Adverbs and Adverbial Adjuncts at the Interfaces

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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 section undergoes flattening, and 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-c) 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**.*
    etc.

      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 ($\sqrt{}$) 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. $\sqrt{}$**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.
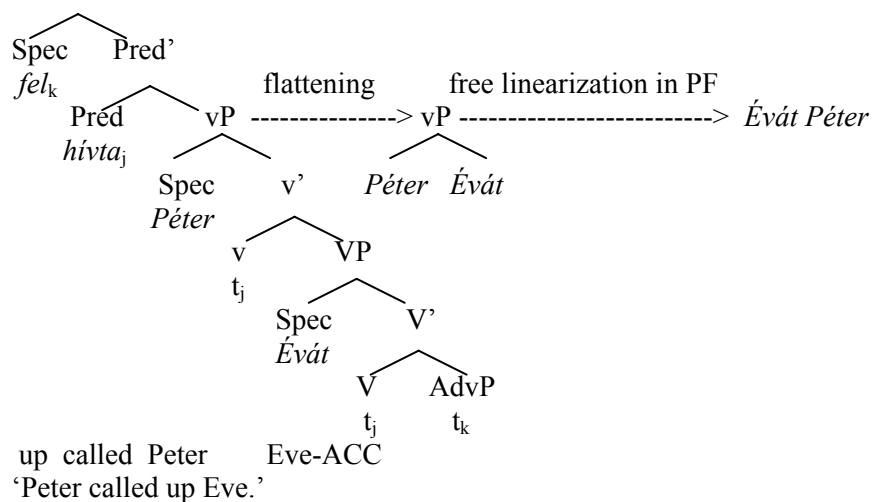
3. The Hungarian sentence structure assumed
The facts of Hungarian surveyed in section 2 will be interpreted on the sentence structure argued for in É. Kiss (2008), integrating proposals of É.

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 in their specifiers.
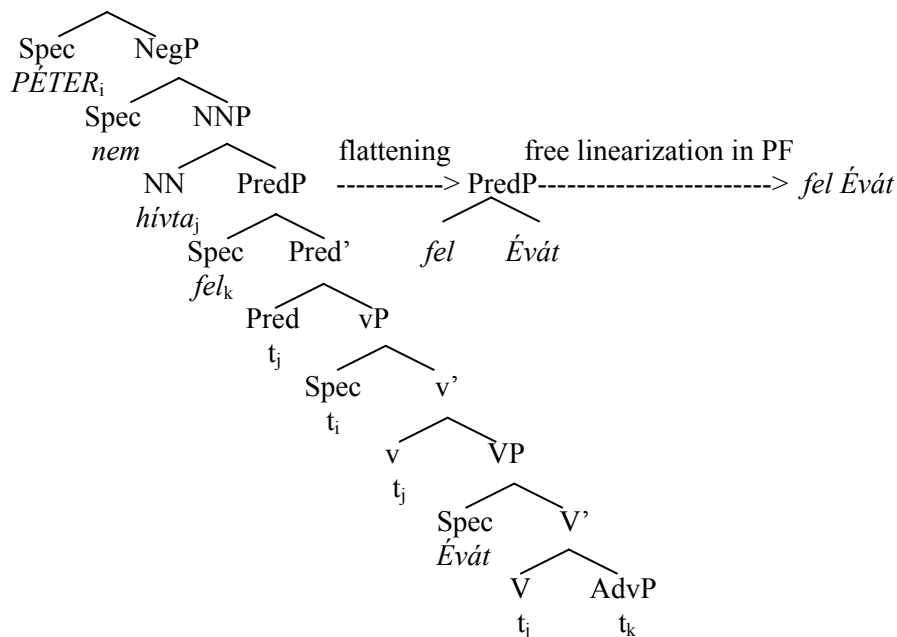
I assume that the overt V (i.e., the V in its highest position) functions as a phasal head. The phasal domain, a projection with no overt head, undergoes flattening, which results in a number of well-known subject-object symmetries. Flattening takes place either because V-movement leaves no trace, or 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. For example:[3]

(11) PredP

```
          /\
        Spec   Pred'
        fel_k      /\
                 Préd    vP        flattening              free linearization in PF
                 hívta_j   /\      -------------> vP  -------------------------> Évát Péter
                         Spec   v'               /\
                         Péter   /\           Péter  Évát
                                v    VP
                                t_j    /\
                                     Spec    V'
                                     Évát     /\
                                            V    AdvP
                                            t_j     t_k
```

 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   flattening   free linearization in PF

             NN   PredP -----------> PredP-----------------------> *fel Évát*
             hívta$_j$

                 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 $Asp_{completive}P$, a VoiceP, and an $Asp_{frequentative}P$, 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 $Mood_{evidential}P$, a $Mod_{epistemic}P$, and a $Mod_{speech\text{-}act}P$. 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. ***Taktikusan** JÁNOST   választják meg **valószínűleg szerintem**.*
        cleverly   John-ACC elect-they PRT probably   according-to-me
        'In my opinion it is probably expediently John that they will elect.'
    b. [$_{XP}$ ***Szerintem*** [$_{YP}$ ***valószínűleg*** [$_{ZP}$ ***taktikusan*** [$_{FocP}$ *JÁNOST*
        [$_{NNP}$ *választják* [$_{PredP}$ *meg*]]]]]]

c. [$_{XP}$ ***Szerintem*** [$_{WP1}$ [$_{ZP}$ ***taktikusan*** [$_{FocP}$ *JÁNOST választják meg*]]$_i$ [$_{YP}$ ***valószínűleg*** t$_i$]]]

d. [$_{WP2}$ [$_{WP1}$ [$_{ZP}$ ***taktikusan*** [$_{FocP}$ *JÁNOST választják meg elnöknek*]]$_i$ [$_{YP}$ ***valószínűleg*** t$_i$]]$_j$ [$_{XP}$ ***szerintem*** t$_j$]]

It remains to be solved how *valószínűleg* assumes a position between the two constituents of PredP. Remnant-movement theories, in general, involve a more basic problem, as well: the projections providing landing sites for the remnants lack independent motivation.

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 the operation of adjunction forms from the objects β and α the ordered pair $\langle\alpha, \beta\rangle$ 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 $\langle\alpha, \beta\rangle$ is spelled out, it becomes a simple structure by means of an operation SIMPL that converts $\langle\alpha, \beta\rangle$ to $\{\alpha, \beta\}$. 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 high costs, 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 section 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 a feladatot*]]]]
        John   quickly   half   PRT solved 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 feladatot*]]]]
        John   often   well   PRT solved the 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*** [PredP *'csengetett*]]]]
      the postman   several-times even   again   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 feladatot*] *' jól*]]]
      John   often   PRT solved the problem   well
  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 feladatot*]] ***'gyakran***]]
      John   well   PRT solved the 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*] *'gyakran*]]
        John   PRT solved the problem   well 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 sentences in (25) are ambiguous.

(24)a. [FocP *'JÁNOS* [NNP *oldotta* [PredP ***gyakran*** [PredP ***jól*** [PredP *meg a*
        John   solved   often   well   PRT the
    feladatot]]]]]
    problem
PF: b. *'JÁNOS oldotta meg **jól gyakran** a feladatot.*
    'It was John who often solved the problem well.'

(25)a. [FocP *A 'POSTÁS* [NNP *csengetett* [PredP ***többször   is*** [PredP ***újra*** [PredP]]]]
        the postman   rang   several-times even 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 – see (26). (About the semantic effects of their focusing, see chapter 13 of this book.) In the case of negative scalar adverbials, focusing is obligatory – see (27).

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

(27)a. [TopP *János* [FocP ***'ALIG*** [NNP *fáradt* [PredP *el*]]]]
         John   barely   got.tired   PRT
    'BARELY did John get tired.'
  b. [TopP *János* [FocP ***'ROSSZUL*** [NNP *oldotta* [PredP *meg a   feladatot*]]]]
         John   badly   solved   PRT the problem
    'John solved the problem BADLY.'
  c. [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, i.e., universal and existential adverbial quantifiers participating in negative concord, are the two (lower and higher) NegP projections. I assume that negative proadverbs comprise a negative scope marker and a quantifier, whose universal or existential interpretation depends on whether it is understood to be outside or inside the scope of negation. The two interpretive options are [neg > ∃], and [∀ > neg].

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

Right-adjoined negative adverbs have the same scope and the same 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* [$_{NegP}$ [$_{NegP}$ ʼnem [$_{NNP}$ *volt* [$_{PredP}$ *ideges*]]] ***'semennyire***]]
         John   not   was   nervous to.no.degree
   b. [$_{TopP}$ *János* [$_{NegP}$ [$_{NegP}$ ʼnem [$_{NNP}$ *tudta* [$_{PredP}$ *ki- nyitni az ajtót*]]]
         John   not   could   PRT open the door
      'sehogy]]
      in.no.way

c. [TopP *Jánossal* [NegP [NegP [NegP *'nem* [NNP *találkoztam*]] **'soha**] **'sehol**]]
      John-with   not   met-I   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 focus, in which case they are subject to 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 *le*
        only   John   never   not   won   PRT
     Pétert   *sakkban*]]]]]
     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 *a győztes*]]]]]
        once   neither not   John   was   the winner
     'Not even once was it John who won.'
  b. [NegP ***'Soha*** [NegP ***'senkit*** [NegP *'nem* [FocP *A PROFESSZOR* [NNP
        never   nobody-ACC not   the professor
     buktatott [PredP *meg*]]]]]]
     failed   PRT
     'For nobody was it ever the professor who failed him.'

As expected, 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* [$_{PredP}$
                 not   the professor   failed
    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 *'együtt-működött a*
        probably   John   seemingly   co-operated   the
    rendőrséggel]]]]
    police-with
    'Probably John seemingly cooperated with the police.'
  b. [TopP *János* [SDP ***valószínűleg*** [SDP ***látszólag*** [PredP *'együtt-működött a*
    rendőrséggel]]]]
  c. [TopP ***Valószínűleg*** [TopP ***látszólag*** [TopP János [PredP *'együtt-működött a*
    rendőrséggel]]]]

(36) [SDP ***Szerintem***   [SDP ***valószínűleg*** [SDP ***taktikusan*** [FocP *'JÁNOST*
      according.to.me   probably   cleverly   John-ACC
    [NNP *választják* [PredP *meg*]]]]]]
      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 PredP. In the non-neutral (36), they are adjoined to FocP. PredP and FocP can serve as adjunction sites for sentence adverbials because the fact–event objects they denote can be converted to propositions (recall Ernst's (2002) FEO theory, discussed in connection with the FEO hierarchy in (14)).

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 PredP. (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. [$_\text{TopP}$ [$_\text{TopP}$ *János* [$_\text{SDP}$ **látszólag** [$_\text{PredP}$ *'együtt-működött a*
          John   seemingly   co-operated   the

    rendőrséggel]]] **valószínűleg**]
    police-with   probably
  b. **Látszólag** *János '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 PredP. The right-adjoined adverbial
participates in free linearization in PF.

(38)a. [$_\text{TopP}$ **Valószínűleg**[$_\text{TopP}$ *János* [$_\text{SDP}$ [$_\text{PredP}$ *'együtt-működött a*
    rendőrséggel] **látszólag**]]]
  b. **Valószínűleg** *János 'együt-tműködött* **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.[$_\text{TopP}$ [$_\text{TopP}$ *János* [$_\text{SDP}$ [$_\text{SDP}$ [$_\text{PredP}$ *'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 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)a. [$_\text{SDP}$ **Szerintem**   [$_\text{SDP}$ **valószínűleg** [$_\text{SDP}$ [$_\text{FocP}$ *'JÁNOST* [$_\text{NNP}$ *választják*
    according.to.me probably   John-ACC   elect-they
    meg]] **'taktikusan**]]]
    PRT   cleverly
PF: b. **Szerintem** **valószínűleg** *'JÁNOST választják meg* **taktikusan**.
or: c. **Szerintem** **valószínűleg** *'JÁNOST választják meg* **taktikusan**.

'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 (40b,c) 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)a. [$_{SDP}$ [$_{SDP}$ **Taktikusan** [$_{FocP}$ *'JÁNOST* [$_{NNP}$ *választják* [$_{PredP}$ *meg*]]]]
     szerintem]
PF: b. **Taktikusan** *'JÁNOST választják 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.

Contents

Acknowlegements

Introduction
Katalin É. Kiss

1. Goals

This volume presents the results of a three-year project of the Research Institute for Linguistics of the Hungarian Academy of Sciences, investigating – primarily on the basis of Hungarian material – the syntactic and semantic properties of adverbs and adverbial adjuncts.

The aim of the project has been twofold. The category 'adverb' and the function 'adverbial' belong to the most controversial notions of grammatical theory. Such basic issues as whether or not adverb is a primitive syntactic category constrained by X' theory, and whether so-called adverbial adjuncts are targets of adjunction or occupy specifier positions, where they participate in feature-checking, represent open questions. The answers to them should be based, at least partially, on empirical evidence; however, adverbs and adverbial adjuncts are typically ignored, or mentioned only in passing in the generative grammars of particular languages, among them the generative grammars of Hungarian. Our goal has been to contribute to the clarification of issues of the grammar of adverbs and adverbial adjuncts on the basis of extensive and detailed empirical analyses of various types of adverbs and adverbial adjuncts of Hungarian.

More generally, adverbial modification appears to represent an ideal testing ground for the examination of the interaction of the syntactic, semantic, and prosodic components of grammar. In the Minimalist framework of generative theory, syntactic operations can be factored into general computational mechanisms, and into operations satisfying interface requirements. The studies of the present volume examine the division of labor among these components in the grammar of adverbials, separating purely syntactic constraints from requirements imposed upon syntax by semantic and prosodic demands.

2. Questions and answers
2.1. The category 'adverb'

The category 'adverb' has an uncertain status in the set of lexical categories. If lexical categories are those characterized by either one or both of the features [+V] and [+N] (cf. Chomsky 1981:48), then they clearly do not include the category 'adverb' – despite the fact that adverbs are also open-class items with a descriptive content, similar to [+N, -V] nouns, [-N, +V] verbs, and [+N, +V] adjectives. The possibility has been raised that adverbs (or at least certain types of them) are intransitive prepositions characterized by the features [-N, -V] (cf. Emonds 1985, Huddleston and Pullum 2002). The assimilation of adverbs to adjectives has also been attempted (Radford 1988). The elimination of the category 'adverb' has been supported by claims that AdvPs have no properties unique to them; their adverbial function is shared by clauses, noun phrases and pre- or postpositional phrases functioning as adverbials. If we nevertheless accept the existence of the category 'adverb', it remains a question if adverbs project a phrase, and if various types of adverbs represent a uniform category in this respect. In other words, the question is if adverbs are constrained by X' theory. Chomsky (1981), for example, does not include adverbs in the set of heads subject to X' theory, unlike Radford (1988).

Two chapters of the present volume contribute to the clarification of this issue, which converge on the claim that adverbs are PPs. Chapter 3 by Surányi proves about a type of verbal particles, traditionally categorized as adverbs, that they are PPs involving a pro complement. Chapter 7 by Kádár argues on the basis of historical and synchronic evidence that adverbs are PPs (i.e., [-N, -V] projections), whose NP complement is either incorporated into the P head or is phonologically null. Adverbs of the former type derive from case-marked noun phrases whose adverbial case suffix, or stem, or both have become obsolate, whereby they are understood to be non-compositional synchronically. Adverbs of this type appear not to project an AdvP because they represent a maximal projection in themselves. Manner adverbs derived from adjectives, on the other hand, are hypothesized to represent case-marked NPs involving an adjectival modifier and an empty N head meaning 'manner'. The *-An* superssive case suffix or *-Ul* essive case suffix cliticized to the adjective is of the category P, hence the manner adverb is also of the category PP. The occasional PP complement of the manner adverb is, in fact, a complement of the adjective, e.g.:

(1)

PP
NP　　P
AdjP　　N
PP　　Adj
DP　　P

a siker　-re　büszké　　0　　-n
the success-to　proud　　　　-SUPERESS
'proudly of the success'
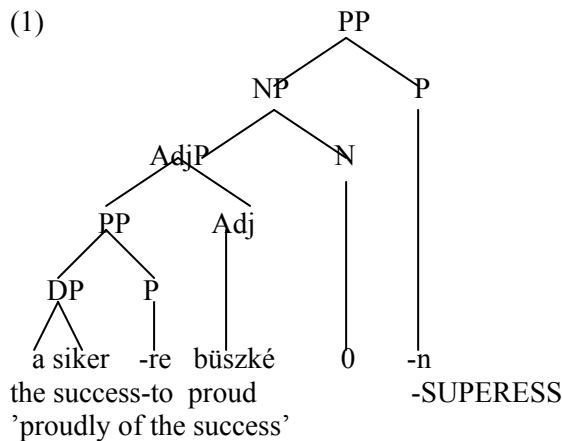
(In (1) complements precede their heads, which is assumed to be a derived order in Hungarian.) The proposed analysis also explains why adverbs appear to have no properties unique to them; why they share the functions of postpositional phrases, and noun phrases with an adverbial case ending, which are also claimed to be PPs. Chapter 6 by Ürögdi analyzes temporal adverbial clauses as PPs.

2.2. Argument-adjunct distinction

It is not only the category 'adverb' that represents a problem in generative theory; the function 'adverbial', or 'adverbial adjunct', more precisely, the adverbial adjunct versus argument distinction also lacks clear-cut criteria. Chapter 8 by Peredy demonstrates that the traditional criterion of optionality breaks down in the case of a large class of obligatory adjuncts. The syntactic properties specific to adjuncts are iterability, variable morphological case marking, and islandhood for extraction.

2.3. Adjunction, or feature-checking in specifier position

A question that has been in the focus of interest in the past decade is how adverbial adjuncts enter the derivation of a sentence. According to main-stream generative tradition, adverbs are added to sentence structure by adjunction; that is, they are merged with a category without changing its bar level, merely establishing a new segment of it. This view survives, for example, in Chomsky (1995:329-334). The adjunction theory of adverbial modification does not predict that the order of adverbs is largely invariant across languages, as pointed out e.g. by Travis (1988) – but these ordering restrictions are intuitively felt to be semantically motivated, reflecting

semantically licit and illicit scope interactions (cf. Ernst 1984, 1991, 2002, Shaer 1998, Svenonius 2002).

The most detailed explication of the adjunction theory of adverbial modification has been put forth by Ernst (2002). He claims that adjuncts merge with the projection they modify in a syntactically largely unconstrained manner; their adjunction site is determined primarily by their semantically motivated, lexically specified selectional needs. The selectional requirements of adverbials refer to events, propositions, times, and predicates. The fixed relative order of adverbials adjoined to one and the same projection is derived by means of the so-called Fact Event Object (FEO) Calculus. Fact event objects such as events, propositions and speech acts form a hierarchy, and the FEO Calculus allows any FEO type to be freely converted to any higher FEO type but not to a lower one. Thus an event can be freely converted to a proposition, or a propositioncan be freely converted to a speech act, but not vice versa. This ensures that, when a syntactic projection represents simultaneously, say, an event and a proposition (as happens in a topicless Hungarian sentence), and it has a modifier taking an event as its argument, e.g., a manner adverb, and another modifier taking a proposition as its argument, e.g., a modal adverb, the latter must precede the former , as illustrated in (2):

(2)a. [$_{PredP}$ *Valószínűleg* [$_{PredP}$ *hangosan* [$_{PredP}$ *horkol valaki*]]]
       probably   loudly   snores somebody
   'Probably somebody is loudly snoring.'
  b.*[$_{PredP}$ *Hangosan* [$_{PredP}$ *valószínűleg* [$_{PredP}$ *horkol valaki*]]]

The innermost segment of PredP represents an event, as required by the manner adverb combined with it. However, in order to satisfy the selectional requirement of the modal adverb, the event represented by the PredP projection subsuming the manner adverb must be converted to a proposition. A manner adverb in front of the modal adverb would mean the conversion of the proposition back to an event, which is excluded by the FEO Calculus.

In the theory of Ernst (2002), the placement of adverbial adjuncts is also affected by some PF constraints, among them Directionality Principles. It is claimed that head-initial languages allow both left- and right-adjunction, whereas head-final languages only allow the former. Weight theory requires, disallows, or (dis)favors certain positions depending on the weight of the adjunct. It is invoked, for example, to account for the ordering of postverbal adjuncts in the English sentence.

