Syntactic, semantic, and prosodic factors determining the position of adverbial adjuncts
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1. Aims

What type of mechanism determines the placement of adverbial adjuncts is an open question of generative syntax. Several alternative theories have been proposed, and their competition appears to be far from being settled. The position of adverbial adjuncts is also a neglected problem of Hungarian syntax; no attempt has been made to account for all their word order possibilities. This chapter aims to fill in this blank spot of Hungarian grammar, i.e., to provide an analysis which can predict all the word order positions, the scope, and the prosody of the different types of adverbials. It will be argued that the theoretical framework which is both sufficiently flexible and sufficiently constrained for a descriptively adequate analysis of the Hungarian data is the adjunction theory of Ernst (2002). Facts of Hungarian will also support a version of Chomsky's (2001) claim that adverbials are attached to the syntactic tree on a separate plane, in a third dimension, and are integrated into linear order only in PF.

Section 2 of the chapter will introduce the most problematic facts of Hungarian adverbial placement. Section 3 presents the Hungarian sentence structure on which these facts will be interpreted, a hierarchical structure whose postverbal can be reordered freely in PF. Section 4 briefly outlines the prevailing theories of the syntax of adverbial adjuncts. Section 5 presents the main claims of the paper, stating that adverbial adjuncts enter the Hungarian sentence structure via adjunction, in a third dimension, which can be linearized as either left-adjunction or right-adjunction. Right-adjoined adverbials, similar to other postverbal constituents, can participate in free PF reordering. In section 6 the facts surveyed in section 2 are revisited and are given a principled explanation.

2. Facts to account for

Adverbial placement represents a problem for Hungarian syntacticians because adverbials can appear both preverbally and postverbally, and whereas their preverbal order is strictly fixed, their postverbal order is completely free. Moreover, an adverbial appears to have the same scope and the same prosody either in preverbal or in postverbal position.

Thus predicate adverbials (or, in another terminology, lower adverbials) precede the particle + verb +arguments string in the unmarked case, and

their relative order basically corresponds to the order predicted by Cinque (1999) on the basis of crosslinguistic evidence. For example, manner adverbials precede degree adverbials (1a,b), and frequency adverbials precede manner adverbials (2a,b). These adverbials take scope over the constituents they precede, and they bear primary stresses (to be denoted by the symbol ').

(1) a. *János **'gyorsan 'félig** meg-oldotta a feladatot.*[1]
John quickly half PRT solved the problem
'John quickly half solved the problem.'
b. ??*János **'félig 'gyorsan** meg-oldotta a feladatot.*

(2) a. *János **'gyakran 'jól** meg-oldotta a feladatot.*
John often well PRT solved the problem
'John often solved the problem well.'
b. **János **'jól 'gyakran** meg-oldotta a feladatot.*

It is only adverbials of the same type that can be reversed preverbally. Their order determines their scope interpretation; the adverbial that stands first has wider scope:

(3) a. *A postás **'többször is 'újra** csengetett.*
the postman several.times even again rang
'The postman rang again several times.'
b. *A postás **'újra 'többször is** 'csengetett.*
'The postman rang several times again.'

Predicate adverbials can also follow the verb, even though such sentences have a somewhat marked flavor. Within the postverbal section of the sentence, they can stand in any order with respect to one another and to the other major constituents. Interestingly, they bear the same pitch accent, and have the same scope options postverbally as they have in preverbal position:

(4) a. *János meg-oldotta **'gyorsan 'félig** a feladatot.*
'John quickly half solved the problem.'
b. *János meg-oldotta **'félig** a feladatot **'gyorsan**.*

(5) a. *János **'gyakran** meg-oldotta **'jól** a feladatot.*
'John often solved the problem well.'

    b. *János meg-oldotta **'jól** a feladatot **'gyakran**.*

We attest the same dual behavior also in the case of sentence adverbials. Their unmarked position is a pre- or post-topic position in the left periphery, preceding everything else – see (6a-d) and (7a). They have the same fixed order relative to one another that is known from the work of Cinque (1999). They precede the first pitch accent of the sentence; they only bear secondary stresses.[2] Their scope extends over the sentence part they precede and c-command. Their order relative to topics may be free because topics are referential expressions, having maximal scope anyway. If the relative order of two sentence adverbials is reversed, as in (6d) and (7b), so is their relative scope, and the output is acceptable to the extent the resulting scope order is interpretable.

(6) a.   ***Valószínűleg*** *János **látszólag** 'együttműködött a rendőrséggel.*
        probably   John seemingly cooperated   the police-with
        'Probably John seemingly cooperated with the police.'
    b. *János **valószínűleg látszólag** 'együttműködött a rendőrséggel.*
        'Probably John seemingly cooperated with the police.'
    c. ***Valószínűleg látszólag*** *János 'együttműködött a rendőrséggel.*
        'Probably John seemingly cooperated with the police.'
    d. *János **látszólag valószínűleg** 'együttműködött a rendőrséggel.*
        'Seemingly, John probably cooperated with the police.'

