriving free postverbal order at the syntax/semantics/phonology interface, for the same reason why sentences containing a postverbal sentence adverb: stressed postverbal quantifiers cannot form part of the flattened, freely linearizable phasal domain, as they have scope over (the whole or a part of) the left pheriphery of the phase, as well.

6. The proposal

6.1. Postverbal adverbials

According to mainstream generative tradition, adverbials enter the derivation via adjunction. They are adjoined to the syntactic projection that they have scope over. This is the view represented by Chomsky (2001) and Ernst (2002), and this is the framework that has turned out to be most adequate for the description of adverbial modification in Hungarian (see the studies in É. Kiss (ed.) 2008). The widely accepted alternative theory, elaborated by Cinque (1999), Alexiadou (1997), Laenzlinger (2005), etc., treating adverbials as specifiers of designated functional projections participating in feature checking, provides no straightforward means of accounting for the position and interpretation of postverbal adverbials.

   Adjunction serves the purpose of establishing a c-command relation between the adjunct and the syntactic projection it modifies. In standard generative syntax, nothing constrains the direction of adjunction,[6] i.e., not only left adjunction, but also right adjunction is allowed – see, e.g., Ernst (2002) and Fox (2003). In a version of the adjunction theory, developed by Lebeaux 1988, Åfarli (1997), and Chomsky (2001),[7] among others, adjuncts are merged into the syntactic tree on a separate plane, in a third dimension, and are integrated into linear order

only in PF. Third-dimension adjuncts can also be mapped onto the primary plane either on the left or on the right according to Åfarli (1997).

Adopting this framework, I assume that adverbials are merged into the Hungarian sentence via adjunction. Predicate adverbials (those modifying events) are typically adjoined to a functional projection in the predicational part of the sentence: AspP, NegP, or – rarely – FocP. Sentence adverbials are adjoined to TopP, or to a functional projection right below TopP (identified as (Speaker Deixis Phrase (SDP) by Egedi (2008)). Observe the structure assigned to (11a):

(20) [TopP *Szerintem* [TopP János [AspP *figyelmesen* [AspP el-**olvasta** a könyvet]]]]

according.to-me John   attentively   PRT read the book-ACC

'In my opinion, John read the book attentively.'

The semantic interpretation of left-adjoined adverbials is determined by their c-commanding their scope at the syntax-semantics interface. The fact that postverbal adverbials have exactly the same reading as their preverbal counterparts suggests that they c-command the same projection from a right-adjoined position. That is, a right-adjoined adverbial is not part of the flattened phasal domain c-commanded by the V; it is integrated into the postverbal string to be linearized in accordance with the Law of Growing Constituents only in PF.

In (21), for example, the (a) sentence represents the the output of syntax and the input of the interpretive components, and the (b-e) sentences represent the output of PF. The optimal variant is (21b), but, since the postverbal constituents do not differ very much with respect to length, none of the PF variants violates the Law of Growing Constituents severly.

(21) a. [TopP [TopP János [AspP [AspP el-**olvassa** a könyvet] *figyelmesen*]] *szerintem*]

     b. János el-**olvassa** a könyvet *szerintem figyelmesen*.

     c. János el-**olvassa** *figyelmesen* a könyvet *szerintem*.

     d. János el-**olvassa** *szerintem figyelmesen* a könyvet.

     e. János el-**olvassa** *figyelmesen szerintem* a könyvet.

6.2. Postverbal quantifiers

In standard generative syntax quantifiers assume positions c-commanding their scope via Q-raising, an adjunction rule. At the same time, alternative theories have also been proposed in which quantifiers move to specifiers of designated functional projections, where they

participate in feature-checking – cf. Beghelli and Stowell (1997). A version of this theory, based on facts of Hungarian, has been elaborated by Szabolcsi (1997), and Brody and Szabolcsi (2003).