It was observed a long time ago 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. 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) derives also 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*), beyond the plane in a three-dimensional phrase structure system. In PF, a *z*-axis element can be linearized at will with respect to the daughters of the node it is adjoined to. According to Chomsky (2001) and Bobaljik (2002), too, adverbs are merged in in a third dimension, in fact, countercyclically, and are integrated into linear order in PF.

The fact that the relative order of adverbs is more or less fixed, and more or less invariant across languages, whereas instances of adjunction to one and the same category are syntactically unordered, has led to the formulation of a theory of adverbial modification in which adverbial phrases are unique specifiers of different functional projections, whose order is fixed in Universal Grammar. Alexiadou (1997) elaborated a restricted version of this theory. She distinguished specifier-type and complement-type adverbs. The former are generated to the left of the verb, in the functional domain, and the latter, to the right of it. Complement adverbs undergo incorporation – cf. also Rivero (1992). In the theory of Cinque (1999), clause structure contains as many as 40 functional projections encoding various subtypes of mood, modality, tense, aspect, and voice. In this structure, each subtype of adverbial phrases occupies the specifier position of a different functional projection, whose head – sometimes realized as an auxiliary – instantiates a functional notion corresponding to the meaning of the given adverbial phrase. The adverbs enter into matching relations with the relevant features of their respective functional heads. Cinque claims that not all of the relative orders among the functional projections harboring adverbial phrases can be reduced to scope relations among semantic operators; therefore, the hierarchy of functional projections is likely to be a property of the computational component of Universal Grammar. The proliferation of adverbial projections also brings about a proliferation of subject and object positions. For example, in Italian (and many other languages) the relative position of sentence adverbs and the subject is free. In the framework of Cinque

(1999), this is indication of the presence of further, DP-related functional projections between those harboring adverbial specifiers.

The specifier theory of adverbs predicts rigid word order positions for adverbs in the sentence. (This is not a necessity though; Alexiadou (1997), for example, does allow adverb movement under limited conditions.) Based on the assumption that adverbs occupy invariant positions, they are interpreted as 'sign posts' of sentence structure. That is, if the relative position of an adverb and some other sentence constituent changes, it is taken to indicate the movement of the other constituent across the adverb. (Adjunction theories allowing right adjunction are less strict in this respect.) Cinque (1999) relaxes this rigidity by the duplicating some of the projections, with one occurrence in the postverbal domain, and another, in the preverbal domain, an by allowig 'focusing' and 'parenthetical' uses of AdvPs. There have been attempts (e.g Laenzlinger 2005) to achieve a larger freedom of adverbial word order in Cinque's feature-checking framework by combining the rigid series of base-generated, universal functional projections harboring adverbs with remnant movement.

Of the alternative approaches to adverbials, the theory of Ernst (2002) proved to be most adequate to account for the facts of adverbial modification in Hungarian. We have opted for Ernst's theory for the following reasons, among others: (i) The large number of functional projections assumed to harbor the different types of adverbs in Cinque's theory lack indepedent empirical motivation in Hungarian, a language with practically no auxiliaries. (ii) In the preverbal section of the Hungarian sentence, all scope-bearing elements precede and c-command their scope. The Scope Principle derives their order, including the order of adverbs and adverbial adjuncts, for free; the base-generation of dozens of functional projections in a pre-determined order to derive the word order of adverbs seems redundant. (iii) In Hungarian, all types of adverbs and adverbials can surface both preverbally and postverbally with similar scope possibilities, which falls out in an adjunction framework, assuming both left- and right adjunction, but cannot be derived in Cinque's theory. If adverbs occupy specifier positions, we can generate further series of functional projections for them in the postverbal part of the sentence, however, we will not be able to derive their scope interpretation from those postverbal positions. (iv) There is clear evidence of weight theory playing a role in the ordering of adverbials in the postverbal section of the Hungarian sentence; but weight theory only has a role in Ernst's framework.

2.4. Interfaces

4.1. Syntax–semantics interactions

The current Minimalist program of linguistic theory aims to minimize syntax, narrowing it down to general computational principles. The output conditions of syntax are claimed to be determined at the interfaces, by requirements of the interpretive components. In the syntax of adverbs and adverbial adjuncts, the role of semantic factors (e.g., selectional restrictions and scopal needs) is particularly transparent, hence adverbs and adverbial adjuncts provide strong support for the Minimalist strategy.

The position where an adverb or adverbial adjunct is merged into the clausal projection is determined by by the selectional properties of the adverb(ial). Each adverbial class selects a specific type of semantic argument, and, in accordance with the Scope Principle, it is merged into the sentence at the point where it c-commands the syntactic realization of this argument. The studies of this volume discuss several adverbial types with different selectional requirements: for example, Ps selecting for a time expression (chapter 6), adverbs selecting for an event, among them degree, manner, and frequency adverbs (chapter 13), adverbs selecting for a proposition, e.g., epistemic adverbs and Ps introducing temporal clauses (chapters 5 and 6), adverbs selecting for a verum focus (chapter 5), and adverbs selecting for AspP (chapter 11). Several chapters analyze semantically underspecified adverbs and adverbials, which can be merged into the sentence at various points of the clausal projection, with the different merge-in points yielding different interpretations. In addition to adverbs ambiguous between a manner and a clausal reading, chapter 5 also discusses adverbs with two clausal readings, one corresponding to probability, the other one, to certainty. There are also three-way ambiguous adverbs, e.g., *gyorsan* 'quickly' (chapter 11), and *biztosan* 'certainly' (chapter 5), whose three readings are associated with three different merge-in points.

The -*vA* adverbial participle discussed in chapter 4 can be merged with at least four different shells of the extended verbal projection, and the different merge-in points are responsible for the stative versus manner interpretation of the participle, as well as for the lack or presence of circumstancial adverbials, of an external argument, and of clausal operators in the participle phrase. Since the merge-in point of -*vA* in the participle phrase also determines the merge-in pont of the participle phrase in the matrix clause, it is also responsible for the subject or object control of the subject of the participle.

Chapter 6 compares two types of temporal adverbial clauses introduced by relative pronoun+P complexes. The syntactic and semantic differences

of the two constructions are derived from the selectional properties of the two types of Ps: When a P selects a time expression, the temporal relative clause involves movement of the relative operator from inside the clause, while other temporal clauses, where the P selects an event or proposition, are derived without such movement.

The semantic requirements of adverbs are sometimes manifested in cooccurrence restrictions. Chapter 10 gives a detailed analysis of cooccurrence restrictions among five types of temporal adverbials and nine classes of verbs with different event structures, pointing out their incompatible semantic subcomponents. Chapter 11 derives the interpretation of *gyorsan* 'quickly'', having a manner, a rate, or an aspectual reading, from the interplay of its syntactic position and the event structure of the V it modifies. For example, the manner reading requires an event with an agent, the rate reading requires an event with a run-time, whereas the aspectual reading requires an event with a definite onset. As chapter 12 demonstrates, there are cooccurrence restrictions between particular types of counting adverbs and particular types of situations, as well. For example, multiplicatives and frequency adverbs can only modify bounded situations felicitously. Frequency adverbs require a time-interval argument; furthermore, they are strange with unique situations. At the same time, coerced interpretations are also possible, and they can be facilitated by marked merge-in positions and by marked prosody.

Chapter 3 argues – developing ideas of Koster (1994) and Farkas and de Swart (2003) – that all elements in Spec,Pred, the neutral position of both (pseudo-)incorporated bare nominals and verbal particles, are interpreted as semantically incorporated into the verbal predicate. As a consequence of this property of the syntax–semantics mapping, only those locative adverbial elements may appear in this immediately preverbal position whose semantic type is predicative, allowing them to undergo semantic incorporation. Accordingly, adverbials interpreted as strong quantifiers are excluded from this position. As an adverbial PP may be interpreted as a predicate even if its Ground argument is a definite DP, it is also predicted that such PPs are able to fill the Spec,PredP position. The situation is known to be different for nominals of the category DP, which, as non-predicative expressions, are excluded from appearing in Spec,PredP.

Chapter 8 demonstrates the intertwining of syntactic and semantic constraints in licensing a [-specific] or [+specific] theme argument. Sentences involving a verb of existence, coming into being, or creation are known to be ungrammatical with a [+specific] theme, for a semantic reason (the existence of their theme cannot be both asserted and presupposed). It is shown that a purpose state adverbial can also turn verbs of other types into predicates of existence/coming into being/creation. In such sentences it is semantics that imposes a constraint on the referential properties, and hence the syntactic structure, of the internal argument. The non-specificity requirement on the internal argument of Vs of existence/coming into being/creation can also be blocked by a syntactically encoded semantic operation: by adding a focused constituent (an „obligatory adjunct"), whereby the internal argument becomes part of the presupposition.

Chapter 9 derives the syntactic differences of inclusive and exclusive pronoun + comitative constructions from the different referential relation between the comitative and a semantic subcomponent of the plural pronoun. The plural host pronoun is analyzed as the conjunction of a singular pronoun (*I, you*, or *he*) and a semantically underspecified element meaning 'others'. The comitative is adjoined to the host NP in both cases, and the inclusive reading is a consequence of the comitative being coindexed with the underspecified conjunct, forming a kind of appositive construction with it. Such an appositive relation is impossible between a non-referential pronoun (e.g., a wh-pronoun) and a referential adjunct, or between a referential pronoun and a non-referential adjunct (e.g. a universal quantifier), i.e., the inclusive reading is excluded in both constructions.

Chapter 13 also motivates an apparently syntactic constraint semantically: negative adverbs of degree, manner, and frequency are obligatorily moved into focus position (unlike their positive counterparts). These adverbs are scalar elements, representing negative values of bidirectional scales. A scalar element n is shown to mean 'at least n', 'n or more' in every sentence position but in the focus slot, where the [+exhaustive] feature associated with it excludes the higher alternatives. Thus the syntactic constraint serves to prevent a semantic anomaly.

The perspective of chapter 14 is the opposite: it examines the effect of syntactic structure upon semantic interpretation, and notices that the syntactic differences of English cleft sentences and the corresponding Hungarian focus constructions lead to semantic differences (different scope possibilities).

4.2. Syntax–phonology interactions

When the operation of adjunction forms from the objects β and α the ordered pair <α, β> α adjoined to β, β retains all its properties, therefore α is thought to be attached to β on a separate plane (cf. Chomsky (2001)). α is integrated into the primary plane (the linearly ordered structure) in the course of mapping to PF. In Hungarian, different linearization rules apply in the pre- and postverbal sections of the clause (i.e., in the left periphery of the phase constituted by the clause, and in the phasal domain – cf. É. Kiss (2008)). Preverbal constituent order is determined by semantic considerations: scope-bearing elements, among them adverbials, must c-command the domain they take scope over. The Hungarian sentence being right-branching, preverbal scope-bearing elements precede their scope. The postverbal order of constituents, among them right-adjoined wide-scope adverbials, and narrow-scope adverbials crossed by V-movement, on the other hand, is constrained by a phonological principle: the Law of Growing Constituents formulated by Behaghel (1932), requiring that phonologically light (short and/or unstressed) constituents precede heavy ones – as discussed in chapter 2.

   The phonological component not only determines postverbal constituent order; it can also participate in the disambiguation of postverbal adverbials. Disambiguation is necessary when the merge-in point of a postverbal adverbial linearized in accordance with the Law of Growing Constituents cannot be reconstructed – because it has more than one potential merge-in points in the clausal projection, or it can have either wide or narrow scope with respect to another postverbal adverbial. As chapter 5 examines in detail, a postverbal adverbial constitutes an Intonation Phrase (IP) of its own, which an IP-restructuring rule unifies with the IP formed by the clausal projection it modifies. Apparently, this optional restructuring rule is subject to the condition of Recoverability, i.e. it is blocked when IP-restructuring would collapse two prosodic structures with distinct interpretations.

   The PF component also plays a role in the syntax of directional PPs semantically incorporated into the V. As chapter 3 argues, these PPs raise through Spec,PredP to Spec,TP, establishing a so-called light-headed chain, in which descriptive material is spelled out in the root position. The top link only has the head of PP spelled out. Deletion is ideally complementary in the two chain-links, hence the P of the top link is not required syntactically to be spelled out in its base position. Morphologically, however, it is a bound suffix, hence neither P in the root copy, nor its complement noun phrase in the top copy can be deleted. P of

the root link is spelled out, whereas its complement in the top link is replaced by a covert *pro*, a phonologically null feature bundle.

3. The chapters

'Syntactic, semantic, and prosodic factors determining the position of adverbial adjuncts' by Katalin É. Kiss explores the mechanism of adverbial placement in the Hungarian sentence. It shows that the position of adverbial adjuncts is determined by an interplay of semantic, syntactic, and phonological factors. The semantic factor at play is the selectional requirement of the adverbial, encoded in the lexicon. The major syntactic factors determining the grammar of adverbial adjuncts are the Scope Principle, requiring that the adverbial c-command the syntactic realization of this argument, and the requirement that it be merged in via adjunction, on a separate axis, to be integrated into the primary syntactic plane only in PF (cf. Chomsky 2001). The assumption that adjuncts can be linearized either to the left or to the right need not be stipulated; it represents the null hypothesis. The postverbal constituents of the Hungarian sentence, including adverbial adjuncts, can be spelled out in any order, but the order observing the Law of Growing Constituents (Behaghel 1932) is valued as optimal by native speakers.

   'Locative particle and adverbial incorporation at the interfaces' by Balázs Surányi analyzes „incorporated" locative adverbials, i.e., locative adverbial elements behaving as „verbal modifiers" in the Hungarian clause. Surányi proposes a syntactic derivation of the adverbial+V complex, adopting a pseudo-incorporation analysis. As for the category of adpositonal locative particles, Surányi convincingly argues that they are not simply Ps, but full-fledged PPs with a pro argument. They undergo XP-movement from their base position (which, as shown, can be an argument, a secondary predicate, or an adjunct position) to Spec,PredP. At the interpretive level, locative elements in Spec,PredP are semantically incorporated into the verbal predicate. The PredP projection is placed by Surányi lower than by the other authors. Temporal and source adverbials and particles, agents, as well as external stative locatives cannot „incorporate", which is taken to be evidence that PredP, the syntactic locus of incorporation, is situated below the base position of these constituents, but above that of patients/themes/obliques, as well as goal, route and internal

stative locative arguments/adjuncts. The surface position of pseudo-incorporated locative adverbials and particles is identified as Spec,TP, where they get raised to in a second movement step to satisfy T's „EPP" property.

Locative particles that have a lexical associate (a 'double') are argued to be related to their doubles via movement. In the case of suffixal adpositional particles, this movement creates what is referred to as a 'light-headed' chain, a marked spell-out pattern resulting from Chain Reduction in which the root link is preserved at PF in full, while the top link is also pronounced, as the inflected form of the P head of the locative PP.

Due to the fact that adverbial constituents in Spec,PredP are semantically incorporated, it is correctly predicted that adverbials interpreted as strong quantifiers are excluded from this position: this is because only those elements are able to undergo semantic incorporation whose semantic type is a predicate.

'**The syntax of Hungarian –*vA* adverbial participles: A single affix with variable merge-in locations**' by Huba Bartos discusses so-called adverbial participles, a family of constructions including variants differing with respect to the voice of the V, the controller of the PRO subject, the possibility of circumstancial adverbial modifiers and left peripheral operator projections, manner versus state interpretation, and position in the main clause. Bartos claims that these differences all follow if we assume a single -*vA* participial suffix merged with different shells of the extended verbal projection.

The smallest verbal projection that -*vA* can merge with is a verbalized root and its internal argument. Such minimal adverbial participle phrases appear in a copular matrix domain, where the nominative case of their internal argument is licensed by matrix Tense. If -*vA* is merged one shell higher, above the CAUS head, the resulting participle phrase will also include an event variable, which can license circumstancial adverbials. If the -*vA* suffix is merged in above Voice, the Voice head will assign accusative case to its internal argument, and will licence an external argument represented by PRO, or assigned accusative case by a matrix ECM V. The -*vA* suffix can also be merged with an IP-type verbal projection, in which case it has a rich functional structure. The size of the verbal projection that -*vA* combines with not only determines the argument structure of the participial verb but also affects the interpretation of the participle: whereas a participle phrase derived from *vP* is necessarily

stative, a participle phrase involving an event argument can also denote a transparent relation (e.g., manner) between the event and a participant.

Bartos describes an interesting matching effect between the category of the projection merged with the *-vA* participle suffix and the category of the matrix projection merged with the participle phrase (i.e., the more extended the projection of the participle phrase is, the higher it is merged in the matrix sentence). This matching effect is identified by Bartos – tentatively and somewhat speculatively – as an instance of the coordinate structure constraint; he analyzes *-vA* as an element forming a conjunction from the matrix clause and the participle phrase.

'Adverbial (dis)ambiguities. Syntactic and prosodic features of ambiguous predicational adverbs' by Barbara Egedi examines various types of semantically underspecified adverbs, which are associated with different readings and different prosodic patterns depending on their adjunction site. In the case of adverbs ambiguous between a manner and a clausal, e.g., a subject-oriented, reading, the manner interpretation arises when the adverb is adjoined to PredP (the predicate phrase of neutral sentences, to be subsumed by FocP and/or NegP in non-neutral ones). The merge-in positions of the clausal variants are more problematic. They follow the topic (i.e., the logical subject of predication) in the unmarked case, but are still not part of the predicate phrase – given that they precede the pitch accent marking its left edge. Egedi identifies their adjunction site with the ForceP projection of Haegeman (2002), and the SD (Speaker Deixis) phrase of Tenny (2000) and Haegeman (2006).

If SDP directly subsumes PredP, the adjunction site of a left-adjoined ambiguous adverb can only be identified on the basis of its stress: PredP-adjoined adverbs are stressed, whereas SDP-adjoined adverbs are unstressed. Interestingly, this difference is neutralized in focus constructions and in negated sentences, where PredP-adjoined adverbs also lose their stress. Owing to a PF rule of Hungarian, which allows the free linearization of postverbal constituents, the adjunction site of a postverbal adverb cannot be determined on the basis of its relative position, either. Egedi demonstrates that such sentences are, nevertheless, disambiguated: the intonational phrase (IP) restructuring rule which unifies the intonation phrase constituted by a sentence adverbial with that of the clausal projection it modifies is blocked in such constructions, presumably because IP-boundary deletion is subject to the condition of Recoverability.

Egedi also finds a three-way ambiguous adverb: *biztosan* 'certainly', which has, in addition to its manner reading, two clausal readings, one corresponding to probability, the other one, to certainty. *Biztosan* under the

certainty reading, together with a group of other epistemic adverbs, has a number of atypical properties, e.g., they bear focus stress, destressing the subsequent sentence part; and they can occur in questions, imperatives, in the antecedent of conditionals, and in the scope of negation. Egedi derives their syntactic, semantic and prosodic properties from their association with a so-called verum projection.

'**Temporal adverbial clauses with or without operator movement**' by Barbara Ürögdi compares the syntactic and semantic properties of three types of temporal clauses, and traces back their differences to the selectional properties of the temporal adpositions they involve. Some of the adpositions take a time expression as their complement, whereas others take an event or proposition. In the former case, i.e., in "regular" temporal relative clauses , the relative operator (which can be realized by a bare wh-word as in Hungarian, or an empty operator as in English) originates inside the embedded clause as a temporal modifier of the embedded predicate, and moves up to the left edge of the temporal clause in the standard manner of relative clause formation. In the latter type of temporal clauses, the relative pronoun+P complex starts out externally to the embedded clause; the P functions as an adposition taking the entire embedded IP as its complement (in Hungarian, with the mediation of a relative determiner that ends up morphologically hosting the P element). In sentences involving a regular temporal relative, the time of the relative clause is shared with that of the main clause. In sentences involving an "IP relative", on the other hand, the temporal relation of the two clauses is indicated by the adposition connecting them, i.e., the adposition functions as a temporal connective. In Hungarian, Ps selecting an entire event can also combine with a propositional *that*-clause.