(7) a.   ***Szerintem***   ***valószínűleg taktikusan*** *'JÁNOST   választják meg.*
        according-to-me probably   cleverly   John-ACC elect-they PRT
      'In my opinion, they probably cleverly elect JOHN.'
    b. ??***Valószínűleg szerintem taktikusan*** *'JÁNOST választják meg.*

As a somewhat marked option, sentence adverbials can also appear postverbally, where their relative position is free. No matter what absolute and relative word order position they occupy in the postverbal part of the sentence, they have the same scope possibilities and the same secondary stresses as they have preverbally. Thus every word order variant under (8) shares the two readings of (8a), and every word order variant under (9) shares the reading of (9a):

(8) a.   ***Látszólag***   *János 'együttműködött **valószínűleg** a rendőrséggel.*
        seemingly   John cooperated   probably   the police-with
        'Probably John seemingly cooperated with the police.'

or: 'Seemingly, John probably cooperated with the police.'
   b. ***Valószínűleg*** *János 'együttműködött **látszólag** a rendőrséggel.*
   c. *János 'együttműködött **látszólag** a rendőrséggel **valószínűleg**.*
   d. *János 'együttműködött **valószínűleg látszólag** a rendőrséggel.*

(9) a. ***Szerintem***   ***taktikusan*** *'JÁNOST* *választják* *meg **valószínűleg**.*
      according-to-me cleverly   John-ACC elect-they PRT probably
      'In my opinion, they probably cleverly elect John.'
   b. ***Szerintem*** *'JÁNOST választják meg **valószínűleg taktikusan**.*
   c. ***Szerintem*** *'JÁNOST választják meg **taktikusan valószínűleg**.*
   d. ***Valószínűleg taktikusan*** *'JÁNOST választják meg **szerintem**.*

Lower adverbials also have further structural possibilities. They can be focused, in which case they occupy a fixed preverbal position (10a), taking scope over their c-command domain, and bearing a pitch accent. They can also be in the scope of an identificational focus and/or negation (10b), in which case they surface postverbally, and behave like other postverbal adjuncts – apart from the fact that they undergo destressing. Finally, they can also be topicalized with a contrastive, fall–rise (√) intonation (10c), in which case they appear to have narrow scope with respect to the preverbal operators, seemingly contradicting the generalization that preverbal adverbials take scope over the sentence part that they precede.

(10) a. *János **JÓL** oldotta meg a feladatot.*
      John well   solved   PRT the problem
      'John solved the problem WELL.'
   b. *JÁNOS oldotta meg **jól** a feladatot / oldotta **jól** meg a feladatot.*
      'It was John who solved the problem well.'
   c. √**Jól** JÁNOS oldotta meg a feladatot.
      '[As regards quality,] it was John who solved the problem well.'

For sentence adverbials, these options are not available.

3. The Hungarian sentence structure assumed
The facts of Hungarian surveyed in section 2 will be interpreted on the sentence structure argued for in É. Kiss (2008), integrating proposals of É. Kiss (1987; 2002), Brody (1990; 1995), Csirmaz (2004; 2006), Olsvay (2000), and Surányi (2002; 2006), among others. (The structure is simplified to the extent that it does not include morphosyntactic projections

not affecting the word order of syntactic constituents, such as AspP, TenseP, and AgrP.)

The Hungarian sentence is assumed to involve a layered verb phrase, dominated by a PredP projection. PredP, a projection argued for by Zwart (1994) and Koster (1994), serves to establish a specifier–head relation between the secondary predicate (a resultative or terminative element predicated of the overt internal argument, or a bare nominal predicated of the incorporated internal argument) and the V, thereby facilitating their complex predicate interpretation (cf. also chapter 3). PredP can be dominated by one or more TopP projections, harboring topic constituents.

I assume that the overt V (i.e., the V in its highest position) functions as a phasal head. The phasal domain, a projection with no overt head, undergoes flattening, which results in a number of well-known subject-object symmetries. Flattening takes place either because V-movement leaves no trace, or because the silent copies of the V and their projections are pruned. In the PF component, the postverbal part of the sentence can be linearized freely, subject to Behaghel's Law of Growing Constituents (1932), ordering constituents according to their phonological weight. E.g.:[3]

(11)
```
       PredP
      /     \
   Spec     Pred'
   felₖ     /    \
         Pred     vP  ------------> vP  ------------------------> Évát Péter
         hívtaⱼ   /  \              /  \    flattening   free linearization in PF
              Spec   v'         Péter  Évát
              Péter  /  \
                    v    VP
                    tⱼ   /  \
                      Spec   V'
                      Évát   /  \
                            V    AdvP
                            tⱼ   tₖ
```

up called Peter   Eve-ACC
'Peter called up Eve.'
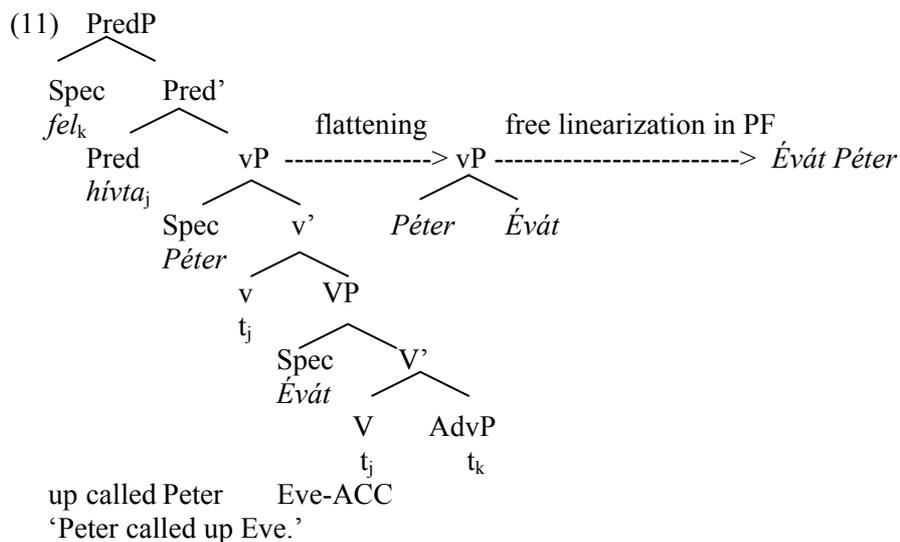
PredP might be preceded by an identificational focus, and either PredP, or the identificational focus, or both simultaneously can also be preceded by a negative particle. I assume, following a proposal of Olsvay (2000), that PredP cannot directly merge with a logical operator; it must first project a