In the theory of Szabolcsi, and Brody and Szabolcsi, distributive quantifiers, among them universals, are moved into the specifiers of Distributive Phrases. DistP is an iterable functional projection located above FocP and below TopP.[8] A clause can contain several instances of the functional series FocP, DistP, TopP: above vP, above AgrOP, above TenseP, and above AgrSP. That is:

(22) Top*
      Dist*
         F
            AgrS
               Top*
                  Dist*
                     F*
                         T
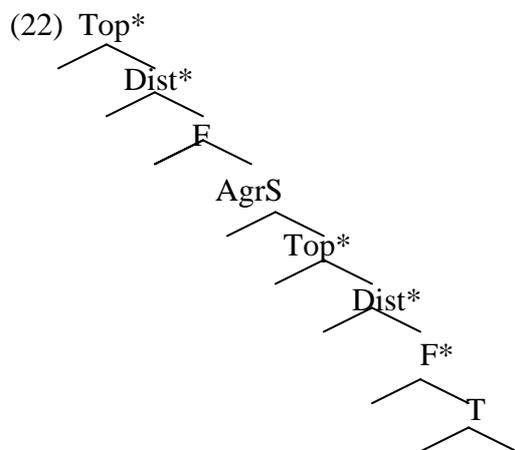
(* marks the iterability of the given projection.) Since the V raises across the functional heads AgrO and T into AgrS, the operators of the lower functional series will follow the V. The assumption of postverbal functional series explains the presence of postverbal quantifiers, however, it does not explain the possibility of their having wide scope over a preceding sentence part, and inverse scope with respect to a preceding quantifier. This falls out from an additional component of the approach: Mirror Theory (cf. Brody 1997, and Baker 1985). According to Mirror Theory, syntactic heads precede their complement, whereas morphological heads follow it. Brody and Szabolcsi assume that Dist can be analyzed as either a syntactic or a morphological head. In a DistP with a morphological Dist head, a quantifier in Spec,DistP has scope over the projection which precedes it in the complement of the Dist head.

In addition to having several stipulative elements, the Szabolcsi–Brody theory also raises empirical problems. For example, it does not follow from anything that, whereas the highest quantifier and the highest topic can land in any of the lower, postverbal operator series, the highest focus must move up into the Spec,FocP position of the highest, preverbal, operator series. It also remains unexplained why FocP is recursive only in the lower operator series,

but not in the highest one. The theory does not appear to be extendable to negative quantifiers. (For a more detailed criticism of the theory, see É. Kiss (2008b).)

These problems do not arise if we return to the standard, adjunction analysis of Q-raising, and we derive the wide scope of postverbal quantifiers by assuming right-adjunction, and we derive their free postverbal order by assuming free linearization in PF.

Quantifiers can be adjoined to any functional projection in the predicational part of the sentence. (The projections external to the predicational part, among them TopP and CP, are not possible landing sites of Q-raising).[9] Quantifiers adjoined to NegP are subject to negative concord, as a result of which their initial *minden* 'every' morpheme is replaced by *se-* 'no'.

If Q-raising is mapped on the two-dimensional syntactic tree as left-adjunction, the semantic and phonological interpretation of quantifiers in the preverbal domain is trivial: they c-command their scope, and they are pronounced in the order determined by their syntactic position. Observe the syntactic structures assigned to (14a) and (17a):

(23) a. [AspP *Mindenki* [AspP *több   cikket is* [AspP gyorsan [AspP el-**olvasott** a   vizsgára]]]]
             everybody   several paper even   quickly   PRT read   the exam-for
        'Everybody quickly read several papers for the exam.'   every > several

   b. [FocP *Mindenki* [FocP *legtöbb tárgyból* [FocP KÉTSZER **bukott** meg]]]
             everybody   most   subject-from twice   failed   PRT
        'Everybody failed most subjects twice.'   every > most

If Q-raising is mapped on the two-dimensional syntactic tree as right-adjunction, quantifiers will c-command, and take scope over, the very same syntactic domain as their left-adjoined counterparts. The right-adjunction of one or both of the quantifiers in (23a) yields the following syntactic structures:

(24) a.[AspP [AspP *Több   cikket is* [AspP gyorsan [AspP el-**olvasott** a   vizsgára]]] *mindenki*]
                several paper even   quickly   PRT read   the exam-for   everybody
   b. [AspP *Mindenki* [AspP [AspP gyorsan [AspP el-**olvasott** a vizsgára]] *több cikket is*]]
   c. [AspP [AspP [AspP Gyorsan [AspP el-**olvasott** a vizsgára]] *több cikket is*] *mindenki*]

Each of these structures has the same interpretation as (23a), since the quantifiers have the same c-command domains, and, consequently, the same absolute and relative scopes. However, in PF the postverbal constituents of these strings are optionally reordered in

observance of the Law of Growing constituents. For example, (24c) can be pronounced as (25). (The stressed *mindenki* 'everybody' is phonologically at least as heavy as the one-syllable longer but unstressed *a vizsgára* 'for the exam'.)