Two P elements - *óta* 'since' and *-ig* 'while/until' - exhibit dual behavior with respect to both semantic and syntactic criteria (in particular, time-sharing between the two clauses, and the availability of long-distance dependencies indicative of operator movement, cf. Larson (1990)). Prompted by the extensive literature on 'until'-clauses in various languages, the chapter examines the properties of *–ig* in detail. Looking at scope interactions (of negation, focus and *–ig*) as well as the licensing of negative quantifiers, the chapter argues for a syntactic explanation that does not rely on lexical ambiguity or so-called 'expletive negation'. The analysis is then extended to English to explain the availability of 'low readings' (cf. Geis (1970), Larson (1990)), which is argued to fall out of the same distinction (the presence or absence of operator movement from inside the clause) modulo morphological differences (the P+wh complex is

always generated in a local relationship in Hungarian, whereas in English the P always starts out outside the temporal clause).

'**Adverbial versus adjectival constructions with BE and the category Adv**' by Edit Kádár addresses the question of the syntactic category of adverbs and adverbial adjuncts, focusing on the differences between copula + AdjP and copula+AdvP constructions. Kádár argues that a large subset of Hungarian adverbs represent a transitory stage in the diachronic cycle 'nominal with an (obsolate) adverbial case suffix → adverb → postposition → adverbial case suffix', and proposes to analyze both nominals with an adverbial case suffix and adverbs as PPs. Crucially, Advs are not intransitive Ps but Ps having incorporated their complement. Verbal particles, traditionally categorized as Advs, are also PPs (here the analysis converges with that of Surányi, who also argues for the PP analysis of a type of locative verbal particles). Adverbs derived from adjectives with the Hungarian equivalent of –*ly*, formally identical with the superessive case suffix, are hypothesized to be PPs involving an adjectival modifier and an empty nominal meaning 'manner', with the case suffix cliticized to the adjective..

Adverbs and adjectives seem to show up in the same type of Adv+copula/Adj+copula construction. Kádár demonstrates that the parallelism of the two constructions is only apparent; they behave differently in several respects. For example, the copula is always spelled out in the presence of adverbs, but is missing in 3rd person present indicative in the presence of adjectives. Adjectives can undergo predicate clefting on their own; adverbs, on the other hand, undergo predicate clefting only together with the copula. The copula associated with adverbs can be subjected to predicate fronting in itself; the copula associated with adjectives, on the other hand, cannot. Kádár concludes that the copula accompanying adverbs is a verbal element inserted into sentence structure under V; the copula accompanying adjectives, on the other hand, is inserted under I. That is, in sentences involving an adjective + copula, the predicate phrase is the AdjP; the copula is a dummy element providing lexical support to phonologically salient tense and person markers. An adverb, more generally, a PP, whether represented by an adverb, a noun phrase with an adverbial case, a noun phrase with a postposition, or a verbal particle, on the other hand, cannot function as a primary predicate. This is in accordance with the typological findings of Stassen (1997), according to whom locative predications are characteristically encoded by a PP and a verbal „support" element across languages.

'**The Definiteness Effect and the adverbial licensing of presentational constructions**' by Márta Peredy provides a solution to the problem of „obligatory adjuncts" in the framework of a novel theory of presentational sentences. The fact to be acounted for is that certain verbs can take a [-specific] indefinite theme only in the presence of an adjunct, which, therefore, appears to be obligatory in the given construction; for example, *??Ütöttem egy tojást* 'I cracked an egg' vs. *Ütöttem egy tojást a serpenyőbe* 'I cracked an egg into the pan'. Peredy provides an explanation in the framework of Parsons's event semantics (1990). Her theory is built on the distinction of real and intentional theme arguments. Presentational interpretation takes place when an actual entity is identified as the instantiation of an intentional entity. The intentional entity can be introduced either by a verb of creation or existence (e.g., *I have written a poem*; *There is a problem*), or by a purpose state adverbial (typically a beneficiary or a goal, as in *I have cracked an egg into the pan*). She argues that obligatoriness has nothing to do with argumenthood. A purpose state adverbial is obligatory in as much as without the persistence of the purpose state the theme is understood as [+specific], and no presentational reading is available. Another construction with an „obligatory adjunct" also has a prosodic aspect: sentences involving a verb of existence, coming into being, or creation can only have a [+specific] (e.g., a definite) theme if they also contain a focus (in most cases, a focused adjunct), cf. ??*The baby was born* vs. *The baby was born YESTERDAY.* Verbs of creation/coming into being, representing par excellence presentational predicates, select a [-specific] theme; however, in the presence of a focused adjunct (or argument) different from the theme, the primary presentational statement can be presupposed, and the presuppositional environment licences a [+specific] theme.

'**Comitative adjuncts: appositives and non-appositives**' by Éva Dékány examines comitatives, focusing on an interesting ambiguity: expressions involving a comitative adverbial and a plural pronoun as its host DP (e.g., *mi Jánossal* 'we with John') have both an exclusive reading, with the comitative added to the referent of the pronoun, and an inclusive reading, with the referent of the comitative included in the referent of the pronoun. Most constructions of this type are ambiguous; however, in certain cases one reading or the other is blocked. For example, the inclusive reading is excluded when the host pronoun has undergone wh-movement; when a non-restrictive relative intervenes between the host and the comitative; when the comitative is expressed in a morphologically marked way; and when the comitative bears the sociative case. The

exclusive reading, on the other hand, is missing when the pronoun and the comitative are focus-moved together. Dékány proposes slightly different analyses for the two constructions. The plural host pronoun is analyzed as the conjunction of a singular pronoun (*I, you*, or *he*) and a semantically underspecified element meaning 'others'. The comitative is adjoined to the host NP in both cases, and the inclusive reading is a consequence of the comitative being coindexed with the underspecified conjunct, forming a kind of appositive construction with it. The distributional differences of the two types of comitatives is predicted as follows. The wh-extraction of the host DP (*who$_i$ … t$_i$ with John*) is impossible under the inclusive reading for the same reason why it is impossible in all appositive constructions: because one and the same expression cannot be simultaneously both referentially open and referentially fixed. The fact that the host and the comitative can undergo focus movement together only under the inclusive reading is also independently motivated: constituents in Spec,FocP must be head-final (hence XPs with a right-adjoined modifier cannot be focused); however, appositive constructions of all types are licensed in Spec,FocP; obviously a head referentially non-distinct from the head of the host XP does not violate this restriction. A non-restrictive relative is also a type of appositive element. If it intervenes between a host pronoun and a comitative, we have an appositive construction of three members. In the Hungarian sentence, syntactically unordered elements have to obey Behaghel's (1932) Law of Growing Constituents. Hence in the 'pronoun, non-restrictive relative, comitative' string, only the pronoun and the non-restrictive relative can be in a syntactically unordered appositive relation; the comitative only has the exclusive reading. A non-referential comitative and its host cannot be in an inclusive relation because the comitative is unable to corefer with the conjunct 'others' in the semantic structure of the pronoun. The incompatibility of the inclusive interpretation and the sociative case derives from a morphological property of the -*stul/stül* sociative suffix, namely, that it only combines with bare nouns. Thus the exclusive or inclusive reading of a pronoun + comitative adjunct follows from the interplay of syntactic, morphological, semantic and pragmatic factors.

'**Types of temporal adverbials and the fine structure of events**' by Ferenc Kiefer employs temporal adverbials to expose a more fine-grained event structure of sentences than was previously thought to be possible. Kiefer's starting point is an apparently syntactic problem: unpredicted cooccurrence restrictions between certain verb classes, and certain types of temporal adverbials, namely: (i) time span adverbials such as *két órán át*

'for two hours', denoting the length of an ongoing event; (ii) durative-delimitative adverbials such as *két óra alatt* 'in two hours', denoting the length of a process or activity with a culmination; (iii) time point adverbials such as *két órakor* 'at two o'clock', identifying the time of a punctual event; (iv) adverbials denoting the length of a resulting state such as *két órára* 'for two hours', and (v) adverbials denoting the endpoint of a process or activity such as *két óráig* 'until two o'clock'. Compatibility with different subsets of these adverbials determines nine verb types. Kiefer shows that these adverbials identify different atomic events, which constitute subevents of various types of complex events. Adverbials of type (i) identify a state/process/activity; those of type (ii) identify a process and a subsequent state. Adverbials of type (iii), denoting a point of time, identify a punctual (sub)event. Type (iv) adverbials denote the length of a state following an event, whereas those of type (v) identify the endpoint of a process or activity. Hence the event structure of verbs compatible with type (i) adverbials includes a process component; those compatible with type (ii) adverbials includes a process and a state; verbs compatible with type (iii) adverbials include a punctual subevent, whereas those compatible with type (iv) include a reversible resultant state. Verbs compatible with type (v) adverbials involve a delimited process or activity. Relying mostly on this information, Kiefer reveals the fine-grained event structure (the subevents and their temporal relations) of the predicate types determined at the outset, also showing that the lexically determined event structure can be altered on the sentence level. Finally, he argues that aspect, i.e., (im)perfectivity, can be deduced from event structure. The defining property of perfective aspect is claimed to be divisibility, and that of imperfective aspect is claimed to be indivisibility, both of which can be read off event structure. In sum: both syntactic distribution (i.e., the compatibility of certain verb types with certain temporal adverbials), and syntactic aspect are derived from event structure, in fact, from event semantics.

'**Aspect and adverb interpretation – the case of** *quickly'* by Boldizsár Eszes demonstrates on a case study how adverb interpretation is determined by the interrelation of the aspectual class of the verb and the syntactic position of the adverb. He argues that *quickly* has three readings: a manner reading ('with quick motions'), a rate reading ('at a quick rate'), and an aspectual reading ('right away'), also providing semantic analyses of the three interpretations. The manner and rate readings are represented on scales of different types, the former involving a scale of intensity, associated with atomic agents of the atomic elements of the event, the latter

involving a scale of quantity, associated with rates of events of the same type. The aspectual reading is based on a comparison class containing the run-time values of intervals between a contextually given reference time and the onsets of events of the same type as the given event. The interpretation of an instance of *gyorsan* 'quickly' is determined, on the one hand, by the aspectual type of the predicate (activities/processes, and progressive accomplishments only allow the manner and rate readings of *gyorsan*; perfective accomplishments also allow the aspectual reading, wheres achievements exclude the manner reading, only allowing the rate and the aspectual interpretations). The distributional restrictions attested follow from the proposed semantic analyses. Imperfective events (states/processes and progressive accomplishments) are incompatible with the aspectual *gyorsan* because they do not have their onset specified. Statives, and momentary events, among them semelfactives, exclude the rate reading because they have no run-time. However, in the case of achievements, the rate reading might be interpreted on the preparatory phase of the event. Verb types with no agent necessarily lack the manner reading of *gyorsan*, interpreted on a scale associated with agent-atoms. The readings of instances of *gyorsan* are also structure-dependent: whereas the manner/rate adverb is adjoined to PredP or is focused, the aspectual adverb is adjoined to the AspP projection dominating PredP. This hypothesis has distributional consequences in the preverbal part of the sentence: for example, a *gyorsan* following a manner adverb must itself be a manner or rate adverb, as well, whereas a *gyorsan* preceding a manner adverb can either have the manner, or rate, or aspectual reading. Interestingly, an aspectual *gyorsan* cannot be focused, which may be related to the stativity of the focus construction, expressing identification or specification.

'**Adverbs of counting, frequency and quantification: Flexibility and rigidity**' by Anikó Csirmaz analyzes adverbs of counting, among them multiplicatives such as *kétszer* 'twice', adverbs of (relative and fixed) frequency such as *sűrűn* 'frequently' and *naponta* 'daily', and quantificational (Q-) adverbs such as *gyakran* 'often'. Csirmaz argues that these types of adverbs have different semantic features, different scope possibilities, and different distributions. She derives the positions of the adverbs by appealing to their semantic properties (including selectional and referential features), and to the specific properties of Hungarian sentence structure. As regards their semantic differences, multiplicatives count the number of occurrences of situations; frequency adverbs specify the frequency of multiple situations of the same type within a larger time interval; and Q-adverbs quantify over situations. These facts impose

selectional restrictions upon them. E.g., multiplicatives and frequency adverbs can only modify bounded situations felicitously. Frequency adverbs require a time-interval argument, and are marked with unique situations, since they require multiple situations to occur within the time interval. They must be merged locally to the time-interval argument, which is located by Csirmaz above PredP, but below TenseP. Whereas the syntax of Q-adverbs is parallel with the syntax of quantifiers, the syntax of multiplicatives is shown to be partially different from the syntax of indefinites; apparently multiplicatives always occupy a scope position. It is shown that adverbs of counting allow a certain degree of flexibility: they tolerate various forms of coercion, which can be facilitated by marked prosody.

'**Scalar adverbs in and out of focus**' by Katalin É. Kiss aims to explain the curious fact that positive adverbs of degree, manner, and frequency, and their negative counterparts occupy different word order positions in the Hungarian sentence. Whereas positive adverbs are adjoined to PredP, the syntactic category representing an event, negative adverbs undergo focus movement, landing in Spec,FocP. In the spirit of the Minimalist program, according to which grammatical constraints that are not manifestations of general computational principles represent interface requirements, this chapter finds the motivation for the obligatory focusing of negative gradable adverbs in semantics.

The word order behavior of inclusive and exclusive adverbs of degree, manner, and frequency is derived from their scalar meaning. It is argued on the basis of Horn (1972), Levinson (2000), and Kadmon (2001) that a scalar expression n is interpreted in natural language, and specifically in Hungarian, as 'at least n'; 'n or more' – unless n is moved to focus position, where it is understood as 'exactly n', owing to the exhaustive identification function of structural focus. In the case of scalar elements in the negative domain of a bidirectional scale, among them negative scalar adverbs, the 'at least n'; 'n or more' interpretation would lead to a semantic anomaly, which is avoided by the obligatory focusing of n. Scalar adverbs marking a value in a positive scalar domain can also be focussed. In focus position, the readings 'to at least n degree', 'in at least n manner', 'at least n times', 'with at least n frequency' are changed to 'to exactly n degree', 'in exactly n manner', 'at exactly n times', 'with exactly n frequency'.

'**Adverbs of quantification, *it*-clefts and Hungarian focus**' by Ágnes Bende-Farkas studies – and derives compositionally – the semantic interaction of Hungarian focus constructions and English clefts with adverbs of quantification. She examines the so-called partition problem on

a previously unexamined set of data: in sentences involving an *it*-cleft or Hungarian Focus and a complex subevent structure. She reports that in these environments syntax plays a decisive role for semantic partition, which is a marked difference from the original cases, *in situ* English Focus, where semantic partition is determined by an interplay of prosodic and contextual factors She finds that, if an adverb of the *mindig* 'always' type c-commands the focus/cleft constituent, syntactic structure determines semantic structure: the focus/cleft constituent corresponds to the Scope of the adverb, and the background corresponds to its Restrictor. If, on the other hand, the adverb is c-commanded by the focus/cleft constituent, the Restrictor and Scope division corresponds to the subevent structure. In English, the adverb performing universal quantification clearly cannot outscope the embedded clause of a cleft construction; in Hungarian, too, the post-focus section of the sentence is claimed to represents a different phase by various syntactic analyses. Nevertheless, Hungarian focus constructions and English clefts are not parallel in every respect: a post-focus quantifier can have a wide-scope reading only in the former. Bende-Farkas argues against semantic explanations, e.g., the choice function analysis of post-focus wide-scope existential quantifiers, and proposes a solution based on the possibility of the right-adjunction of quantifiers in the Hungarian sentence.

The formal semantic analysis is built on a focus theory in which the focus-marked expression is a special generalized quantifier that presupposes its scope, similar to a definite description. The focus construction is like the skeleton of an identificational sentence, paraphraseable as (It is) F (that) is identical to the unique greatest individual with property P. The explanation of why quantifiers cannot assume narrow scope via reconstruction is that they are generated in their original scope position, so there is no position for them to be reconstructed to in syntax. They cannot undergo semantic reconstruction because of their quantificational type.

"Incorporated" locative adverbials in Hungarian
Balázs Surányi

1. Introduction

Directional locative adverbial expressions and particles have stimulated a great deal of interest in recent years as part of the intensified investigations into the detailed cartography of the syntax of adverbials at large.[1] As for *non*-directional (or stative) locative adverbial adjuncts, it is relatively well-established by now that – abstracting away from their topic-like or scene-setting/frame-adverbial use, as well as from their occurrence as a selected argument or a secondary predicate – they occupy a relatively low position among circumstantial adverbials in terms of a Cinquean hierarchy (Cinque 1999: 28–29).[2] Among directional locatives, goal adverbials are thought to occupy an especially low position, embedded in an articulated verb phrase structure.

The cross-linguistic study of verbal particles has contributed greatly to a better understanding of the internal micro-structure and semantic composition of the layered verb phrase containing locative adverbials. The Slavic particle inventory has traditionally been divided into the "outer" or "superlexical" and the "inner" or "lexical" class of particles (abstracting away from purely perfectivizing prefixes) (see Babko-Mayala 2003, Romanova 2004, and references therein), where the latter class are analogous to verbal particles in Germanic. Lexical prefixes characteristically have a basic spatial/locative meaning, and are used to form predicates with a resultative interpretation, especially, though not exclusively (e.g. *eat up*), with verbs of motion (e.g. *push in, take away*). In syntactically based approaches (see Ramchand and Svenonius 2002: 102 for references to lexicalist, or more broadly, "complex predicate" accounts), these particles are typically analyzed as (secondary) predicative elements, originating in the predicate part of a resultative Small Clause generated below the verb (e.g., Hoekstra 1984, 1988; Hoekstra and Mulder 1990; Kayne 1985; den Dikken 1995; Svenonius 1994, 2004; Ramchand and Svenonius 2002; Ramchand 2004). One prominent view holds that particles can then move higher by head movement, and can incorporate into a head in the verbal domain (cf. also inseparable particles of German). This derivation is applied to particle shift constructions in Germanic, as in (1a), and modulo differences, to lexical prefix incorporation in Slavic, as in (1b) (adapted from Rojina 2004), corresponding to (1c) (e.g., Svenonius 1994;

Harley and Noyer 1998; Ramchand and Svenonius 2002; Ramchand 2004; Rojina 2004, cited by Svenonius (2004: 224–226)).[3]

(1) a. [FP$_1$ *take* F$_1$ [FP$_2$ [F$_2$ *away*$_i$] [FP$_3$ *the pizza* [F$_3$ t_i]]]]
   b. [FP$_1$ [F$_1$ *vy*$_i$+*šel*] [FP$_2$ [F$_2$ t_i] *iz-za stola*]]
   c. *On   vy-šel   iz-za   stola*
      he   out-went out.of-behind table
      'He got up from the table.'

    The study of the syntax of locative particles has generally had its main empirical focus predominantly on Slavic and Germanic languages. The present paper sets out to provide a syntactic analysis of the apparent "incorporation" of (esp. directional) locative particles in Hungarian, a non-Indo-European language, seeking analogues and comparisons with the syntax of particles in Germanic and Slavic.[4] The "incorporated" particles under scrutiny in this chapter (exemplified in (2a)) are morphosyntactically related to morphologically bound, suffixal adpositions (compare (2b)) (see É. Kiss 2002), whence the term 'adpositional particle' that will be used throughout to designate members of this class. "Incorporated" particles are strictly left-adjacent to the verb in 'neutral' clauses, forming a single phonological word with it.[5]

(2) a. *János   **hozzá** érintett   egy műszert   (a vezetékhez)*
      John   PRT   touched-3SG an instrument-ACC (the wire-to)
      'John touched an instrument to it (to the wire).'
   b. *János**hoz***
      John-to

    In what lies ahead, I aim to substantiate the following main claims regarding "incorporated" adpositional locative particles in Hungarian. First, in Section 2 it is demonstrated that the particles at issue have a phrasal status, and that they are categorically adpositional. They are shown to undergo XP-movement out of *v*P in neutral clauses, surfacing in an immediately preverbal position. It is argued that their movement to this position involves two steps: they are first raised to a specifier within a layered verb phrase, flanked between *v*P and VP (a verb phrase medial position), which is then followed by further displacement of the particles to a *v*P-external position. Section 3 investigates the range of argument structures that directional locative adpositional particles may derive from, arguing that (contrary to a popular view) their telicizing effect is not

contingent on their function as a resultative secondary predicate: they may originate as ordinary complements, and also as (verb phrase internal) adjuncts. It is proposed in Section 4 that in their verb phrase medial position, adpositional particles are semantically incorporated into the verbal predicate. In Section 5 the syntactic relation is scrutinized that the adpositional particle bears to an optional lexical locative 'associate' phrase (appearing between brackets in (2a) above). Contrasting them with some other particle types, it is argued that the locative adpositional particles examined in this chapter are related to their 'associate' phrase by a direct ("light-headed") movement chain, whose tail is spelled out in full and whose head link is realized at PF as an optimally reduced form. Section 6 concludes with a summary.