Non-Neutral Phrase/NNP (which might be a realization of Rizzi's (1997) FinP). It is the NNP which can be extended into a lower NegP, a FocP, and a higher NegP. The V moves into the NN head, as a consequence of which the order of the particle and the V is reversed. In non-neutral sentences, the V in NN acts as the phasal head, and the phasal domain subject to flattening is PredP. A FocP or NegP can also be subsumed by a TopP projection. Here is a topicless focus construction, involving a lower NegP:

(12)   FocP

Spec   NegP
PÉTER$_i$
          Spec   NNP
          nem
                    NN   PredP ---------->PredP------------------------>*fel Évát*
                    hívta$_j$ flattening   free linearization in PF
                              Spec   Pred'   *fel   Évát*
                              fel$_k$
                                        Pred   vP
                                        t$_j$
                                                  Spec   v'
                                                  t$_i$
                                                            v   VP
                                                            t$_j$
                                                                      Spec   V'
                                                                      Évát
                                                                                V   AdvP
                                                                                t$_j$ t$_k$
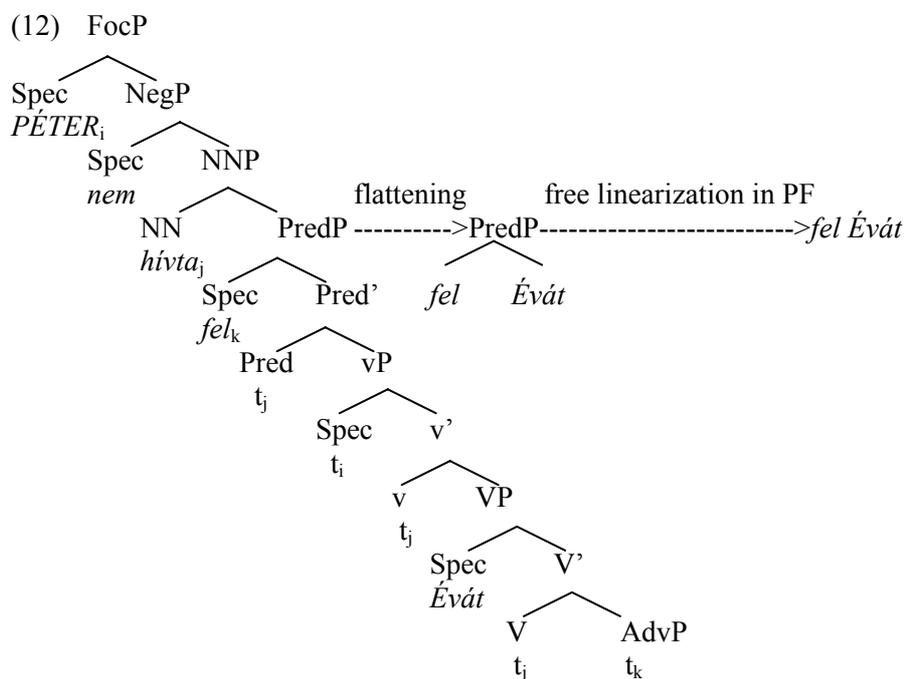
Peter not called up   Eve-ACC
'It was Peter who did not call up Eve.'

The presupposed, post-focus section of focus constructions (the NegP in (12)) is subject to stress reduction.

4. Theories of adverbial placement
Generative theory provides at least two major alternative frameworks for the integration of adverbs and adverbial adjuncts into sentence structure.

In the feature-checking theory elaborated by Alexiadou (1997) and Cinque (1999), adverbs are licensed as specifiers of functional projections, and they enter into matching relations with the relevant features of their respective functional heads. In this framework, the Hungarian preverbal degree adverb, manner adverb, and frequentative adverb, illustrated in (1), (2), and (3), would occupy the specifier positions of an $\text{Asp}_{\text{completive}}P$, a VoiceP, and an $\text{Asp}_{\text{frequentative}}P$, respectively. The evidential, modal and speech act adverbs illustrated in (6) and (7), on the other hand, would move to the specifier positions of a $\text{Mood}_{\text{evidential}}P$, a $\text{Mod}_{\text{epistemic}}P$, and a $\text{Mod}_{\text{speech-act}}P$. These projections have invariant relative positions in the universal hierarchy of functional projections, from which both the relative order and the relative scope of preverbal adverbs can be derived. What this theory could not account for in a straightforward manner is the postverbal occurrence of all adverb types. Cinque (1999) only allows a subset of adverbs (e.g. repetitives and frequentatives) to occur both preverbally and postverbally, by duplicating the functional projections harboring them. In Hungarian, however, all the 30 adverbial projections assumed by Cinque would have to be duplicated – and there would still remain problems. For example, it would not follow that, whereas preverbal adverbs take scope over their c-command domain, postverbal adverbs take scope from the positions of their preverbal counterparts.