(25) Gyorsan el-**olvasott** a vizsgára *mindenki több cikket is*.

At the same time (25) is also a possible linearization of the syntactic structure in (26), in which *több cikket* 'several papers' c-commands, and has scope over, *mindenki* 'everybody':

(26) [AspP [AspP [AspP Gyorsan [AspP el-**olvasott** a vizsgára]] *mindenki*] *több cikket is*]

      quickly   PRT read   the exam-for everybody   several papers even

   In this framework, the ambiguity of sentences containing both preverbal and postverbal quantifiers, such as (27a), also follows: the sentence is a possible PF-linearization of both (27b) and (27c):

(27) a. *Mindenki*   KÉTSZER **bukott**   meg *'legtöbb tárgyból*.

         everybody   twice   failed   PRT most   subject-from

    b. [FocP *Mindenki* [FocP [FocP KÉTSZER **bukott** meg] *'legtöbb tárgyból*]]

    c. [FocP [FocP *Mindenki* [FocP KÉTSZER **bukott** meg]] *'legtöbb tárgyból*]

   In sum: the wide scope of right-adjoined adverbials and quantifiers, extending over a projection subsuming the overt verb, can be derived if the adverbial or quantifier c-commands its scope at the syntax–semantics interface. That is, its integration into the postverbal string must take place in PF; hence the free linearization of the postverbal string must be a PF operation.

7. A prediction

In the grammatical framework assumed, the output of the syntactic component is mapped on a prosodic structure in PF. However, there is no biunique relation between the two constructions; the former cannot be reconstructed from the latter. The prosodic hierarchy is expected to be less articulated than the syntactic hierarchy because of a NonRecursivity constraint on prosodic representations. As formulated by Truckenbrodt (2007), this constraint requires that no constituent of level *l* be contained in another constituent of level *l*. Thus no

phonological phrase can be contained in another phonological phrase; phonological phrases are to be directly dominated by an intonation phrase.

Phonological phrases are the PF equivalents of functionally extended lexical phrases such as noun phrases. Because of the NonRecursivity constraint, a noun phrase (or postpositional phrase) embedded in another noun phrase like [DP *a találkozás* [DP *a régi barátnőjével*]] 'the meeting with his old girlfriend' is segmented into two adjacent phonological phrases (p-phrases) as follows: [pP *a találkozás*] [pP *a régi barátnőjével*].

If in Hungarian postverbal free linearization is a PF phenomenon, then it is expected to affect phonological phrases rather than syntactix phrases. This is exactly what happens. In (28) the syntactic structure is ambiguous: in the string *a találkozást a régi barátnőjével* 'the meeting-ACC with his old friend' *a régi barátnőjével* can be either the prepositional object of *a találkozás*, or a comitative adjunct of the verb:

(28) Péter nagyon   várta   a találkozást   a régi barátnőjével.
     Peter very-much looked-for the meeting-ACC   the old   girlfriend-his-with
     'Peter was very much looking forward to the meeting with his old girlfriend.'

Under both structural interpretations of (28), *a találkozást a régi barátnőjével* is linearized as two independent units – in accordance with the fact that both syntactic structures underlying (28) are mapped on a prosodic representation in which *a találkozást* and *a régi barátnőjével* represent two distinct phonological phrases:

(29) a. Péter várta   **a találkozást**   nagyon   **a régi barátnőjével**.
        Peter looked-for the meeting-ACC   very.much the old   girlfriend-his-with
        'Peter was very much looking forward to the meeting with his old girlfriend.'
     b. Péter várta **a régi barátnőjével** nagyon **a találkozást**.

The question arises what evidence we have that the disintegration of the complex noun phrase takes place in PF rather than in syntax. After all, the complex noun phrase cannot be focus-moved as a whole, either; the complement is obligatorily extraposed, which suggests that *a találkozást* and *a régi barátnőjével* are separated in syntax already. However, extraposition is obligatory only in the case of focusing, for the reason that Hungarian structural focus must be head-final. Topic movement is not constrained in this way; the complex noun phrase is topicalized as a whole, as in (30a). The PP complement of a

topicalized noun phrase can only be extraposed if it has discourse features other than those of the host noun phrase (e.g., one of them is topic, and the other one is focus – see (30b,c)). If extraposition could take place in syntax automatically, without any trigger, (30d) should also be grammatical.