2. Phrasal "incorporation" of locative particles

2.1 The syntactic category of locative particles

Particles, especially locative particles, have commonly been assimilated to adpositions in a number of languages (with which they are often, though not always, homophonous) and have been analyzed categorically as Ps (e.g., Emonds 1985; den Dikken 1995; Matushansky 2002; Svenonius 2007). Particles that apparently behave as phrases have accordingly been analyzed as "intransitive" adpositions (Klima 1965; Emonds 1985; see Horvath 1981 for this view of verbal particles in Hungarian): PPs that contain nothing beyond a P head. Locative particles like the one in (2a), which morphologically contain an adverbial case suffix (see (2b)), have also been argued to be (complex elements headed by) adpositions, based on the broader assumption that adverbial case suffixes are syntactically postpositions in Hungarian (see Bartos 2000; É. Kiss 2002; see also Emonds 1985; for a similar approach to Lezgian adverbial suffixes, see van Riemsdijk and Huijbregts 2007).[6]

There is in fact overt morphological evidence that Hungarian locative particles are adpositional, and in fact, phrasal. To see this, it is instructive to first look at morphologically free postpositions. As pointed out by Marácz (1986), exactly those postpositions that take a caseless noun phrase as a complement (as in (3a)) bear person/number inflection when their complement is a personal pronoun (as in (3b)). The paradigm of inflections carried by such postpositions is identical to the paradigm of inflections suffixed to possessed nouns. The complement of the postposition can appear at a distance from the postposition, but only if it appears in dative case; the same is true of nominal possessive constructions (Szabolcsi 1983).

The straightforward conclusion Marácz draws based on facts like these is that such PPs have a possessive structure, with the P bearing the role of the possessed head. Given that the suffixal locative particles illustrated in (2a) above bear the same paradigm of inflections agreeing with their pronominal complements (see (4a–b)), they too should have a possessive structure, with a suffixal adposition being the possessed head (see É. Kiss 2002). That in their case the possessor noun phrase cannot appear at a distance from the possessed postposition is expected, given the affixal nature of this class of postpositions.

(3) a. *Mari után*   (4) a. *Mari-ért*
      Mary after   Mary-for
   b. *te   után-ad*   b. *te-ért-ed*
      you after-2SG   you-for-2SG

Pronominal possessors, which the possessed head (noun or adposition) agrees with for phi-features, can in general remain covert, realized by a silent *pro* (the natural choice unless the possessed phrase is a syntactic topic or focus). It can be inferred that the "incorporated" locative particles at hand also contain a *pro* possessor, as well as a functional head associated with possessive person/number-agreement; whence they must be phrasal. Thus, in distinction to "intransitive" adpositions (exemplified by English locative particles that may alternate with lexical locative PPs, see (5) below), the locative particle in Hungarian is a full-fledged phrase, a PP containing a proper (pronominal) argument.

(5) a. *John climbed up the slope*
   b. *John climbed up*

As expected, locative particles, and indeed all verbal particles in Hungarian, may undergo XP-movement. Most importantly, they can be contrastively topicalized and focused on their own. They can raise across a sequence of superordinate verbal heads (VM "climbing"), which has also been taken as an indication that they are phrasal (see Farkas and Sadock 1989; Brody 2000; Koopman and Szabolcsi 2000; see also Den Dikken 2004; Williams 2004, a.o.).

Further evidence that particles in Hungarian are phrases, rather than merely head-level projections undergoing syntactic incorporation into the verb à la Baker (1988) or being generated at the lexical level as part of a complex verbal compound head, comes from the syntax of non-neutral

clauses, i.e., clauses that contain a preverbal "operator," such as negation, focus or a *wh*-phrase (cf. Note 5). In such clauses the (finite) verb must immediately follow the "operator" itself, as a result of which the particle will appear postverbally, where it can be relatively freely separated from the preceding verb. The situation is schematized in (6):

(6)   OP V_{fin} … PRT …

The placement of the verb in such clauses has been analyzed in terms of head movement of the verb to the head of some functional projection that houses the operator in its specifier (Brody 1990; Puskas 2000; though see É. Kiss (2002) and (2005, 2006d) for two alternatives), which on mainstream assumptions entails that particles do not undergo head-incorporation into the verb. For if the particle did incorporate into the verb by head-incorporation at some point of the derivation, forming the complex head [PRT V], then this would mean that the verbal host head would have to excorporate from the complex verbal head (raising on its own to the functional head position right-adjacent to the clausal operator OP).

Such considerations – from applicability of (A-bar and long) XP-movement to the particle itself and from head-raising of the verb away from the particle – strongly support the view that particles in Hungarian, locative particles among them, are phrasal categories. Similar arguments can, and have been, made for the case of German/Dutch type separable verbal prefixes, as well as for English-type verbal particles (see Zeller (2001) for a host of such arguments applied to German).

A last argument to be mentioned here comes from an observation regarding the set of elements that alternate with verbal particles in the immediately pre-verbal linear position of a neutral clause. The set of elements that are in complementary distribution in such a surface position include verbal particles, adverbial phrases, determinerless nominal phrases, as well as resultative and other secondary predicate phrases, all of which (apart from particles) can contain modifiers, i.e., can have a complex, phrasal structure (see É. Kiss 2002, and references cited there).[7] The pre-verbal complementary distribution of all these elements (commonly referred to collectively as "verbal modifiers," VM for short) has been generally taken to suggest that they also occupy one and the same structural position in the phrase-marker (which has come to be called the "VM position").[8] In view of the phrasal status of VMs other than verbal particles, the VM position must be a phrasal position; hence verbal particles too should (be able to) have a phrasal status.[9]

2.2 Locative particles are outside *v*P

While the phrasal status of particles seems amply motivated, their syntactic position in a neutral clause is less clear. Here I merely wish to point at some evidence – often under-acknowledged in earlier literature (e.g., Brody 1990, 1995; É. Kiss 1994; Csirmaz 2004) – that both the particle (more generally, the VM) and the verb are outside of the verb phrase at the surface. This is what the pattern exhibited by VP-ellipsis in the language suggests: VP-ellipsis in a neutral clause deletes elements to the right of the verb, but strands the VM and the V itself. The sentence in (7a) could be a continuation of (2a). Similarly, in a sentence where the bracketed string in (7a) is overt, it can undergo coordination, as well as Right Node Raising. (7b) illustrates the latter in a sentence where the affected constituent contains an object, an agentive subject and an adverb of frequency.

(7) a. *Mari is   hozzá érintett   [egy műszert   (a vezetékhez)]*
      Mary too   PRT   touched-3SG an instrument-ACC the wire-to
      'Mary did too.'
   b. *Neked   el küldi,   nekem pedig   fel hozza*
      you.DAT   PRT send-3SG   I.DAT   in.contrast PRT bring-3SG
      [*mindig   valaki   a leveleket   a portáról*]
       always   somebody the letters-ACC   the reception.desk-from
      'Someone always sends the letters to you from the reception desk, whereas someone always brings them up to me.'

The observation that purpose infinitives, standardly analyzed as *v*P-external adjuncts, can climb to the VM position also suggests that the VM position targeted in VM climbing must at least be outside *v*P (otherwise, "incorporation" in such cases would involve lowering).

(8) Amikor csak vásárolni   indulok …
    when   only shop-inf   leave-1sg
    'Whenever I leave to do shopping, …'

We then have evidence that both the verb and the VM element, which originate inside the *v*P, undergo syntactic movement and appear in a derived position at surface structure.[10] The fact that the constituent undergoing Right Node Raising, coordination or deletion may contain objects, (both agentive and non-agentive) subjects, all sorts of oblique arguments as well as adjuncts suggests that the landing site of the

movement of the VM (the so-called "VM position") and of the verb must (minimally) be outside the *v*P.[11] Let us add that the assumption that Hungarian has a right-branching clause and verb phrase structure (the predominant view of the language) in itself implicates movement of the VM elements base-generated to the right of the verb to its left.

In view of the phrasal nature of movements to the VM position, "incorporation" of nominals in Hungarian is "pseudo-incorporation" in the sense of Massam (2001) (essentially, Mithun's (1984) notion of Type I incorporation, "incorporation by juxtaposition"). Massam shows for the Polynesian language Niuean that its incorporated nominals are phrasal: just like in Hungarian, "incorporated" nominals can include a number of modifiers, but no determiner. She argues that no syntactic incorporation proper takes place with such bare NPs: the adjacency of V and the "incorporated" internal argument NP is simply due to basic constituency structure: the V+NP unit corresponds to the (smallest) VP. Hungarian pseudo-incorporation is structurally different from that found in Niuean (and Hindi (Dayal 1999), Chamorro (Chung and Ladusaw 2003)), however. The constituency facts reviewed above as well as the availability of a varied range of elements in the VM position other than internal argument bare NPs both strongly suggest that the adjacency of the pseudo-incorporated NP and the verb cannot be put down to adjacent base-generation inside the (smallest) VP.[12]

A mainstream syntactic analysis of the VM position that meets the syntactic desiderata established thus far equates it with the specifier of a functional phrase projected above the (maximal) verbal phrase. According to a common view, this functional projection is identified as AspP (on account of aspectual correlates of various types of VM elements in the preverbal position; see Piñón 1992, 1995; cf. Puskas 2000; É. Kiss 2002). An alternative conception identifies it with (Koster's 1994) PredP (on account of the predicative nature of many, perhaps all, of the elements appearing here; see É. Kiss 2005, 2006a, d; cf. the 'complex predicate' accounts, e.g., Komlósy and Ackermann 1983; Ackermann 1984). On these approaches, the adjacency of the VM and the verb is often taken to be the reflex of V-movement to the head of the functional projection housing the VM in its specifier (AspP or PredP).

2.3 Locative particles are inside *v*P

Having established that particles (or more broadly VMs) appear *outside* the *v*P in Hungarian, let us turn now to considerations that suggest otherwise. As pointed out by É. Kiss (1998c, 2002), while goal and route directional

particles as well as stative locative particles are ubiquitous, source directional particles are unattested in the "incorporated" position (see (9a)).[13] The unavailability of this particle type in the VM position is argued by É. Kiss (1998c, 2002) to be due to the role of VM elements in determining viewpoint aspect, the assumption being that it is VMs that give rise to a perfective or imperfective aspectual interpretation: when preceding an activity verb, goal locative particles license perfective aspect, while stative locative particles give rise to an imperfective interpretation.

Such an explanation seems dubious, however. First, it is unclear why a (perfective) inceptive interpretation should be unobtainable with source locative particles (inceptive aspect is available with some other particles in the language, e.g., the 'perfectivizer' *meg*). Second, orientation of trajectory locative particles are not attested either (with activity verbs) (see (9b)), despite the fact that they are expected to easily give rise to an imperfective interpretation. Third, an analogous situation holds in other languages as well with respect to the opposition of goal and route locatives on the one hand, and source locatives and orientation of trajectory locatives on the other, in constructions involving (overt or covert) incorporation. This is exemplified by data from English pseudo-passives in (10) (from Nam 2005), which involve covert locative preposition incorporation (see Baker 1988), a process that is not known to be related to aspectual interpretation (see Koopman (2000) for the observation that Dutch prohibits incorporation of source particles, in contrast to goal particles). Pseudo-passivization stranding an orientation of trajectory preposition is also unavailable in English (Nam 2005, Fn. 4), see (11).

(9) a. *Belőle   hozott   gombát   (az erdőből)*
       from.it(=PRT) brought-3SG mushroom-ACC the woods-from
       intended: 'He brought mushrooms from the woods.'
   b. *Felé   ment   Mari   (a várnak)*
       towards-3SG   went-3SG   Mary   (the castle-DAT)
       intended: 'Mary walked towards the castle.'

(10) a. If the boat is jumped into, it may capsize.   (goal)
     b. *If the boat is jumped from, it may capsize.   (source)
     c. The road can be run across only at great risk.   (route)

(11) ??The house was advanced towards by John.

Let us add some further observations to this picture. Neither durative, nor completive temporal adpositions can function as an incorporated particle, even though in most cases they are formally identical with their locative counterparts. (12) illustrates this with a particle (intended to be) interpreted duratively.

(12) *Alatta   élt   (a török megszállásnak)
     under.it   lived-3SG (the Turkish occupation-DAT)
     intended: 'He lived at the time of the Turkish occupation.'

In much the same way, "external" (or "outer") stative locatives and "internal" (or "inner") stative locatives are contrasted, both in Hungarian and in English (for the latter, see Hornstein and Weinberg 1981):

(13) a. *Benne   aludt   János   a régi szekrényben*
        in.it   slept-3SG John-NOM   the old wardrobe-in
        'John slept in the old wardrobe.'
     b. *Benne láttam   egy filmet   az új moziban*
        in.it   saw-1SG   a film-ACC   the new cimena-in
        'I saw a film in the new cinema.'

(14) a. My bed was slept in last night
      b. *New York was slept in last night

As for bare NP incorporation, agentive subjects, in contrast to unaccusative subjects, have been shown to be excluded from being incorporated (see Marácz 1989; É. Kiss 2002).[14] We can add that experiencer subjects are also banned from the VM position.

Ever since Baker's seminal work on the topic (see esp. Baker (1988: 81ff, 244ff)), contrasts like these in the domain of head-incorporation have been conventionally explained in terms of the hierarchical structure of the verb phrase. Baker proposed that only those heads can undergo incorporation into the verb that originate in a position governed by the verb – a restriction that reduces to the Empty Category Principle (ECP). Accordingly, head-incorporation of an adposition is licensed only from argument PPs (adjuncts being barriers to government) and only under closest c-command. Even though the notion of government is dispensed with in the current minimalist framework (along with the ECP), closest c-command and the opacity of adjuncts are maintained as restrictions on

syntactic movement, thus Baker's account of the relevant oppositions can be transposed seamlessly into the current model.

It will be readily recalled at this point that "incorporation" in Hungarian involves XP-movement, rather than head movement. This leaves the relevance of the c-command condition unaffected, as that is a general condition on all movement operations. Closeness also remains applicable, in principle, implemented in current minimalist theory in the form of a top-down search operation for the appropriate filler element. I will ignore the issue of closeness here, as it does not pertain to the main concerns of this paper. Finally, the opacity of adjuncts to movement applies to head movement and XP-movement alike. Although the opacity of adjunct phrases is also irrelevant to the examples I discuss here, in which nothing gets subextracted from modifiers of the verb (rather, it is the modifier phrases themselves that raise to the VM position), it is to be noted that "incorporation" of a dependent of an adjunct is generally unattested, as expected.

The distinction between incorporating an adjunct vs. a dependent of an adjunct may be insignificant, anyway, if the locus of "incorporation," viz. the VM position, turns out to be lower than the base position of any adjuncts. This is because the c-command condition precludes movement of an adjunct to the VM slot, if that movement would have to involve lowering. However, some adjunct phrases originate sufficiently low, more specifically, below the VM site. Unless further conditions get involved, these adjuncts are expected to be licit fillers of the VM position via XP-movement. (This contrasts with incorporation via head movement, at least in those cases where the head strands its dependent(s), i.e., where head-incorporation from an adjunct position qualifies as subextraction from an adjunct.) It will be shown in the next section that this prediction is indeed correct: in cases where no further conditions interfere, (low) adjuncts too can raise and be "incorporated" in the VM position.

Based on these simple premises, embraced following Baker, the conclusion to draw regarding the location of the VM position in the clause is that it is below the base position of those elements that cannot "incorporate" and above the base position of those that can. This is summarized in the schematic representation below (OT=orientation of trajectory, Oblique=oblique internal argument):

(15) [...Temp/$Subj_{agentive}$/$Subj_{experiencer}$/Source/OT/$Stative_{external}$...[VM...
...[...$Stative_{internal}$/Route/Goal/Theme/Oblique...]]]

Significantly, the diagram in (15) ties in with current views of the relative base positions of the elements involved. First, agent and experiencer subjects are both known to be higher than goals and themes.[15] Similarly, temporal adverbials are known to be higher than locatives (e.g., Nilsen 2000; Cinque 2006, Ch. 6; Schweikert 2005). Zooming in on locatives, stative locatives are characteristically analyzed as generated either inside the (maximal) verbal phrase (Larson 1988; Pesetsky 1995; Nilsen 2000; a.o.) or in the low region immediately above it (Hinterhölzl 2002; Cinque 2006, Ch. 6; Baltin 2007; a.o.). They are often taken to be "event-external," modifying the whole of the eventuality denoted by the (maximal) verb phrase. On the other hand, directionals are seen as "event-internal," modifying the event (or a subevent) internally, or predicating of some participant in the event. "Internal" stative locatives (as in (13a), or in *Eva signed the contract on a separate sheet of paper*) are also "event-internal" in this sense (see Maienborn 2003). Correspondingly, directional locatives and "internal" statives are located below "external" statives at the level of basic structure (e.g., Hoekstra 1984; Nilsen 2000; Tungseth 2003; Schweikert 2005; Nam 2005). On account of the role that the former play in shaping argument structure and event structure composition, they are typically mapped to the lower part of a (sometimes richly) layered verb phrase.[16]

Finally, source locatives have been argued to be generated higher than goal locatives (Nam 2005; Ramchand 2008). Anaphor licensing provides corroborating evidence for this view, as witnessed by the pair of examples in (16): the source can A-bind an anaphor within the goal PP (16a), whereas a goal cannot A-bind an anaphor within the source PP (16b).

(16) a. *Átültették*   *a két egérből$_i$*   *egymás$_i$ testébe*
        transplanted-3PL the two mouse$_i$-from   each other$_i$'s body-into
        a microchipet
        the microchip-ACC
        'They transplanted the microchips from the two mice
          into each other's bodies.'
    b. **Átültették*   *egymás testéből$_i$*   *a két egérbe$_i$*
        transplanted-3PL each other$_i$'s body-from   the two mouse$_i$-into
        a microchipet
        the microchip-ACC
        'They transplanted the microchips into the two mice
        from each other's bodies.'

If the goal PP, generated lower, is scrambled above the source PP (into the position indicated by the brackets), (16a) becomes slightly degraded. The corresponding scrambling of the goal PP above the source PP in (16b) somewhat ameliorates the unacceptability of the example. This replicates an analogous effect found with local scrambling of a postverbal object above the subject in Hungarian (see Surányi 2006), and in Japanese-type short scrambling more generally, hence we can safely conclude that the base hierarchy is *source > goal* in Hungarian too.[17]

2.4 A two-step derivation of incorporated particles

The conclusion to draw based on the summary in (15) is that the VM position is situated somewhere below the *v*P projection (hosting the external argument subjects, and probably also dominating source and orientation of trajectory adverbials), and above the VP (containing oblique, goal and theme arguments, as well as internal stative locatives). This conclusion, however, apparently contradicts the results of the first part of this subsection, according to which the VM position is *outside* the *v*P. Note that whereas the arguments that point to the fact that the VM position lies outside the *v*P are pertinent to the surface position of the VM, the evidence that the VM slot must be located in between *v*P and VP do not necessarily bear on the surface position of the VM: the relevant evidence concerns the position at which "incorporation" takes place within the syntactic derivation. If we embrace the conclusion that the incorporation site is indeed between *v*P and VP, and that no incorporation can happen in any higher position, then the paradox can be resolved straightforwardly by assuming that the incorporation site of VMs is actually an intermediate position in the derivation. The derivational stage at which the VM occupies this intermediate position serves as input to further phrasal movement due to which the VM ends up outside the *v*P. I propose to adopt such a two-step derivation for VM elements: first VMs "incorporate" by XP-movement into a verb phrase medial position, in particular, to a position below *v*P and above VP, which is then followed by a second XP-movement to a position above the *v*P.