In order to account for the fairly free distribution of adverbs in German and French, Laenzlinger (2005) combines the feature-checking theory of Alexiadou (1997) and Cinque (1999) with remnant movement. In this framework, the postverbal position of a Hungarian low adverb can be the result of VP-movement into a specifier position (Spec,WP) above the functional phrase harboring the adverb. The moved constituent can also be a remnant VP, or a projection subsuming VP. The mechanism is very flexible; it is practically unconstrained. Consider, for example, (13a). Its derivation would presumably involve the steps in (13b-d), among others:

(13) a. ***Valószínűleg*** *JÁNOST*   *választják*   ***szerintem***   *elnöknek.*
            probably   John-ACC   elect-they   according-to-me president
            'In my opinion it is probably John that they elect president.'

      b. $[_{\text{XP}}$ s***zerintem*** $[_{\text{YP}}$ ***valószínűleg*** $[_{\text{FocP}}$ *JÁNOST* $[_{\text{NNP}}$ *választják* $[_{\text{PredP}}$ *elnöknek*$]]]]]$

      c. $[_{\text{XP}}$ ***szerintem*** $[_{\text{WP1}}$ $[_{\text{PredP}}$ *elnöknek*$]_i$ $[_{\text{YP}}$ ***valószínűleg*** $[_{\text{FocP}}$ *JÁNOST választják* $t_i$$]]]]$

      d. $[_{\text{WP2}}$ $[_{\text{YP}}$ ***valószínűleg*** $[_{\text{FocP}}$ *JÁNOST választják* $t_i$$]]_j$ $[_{\text{XP}}$ ***szerintem*** $[_{\text{WP1}}$ $[_{\text{PredP}}$ *elnöknek*$]_i$ t_j $]]]$

The traditional assumption that adverbials are merged into the sentence by Chomsky-adjunction has been updated and worked out for English in detail by Ernst (2002). In Ernst's theory, the hiearchical arrangement of adverbials is determined by their semantically motivated, lexically determined selectional properties. Different types of adverbials select different types of fact–event objects (FEOs). FEOs are ordered into the following hierarchy:

(14)   Hierarchy of FEOs:
        speech act > fact > proposition > event > specified event

Particular FEOs are mapped onto particular syntactic projections; nevertheless, there are no one-to-one relations between them. A FEO can be freely converted to a higher FEO, as a consequence of which a given type of adverbial adjunct may have more than one possible adjunction sites in syntactic structure, and a given syntactic category can also serve as a possible adjunction site for more than one types of adverbial adjuncts. The fixed relative order of FEOs is ensured by the fact that a category converted to a higher FEO cannot be converted back (unless a coercion operator is employed, or a lexical item indicates the conversion). For example, PredP, a category realizing an event, modified by predicate adverbials, can be reinterpreted as a proposition, and as such it can be modified by a sentence adverbial. However, once it has been modified as a proposition, it cannot be reinterpreted as an event, hence its sentence-adverbial modifier cannot be preceded by a predicate adverbial. Crucially, Ernst allows both left adjunction and right adjunction.[4] Right-adjunction predicts the postverbal occurrences of adverbial adjuncts, but it predicts a reverse scope order for multiple postverbal adjuncts instead of the free scope order attested in Hungarian.

It is a well-known fact of generative syntax that adjuncts are invisible for certain grammatical processes. For example, an adjunct modifying a preposed wh-expression is not bound by arguments c-commanding the trace of the wh-expression – presumably because it has no copy in the base position of the wh-expression. This fact, e.g, the lack of a Binding Principle C effect between *he* and the trace of *John* in *Which picture of Bill that John liked did he buy t,* has been accounted for by the assumption that adjuncts are inserted into the sentence late in the derivation (cf. Lebeaux 1988). Åfarli (1997) also derives the relative freedom of the linear ordering

of adverbials from their late insertion. He argues that an adverbial originates on a separate axis (called axis *z*) in a three-dimensional phrase structure system. A *z*-axis element can be linearized at will with respect to the daughters of the node it is adjoined to.

Chomsky (2001) also claims that adjuncts can be late-merged at the root. When adjunction forms from the objects β and α the ordered pair <α, β> α adjoined to β, β retains all its properties, including its label, its theta-role, and its role in selection – hence we might intuitively think of α as being attached to β on a separate plane. Adjunction takes place cyclically, but is visibly only for semantics (adjunction elicits the operation of predicate composition in semantics). E.g. existing c-command relations are not altered by adjunction. At the stage where <α, β> is spelled out, it becomes a simple structure by means of an operation SIMPL that converts <α, β> to {α, β}. SIMPL applies at Spell-Out; in the course of mapping to PF α is integrated into the primary plane (the linearly ordered structure).

Adverbial placement in Hungarian appears to have all the properties of adjunction. A PredP, a FocP, or a TopP modified by an adverbial adjunct continues to behave syntactically like a PredP, a FocP, or a TopP. The adjunction approach can also account for the freedom of adverbial placement in a more straightforward way. Whereas in the feature-checking framework (cf. Laenzlinger 2005), postverbal adjunct positions can only be obtained at a high cost, in the adjunction framework the possibility of right-adjunction yielding postverbal adverbials comes for free (what would be costly is the exclusion of the rightward linearization of adjuncts generated on a *z* axis).

5. The proposal
The analysis that is capable of predicting all and only the word order possibilities of Hungarian adverbs and adverbial adjuncts, as well as their interpretation and prosody, is built on the following assumptions:
i. Neutral sentences have the structure in (11), and non-neutral sentences have the structure in (12), both optionally extended into TopP projections.
ii. The postverbal part of the sentence is subject to free linearization at PF.
iii. An adverbial is adjoined to the category it modifies on a *z* axis.
iv. Adjuncts can be mapped on the plane in either direction, i.e., either left- or right adjunction is possible.
(As a consequence of assumptions (ii) and (iv), right-adjoined adverbials participate in the free linearization of the postverbal string.)