(30)a.[TopP **A találkozást a régi barátnőjével** [valószínűleg nagyon várta Péter]]
     the meeting-ACC the old friend-his-with presumably very.much looked-for P.
   'The meeting with his old girlfriend, Peter was presumably looking forward to very much.'
   b. [TopP **A találkozást** [FocP csak **A RÉGI BARÁTNŐJÉVEL** [NNP várta Péter nagyon]]]
      'It was only his old girlfriend that Peter was looking forward to meeting very much.'
   c. [FocP Csak **A RÉGI BARÁTNŐJÉVEL** [NNP várta Péter **a találkozást**]]
   d.* [TopP **A találkozást** [TopP valószínűleg [TopP **a régi barátnőjével** [FocP PÉTER
        the meeting-ACC presumably the old friend-his-with Peter
      várta a legjobban]]]]
      looked-for the most
   'The meeting with his old girlfriend, presumably JOHN was looking forward to the most.'

Infinitival constructions provide further evidence of free postverbal linearization taking place in the PF component. An infinitive phrase projects no CP in Hungarian, and it does not represent a separate intonation phrase; it is integrated into the matrix intonation phrase. If linearization in the postverbal section of the matrix sentence takes place in PF, then the constituents of the infinitive are expected to freely mingle with those of the matrix verb. This prediction is borne out:

(31)a. Nem tudta volna **őket** János **egymással** valószínűleg **kibékíteni**.
       not was.able PERF.COND them John each-other-with presumably reconcile-INF
       'John presumably wouldn't have been able to reconcile them with each other.'
   b. Nem tudta volna **kibékíteni** János **őket** valószínűleg **egymással** .

In the syntactic component, the non-finite clause still forms a constituent which can only be topicalized as a whole (see (32a,b)) unless its subconstituents are supplied with different discourse features (see (32c)).

(32)a. [TopP **Kibékíteni őket egymással** [valószínűleg [nem tudta volna János]]]

'To reconcile them with each other, John presumably woudn't have been able to.'

b.* [TopP **Kibékíteni** [TopP János [TopP **egymással** [valószínűleg [[TopP **őket** [NegP nem tudta volna]]]]]]

c. [TopP **Kibékíteni** [TopP János [FocP csak **EGYMÁSSAL** [NNP tudta   őket]]]]
  reconcile-INF   John   only each-other-with   was.able   them
  'As for making piece, it was only with each other that John could make them do that.'

8. Conclusion

It has been argued that the free constituent order attested in the postverbal section of the Hungarian sentence cannot be either the result of random base-generation, or the result of a syntactic operation, e.g., Scrambling, or flattening resulting from the pruning of the silent copies of the V. It must be a PF operation, because it also affects postverbal adverbials and quantifiers which c-command their scope from a right-adjoined position at the interfaces. Further evidence of free linearization taking place in PF has been provided by the fact that the units of reordering are the phonological phrases. Prosodic representations are subject to a NonRecursivity constraint, hence complex noun phrases and infinitival phrases are segmented into strings of non-recursive phonological phrases. PF-reordering affects these segments, yielding the illusion of free extraposition. Postverbal phonological phrases are reordered according to their phonological weight.

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[2] More precisely, the order of topic constituents in multiple topic constructions is free.

[3] The most detailed discussion of these asymmetries has been provided by Marácz (1989).

[4] According to Csirmaz (2006), Spec,AspP has an the EPP feature, which requires it to be filled by the closest potential filler, the verbal particle.

[5] This functional projection has been argued for by Horvath (2006); the term is from Olsvay (2000).

[6] I do not regard Kayne's (1994) Linear Correspondence Axiom, which excludes the possibility of right adjunction, as a generally accepted, standard constraint.

[7] For a recent version of this theory, see Erteschik-Shir (2006).

[8] In the theories of Szabolcsi (1997), and Brody and Szabolcsi (1997), the term TopP is replaced by RefP.

[9] Left-adjunction to NNP is restricted by a PF-constraint: the focus and the finite verb must form one phonological word. Consequently, left-adjunction to NNP is only possible if it is dominated by NegP (rather than FocP), for example:

(i) [$_{NegP}$ Nem [$_{NNP}$ *mindenki* [$_{NNP}$ jött [$_{PredP}$ el   az   előadásra]]]]
      not   everybody   came   PRT the show-to
   'Not everybody came to the show.'