Drawing on the basic insight of É. Kiss (2005, 2006a, d) that the VM position is filled by elements that are "predicative," I submit that it is the lower, intermediate VM position that has a "predicative" nature. Adopting É. Kiss's label (borrowed in turn from Zwart 1993; Koster 1994), I will refer to the projection that houses this position as PredP.[18] This view entails at the same time that, contrary to É. Kiss (2005, 2006d), PredP cannot be identical with the locus targeted by (identificational/contrastive) focus

movement, a position projected higher up in the clause structure (and targeted by all the adverbial and nominal elements enumerated in (15) above). Also departing from É. Kiss (2005, 2006a, d), I will be assuming that the "predicative" nature of this structural slot is due to the mode of composition available (exclusively) in this position (see Farkas and de Swart 2003), namely, semantic incorporation, an idea elaborated in Section 4 below.

As for the *surface* VM position projected outside *v*P, I only point out that nothing substantial in this paper hinges on how we choose to identify it. Therefore I will remain uncommitting regarding the choice between the various plausible possibilities – the most popular one among which in the literature on Hungarian, on account of the apparent aspectual role of the position, is an AspP projection (e.g., É. Kiss 2002). The original proposal, in the context of Hungarian, is due to Piñón (1995), who bases his view on the viewpoint (or outer) aspectual role of the particles and other elements appearing in the VM slot. É. Kiss (2006a), however, argues that the viewpoint (or outer) aspect of the clause is not correlated with this position.[19] Here, I will tentatively equate the surface position of VM with TP, on account of the widely recognized fact that there is apparently no preverbal canonical subject position in Hungarian that would be filled by subject DPs, as well as the fact that the surface VM position seems to have a quasi "EPP" property: abstracting away from systematic and easily explicable exceptions, the VM element (in a neutral clause) has a fixed preverbal surface position.

The core structure of the lower part of the Hungarian clause can then be summarized as in (17), where the VM, which eventually ends up within the specifier of TP, is in its intermediate "incorporation" position in [Spec,PredP].[20]

(17) $[_{TP}$ T $[_{vP}$ *v* $[_{PredP}$ VM Pred $[_{VP}$ V $]]]$

3. Goal locative particles and argument structure

Having established a basic two-step clausal syntax of locative particles, as members of the class of VMs, in this section I examine the range of argument structures that directional locative adpositional particles may derive from. On some approaches, goal verbal particles are treated uniformly as secondary predicates of Small Clause complements to the verb.[21] On such a view, goal particle incorporation would invariably involve incorporation of a secondary predicate into a primary predicate. As noted in the previous section, based on the XP-movement analysis of

particle "incorporation" presented here, it is expected that direct modifiers of the verb (complements and adjuncts) that are base-generated lower than the incorporation site (PredP in (17) above) should in principle be able to incorporate. This is simply because nothing in the analysis bans them from being raised to [Spec,PredP], provided that their movement obeys the c-command condition. This prediction will be explored below.

Before embarking on the endeavor, a clarifying note is in order regarding the notions of adjunct and argument that will be assumed (Section 3.1). In section 3.2, I review evidence that – contrary to a popular belief – not all goal locatives are resultative secondary predicates, which holds both cross-linguistically and internally to individual languages. Section 3.3 then examines whether or not the range of goal locatives targeted by locative particle incorporation is restricted to resultative predicate goals.

3.1 Event structure and argument structure

As is commonly acknowledged, despite the fact that these two notions have a long tradition in grammatical theory, no generally accepted demarcation criteria have emerged, and even the classic adjunct properties of free omissibility and relative unselectiveness w.r.t. the modifyee are to be handled with great caution.[22] Significantly, in view of the fact that aspectual composition has been identified as a major determinant of argument realization (even if in partly different ways, see e.g., Tenny 1994; van Hout 1996; Levin and Rappaport Hovav 1999, 2001, 2005; Rothstein 2004 for recent accounts; cf. also Goldberg 2005), the distinction between the two notions has become especially difficult to pin down. Levin and Rappaport Hovav (2001: 779) formulate (18) (similar conditions can be found both in their earlier work and elsewhere in the literature, e.g., in Grimshaw 1990, van Hout 1996):

(18) *Argument-Per-Subevent Condition*
      There must be at least one argument XP in the syntax per subevent in the event structure.

According to (18), argument realization patterns reflect event structure, with simple and complex events having distinct argument expression options. For instance, changing the simple event in (19a) into a complex event in (19b) by adding a result state (an alternation called 'result augmentation' by Ramchand (2008)) requires the presence of the fake reflexive object. The fake reflexive is not an argument selected by the verb,

nevertheless it is an argument, viz. one that is predicated of by the resultative adjective.

(19) a. We sang
  b. We sang *(ourselves) hoarse

  In the present paper I follow this general approach to the notion of argumenthood and the relation between event structure and argument structure. Accordingly, I will regard only those locatives as adjuncts that are not defining constituents of (some subevent within) the event expressed by the whole verbal phrase. Particles that function as secondary predicates in a resultative predication are therefore not taken to be adjuncts, despite the fact that the whole of the resultative secondary predication substructure is often optional. The optionality of this substructure may appear on the surface as the optionality of the resultative predicate itself if the (subject) semantic argument of the result (state/location) predicate is identical with a semantic argument of the verb and is phonetically covert, as in (20a). This case, generally referred to as the "control" type of resultatives, contrasts with the "ECM"/"raising" type, illustrated in (20b,c), where the semantic (subject) argument of the resultative predicate is an element distinct from the arguments of the verb (see Dowty 1979; Simpson 1983; Carrier and Randall 1992; and esp. Wechsler 1997 for this bi-partitioning of resultatives).[23, 24]

(20) a. He hammered the metal (PRO flat)
  b. The joggers ran (the pavement thin)
  c. The audience laughed (the actor off the stage)

3.2 Goal locatives as resultative predicates?

Goal locatives are generally considered to be among the potential exponents of the result state of complex events (see e.g., Beck and Snyder 2001). This is supported, for instance, by the fact that goal locatives and (other) resultative secondary predicates are generally mutually exclusive (e.g., Goldberg 1991; Levin and Rappaport Hovav 1995), see (21a) (from Goldberg 1991: 368). Resultative secondary predicates are also in complementary distribution with one another, see (21b) (from Goldberg 1991: 370), as are goal locatives (of disjoint reference), see (21c).

(21) a. *Sam kicked Bill [black and blue] [out of the room]
  b. *She kicked him [bloody] [dead]

c. *He ran [into the kitchen] [into the garden]

Furthermore, adding a result state to an activity predicate can turn the predicate into an accomplishment (22a), and the same is true of the addition of a goal PP (22b) (Tenny 1994). The conceptual similarity between resultatives and goal PP constructions in terms of involving a transition (change of state/location) was pointed out as early as Gruber (1965), and the telicizing role of both has been analyzed by Dowty (1979) as being due to the boundedness incurred by the result state (contributed, among others, by adjectival predicates or goal PPs).

(22) a.   He hammered the metal *(flat) in an hour
     b.   He pushed the cart *(to the wall) in an hour

On the syntactic side, at least since Stowell (1983), Hoekstra (1984, 1988) and Kayne (1985), a leading syntactic analysis of resultative constructions is essentially a Small Clause (SC) analysis, where the Small Clause is a complement to the verb, and the result phrase itself is a Small Clause predicate (see e.g., Ramchand 2008 and den Dikken 2006 for recent accounts, and references).[25] The Small Clause analysis of resultatives applies – by definition – to result goal PP locatives, as in (20c) above. On the more radical view that goal PPs are resultative predicates across the board (i.e., including cases like (22b)), goal PPs are analyzed as Small Clause predicates more generally. On such an account, the complementarity of resultative predicates and goal PPs would then also be made to follow from the fact that they 'compete' for the same (unique) syntactic position.

 This, then, extends to goal verbal particles (see Ramchand and Svenonius 2002). That goal particles are raised to the "incorporated" VM position from a resultative secondary predicate position squares well with the general account of verbal particles in Hungarian laid out in É. Kiss (2005, 2006a, d): ordinary resultative secondary predicates are normally raised to the VM position in neutral sentences. É. Kiss (2005, 2006a, d) proposes to analyze all verbal particles in this language (which normally appear in the VM slot in neutral perfective sentences, see Section 1) as invariably being secondary predicates, predicating of the theme argument of the verb. This is a generalization of familiar accounts of (esp. Germanic) verbal particle constructions in terms of resultative secondary predication (see Kayne 1985; Hoekstra 1988, 1992; see also Winkler 1997 for further references).

However, as it turns out, not all goal PPs are necessarily and universally result phrases, and collapsing goal PPs with resultative predicates is much too simplistic. First, languages differ parametrically with respect to whether or not they permit resultatives. Romance languages, Russian, Arabic, Hebrew, Greek and Hindi-Urdu, among others, do not. This group of languages are not without goal PPs, nevertheless. Their goal PPs, however, cannot appear in the position of a result predicate within a Small Clause, assuming that in these languages the resultative construction is simply unavailable. In fact, Snyder and Beck (2001) point out that bounded goal PPs can turn an activity into an accomplishment only in languages that permit resultatives (see also McIntyre 2004 for the correlation between the availability of directed motion with goal PPs and the availability of the resultative construction). This suggests that those bounded goal PPs that turn an activity into an accomplishment occupy a resultative position. Assuming that the semantics of the resultative construction involving a bounded goal locative as the resultative predicate is uniform, regardless of the choice of goal PP (which is the null hypothesis), it follows that bounded goal locatives that do not yield an accomplishment (i.e., all goal PPs in the above language group) are not in a resultative predicate position.[26]

Such goal PPs may leave the VP atelic (denoting a direction (Jackendoff 1983), a type of unbounded path (Jackendoff 1991)), or they may telicize the VP. Note that resultativity involving an end state/location (by its very nature) entails telicity (for instance, see Dowty 1979; Ramchand 2004), but the reverse does not hold: telicity of a predicate does not entail the attainment of a result state represented in the event composition (contra Dowty 1979). Telicity merely requires a homomorphic mapping between the event and some scale that "measures out" (Tenny 1994) the event (e.g., a scale projected from a path) (see Krifka 1998; Beavers to appear). If the scale is not bounded (as with partial paths excluding the endpoint, viz. goal PPs interpreted as direction, e.g. *towards the castle*), the predicate is not telicized.[27]

Goal locatives that telicize the VP can even be generated in an ordinary adjunct position. This is evidenced, for instance, by auxiliary selection in Italian. The auxiliary that goes with atelic–intransitive predicates in Italian (*avere*) can co-occur with (bounded) goal PPs, which must then be telicizing such activity VPs at a relatively high structural point, as an adjunct (see Folli and Ramchand 2005).[28]

The two conclusions to draw from this discussion are: (i) goal PPs, as opposed to resultative predicates, do not always telicize, hence they

17

cannot uniformly be resultative predicates, and (ii) telicization by a goal PP does not imply that the goal PP is a resultative predicate.

These dissociations suggest that the complementary distribution of result states and goal PPs, illustrated above, cannot be motivated syntactically. The reasons for the complementarity effect, if real, must then be semantic or pragmatic, in the spirit of Tenny's (1987, 1994) Single Delimiting Constraint (for a re-formulation, see Filip (2003: 63)), or Goldberg's (1991) Unique Path Constraint, based on a metaphorical, abstract goal of motion interpretation of resultative predicates (see also Gruber (1965), Jackendoff (1996) and Krifka (1998), a. o., for the same basic approach). Importantly, however, the complementarity effect is far from total. Lupsa (2004) reports that (21a) is acceptable for four out of her five informants, and she adds further examples where a result predicate co-occurs with a goal PP (Lupsa 2003, 2004); see (23a) below. Her examples are analogous to (23b), which involves a measure phrase (rendering the event telic), as well as a goal PP. Another case of a result predicate co-occurring with a goal PP is represented by sentences where instead of the goal PP it is the result state predicate that functions as an adjunct (see Levin and Rappaport Hovav 1995; Horrocks and Stavrou 2003; Lupsa 2003; and Iwata 2006). Such constructions can be divided into two subtypes, dubbed "weak" and "spurious" resultatives by Washio (1997) and exemplified by (24a) and (24b), respectively (from Iwata 2006). "Weak" resultative predicates further specify a component of the lexical meaning of the verb, while "spurious" resultative predicates are essentially adverbial in nature and can typically be paraphrased using a corresponding adverb (tightly in the case of (24b)); see Kratzer (2005).

(23) a. She ran herself ragged to the store
     b. I ran a mile to the store

(24) a. He screamed as the bonnet fell shut on his fingers
     b. She tied the tourniquet tight around her upper arm

A third conclusion, emerging from these observations (and further corroborated by the Italian auxiliary selection data cited above), is that (iii) both goal locatives and resultative predicates may function as an adjunct.

Whether goal locative complements exist alongside resultative predicate goal PPs (and adjunct goal PPs) is a question that is especially difficult to settle conclusively, given that the syntactic positions, and "argument structural" and aspectual (viz. telicizing) functions of the two

alternatives are either identical, or extremely difficult to tease apart. For instance, verbs of motion that lexically require a goal locative can easily be analyzed as being complemented by a resultative Small Clause with a goal locative in its predicate position. Much, if not all, depends on the specific view one adopts regarding what it takes for a construction to be resultative. According to Parsons (1990), Kratzer (1995), and Rothstein (2001) (a.o.), secondary predicate adjectives and PPs introduce eventuality arguments. On a widespread conception of resultatives, also adopted here, one of their defining properties is that they uniformly involve a complex event structure made up of (at least) two subevents e_1 and e_2, where e_2 is an end state within the complex event.[29] This is a crucial distinctive property that will be exploited in the discussion of what argument structural status incorporated goal locative particles can or cannot have.

3.3 Targets of goal locative particle incorporation

I will now demonstrate that Hungarian locative particle incorporation can apply whether or not the locative particle is a resultative predicate, and whether it is a complement or it is an adjunct of the verb.

(i) It is characteristic of resultative predicates, in line with generalizations in the vein of the Argument-Per-Subevent Condition in (18) above, that they introduce their own argument when combining with an unergative verb (see (25), from Zeller (2001); as well as (19) and (20b,c) above).

(25) a. *Peter   spülte   (*das Fett)*
      P-nom washed the grease-acc
  b. *Peter   spülte   *(das Fett)   ab*
      P-nom washed the grease-acc   off

When augmenting a transitive verb with an optional implicit argument (like *read*), the argument cannot be left implicit in resultative particle constructions of the Germanic type, but must be syntactically realized; see (26).

(26) a. John read (the passage)
  b. John read *(the passage) out

Optional implicit arguments are not forced to overtly appear in examples of the locative incorporation construction in Hungarian (LIC, for short), see (27b,d). This suggests that in these examples the goal locatives do not

function as secondary predicates. This property is not limited to the particle locative incorporation construction (Prt-LIC), but is exhibited in the lexical locative incorporation construction (Lex-LIC) as well, see (27d'). Lex-LIC is an alternant of Prt-LIC, where, in the absence of a locative particle, a lexical locative phrase is "incorporated" to the VM position (more on this alternation in Section 4 below). As the locative particles / lexical locative phrases at hand are clearly not selected, it is safe to conclude that the goal locative particles in these examples originate as adjuncts.

(27) a. *János   írt   (valamit)*
          J-nom   wrote   something-acc
      b. *János   hozzá   írt   (valamit)   (a cikkhez)*
          J-nom   to.it   wrote   something-acc (the article-to)
          'John wrote (something) to the article.'
      c. *János   énekelt (valamit)*
          J-nom   sang   something-acc
      d. *János   rá   énekelt (valamit)   (a rögzítőre)*
          J-nom   onto.it   sang   something-acc (the answerphone-onto)
          'John sang (something) on the answerphone.'
      d'. *János   a rögzítőre   énekelt   (valamit)*
          J-nom   the answerphone-to sang   (something)

That this pattern is not related to some property of these verbs is evidenced by the fact that it is not exhibited by the very same verbs when they combine with some other particles:

(28) a. *János   fel   írt   *(valamit)*
          J.-nom up   wrote   something-acc
          'John wrote something down.'
      b. *János   el   énekelt *(valamit)*
          J.-nom away   sang   something
          'John sang something.'

Particles that require the presence of a noun phrase are, then, generated as resultative secondary predicates:

(29) a. *János   pakolt (valamit)*
          J.-nom packed something-acc
      b. *János   bele   pakolt *(valamit)   (a bőröndbe)*
          J.-nom into.it   packed   something-acc the suitcase-into

(ii) A second condition concerns the actual entailment of the final state itself. In the case of telic predicates of perfective sentences, reaching the endstate is strictly entailed in a resultative construction, while this is not necessarily so otherwise. Consider the following examples:

(30) a. *Mari   hozzá   vágta   az esernyőt   (a falhoz)*
         M-nom to.it   fling-past-3sg the umbrella-acc (the wall-to)
         'Mary flung the umbrella at the wall.'
     b. *János   rá   lőtte   a nyilat   (a fatörzsre)*
         J-nom onto.it shot-3sg   the arrow-acc   (the tree.trunk-onto)
         'John shot the arrow at the bird.'

While (30a) cannot be continued with "but the umbrella did not hit the wall," (30b) can be extended naturally by "but the arrow did not hit the tree trunk." Although this is no evidence that (30a) involves a resultative construction (as the entailment may also be of lexical semantic or of pragmatic origin), it does confirm that the goal PP in (30b) is not a resultative secondary predicate. On account of the selectional relation between the verb (*lő* 'shoot') and the choice of the P head (*–ra* 'onto') the goal locative particle must be generated as a(n optional) complement.[30]
    Not only the goal particle can be a complement: the same is available to lexical goal locatives in the Lex-LIC as well. For instance, while (31a) can be continued with "but no one has seen him since," reaching the goal is implicated in some other examples of the Lex-LIC, as in (31b).

(31) a. *János tegnap   reggel   a munkahelyére   ment*
         J-nom yesterday morning   the workplace-onto went-3sg
         'John went to his workplace yesterday morning.'
     b. *Mari   a falhoz   vágta   az esernyőt*   (cf. (30a))
         M-nom the wall-to fling-past-3sg the umbrella-acc
         'Mary flung the umbrella at the wall.'

    (iii) In a resultative construction, the (predicate-external) subject of the Small Clause should be non-transparent to subextraction.[31] (32a) exemplifies the degradation in acceptability due to subextraction from an ordinary Small Clause subject (see Kayne 1984), and (32b) does the same for a resultative Small Clause. Crucially, then, (33a) apparently involves subextraction from a resultative Small Clause subject. It can be inferred that the goal particle in (33a) originates as the predicate of this Small

Clause. Compare the degradedness of (33b), which involves subextraction from an external argument subject. Subextraction from (external) subjects sharply contrasts with (34), where the accusative noun phrase in the Prt-LIC is a plain complement, from which subextraction is permitted[32] (internal argument subjects pattern with complements).

(32) a. ??Which politician do you consider [a photo of __] unattractive?
    b. ??Which politician did they boo [an imitator of __] off the stage?

(33) a. ?*_Melyik politikussal fogsz bele könyörögni_
        which politician-with will-2sg into.it beg-inf
        _[egy interjút __] (a kötetbe)?_
        an interview-acc (the volume-into)
        '*Which politician are you gonna beg an interview with
        into the volume?'
    b. *_Melyik politikussal okozott [egy interjú __] nagy botrányt?_
        which politician-with caused an interview big scandal-acc
        '*Which politician did an interview with cause a big scandal?'

(34) (?)_Melyik politikussal fogsz rá tenni_
        which politician-with will-2sg onto.it put-inf
        _[egy interjút __] (a honlapodra)?_
        an interview-acc the homepage-poss2sg-onto
        'Which politician are you going to place an interview with
        on your homepage?'

    (iv) A classic test that event decompositionalists use to detect a result or endstate subevent is selective modification by adverbial elements. One such adverbial with a by now respectable career is the adverb _again_. _Again_ is known to have a repetitive and a restitutive reading, where the latter refers to the case of a complex event, of which _again_ selectively modifies the result or endstate subevent (see von Stechow 1995, 1996).[33] Consider the contrast in (35) below, where _újra_ 'again' is applied first to an unaccusative predicate and then to an unergative predicate, both in the Prt-LIC. (36) exemplifies a parallel contrast in the Lex-LIC, employing a transitive verb in (36a) and an unergative in (36b) (the bracketed text given above the examples provides a suitable context for a restitutive reading).[34]

(35) (The dog was hidden into a pit. It climbed out, and then…)
    a. _Bele zuhant újra a gödörbe_ (repetitive/restitutive)

into.it fell-3sg again   the pit-into
'It fell into the pit again.'
  b. *Bele ugrott   újra a gödörbe*   (repetitive/#restitutive)
     into.it jumped-3sg   again the pit-into
     'It jumped into the pit again.'