From these assumptions, all the problematic facts of Hungarian surveyed in section 2, and more, can be derived in a straightforward way, as follows.

6. Predicate adverbials
Predicate adverbials, modifying PredP, the canonical syntactic realization of events, are merged into the sentence in a PredP-adjoined position. They take scope over their c-command domain. Their stress must be due to a stress rule of Hungarian that assigns a primary stress to every major constituent c-commanding the V in the logical predicate of the sentence (assuming a logical subject (topic)–logical predicate articulation). In PF, predicate adverbials surfacing postverbally are subject to free linearization.

The examples quoted in (1)-(3) are cases of left-adjunction. Presumably owing to perceptual reasons, right-adjunction represents a more marked option than left-adjunction. The relative order of adverbials (frequentative adverbial > manner adverbial > degree adverbial) is determined by their semantically motivated, lexically given selectional restrictions.

Observe the structures assigned to the examples quoted in (1)-(5):

(15) a. [_TopP_ *János* [_PredP_ **'gyorsan** [_PredP_ **'félig** [_PredP_ *'meg-oldotta*
       John   quickly   half   PRT solved
     a feladatot]]]]
     the problem
     'John quickly half solved the problem.'
    b.??[_TopP_ *János* [_PredP_ **'félig** [_PredP_ **'gyorsan** [_PredP_ *'meg-oldotta a*
      feladatot]]]]

(16) a. [_TopP_ *János* [_PredP_ **'gyakran** [_PredP_ **'jól** [_PredP_ *'meg-oldotta*   *a*
        John   often   well   PRT solved   the
     feladatot]]]]
     problem
     'John often solved the problem well.'
    b. *[_TopP_ *János* [_PredP_ **'jól** [_PredP_ **'gyakran** [_PredP_ *'meg-oldotta a*
      feladatot]]]]

(15b) is acceptable to the extent *félig* 'half' can be coerced into a locative interpretation, meaning 'until the middle', or, alternatively, *félig gyorsan* can be understood as a constituent meaning 'half quickly'.

If the sentence contains predicate adverbials of the same type, either adverbial order is possible, and their shift is accompanied by scope reversal:

(17) a. [TopP *A postás* [PredP **'többször is** [PredP **'újra**
          the postman   several-times even   again
          [PredP *'csengetett*]]]]
          rang
          'The postman rang several times again.'
      b. [TopP *A postás* [PredP **'újra** [PredP **'többször is** [PredP *'csengetett*]]]]
          'The postman rang again several times.'

Either one, or the other, of the predicate adverbials in (15)-(17) can also be right-adjoined to PredP. Right-adjoined adverbials are – correctly – predicted to have the same scope possibilities and the same stress as their left-adjoined counterparts. Postverbally, however, adverbials are subject to free linearization in PF, motivated by Behaghel's Law of Growing Constituents. (18) is a permutation of (16a) in which the lower, manner adverbial has been right-adjoined to PredP. (18a) represents the structure that is transmitted to LF and PF, with the wider-scope frequency adverbial c-commanding the manner adverbial. (18b) is the PF realization of (18a), in which the postverbal string has been linearized in accordance with Behaghel's Law.

(18) a. [TopP *János* [PredP **gyakran** [PredP [PredP *meg-oldotta a*
          John   often   PRT solved the
          feladatot] **'jól**]]]
          problem   well
PF: b. *János* **'gyakran** *'meg-oldotta* **'jól** *a feladatot.*
          'John often solved the problem well.'

Naturally, it is also possible to left-adjoin the manner adverbial, and right-adjoin the frequentative adverbial:

(19) a. [TopP *János* [PredP [PredP **'jól** [PredP *'meg-oldotta a*
          John   well   PRT solved   the
          feladatot]] **'gyakran**]]
          problem   often
PF: b. *János* **'jól** *'meg-oldotta* **'gyakran** *a feladatot.*
          'John often solved the problem well.'

In (20) both adverbials are right-adjoined to PredP. Structure (20a), transmitted to the interfaces, is assigned the same interpretation as (16a), (18a) and (19a); the adverbials have the same relative scopes, and they are assigned the same stresses in each of these variants.

(20)   a. [$_{TopP}$ *János* [$_{PredP}$ [$_{PredP}$ [$_{PredP}$ *meg-oldotta a feladatot*] *'jól*]
           John   PRT solved the problem   well
      'gyakran]]
       often

PF: b. *János 'meg-oldotta 'jól a feladatot 'gyakran.*
or: c. *János 'meg-oldotta 'jól 'gyakran a feladatot.*
       'John often solved the problem well.'

In example (17) the relative scope of the adverbials is not fixed lexically – hence, if one or the other, or both of them are right-adjoined to PredP, where they are subject to free linearization, their c-command relation and their relative scope cannot be reconstructed. The PF strings in (21a), (22a), and (23a) are ambiguous because they can derive from either one of the corresponding structures in (b) and (c):

(21)   a. *A postás   'többször   is   csengetett   'újra.*
       the postman several-times   even   rang   again
       'The postman rang several times again./The postman rang again several times.'
    b. [$_{TopP}$ *A postás* [$_{PredP}$ [$_{PredP}$ *'többször is* [$_{PredP}$ *csengetett*]] *'újra*]]
    c. [$_{TopP}$ *A postás* [$_{PredP}$ *'többször is* [$_{PredP}$ [$_{PredP}$ *csengetett*] *'újra*]]]