(36) (John took the lift upstairs, and he came down. The lift then broke
     down. As he was called for by his boss, …)
     a. *János az emeletre   vonszolta magát   újra*
       J-nom the upstairs-onto dragged-3sg himself-acc again
       'John dragged/walked himself upstairs again.'
       (repetitive /restitutive)
     b. *János az emeletre   szaladt   újra*
       J-nom the upstairs-onto ran-3sg   again
       'John ran upstairs again.'
       (repetitive/#restitutive)

As these examples show, while the restitutive reading is available for the unaccusative and for the transitive verb in both construction subtypes, it remains inaccessible to unergative verbs, again in both constructions. Assuming that these judgments can be generalized, the facts follow insofar as the resultative construction is obeys the generalization that has come to be called the Direct Object Restriction (Simpson 1983, Levin and Rappaport-Hovav 1995: 34):

(37) *Direct Object Restriction (DOR)*
    A resultative phrase may be predicated of the immediately postverbal
    NP, but may not be predicated of a subject or an oblique complement.

Subjects of unergatives are base-generated as external arguments, and hence cannot serve as subjects of resultative secondary predicates, according to the DOR. (35b) and (36b) cannot have a resultative structure, whence no result- or endstate for *again* to restore. The unaccusative underlying object and the transitive object in (35a) and (36a), respectively, are possible subjects to be predicated of in resultative predication, as far as the DOR is concerned. At least in (35a) and (36a), it appears, this option is realized.

    Different verb subclasses within the same general class behave differently in the Prt-LIC with regard to modification by *again*. For instance, the transitive verbs *köp* 'spit' and *tesz* 'put' are contrasted

minimally in (38a,b): while the latter seems to combine with a resultative substructure, the former resists such a construal. Just as in Italian the membership in the class of verbs of motion that directly embed a resultative substructure versus in the class that do not is, according to Folli (2002) and Folli and Ramchand (2005), a matter of idiosyncratic lexical specification, it is also apparently largely idiosyncratic in Hungarian.

(38) (The boy found a cherry pit on a plate. He put it in his mouth, and…)
    a. *Rá   köpte   a meggymagot   újra a tányérra*
       onto.it spit-past-3sg the cherry-pit-acc again the plate-onto
       'He spit the cherry pit onto the plate again.'
       (repetitive/#restitutive)
    b. *Rátette a meggymagot   újra a tányérra*
       onto.it the cherry-pit-acc again the plate-onto
       'He put the cherry pit (back) onto the plate again.'
       (repetitive/restitutive)

Since *köp* 'spit' does not license a resultative Small Clause, and given that it does not select a goal locative lexically, it can be inferred that the goal PP in (38a) must be an adjunct.[35]
     (v) That the locative element to be moved into VM can be a base-generated complement is corroborated by examples of incorporated stative locative particles:

(39) a. *Nála alszik   Marinál   néha*
      by.her sleep-3sg M-by   sometimes
    a'. *Marinál alszik   néha*
      M-by   sleep-3sg sometimes
      'He sometimes sleeps at Mary's place.'
    b. Rajta állt az érmén, de nem vette   észre
      on.it stood-3sg the coin-on   butnottook-3sg mind-onto
    b'. Az érmén állt,   de nem vette   észre
      the coin-on stood-3sg butnottook-3sg mind-onto
      'He was standing right on the coin, but he didn't realize that.'
    c. Vele   élt   Marival öt évig
      with.her   lived-3sg M-with five year-for
    c'. Marival   élt   öt évig
      M-with   lived-3sg five year-for
      'He lived with Mary for five years.'

The stative locative particles above cannot be construed as resultative secondary predicates, as the predicates in (39) are all interpreted as atelic (recall the assumption made above that resultatives must turn activity verbs into telic accomplishments).

We can draw the following main conclusions from the results of the tests in this subsection. First, in both versions of the LIC in Hungarian (Prt-LIC and Lex-LIC) the goal locative element moved to the VM position can be generated as a resultative secondary predicate. Second, this movement is not limited to resultative secondary predicates, but can also involve direct modifiers of the verb. And third, among direct modifiers of the verb, not only complements, but also adjuncts can be raised to the "incorporated" position. Note that the fact that adjunct locative particles can also be "incorporated" into the VM position strongly argues against a head-movement analysis of particle incorporation in Hungarian, and instead favors an XP-movement account.[36] Apparently, no special syntactic restrictions need to be added over and above the general c-command condition on the XP-movement to the VM position in the schematic structure proposed in (17) in Section 2.4 above that would limit this movement to elements belonging to a specific subclass of functions/positions.

Having mapped the elementary syntax of the locative particle incorporation construction, in the next section we take up the issue of the semantic interpretation of "incorporated" locative particles.

4. Semantic incorporation of locatives

4.1 Generalizing semantic incorporation

I argue in this section that the interpretation of incorporated locative particles is closely related to their syntactic movement to the (low) VM position. Recall that – following a large body of literature on Hungarian – I have been assuming that the individual subclasses of elements collectively referred to as 'verbal modifiers' occupy one and the same position (see Section 2.1). A prominent view of one subclass of VMs, namely, pseudo-incorporated bare nominals is that they are semantically incorporated into the verb (e.g., Farkas and de Swart 2003; Bende-Farkas 2002). Farkas and de Swart (2003) (F&S) argue that not only is a bare nominal in the VM position semantically incorporated, but a bare nominal can only appear in the VM position. Accordingly, F&S suggest that the interpretive rule of semantic incorporation is tied to the VM position in Hungarian, the reason why full DPs are uninterpretable (hence, unavailable) in this position.

Developing this view of the distribution of nominals in the language, I would like to propose that adpositional locative particles and lexical locatives that occupy the VM position – more specifically, the low, intermediate VM position – are interpreted as semantically incorporated. I tentatively assume that an even stronger generalization holds: any element in the low VM position is interpreted as semantically incorporated into the verbal predicate.[37] Semantic incorporation at the *v*P-internal VM position [Spec,PredP] is the syntax-semantics interface 'tool' that this language uses to form "complex predicates" in the syntax.[38]

A popular view of semantically incorporated singular bare nominals is that they introduce a predicative restriction (a property), but no discourse referent. Both F&S and Chung and Ladusaw (2004) propose that semantic incorporation involves a special mode of semantic composition. This is Unification in F&S's DRT-based model (see Bende-Farkas 2002 for another unification-based account), and Restrict in Chung and Ladusaw's type-theoretical analysis. For ease of exposition, here I employ this latter, type-theoretical formalism. Restrict (similarly to F&S's unification) applies only to predicative elements (following F&S, I will assume that this mode of composition is tied to the (lower) VM position).[39] (40) is an abstract example of how Restrict composes a transitive verb with a bare nominal object: via predicate conjunction, identifying the argument of the common noun with an argument of the verb.

(40) *Restrict* $(\lambda y \lambda x[V'(y)(x)], \lambda z[NP'(z)]) \rightarrow$
$\lambda y \lambda x [V'(y)(x) \& \lambda z[NP'(z)](y)] = \lambda y \lambda x [V'(y)(x) \& NP'(y)]$

At the heart of this treatment is the property of Restrict that it composes a predicate with an argument without saturating the relevant argument position of the verb (Unification is similar in this regard). In the simplest case, the argument variable is existentially closed.

Assuming such an approach to semantic incorporation, what does it mean for a locative expression to be semantically incorporated into the verbal predicate? The crucial point is that the mode of composition involved in semantic incorporation must be applicable independently, to a certain degree, of the precise type of the elements involved. Just as the verb involved in the operation may be unaccusative (*e,t*) or transitive (*e,(e,t)*), the argument it composes with may also be of different types: the crucial property of the argument in semantic incorporation is that it is interpreted as a predicate. A common noun is a predicate of individuals. I suggest that

the adpositional particle is also interpreted as a predicate in the (low) VM position, viz. as a predicate of paths.

Let us look at a simple example to see how this can be implemented. Assume that the head of the adpositional particle *hozzá* 'to her/him/it' (namely, *-hoz*) is interpreted as a relation between paths and individuals given in (41a), where ES is a function that assigns each physical entity its location in space (its eigenspace), and AT and TO are spatial functions (see Zwarts and Winter 2000). Specifically, TO is a relation between a place and paths (that lead to the place). The third person pronoun *pro* in the particle contributes a type *e* individual, whose value – to keep the example simple – is determined by the discourse context to be *j* (=John). The interpretation of the particle *hozzá* is then a predicate of paths, as given in (41b). The verb of motion *megy* 'go' is represented as a predicate with two arguments: a subject and a path (following Krifka (1998: 224ff), for simplicity's sake, in assuming that all motion verbs have a semantic path argument; I ignore event arguments here). (42b) shows the application of Restrict to the particle in (41b) and the verb in (41c), which is what happens when the former composes with the latter, as in (42a): Restrict conjoins the two predicates, and identifies the path argument of TO with the path argument of *go′*.

(41) a. [[[$_P$ -hoz]]] = λyλπ[TO(AT(ES(y)), π)]
 b. [[[$_{PP}$ *pro* hozzá]]] = λπ[TO(AT(ES(j)), π)]
 c. [[megy]] = λπ′λx[go′(π′)(x)]

(42) a. *hozzá   megy*
  to.him   goes
 b. *Restrict* (λπ′λx[go′(π′)(x)], λπ[TO(AT(ES(j)), π)]) →
  λπ′λx[go′(π′)(x) & λπ[TO(AT(ES(j)), π)](π′)] =
  λπ′λx[go′(π′)(x) & TO(AT(ES(j)), π′)]
 c. *Jánoshoz   megy*
  John-to   goes

As this example illustrates, semantic incorporation of locative particles works in much the same way as semantic incorporation of singular bare nominals: the locative particle is interpreted as a predicate that is conjoined with the verbal predicate, the former restricting a variable within the latter. The interpretation is the same if instead of a locative particle, it is a lexical locative that appears in the (low) VM position, as in (42c).

This analysis can, in principle, be extended to any element occupying the (low) VM position.[40] The idea, then, is that the (low) VM position is targeted by predicative elements in order to be interpreted in this position via semantic incorporation. This conception is similar to a lexicalist "complex predicate" view of VM+V combinations, as well as to the view of VM elements expressed in É. Kiss (2005, 2006a, d), who describes them as being predicative, bearing a [+pred] feature to be checked in the VM position. In difference to the latter view, on the present account movement to the (low) VM position is not driven by checking of a formal feature, but rather by the need for the predicative VM element to be interpretable (which is achieved through semantic incorporation).[41]

4.2. Evidence for semantic incorporation of pseudo-incorporated locatives

Let us turn now to some support for the claim that the locative element in the VM position is semantically incorporated. Strong quantifiers are known to be excluded from semantic incorporation (they are not interpreted as predicates). Indeed, they are unable to appear in the VM position as locatives (or as any other PPs or suffixed DPs), see (43a). Note that the locative P may take a definite DP (headed by a definite article, or by a proper name) as its Ground argument (see (43b), and (31b) above). This is because this DP Ground argument can reduce to (the eigenspace of) an individual as an argument of P (more precisely, as an argument of the Place adposition translated in (41a) above as AT). This is not available to a strong quantifier, which, by contrast, eventually turns the whole PP into a strong quantifier.

(43) a. *Mari mindenhez   vágta   az esernyőt   (cf. (31b))*
      M-nom everything-to fling-past-3sg the umbrella-acc
      'Mary flung the umbrella at everything.'
   b. *Mari   a fiúhoz / Jánoshoz vágta   az esernyőt*
      M-nom the boy-to J-to   fling-past-3sg the umbrella-acc
      'Mary flung the umbrella at the boy/ at John.'

Second, locative PPs in the (low) VM position can contain a bare nominal as the Ground. That this is not simply because such phrases are in fact suffixed nominals (contrary to what was argued in Section 2 above) rather than true PPs, is suggested by the fact that non-suffixal, morphologically free locative adpositions (illustrated in (3) above) behave the same way, see (44a). Third, incorporated locative PPs cannot have wide scope, but must

have narrowest scope, just like incorporated bare nominals. For instance, (44a) below, containing a negation (which attracts the verb from behind the VM, cf. (6)) as well as a deontic modal suffix on the verb, can mean neither that 'There is a wall such that it is not the case that I can fling the umbrella at it,' nor that 'It is not the case that there is a wall such that I can fling the umbrella at it.' The existential scope of the PP is narrowest. The same is apparently true of PPs that contain a singular indefinite headed by an indefinite article: when such an indefinite in the VM position is interpreted as semantically incorporated, it must also take narrowest scope (see (44c)).[42]

(44) a. *János   munka után   nézett*
        J-nom   work after   look-past-3sg
        'John looked for work.'
     b. *Nem   vághatom   falhoz   az esernyőt*
        not   fling-poss-1sg wall-to   the umbrella-acc
        'I'm not gonna fling the umbrella at a wall.'
     c. *Nem   akarom   (egy) szerelőre   bízni   a munkát*
        not   want-1sg (a) plumber-onto trust-inf   the job-acc
        'I don't want to get a plumber to do the job.'

Finally, Ground nominals inside PPs in the VM position are number neutral, in the same way as incorporated bare nominals, see (45a). As a consequence of the number neutrality of incorporated locatives, the lexical locative 'associate' phrase optionally co-occurring with an incorporated singular locative particle (cf. Section 2.1) can be either singular or plural. The latter case is illustrated in (45b).

(45) a. *Bélyegre   cseréltem   az akváriumot*
        stamp-onto   exchanged-1sg   the fishtank-acc
        'I swapped the fishtank for stamps.'
     b. *János   **hozzá** érintett   egy műszert   a vezetékekhez*
        John   to.**it** touched-3SG an instrument-ACC the wire-**pl**-to
        'John touched an instrument to the wires.'

In this section I have provided support for the claim that locative elements appearing in the VM position are interpreted as semantically incorporated, similarly to bare nominals. This required a generalized notion of semantic incorporation, which can be coarsely defined as predicate conjunction concurrent with variable co-identification. This generalized

rule of interpretation can potentially apply to syntactically complex predicates, which is precisely what is required on the syntactic analysis of the locative incorporation construction presented in Section 2 above (esp. Section 2.3), according to which "incorporation" in the VM position involves the syntactic composition of a VM element with a complex verbal constituent subsuming VP (see also Note 40).

Before concluding this section, let us briefly come back to the doubling construction illustrated in (45b). The very fact that a lexical associate is available for the preverbal locative particle may be interpreted as further evidence that the particle is semantically incorporated. This is because, as noted above, semantic incorporation itself does not eliminate the relevant argument variable of the verbal predicate, hence the valence of the verbal predicate remains unaltered. Polysynthetic languages make regular use of this option, doubling their internal argument incorporee by a (more specific) adjunct nominal, as illustrated below from Caddo (this is Mithun's (1984) "classificatory" type of incorporation; see also Rosen (1989)).

(46) *kassi' háh-'ič'á-sswí-sa'*   (Mithun 1984)
     bead   prog-eye-string-Prog
     'She is stringing beads.'

Appearances notwithstanding, the syntax of Hungarian locative doubling construction, as I argue in the next section, is different from that of classificatory incorporation. In the remainder of the paper, I sketch a syntactic analysis of the relation between incorporated locative particles and their lexical associates.

5. Locative doubling at the syntax/PF interface

5.1 Differences from classificatory incorporation

Let us briefly take stock of the properties that make the Hungarian locative doubling construction appear to be analogous to classificatory incorporation. A central characteristic feature of the locative doubling construction in Hungarian analyzed in the foregoing sections and the classificatory incorporation construction is that they both involve the syntactic "incorporation" of some element (even though "incorporation" is pseudo-incorporation in Hungarian), which is interpreted as semantically incorporated. Another property that locative doubling and classificatory incorporation share is that an 'associate' phrase may optionally appear. A

further common feature is that the associate is a semantic argument (see Chung and Ladusaw 2004), and it is related to the same argument slot as the incorporated element: if this were not the case, uninterpretability would ensue (furthermore, in goal locative doubling, the event would inconsistently be doubly delimited). In both constructions the associate is semantically more specific than the incorporated element ('bead' in (46) is more specific than 'eye,' which stands for 'small, round object'; 'to the wire' in (2a) is more specific than 'to it'). Beyond this point, however, no shared properties are observed.

First, classificatory incorporation in polysynthetic languages allows feature mismatches (Baker 1995: 121–132). As for adposition incorporation, incorporated adpositions are often morphologically distinct from adpositions heading non-incorporated lexical modifier phrases (Baker 1988: 236ff). In locative doubling of adpositional phrases in Hungarian, the adposition heading the incorporated particle must be morphologically identical with the adposition heading the lexical associate, as illustrated below.

(47) a. Hozzá érintettem   a műszert   a vezetékhez/*-re/*-be
           to.it   touched-1sg the instrument-acc the wire-to/*-onto/*-into
      b. Neki   ütköztem   a falnak/*-ba/*-hoz
          against.it bumped-1sg the wall-against/*-into/*-to

Second, classificatory incorporation typically involves incorporation of nouns. Doubling in Hungarian is unavailable for incorporated nouns. If doubling of adpositional phrases were analyzed as classificatory incorporation, it would remain unclear why nouns cannot participate in the same construction.[43]

Third, Chung and Ladusaw (2004) argue that the associate phrase involved in classificatory incorporation is a syntactic adjunct. Let us consider subextraction facts in order to test whether the same is true of lexical associates of incorporated locative particles in Hungarian. If the lexical associate is an adjunct, subextraction from it is predicted to be unacceptable. This is borne out in some cases, such as (47a). However, in some other cases, subextraction appears to be licensed (see (47b) and (47c)). Some lexical associates are adjuncts, but this is not uniformly the case, contrary to the prediction of a classificatory incorporation analysis.

(47) a. *Melyik politikussal akarsz érte menni
           which politician-with want-2sg for.it go-inf

a könyvtárba   [egy interjúért __]?
the library-into an interview-for
'*Which politician do you want to go to the library for
an interview with?'

b. ^(?)Melyik politikussal akarsz bele szőni
   which politician-with want-2sg into.it weave-inf
   valami meglepőt   [egy interjúba __]?
   something surprising-acc an interview-into
   'Which politician do you want to smuggle something surprising
   into an interview with?'

c. Melyik politikussal akarsz bele kezdeni
   which politician-with want-2sg into.it begin-inf
   [egy hosszabb interjúba __]?
   a long interview-into
   'Which politician do you want to start a long interview with?'

We have reasons to conclude, then, that the structure of doubling in the adpositional locative particle incorporation construction cannot generally be analyzed as doubling by an adjunct.

5.2 The structure of locative particle doubling in Hungarian

Given the syntactic analysis of incorporation in Hungarian presented in Section 2 in terms of phrasal movement, an alternative is to assume that the particle and the lexical associate are generated as a single constituent, from which the particle gets extracted to the VM position. A stranding account of this extraction involves subextraction from the base-generated constituent. The subextracted constituent may then be a complement of some functional head, as in some prominent stranding approaches to Q-float, clitic doubling, or resumption, or a specifier of some extended projection of the adposition. The immediate difficulty for such an account is the fact that the particle itself is apparently the exponent of a full-fledged PP matching the associate PP: it has a *pro* possessor as its Ground, and it is headed by the very same P head as its lexical associate. A further problem is that, as demonstrated in the preceding subsection, some lexical associates are adjuncts, from which subextraction should be impossible. I will therefore propose a different syntactic analysis, one in which the particle and its lexical associate derive from a single constituent, which the particle is related to by movement, but crucially, not by subextraction. This is possible if the particle is analyzed as a reduced copy of the lexical locative itself. This approach will be briefly elaborated briefly below.

By way of contrast, an analysis in terms of phrasal subextraction is in fact plausible for a different locative particle construction where the incorporated particle is associated with a lexical PP, illustrated in (48a–b).[44] The adverbial particles of this construction may be located in a specifier of a functional projection above PathP dominating the directional P and its Ground (for PathP, see Koopman (2000)), as Svenonius (to appear) suggests for English (Svenonius places them in the specifier of a deixis phrase); see (49a). One may take these particles to further restrict the denotation of the lexical locatives by locating the spatial entity they denote with regard to some deictic or logophoric spatial entity accessible in the discourse. It seems equally possible, however, to construe the particles themselves as being 'further specified' (i.e., denotationally restrict) by the lexical locatives, as in classificatory incorporation, or in the case of the doubling of adpositional particles. Syntactically, then, the lexical locative may be analyzed as an adjunct to the particle, where the latter would correspond to the core adpositional phrase (a PathP), see (49b). This would also explain why it is the particle that undergoes incorporation, rather than the lexical locative: the latter is only a modifier of the former, which is the core PP. The same fact is less natural on (49a), where it is apparently accidental that it is a functional specifier of the PP that undergoes "incorporation" to the VM position. The analysis in (49b), in contrast to (49a), is also able to explain why adpositional locative particle incorporation is unavailable in the presence of an adverbial particle, as attested by (48d). This falls out if closeness is relevant to "incorporation" to the VM position. The large PathP in (49b) is closer to the VM position than the adjunct of the contained PathP. If this larger PathP is attracted, then what enters a movement dependency is a PP ultimately projected from the particle *le* 'down.' This particle is adverbial and not adpositional, hence it cannot induce the doubling movement pattern that would give rise to a reduced adpositonal PP in the VM position.[45]

(48) a. *Le   tette   a könyvet (az asztalra)*
        down   put-past-3sg   the book-acc the table-onto
        'He put down the book (on the table)."
     b. *El   ment   (a boltba)*
        away   went-3sg   the shop-into
        'He went to the shop.'[46]
     c. *Az asztalra   tette   a könyvet   (*le)*   (cf. (48a))
        the table-onto put-past-3sg   the book-acc down
     d. **Rá   tette   le   az asztalra   a könyvet*

onto.it   put-past-3sg down the table-onto the book-acc

(49) a. [_{DeixP} down Deix [_{PathP} the table-onto]]
    b. [_{PathP} [the table-onto] [_{PathP} down]]

On either account ((49a) or (49b)), incorporation of the particle is subextraction from a complex PP.

    Returning now to doubling in adpositional locative particle incorporation, I propose that instead of involving subextraction, it is derived by applying movement to the lexical locative phrase itself. At the PF interface, the link of the resulting chain in the VM position is phonologically interpreted as a reduced copy of the lexical locative PP, while the base occurrence is pronounced in full. On this view the construction is yet another case of a movement chain with more than one overt occurrence (see, among others, Pesetsky 1998; Hornstein 2000; Fanselow and Cavar 2000, 2002; Richards 2001; Nunes 2001, 2004). The spell-out pattern of the chain formed by the particle in the VM position and the double in its base position is essentially similar to the pattern found in *wh*-scope-marking constructions that fall under McDaniel's (1989) "direct dependency" approach, where a reduced *wh*-phrase appears in the head position of a *wh*-chain (see Cheng 2000 for a recent reinterpretation of the "direct dependency" approach in terms of multiple overt links of a single chain).

    The (low) VM position is a strong position (i.e., Pred bears an EPP/OCC/Edge-feature), which is interpreted as instruction provided by syntax for the PF interface that the position must be filled by an overt category. As Landau (2007) argues, such a feature is satisfied if at least one element is spelled out within the phrase that is raised to the strong specifier position: the head of the category. One way of meeting this requirement is to spell out the whole category in the strong position, i.e., to apply ordinary overt category movement. Another way of satisfying the PF-requirement of the strong VM position is what is involved in the "light-headed" chain witnessed in clauses with an incorporated particle and a lexical associate. I assume that the spell-out pattern of the "light-headed" type of chains at issue is defined by a search for minimized overt pronunciation in the head link of the chain. This pushes for deleting everything else than the head of the PP in the head of the "incorporation" chain. Then, by the pressure to maximize deletion in the entire chain (up to Recoverability), deletion is ideally complementary in the two chain links, i.e. in the base position it is precisely and only the head of the PP that should not be spelled out.

The spell-out pattern exhibited in the incorporation chain at issue, departs from this ideal case of "light-headed" chain, however. The reason is essentially morphological: the adpositional head is suffixal, functioning as the exponent of Case. Due to this latter property, P cannot be deleted on its own in the base occurrence, as that would leave behind an un-Case-marked DP in the base position. On the other hand, in the VM position the suffixal P head cannot remain unsupported: deleting everything else but P would leave behind a stranded affix, leading to crash at PF. Recall from Section 2.1 that the actual form of "incorporated" particles testifies that the complement position of the P is realized as *pro*. On the assumption that the construction is a "light headed" chain as proposed here, this *pro* must be the result of the maximal degree of deletion of the complement that still satisfies the morphological requirement of the suffixal P that it should have a host. Namely, the lexical features of the possessor DP have been deleted, leaving behind the grammatical feature bundle of the category. Covert *pro* is precisely that: a DP with only grammatical features of person and number. The morphological realization of the PP in the VM position, assuming a Distributed Morphology framework, will be that of an adposition with a *pro* possessor. [47]

This account meshes well with the fact that although pronominal complements of suffixal Ps can be realized as overt pronouns in the language, this is impossible in the VM position:

(50) **Az orvos őhozzá érintett egy műszert*
   the doctor-nom he-to-poss3sg touched-3SG an instrument-ACC
   Jánoshoz
   John-to
   'The doctor touched an instrument to John.'

An overt pronoun would be more than what is minimally required to remain in the upper PP copy. [48]

Recall that what licenses the deletion of the privative plural feature too off the covert 3rd person *pro* complement of P in the VM position is the fact (noted in Section 4.2 above) that semantically incorporated (pro)nominal elements in the VM position are interpreted as number neutral. This is the reason why deletion of the privative plural feature off the 3rd person *pro* complement of P yields no number conflict when it co-occurs with a plural lexical associate. Grammatical features are not normally removed by deletion for spell-out purposes. Nevertheless here this additional option of deleting a grammatical (or formal) feature in the upper

copy is made available by semantic incorporation. Accordingly, a plural lexical associate can be associated with either a singular or a plural *pro* within the incorporated PP:[49]

(51) *Az orvos   hozzá(**juk**)   érintett   egy műszert*
      the doctor-nom *pro*-to-poss3sg**(pl)** touched-3sg an instrument-acc
      a gyerekekhez
      the child-**pl**-to
      'The doctor touched an instrument to the children.'

A distinct prediction of the proposed syntactic analysis of the construction is that the lexical associate can appear in any position that was identified as a possible base position of the incorporated locative particle in Section 3. Namely, it is predicted to be able to appear as an adjunct, as a complement, or as a resultative secondary predicate. As pointed out in the preceding subsection, (47a) exemplifies an adjunct lexical associate phrase, which resists subextraction. Complement locatives are expected to allow *wh*-movement out of them, which is what we find with the lexical locative associate in (47c) (that it is a complement is corroborated by the selectional relation holding between the verb and the P head of the lexical locative expression). As Moro (1997: 124) shows, subextraction from resultative secondary predicates is permitted:

(52) What did you wipe the table [clear of __]?

As (47b) above illustrates, resultative lexical locative associates of incorporated particles are indeed transparent to subextraction ('weave' in (47b) is used as an intransitive verb, hence it embeds an ECM/raising-type resultative Small Clause).[50]

6. Conclusion

In this paper I have argued for the following main claims. Pseudo-incorporation of locative particles in Hungarian involves phrasal movement to a position above VP and below *v*P, which I identified as the specifier of PredP. Particles are raised in a second movement step to a position outside *v*P, their final landing site in neutral clauses. The same syntactic derivation is available to lexical locative phrases. Locative particles and lexical locatives moved to [Spec,PredP] are semantically incorporated in that position. Locative elements, including goal locatives, may be raised here not only from a secondary predicate position (of a resultative Small Clause

complement), but also from complement and even from adjunct positions. Locative constructions involving a locative particle and a lexical locative associate phrase are of two varieties. In the case of adverbial locative particles, they involve subextraction from a constituent that initially contains both the lexical locative and the particle. In the case of suffixal adpositional locative particles, the particle and the lexical associate phrase are links in a "light-headed" movement chain, whose tail is spelled out in full and whose head link is realized at PF as an optimally reduced copy, corresponding to the adpositional particle itself.

The study of the syntax of locative particles has generally had its main empirical focus predominantly on Slavic and Germanic. The present paper is hoped to have provided a plausible syntactic analysis of the apparent incorporation of locative particles in Hungarian, a non-Indo-European language, seeking analogues and comparisons with the syntax of particles in Germanic and Slavic. In a broader perspective, the analysis offered here contributes both to the cross-linguistic investigation of the structure of particle constructions, and, from a different angle, to the comparative study of the syntax of phenomena generally discussed under the rubric of "incorporation."

Notes

[1] The set of "directional locatives" includes source and route (cf. Jackendoff 1983) locatives (e.g. *from the office*, and *through the forest*, respectively), as well as goal locatives, the chief concern of the present paper. Throughout this paper the general term "locative adverbial" is used as referring to the broader set including both directional and non-directional (stative) locatives (e.g. *in the room*). Note the unfortunate terminological inconsistencies in the general literature: the term "directional locative" is often used to refer to goal directional locatives, and the term "locative" is sometimes employed narrowly to designate stative locatives.

[2] Many authors do not discriminate (non-directional) locative adverbials from temporal, instrumental and other adjuncts, based on the ill-perceived observation that these adverbials are freely ordered with respect to each other (e.g. Ernst 2002; Haider 2000). Careful testing reveals, however, that these adverbials too are arranged hierarchically in basic structure (unaffected by focus-related movements) (e.g. Nilsen 1998; Cinque 2006, Ch. 6; Schweikert 2005).

[3] Indexed labels "FP" and "F" are meant to be neutral with respect to assumptions about the specific categories projected inside the layered verb phrase. In some head-movement analyses, unlike in (1a), the particle incorporates into (a head containing) the verb itself.

The head movement analysis of Germanic particle shift is, of course, not unrivalled. Among others, the other obvious transformational analysis of this positional alternation, namely one that involves movement of the DP around the particle, has also been advocated (e.g., den Dikken 1995; Collins and Baker 2006).

[4] The term "incorporation" is used here and throughout in a descriptive sense (without any implication of a particular structural analysis, such as Baker's (1988)), on account of the fact that in a 'neutral' clause (see Note 5 for the term) the particles at issue are strictly left-adjacent to the verb, with which they form a phonological word.

[5] The term 'neutral clause' stands for a clause that does not contain clausal negation, a narrow focus, or a *wh*-operator, which would fill the immediately preverbal slot. See É. Kiss (2002) for a detailed account of clausal word order in Hungarian, and for references.

[6] Functionally, the parallel between case affixes and adpositions seems sufficiently clear: loosely speaking, both mark "dependent nouns for the type of relationship they bear to their heads" (Blake 1994: 1, 7). Equally significant is the fact that case suffixes often derive historically from postpositions across languages, and this has been the case for adverbial suffixes in Hungarian too.

[7] Nominals in this position also bear case suffixes. Assuming that case is a property of noun phrases, rather than of (head-level) nominal lexical items, this further corroborates the phrasal status of the position.

[8] This is by no means entailed by the surface complementary destruction, and indeed, the alternative view has been also defended. Notably, Csirmaz (2004) argues that although all VMs may occupy the same preverbal phrasal position in a neutral clause, some VMs (including verbal particles) may also incorporate into the verb instead (by head movement), as an alternative.

Whether "operators" like focus or *wh*-phrases, which are known to be in complementary distribution with VMs in finite clauses, occupy the same syntactic position is a matter of debate (disregarding 'complex predicate' analyses, on which VM is generated as part of a complex verbal predicate). See, for instance, É. Kiss (1987, 1994, 2005) for the view that they do (cf. also É. Kiss 2002 for a slightly different implementation of this approach), and Piñón (1995) and É. Kiss (2006c) for the view that they don't.

[9] See Svenonius (2004) for tentative arguments that Slavic prefixes too are phrasal, and they surface in an immediately pre-verbal position by XP-movement.

[10] VM climbing to a superordinate clause does not qualify as evidence that the VM position is a derived position in contexts without VM climbing (pace É. Kiss 2002, Sect. 3.6).

[11] The remnant *v*P, vacated by the verb, cannot undergo syntactic topicalization or focusing. This is not exceptional behavior: such remnant *v*P fronting is ungrammatical also in languages, such as German or Hebrew, where partial *v*P-fronting is otherwise allowed: the head of a topicalized/focused (verbal) phrase

must generally be present overtly within the landing site position (see Landau 2007).

[12] Assuming a Small Clause based account of secondary predicates, as I do in this paper, the verb and the secondary predicate do not form a constituent on their own at the level of base structure. Embedded infinitival verbs, another type of VM, are also generated together with any arguments they have, rather than together with the superordinate verb that they end up left-adjacent to. VM-climbing constructions (see Koopman and Szabolcsi 2000) are a particularly striking case in point.

[13] Adverbial particles in sentences like (i), expressing motion away from a source location, intuitively, in fact denote a path (from a source location) to a goal location (in (i), the space outside the eigenspace of the cupboard), hence they are goal adverbials.

(i) *Ki   vette   a bögrét   (a szekrényből)*
    out(=PRT) took-3SG   the mug-ACC   (the cupboard-from)
    'He took out the mug from the cupboard.'

[14] Farkas and de Swart (2003) cite (i) to illustrate that agentive subjects can also be incorporated. The verb *sír* 'cry' is not evidently agentive (an agentive adverb like *deliberately* renders (i) unacceptable), but even putting that aside, speakers I consulted find (i) either downright impossible or degraded at best (unless the preverbal nominal is interpreted as focus, cf. Fn. 8). I find (i) degraded as a neutral sentence, marginally acceptable only on a reading paraphrasable as 'There was a child nearby, crying,' i.e., as having existence in a location as its main assertion. Accordingly, omission of the locative phrase from (i) results in clear ungrammaticality. The verb *sír* '*cry*' in this special use is analogous to Szabolcsi's (1986) 'bleached verbs,' whose descriptive content is "backgrounded." Significantly, agents of transitive and unergative verbs are plainly banned from the VM position, e.g. (ii).

(i) *Gyerek   sírt   a közelben*
    child-NOM cried-3SG   the vicinity-in
    'A child was crying nearby.'

(ii) **Gyerek   énekelt   egy dalt   a közelben*
    child-NOM   sang-3SG   a song-ACC   the vicinity-in
    'A child was singing a song nearby.'

[15] Recently, Surányi (2006) and É. Kiss (2008) have independently argued that, contrary to a received view of the syntax of the Hungarian predicate phrase (due to É. Kiss's prior work on the topic), external arguments are base-generated higher than internal arguments in Hungarian too.

[16] Hoekstra (1984) analyses directional PPs as a Small Clause complement to the verb (with the internal argument appearing as a Small Clause subject), while locative PPs as adjuncts to the intermediate projection of V.

[17] Note that it is by no means universal for source directionals to be excluded from incorporation. The example below is from Russian.

(i) *Ona   otbezhala   ot nego*

she-NOM   from-escape-PAST-FEM from he-GEN
'She escaped from him.'

If lexical prefixation in Russian is to be analyzed in terms of incorporation of the prefix by (head or phrasal) movement (see Svenonius (2004) and references therein), source locatives must be generated below the incorporation site in this language (i.e., when targeted by incorporation, the verb is in a higher position than in Hungarian). Source incorporation is cross-linguistically rather rare, however, compared to stative locative and goal incorporation (see Baker (1988: 240) for a Chichewa example), which relates to the relative height of source locatives in a VP-hierarchy (see Nam 2005; cf. also Ramchand 2008) (and in part, of course, to the general scarcity of complex natural predicates of a source+predicate conceptual composition).

[18] According to Zwart (1993), who adopts a base SVO analysis for Dutch, complement Small Clauses in Dutch are raised to a PredP projection. For Koster (1994), [Spec,PredP] can house predicates (like predicates of Small Clauses) or nominal phrases that are part of complex predicates (e.g. *de afwas* 'the washing-up' in *de afwas doen* 'the washing-up do').

[19] Paradoxically, É. Kiss (2006b) nevertheless does adopt an AspP projection encoding viewpoint aspect in her clausal hierarchy. Csirmaz (2006) also adopts a viewpoint AspP projection, where both perfective and imperfective (progressive) aspect are encoded. Although the idea of an AspP in the Hungarian clause encoding viewpoint aspect generally is perfectly feasible, the empirical evidence for its presence in all clauses is rather flimsy (see the cited papers). The only solid piece of evidence comes from word order in progressive sentences containing a VM element, where the verb must precede, rather than follow, the VM. But note that it is only an aspectual operator of the marked, progressive viewpoint aspect whose syntactic presence receives corroboration from this fact (although the silent time interval argument of the progressive (imperfective) operator (see Iatridou, Anagnostopoulou and Izvorski 2001) might also be claimed to occupy an (inner) specifier of FocP, rendering even a progressive AspP dispensable). The postulation of an AspP projection in perfective and in non-progressive imperfective sentences remains without substantial support, especially since these are the viewpoint aspect interpretations that are assigned by default to accomplishments and achievements, on the one hand, and states and processes, on the other (see Bohnemeyer and Swift (2004) for the computation of default viewpoint aspect in terms of 'event realization'). Default viewpoint aspectual interpretation of the different situation aspectual classes of predicates can of course be overridden through coercion by temporal adverbials (see É. Kiss 2006b).

[20] I deliberately leave it open here whether it is the VM itself that moves on to its *v*P-external surface position, or rather, it is the projection that hosts it in its

specifier (i.e., PredP) that raises there, preceded by movements that evacuate the VP, much in the spirit of Koopman and Szabolcsi (2000), and Koster (2000).

[21] In the literature on Hungarian, É. Kiss (2005, 2006a) represents such a view. Although her account maintains that all incorporated verbal particles in the language are secondary predicates, it is not committed to a Small Clause based structural analysis of secondary predicates.

[22] Explorations of the richly layered internal structure of verbal phrases, initiated by Larson's (1988) seminal paper, have further blurred the purely structural differences between the two classes of modifiers. On a Larsonian approach, not all arguments originate as a sister to the verb, and not all elements in a complement/specifier position within a layered verb phrase are arguments of the verb—an issue I will be ignoring here.

[23] Carrier and Randall (1992) call the latter "intransitive resultatives." Hoekstra (1988) assigns a "raising" Small Clause structure to "control" type of resultatives as well, arguing that the verbs that these Small Clauses complement are of the intransitive variety. This view is defended more recently (at least for adjectival resultatives) by Kratzer (2005).

The argument of the embedding verb which the subject of the result state/location is identical with is typically the (underlying) direct object (the so-called Direct Object Restriction). Whether this is always the case is a matter of disagreement (see Simpson 1983; Levin and Rappaport Hovav 1995, 2001; Rothstein 2004; Wechsler 2005) for opposing views.

[24] Fake reflexive arguments represent a hybrid case in that the argument of the result state is referentially controlled by that of the verb, however, it appears morphosyntactically as an independent overt argument expression (viz. the reflexive), placing the construction in the "ECM"/"raising" group. Levin and Rappaport Hovav (2001, and elsewhere) reduce the obligatory overt appearance of the reflexive to the Argument-Per-Subevent condition (=(17)). Referential control of a pronominal element *within* the subject of the resultative predicate is also attested, as in 'x cried [x's eyes] out.'

[25] That the resultative predicate occupies a low position within the VP is evidenced by usual syntactic tests like *do so* replacement, VP-fronting, and VP-ellipsis.

The Small Clause analysis of resultatives has not remained uncontested even within the non-lexicalist camp, see e.g., Winkler (1997) for references to works where resultative predicates receive a non-Small Clause analysis, following the line of Williams (1983) and Rothstein (1985). See also Carrier and Randall's (1992) critique of the Small Clause analysis of resultatives, as well as Dikken and Hoekstra's (1994) reply.

[26] Even though the unambiguously "ECM"/"raising" type of resultatives is less common in Hungarian than, say, in English, the language does exhibit (a variety of) resultative constructions (exemplified below), so the issue whether (and which of) its goal locatives are resultative predicates is real.

(i) *János   rongyosra/*sá   járta   a cipőjét*

41

John-NOM ragged-SUBLAT/TRANSLAT walked the shoe-POSS3SG-ACC

'John walked his shoes threadbare.'