(22)   a. *A postás 'újra csengetett 'többször is.*
       'The postman rang several times again./The postman rang again several times.'
    b. [$_{TopP}$ *A postás* [$_{PredP}$ [$_{PredP}$ *'újra* [$_{PredP}$ *csengetett*]] *'többször is*]]
    c. [$_{TopP}$ *A postás* [$_{PredP}$ *'újra* [$_{PredP}$ [$_{PredP}$ *'csengetett*] *'többször is*]]]

(23)   a. János csengetett *'újra 'többször is.*
    b. [$_{TopP}$ *János* [$_{PredP}$ [$_{PredP}$ [$_{PredP}$ *csengetett*] *'többször is*] *'újra*]]
    c. [$_{TopP}$ *János* [$_{PredP}$ [$_{PredP}$ [$_{PredP}$ *csengetett*] *'újra*] *'többször is*]]

A PredP modified by a predicate adverbial can be subsumed by a Non-Neutral Phrase dominated by a NegP and/or a FocP projection. Since the V

moves into the NN head, predicate adverbials – whether left-adjoined or right-adjoined – surface postverbally, where they can be linearized freely. In the scope of focus and/or negation they are subject to destressing. Whereas their narrow scope with respect to the focus and/or negation is clearly marked by the lack of primary stress, their scope relative to other predicate adverbials can only be reconstructed if it is predetermined lexically, as in (24). The sentence in (25) is ambiguous.

(24) a. [FocP *'JÁNOS* [NN *oldotta* [PredP **gyakran** [PredP **jól**
          John   solved   often   well
      [PredP *meg   a   feladatot*]]]]]
      PRT   the problem

PF: b. *'JÁNOS oldotta meg **jól gyakran** a feladatot.*
     'It was John who often solved the problem well.'

(25) a. [FocP *A 'POSTÁS*[NN *csengetett* [PredP **többször**   **is**
             the postman   rang   several-times   even
      [PredP **újra** [PredP]]]]]
      again

PF: b. *'A POSTÁS csengetett **újra többször is**.*
     'It was the postman who rang again twice./It was the postman who rang twice again.'

Predicate adverbials can also be focused (26). The focusing of negative scalar adverbials is obligatory (27); for an explanation, see chapter 12.

(26) a. [TopP *János* [FocP **'JÓL** [NN *oldotta* [PredP *meg   a feladatot*]]]]
         John   well   solved   PRT   the problem
     'John solved the problem WELL.'
  b. [TopP *János* [FocP **'GYAKRAN** [NN *látogatja* [PredP *meg*
         John   often   visits   PRT
     Marit]]]]
     Mary-ACC
     'John visits Mary FREQUENTLY.'

(27) a. [TopP *János* [FocP **'ROSSZUL** [NN *oldotta* [PredP *meg   a*
         John   badly   solved   PRT   the
     feladatot]]]]
     problem
     'John solved the problem BADLY.'

b. [TopP*János* [FocP **'RITKÁN** [NNP *látogatja* [PredP *meg Marit*]]]]
      John   rarely   visits   PRT Mary-ACC
      'RARELY does John visit Mary.'

Predicate adverbials, not being referential elements, cannot be targeted by regular topicalization. However, if they are individuated by contrast, they can be topicalized. Contrastive topicalization is discussed in detail in É. Kiss and Gyuris (2003), where it is argued that a contrasted adverbial is used as the name of a manner, degree, frequency, direction, etc., and as such it has wide scope with respect to the focus – despite appearances.

8. Adverbials adjoined to NegP
The adjunction sites of negative proadverbs, subjected to negative concord, are the two (lower and higher) NegP projections. Negative adverbs can also be either left-adjoined or right-adjoined to NegP. The following examples involve negative adverbs left-adjoined a low NegP. The adverbs take scope over their c-command domain, and they are assigned primary stresses.

(28) a. [TopP*János* [NegP **'semennyire** [NegP 'nem [NNP*volt* [PredP *beteg*]]]]]
          John   to.no.degree   not   was   sick
          'John wasn't sick to any degree.'
    b. [TopP *János* [NegP **'sehogy** [NegP'nem [NNP *tudta* [PredP *ki-nyitni*
          John   in.no.way   not   could   PRT open
      az ajtót]]]]]
      thedoor
      'John couldn't open the door in any way.'
    c. [TopP *Jánossal* [NegP **'sehol** [NegP **'soha** [NegP'nem
          John-with   nowhere   never   not
      [NNP *találkoztam*]]]]]
          met-I
      'I haven't ever met John anywhere.'

Right-adjoined negative adverbs have the same scope and stress as their left-adjoined counterparts – see (29). Being part of the postverbal string, they participate in free PF-linearization, which can derive the permutations in (30) from the structures in (29).

(29) a. [TopP*János* [NegP [NegP 'nem [NNP *volt* [PredP*ideges*]]] **'semennyire**]]
          John   not   was   nervous to.no.degree

b. [TopP *János* [NegP [NegP *nem* [NNP *tudta* [PredP *ki-nyitni*   *az*
   John   not   could   PRT open   the
   ajtót]]]   ***'sehogy*]]
   door   in.no.way

c. [TopP *Jánossal* [NegP [NegP [NegP *'nem* [NNP *találkoztam*]]
   John-with   not   met-I
   'soha]   ***'sehol***]]
   never   nowhere

(30) a. *János 'nem volt **'semennyire** ideges.*
        'John wasn't nervous to any degree.'
     b. *János 'nem tudta az ajtót **'sehogy** kinyitni.*
        'John couldn't open the door in any way.'
     c. *Jánossal 'nem találkoztam **'sehol 'soha**.*
        'I haven't ever met John anywhere.'

Negative adverbs adjoined to the low NegP can be subsumed by a FocP, in which case they undergo destressing. In the scope of a focus, all negative adverbs adjoined to NegP must be linearized on the right. Left-adjunction is ruled out by a prosodic constraint, requiring that the focus and the (negated) verbal predicate form one phonological word. Cf.

(31) a. *[FocP *CSAK 'JÁNOS* [NegP   ***soha*** [NegP *nem* [NNP *győzte* [PredP
           only John   never   not   won
        le   *Pétert*   *sakkban*]]]]]
        PRT Peter-ACC chess-in
     b. [FocP *CSAK 'JÁNOS* [NegP [NegP *nem* [NNP *győzte* [PredP *le Pétert*
        sakkban]]] ***soha***]]
        'It was only John who didn't ever win against Peter in chess.'
PF: c. *CSAK JÁNOS nem győzte le **soha** sakkban Pétert.*
or: d. *CSAK JÁNOS nem győzte le Pétert **soha** sakkban.*

In the case of negative adverbs adjoined to the higher NegP, either left- or right-adjunction is possible. (The particle *sem* in (32a), immediately followed by the negative particle, triggers particle deletion.)

(32) a. [NegP ***Egyszer sem*** [NegP ~~*nem*~~ [FocP *'JÁNOS* [NNP *volt* [PredP
           once   neither   not   John   was
        a *győztes*]]]]]
        the winner

'Not even once was it John who won.'

b. [NegP **'Soha** [NegP **'senkit** [NegP *'nem* [FocP *A*
      never   nobody-ACC   not   the
     PROFESSZOR [NNP *buktatott* [PredP *meg*]]]]]]
     professor   failed   PRT
     'For nobody was it ever the professor who failed him.'

Right-adjunction goes together with free postverbal linearization:

(33) a. [NegP [NegP *'Nem* [FocP *JÁNOS* [NNP *volt* [PredP *a győztes*]]]] **'egyszer
        sem**]

PF: b. *'Nem JÁNOS volt* **'egyszer sem** *a győztes.*
     'At no time was it John who won.'

(34) a. [NegP [NegP [NegP *'Nem* [FocP *A*   *PROFESSZOR* [NNP *buktatott*
                   not   the   professor   failed
     [PredP *meg*]]]] **'soha**] **'senkit**]
         PRT   never nobody

PF: b. *'Nem A PROFESSZOR buktatott meg* **'senkit 'soha**.
     'For nobody was it ever the professor who failed him.'

9. Sentence adverbials

Sentence adverbials can precede everything but the topic constituents, and they can even precede the topics. In the latter case they are obviously adjoined to the TopP node. It is less clear what they are adjoined to in post-topic position. Ernst (2002) appears to suggest that we should adjoin them to the post-topic projection (i.e., to the maximal functional extension of the verb phrase: a PredP, FocP, or NegP), which can be converted to (reinterpreted as) a proposition. The problem with this solution is that intuitively sentence adverbials do not form part of the functionally extended verb phrase (the logical predicate); they are felt to be external to it. Haegeman (2006), adopting an idea of Tenny (2000), puts forth an intuitively more appealing theory, in which sentence adverbials located below the TopP and above the functionally extended verb phrase are adjoined to a phonologically empty but semantically visible functional projection called S(peaker) D(eixis) Phrase, which introduces the speaker as a sentient, deictic argument, and his point of view.[5] Sentence adverbials can be adjoined either to SDP or to TopP.

    Sentence adverbials can be either left-adjoined or right-adjoined to TopP and SDP. They have scope over their c-command domain. In the

Hungarian sentence, the main stress falls on the left edge of the logical predicate (the functionally extended verb phrase), hence sentence adverbials cannot bear it; they bear secondary stresses.[6] Their inability to bear primary stress appears to be related to the fact that they cannot represent the main assertion, and they cannot be either questioned or negated. Sentence adverbials surfacing postverbally are subject to free linearization in PF.

The examples quoted in (6)-(7) represent cases of left-adjunction, the unmarked option. The relative order of adverbials is determined by their semantically motivated, lexically determined selectional restrictions.

Observe the structures assigned to the examples quoted in (6)-(7):

(35) a. [$_{TopP}$ **Valószínűleg** [$_{TopP}$ *János* [$_{SDP}$ **látszólag** [$_{SDP}$ [$_{PredP}$ *'együtt-*
        probably   John   seemingly   co-
    működött a   rendőrséggel]]]]]
    operated the police-with
    'Probably John seemingly cooperated with the police.'

   b. [$_{TopP}$ *János* [$_{SDP}$ **valószínűleg** [$_{SDP}$ **látszólag** [$_{SDP}$ [$_{PredP}$ *'együtt-*
    működött a rendőrséggel]]]]]

   c. [$_{TopP}$ **Valószínűleg** [$_{TopP}$ **látszólag** [$_{TopP}$ János [$_{PredP}$ *'együtt-*
    működött a rendőrséggel]]]]

(36) [$_{SDP}$ **Szerintem** [$_{SDP}$ **valószínűleg** [$_{SDP}$ **taktikusan** [$_{SDP}$
     according.to.me   probably   cleverly
    [$_{FocP}$ *'JÁNOST* [$_{NNP}$ *választják* [$_{PredP}$ *meg*]]]]]]]]
     John-ACC   elect-they   PRT
    'In my opinion, probably it is expediently John that they will elect.'

In the neutral (35a-c), the sentence adverbials are adjoined to TopP and/or to SDP. In the non-neutral (36), they are adjoined to SDP.

Either one, or more of the adjunction operations in (35)-(36) can alternatively be linearized as right-adjunction. Right-adjoined adverbials are predicted to have the same scope possibilities and the same stress as their left-adjoined counterparts. They will participate in the PF-reordering of the postverbal string, motivated by Behaghel's Law of Growing Constituents. (37) is a permutation of (6a), with the higher adverbial right-adjoined to TopP, and the lower adverbial left-adjoined to SDP. (37a) represents the structure that is transmitted to LF and PF, whereas (37b) is an alternative PF realization of (37a). (Behaghel's Law does not rule out either of them.)

(37) a. [TopP [TopP *János* [SDP **látszólag** [SDP [PredP *'együtt-működött a*
John   seemingly   co-operated   the
rendőrséggel]]]] **valószínűleg**]
police-with   probably

b. *János* **látszólag** *'együttműködött* **valószínűleg** *a rendőrséggel.*
'Probably John seemingly cooperated with the police.'

In (38), the higher adverbial is left-adjoined to TopP, and the lower
adverbial is right-adjoined to SDP. The right-adjoined adverbial
participates in free linearization in PF.

(38) a. [TopP **Valószínűleg** [TopP *János* [SDP [SDP [PredP *'együtt-működött a*
rendőrséggel]] **látszólag**]]]

PF: b. **Valószínűleg** János *'együtt-működött* **látszólag** *a rendőrséggel.*
'Probably John seemingly cooperated with the police.'

Permutations in which all sentence adverbials are right-adjoined sound
slightly marked, but are still fully grammatical:

(39) a. [TopP [TopP *János* [SDP [SDP [PredP *'együtt-működött a rendőrséggel*]]
látszólag]] **valószínűleg**]

PF: b. ?*János 'együtt-működött* **látszólag** *a rendőrséggel* **valószínűleg**.

or: c. ?*János 'együtt-működött* **valószínűleg** *a rendőrséggel* **látszólag**.
'Seemingly John probably cooperated with the police.'

In fact, the strings in (37b), (38b), and (39b,c) are all ambiguous, as they
can also be the PF-realizations of structures in which *látszólag* 'seemingly'
c-commands *valószínűleg* 'probably'.

    Observe two examples involving sentence adverbials adjoined to an
SDP subsuming a FocP projection, linearized partly on the left, partly on
the right. Here the scope relations of the three adverbials appear to be
semantically fixed, hence their c-command relations can be unambiguously
reconstructed:

(40) [SDP **Szerintem** [SDP **valószínűleg** [SDP [SDP [FocP 'JÁNOST
according.to.me   probably   John-ACC
[NNP *választják* meg]]] **'taktikusan**]]]
elect-they   PRT   cleverly
'In my opinion, probably it is expediently John that they will elect.'

In fact, *taktikusan* 'expediently, cleverly' could also be interpreted as a manner adverbial in the scope the focus, in which case (40) would mean: 'In my opinion, it is probably John that they will elect cleverly.' This interpretation is excluded in (41), where the c-command relation between *taktikusan* and the focus in the left periphery is not obliterated by PF reordering:

(41)   [SDP [SDP ***Taktikusan*** [SDP [FocP *'JÁNOST* [NNP *választják* [PredP *meg*]]]]] ***szerintem***]
        'In my opinion, it is probably expediently John that they will elect.'

10. Summary
The facts of Hungarian surveyed above lead us to the conclusion that the behavior of adverbial adjuncts is determined by an interplay of semantic, syntactic, and phonological factors.

The semantic factor at play is the selectional requirements of the different types of adverbials, encoded in the lexicon. Each adverbial class selects a specific type of semantic argument, and, in accordance with the Scope Principle, it is merged in at the point where it c-commands the syntactic realization of this argument. Roughly, predicate adverbials select an event, hence they are adjoined to a syntactic projection realizing an event. Sentential adverbials select a proposition; hence they are adjoined to a syntactic projection realizing a proposition. The relative order of the different subtypes of predicate adverbials, or of the different subtypes of sentence adverbials is determined by finer grained selectional restrictions.

The major syntactic factor determining the grammar of adverbial adjuncts is the requirement that adverbials be merged in via adjunction, on a separate axis, and be integrated into the primary syntactic plane in PF. That adverbials can be mapped onto the primary syntactic plane either left or right need not be stipulated; it represents the null hypothesis.

The spell-out order of the postverbal section of the Hungarian sentence is affected by a prosodic constraint: Behaghel's Law of Growing Constituents. Any order of the postverbal major constituents is grammatical; but that observing the Law of Growing Constituents is valued as optimal by native speakers.

A further phonological constraint, requiring that the focus and the (negated) V form one phonological word, forbids left-adjunction to the NegP projection intervening between the V and a focus constituent.

Notes

[1] The verbal particle and the V are spelt as one word in Hungarian, though they represent syntactically independent constituents. For perspicuity's sake, I will separate them by a hyphen.

[2] A subset of evidentials, asserting the truth of the proposition, may represent an exception. For details, see chapter 5.

[3] The further chapters of this book also assume sructures (11) and (12), except for chapter 3, which places the PredP projection between VP and vP, and identfies the PredP projection of (11) and (12) as TP.

[4] Ernst (2002) does not exclude the possibility of adjunction at the X' level, either – which is a possibility not needed in current frameworks in which VP-shells are all maximal projections.

[5] According to Haegeman (2006), the SD projection is below the topic and focus constituents in the C-domain. In Hungarian, however, the focus projection, possibly subsumed by a NegP, is clearly part of the I-domain, not the C-domain.

[6] Evidentials asserting the truth of a presupposed proposition are exceptions; they must be adjoined to the post-topic, 'logical predicate' part of the sentence, where they are assigned a primary stress. For details, see chapter 5.