(ii) *János   kővé/*re   dermedt*

    John-NOM stone-TRANSLAT/SUBLAT   froze

    'John froze stiff like a stone.'

(iii) *János   orvosnak/*sá/*ra   tanul*

    John-NOM doctor-DAT/TRANSLAT/SUBLAT studies

    'John studies to become a doctor.'

The bound resultative morphemes can be construed as lexicalizing different flavors of the functional head projecting the Small Clause involved in resultative secondary predication (e.g., R(es) in Ramchand 2008). This can then explain why these suffixal elements do not "incorporate" into a VM position similarly to locative PPs (iv): this is because they are not adpositional categories at all.

(iv) **János   rá   járta   a cipőjét   (rongyosra)*

    John-NOM onto-POSS3SG   walked the shoe-POSS3SG-ACC ragged-onto

[27] See Jackendoff (1991), Piñón (1993), Krifka (1998) for a pure partial path account of direction PPs like *towards the castle*, which denote the initial subpaths of *to the castle*, and see Zwarts (2005) for a hybrid of the partial path account with a comparative analysis, where it is also required the endpoint of the path to be nearer to the reference point (the castle) than the initial point of the path.

[28] Horrocks and Stavrou (2007) argue that in ancient Greek (unambiguous) goal PPs modifying verbs of motion are generated as an adjunct, and rather than being interpreted as a result location, they modify the verb of motion itself by specifying the direction of the motion.

[29] I disregard the issue whether the relation holding between e_1 and e_2 of a causal nature (e.g., Dowty 1979; van Valin 1990; Kratzer 2005), or it is a transition, as in all telic predicates (e.g., Pustejovsky 1991, van Hout 1996), or the two subevents are related by a change of state process connected incrementally to e_1, the culmination of which process is time-participant-connected to e_2 (Rothstein 2004). Apparent counterexamples discussed by Levin and Rappaport (1999, 2001) (e.g., *John danced mazurkas across the room*, which they treat through co-identification of two subevents of a complex event) are argued by Rothstein (2004) to not be resultative constructions at all, but rather to involve a VP expressing a simplex event, modified by an adjunct.

[30] That pragmatic (world) knowledge may play a role in the implication that the goal must be reached is suggested by the fact that for some speakers (myself not included), when the target goal PP of the flinging motion is an entity that is capable of changing its spatial position, thereby avoiding being hit, then the predicate in (31b) becomes compatible with a scenario in which the theme does not end up at the goal. (i) can be continued with "but in the last millisecond he stepped out of the way." Significantly, the same effect is absent in the Prt-LIC version of (i), viz. (ii). More generally, if for a given predicate only one of the two variants of the LIC allows for a non-accomplishment of the end state, then it is the Lex-LIC that has

that property. The proper account for this generalization must be left for another occasion.

(i) *Mari   Jánoshoz   vágta   az esernyőt*
   M-nom J-to   fling-past-3sg   the umbrella-acc
   'Mary flung the umbrella at John.'

(ii) *Mari hozzá   vágta   Jánoshoz   az esernyőt*
    M-nom to.him fling-past-3sg   J-to   the umbrella-acc
    'Mary flung the umbrella at John.'

   Lexical semantic properties of the verb are another crucial determinant of the presence or absence of the entailment of the accomplishment of the endstate. Specifically, many predicates that (in Levin and Rappaport's terms) involve "temporally dependent" ("co-identified") subevents (e.g. *tesz* 'put') do not exhibit a comparable difference between the Prt-LIC and a Lex-LIC pattern: the endstate is entailed in both constructions. For other predicates with "temporally dependent" subevents, non-entailment of the endstate is due to the interference of modality. As noted by Krifka (1998: 228), predicates like *megy* 'go' (at least in uses exemplified by (31a)) require a modal representation: intuitively, in (31a), had it not been for some unexpected event, John would have arrived at the end location.

[31] See Basilico (2003) for the contrast between verbal and non-verbal Small Clause complements in terms of subextraction from their subjects.

[32] This is independent of the analysis of the particle in (34): it can be analyzed as a (second) complement, or as a secondary predicate in a resultative construction (the direct object could be assumed to control a PRO subject in the resultative Small Clause).

[33] The *again*-test corroborates the view that accomplishments do not uniformly consist of two subevents (a process and a state): for instance, *He read the book again* only has a repetitive reading, while *She opened the door again* has both the repetitive and the restitutive readings.

[34] The adverb *again* is placed in the postverbal domain to allow for both readings to be available in principle, on the assumption that for the restitutive reading *again* needs to adjoin to the Small Clause representing the "restituted" end state. When *again* precedes the preverbal locative particle or locative phrase, such an adjunction site is excluded in principle (compare von Stechow's 1995, 1996 closely analogous data from German).

[35] Folli and Ramchand (2005) argue that while *run* in English licenses a resultative structure (a ResP in their terms), the verb *swim* does not. As expected, the restitutive reading of *again* is indeed available for *run*, but not for *swim*, when modified by a goal PP.

(i) He ran to the library again
(ii) She swam to the shore again

Other tests of the same general type (involving selective adverbial modification of the result state) can be based on adverbs like *félig* 'partway' and *majdnem* 'almost' (see Krifka 1998; Rothstein 2004 for references). For reasons of space, these tests are not shown here.

[36] Not only particle adjuncts, but also lexical locative adjuncts can undergo "incorporation" to the VM position (adjunct particles alternate with lexical adjuncts in the VM position). Another case of adjunct incorporation is the incorporation of *újra* 'again' (incorporation of such low adjuncts is found also in Greek (Rivero 1992); on adjunct incorporation in Chukchi see Spencer (1995)).

(i) *János   újra   olvasta   a cikkeket*
    J-nom   again   read-past-3sg   the article-pl-acc
    'John read the articles again.'

[37] Note that this crucially does not entail that any element that comes to fill the (higher) *surface* VM position should be semantically incorporated. In particular, elements that appear in the surface VM position (specifier of TP in (17) above) without ever raising to the *v*P-internal VM position (specifier of PredP in (17) above) are expected not to be semantically incorporated. As suggested in Section 2.2, VM climbing targets the *v*P-external VM position of the superordinate verb, and bypasses its *v*P-internal VM position (if that is projected at all). Then, for instance, VMs that have climbed are not predicted to semantically incorporated into the superordinate verb. This seems desirable, as an element can normally semantically incorporate into a predicate of which it is a semantic modifier (argument, less typically, adjunct).

[38] In this regard, the parallel of the Hungarian low VM position with Zwart's (1993) and Koster's (1994) [Spec,PredP] in Dutch is notable: Koster, following de Hoop (1992), argues that DPs occupying [Spec,PredP] in Dutch must be part of a complex predicate (e.g., *een klap geven*, lit. a blow give-inf, 'to hit'). The properties of PredP in Hungarian, as conceived of here, and those of PredP in Dutch, as proposed by Koster (1994) diverge beyond this point. Koster assumes that PredP is not a unique projection; PredP of the present account is. Koster's PredP licenses all prepositional (PP) objects as well as oblique objects; PredP in Hungarian doesn't. The uniqueness of PredP in Hungarian, a syntactic property of the language, limits the number of semantically incorporated pre-verbal elements to one. Accordingly, there can only be maximally one pre-verbal particle (unlike in Slavic), and the number of bare singular nominals in the clause is also restricted to one.

[39] Note that the view that locative particles are semantically incorporated into the verb (and are therefore predicative) is broadly consonant with lexicalist approaches in terms of the notion of "complex predicate" (see e.g., Komlósy 1994). On a lexicalist approach, the particle is a lexical component of a verbal complex, i.e., the verbal predicate. The present account in terms of semantic incorporation in effect generalizes the treatment of particles as belonging to the semantic verbal predicate

to all (incl. lexical) locatives in the (low) VM position. For a lexicalist account of incorporated adpositional locative particles in Hungarian, see Ackermann (1987); for a critique of that account, see É. Kiss (1998a).

[40] Semantic incorporation of a VM may in principle involve a predicative restriction on any variable contained in the verbal predicate. This is because the verbal predicate into which the VM semantically incorporates is not the verb itself, but the syntactically complex verbal constituent headed by the verb (Pred′ if V sits in Pred). On the syntactic analysis of the (low) VM position presented in Section 2 above, this is the constituent that the VM element in [Spec,PredP] is syntactically composed with. Accordingly, the VM may introduce a predicative restriction on a variable introduced by an internal argument, or even an adjunct or a secondary predicate, provided that the latter too are generated below inside PredP. It may also restrict the event variable introduced by the verb or by a secondary predicate (as in the case of 'aspectual' verbal particles like *meg*). If the VM raised to [Spec,PredP] is taken to leave a 'trace' that is interpreted as (an expression containing) a variable (see Lasnik (1999) for the view that A-movement does not leave a 'trace'), then the semantically incorporated occurrence of the VM will restrict that variable inside the verbal predicate phrase.

[41] To assume that the (low) VM position is filled because VM elements would not be interpretable in their base position leaves room for an unfilled [Spec,PredP] (found in clauses containing no VM element to be raised there), and also allows for VM elements that can be interpreted in some other way to remain in situ. This latter option is exemplified by cases like (i), where a VM element functions as an adjunct modifying (or specifying) another VM element, which gets raised to the VM position (see the discussion of (24a) for the notion of "weak" resultatives in Section 3.2 above).

(i) *Be festettem a kerítést pirosra*
    in painted-1sg the fence-acc red-sublat
    'I painted the fence red.'

[42] Incorporated bare nominal indefinites introduced by the indefinite article behave identically, which suggests that they are also able to get semantically incorporated (pace Farkas and de Swart 2003). Accordingly, such indefinites are interchangable in the VM position with bare nominals without any difference in meaning, apart from the singularity restriction contributed by the article, which is taken to be a cardinality predicate, restricting the cardinality of the set denoted by the nominal to be one; see (i). This is not surprising in light of the fact that in Hungarian nominals with the indefinite article can routinely function as both primary and secondary predicates, and as complements of existential verbs (cf. the notion of flexibility of the semantic type of different kinds of DPs, going back to Partee 1987, which allows the same (indefinite) DP to be interpreted either as predicative or as quantificational). I suggest that it is precisely the cardinality predicate interpretation of the indefinite article that makes it analogous to plural morphology

within Farkas and de Swart's (2003, Ch. 5) model: for them, a cardinality predicate introduces a presupposed discourse referent, which presupposition is accomodated by identifying it with the variable restricted by the semantically incorporated nominal predicate. This discourse referent may then pick up overt pronominal anaphora.

(i) *Az orvos   (egy) 'beteget ^{0}lát   el   a szobájában*   (neutral)
     the doctor-nom (a) patient-acc treat-3sg PRT the room-poss3sg-in
     'The doctor is treating a patient in his room.'

Indefinite pronominal DPs like 'somebody' only have an existential quantifier meaning, with the bound morpheme *vala-* 'some' interpreted as an existential determiner. Hence they are excluded from semantic incorporation, see (ii). When the bleached lexical element that *vala-* 'some' morphologically combines with (e.g., *-ki* 'human/person') is descriptively restricted by another lexical element, then *vala-* 'some' is interpreted not as an existential determiner, but either as an indefinite article, or as null (cf. *János egy érdekes valaki volt*, lit. 'John an interesting somebody was,' where *vala-* 'some' cooccurs with the indefinite article, and *valaki* 'somebody' in the nominal head position is interpreted as *human(x)/person(x)*); see (iii).

(ii) **Az orvos   'valakit ^{0}lát   el   a szobájában*   (neutral)
      the doctor-nom patient-acc treat-3sg PRT the room-poss3sg-in

(iii) *János 'valaki fontosat ^{0}lát   el   a szobájában*
      J-nom somebody important -acc treat-3sg PRT the room-poss3sg-in

As the above observations extend to cases when the DP containing an indefinite article or *vala-* 'some' is dominated by a PP (see (44c), as well as (iv–v)), I conclude that they too are semantically incorporated.

(iv) *Az igazgató   holnap   valahova   *(külföldre) utazik*
     the director-nom tomorrow somewhere.to   abroad-to   travel-3sg
     'Tomorrow the director is going somewhere (abroad).'

(v) *Egy szerelőre   bíztam   a munkát.*
     a plumber-onto   trusted-1sg   the job-acc
     'I trusted the job to a plumber.'
     A munka után   meg   hívtam   őt   egy italra.
     the work after   PRT   invited-1sg him   a drink-to
     'When the job was done, I treated him to a drink.'

[43] In addition, given Mithun's (1984) implicational generalization, if Hungarian had classificatory incorporation, it would be expected to also have Mithun's Type III incorporation. Type III incorporation serves to maintain reference to known or incidental information across clauses. The first occurrence of a phrase in the discourse takes the form of an independent noun phrase, and subsequently a co-referential nominal appears as an incorporated noun. Incorporation thus maintains the identity of the noun without foregrounding it again as an independent sentential constituent. Type III incorporation, however, is absent from Hungarian.

[44] This construction type too includes stative locatives, e.g.:

(i) *Ott / Bent állt   egy autó   a garázs előtt / a garázsban*
   there / inside stood-3sg a car-nom   the garage-in.front.of / the garage-in

[45] Neither (49a) nor (49b) excludes the raising of the whole complex PP to the VM position, which, however, is unattested (see (i)). On the analysis in (49b), but not on (49a), the lexical locative associates (*qua* adjuncts) are expected to be opaque to subextraction. This prediction that is difficult to test, however. This is because nominals that can serve as Ground typically do not take a complement in Hungarian (which one could then try to subextract): their argument, if they have one, is normally realized as a possessor. To the extent that (ii) is representative, it indicates that subextraction from the lexical locative is unacceptable. (ii) differs minimally from (i): it contains a particle of the suffixal adpositional variety. (ii) is only slightly degraded (similarly to (47b) above).

(i) **Le   az asztalra   / *Az asztalra   le   tette   a könyvet*
   down the table-onto   the table-onto down   put-past-3sg the book-acc

(ii) **Melyik politikussal   voltál   ott   [egy vitán __]?*
   which politician-with be.past-2sg   there   a debate-on
   '*Which politician did you attend [a debate with __]?'

(iii) *^?Melyik kollégával   voltál   benne   [egy vitában __]?*
   which colleague-with be.past-2sg in.it   a debate-in
   'Which colleague were you in (the middle of/having) a debate with?'

[46] Particles like *el* 'away' or *ki* 'out' are taken to denote sets of paths that, informally speaking, go from a space that is at or inside the reference space, respectively, to some spatial positon characterized by the property of not being at or inside the reference space. Thus, although such particles denote sets of paths that are defined with respect to a reference space from which they point away, they can be analyzed as functioning as goal locatives. This explains how they are able to telicize the event.

[47] The syntactic relation of the incorporated particle and its lexical associate in the case of non-suffixal, morphologically free adpositions (e.g., *után* 'after' in (3a)) is analyzed in É. Kiss (1998c, 2002). For an alternative analysis of this class in terms of a "light headed" chain, see Surányi (to appear).

[48] All that needs to be assumed is that an overt pronoun involves more features than a covert pronoun (*pro*). Phonologically, this assumption is trivial, and it also accords with the fact that in *pro*-drop languages, overt personal pronouns are the marked option, compared to *pro*.

[49] The interpretation of semantically incorporated bare plurals is nevertheless distinct from that of incorporated bare plurals, see Farkas and de Swart (2003, Ch. 5).

[50] Slavic, Latin, and Classical Greek also have examples of doubling of the kind discussed here (Svenonius 2004), see (i–ii). A careful syntactic analysis of such patterns in these languages awaits future research. That not all examples may in fact involve syntactic doubling is suggested by the fact that the incorporated

particle and the adposition in the lexical associate phrase are sometimes lexically distinct, see (iii).

(i) *pře-plavat   přes řeku*
   across-swim-inf across river
   'swim across the/a river'   (Czech, Filip 2003)

(ii) *equum   ad aquam ad-fert*
    horse   to water   to-leads
    '(He) brings a horse to water'   (Latin, Miller 1993:123)

(iii) *Samoljot   pere-letajet čerez granicu*
     plane   across-flies across border
     'The plane is flying across the border' (Russian, Svenonius 2004)

The syntax of Hungarian *-vA* adverbial participles: A single affix with variable merge-in locations[1]

Huba Bartos

1. Introduction

The Hungarian language has for long had two related constructions, labeled as 'adverbial participle' in traditional grammatical terms: the *-vA* and the *-vÁn* participles.[2] It seems that while they may originally have emerged as dialectal variants, by the early modern times their functional distribution became complementary: the *-vÁn* participle was rather consistently used as an adverbial of time or reason, while the *-vA* participle usually assumed the role of manner or state adverbial. Later on, however, this division of labor was gradually lost, and by now, in standard colloquial Hungarian, (i) the *-vÁn* type has almost entirely disappeared: for many speakers it is clearly archaic, and for the rest its use is very limited (stylistically marked) and rare, its earlier functions basically taken over by the *-vA* type; (ii) for those whose dialect has retained the *-vÁn* forms, the functions of the two type heavily overlap, with the exception that the *-vÁn* participle cannot have a state adverbial reading – the other relevant adverbial functions (time, reason, manner, purpose) can in principle be assumed by both of them; (iii) when both are available, *-vÁn* has a strong tendency for a temporally anterior reading (with respect to the time of the matrix), while *-vA* is more neutral in this respect.[3]

This chapter will be exclusively devoted to the discussion of the *-vA* participles, for the following reasons: (i) the *-vÁn* participles play a very limited role (or, for some speakers, no role at all) in present-day Hungarian; (ii) their use is more restricted, with few complications; (iii) arguably, they always project a full-fledged participial clause, whose internals never involve any voice alternation (unlike the *-vA* participles, where this is a key problem; see below); and (iv) they have received an essentially satisfactory account already, with *-vÁn* as an inflectional affix, licensing its own (potentially overt) subject, in Sárik (1998). Just for the sake of illustration, (1) gives two examples of the *-vÁn* participle, by which I part with them for now and turn my attention to the *-vA* participles alone.

(1) a. **Beesteledvén(,)**   *hazaindultunk.*
     in-dusk-VÁN   home-started-1pl
     'Night having fallen, we left for home.'

 b. *A földre*   **feküdvén** *álomba*   *merült.*
     the ground-onto   lie-VÁN   sleep-into   sank(3sg)
     'Having lain on the ground, he fell asleep.'

Let us now take a look at a few introductory examples of *-vA* participle, with traditional function identification given for each occurrence: 'complement': (2a), 'predicate': (2b), simultaneous state adverbial: (2c), anterior state adverbial: (2d), manner adverbial: (2e), and purpose adverbial: (2f).

 (2)   a. **Bezárva**   *találtuk*   *az ajtót.*
       in-lock-vA   found-1pl   the door-ACC
       'We found the door locked.'

 b. **Zárva**   *volt*   *az ajtó.*
       lock-vA   was(3sg) the door
       'The door was locked.'

 c. *Laci a*   *karosszékben*   **ülve** *várta*   *a*   *vendégeket.*
       Laci the armchair-in   sit-vA waited-3sg   the guests-ACC
       'Laci waited for the guests sitting in the armchair.'

 d. *Laci teljesen*   **felöltözve**   *várta*   *a*   *vendégeket.*
       Laci completely   up-dress-vA waited(3sg) the guests-ACC
       'Laci waited for the guests completely dressed.'

 e. **Futva**   *igyekeztünk*   *haza.*
       run-vA   hurried-1pl   home
       'We hurried home running.'

 f. *Kinyitotta*   *az ablakot,*   *utat*   **engedve** *a*   *füstnek.*
       out-opened(3sg) the window-ACC way-ACC allow-vA the smoke-DAT
       'He opened the window, giving way to the smoke.'

One remark is immediately in order for the function labels: the adverbial in (2a) is easily analysable as a small clause predicate, rather than a complement of the matrix verb *talál* 'find'; in fact, all instances of this type can be

analysed this way, conflating the types of (2a) and (2b), simplifying the picture somewhat: adverbial participial phrases/clauses can thus be either predicative complements (small clauses), or adverbial modifiers (as in the rest of the examples), such that the participle itself is a predicate within its phrase/clause domain — as will be argued later in detail.

Given this surface variability of functions and loci in the syntactic structure, as well as the different sizes of the participial, ranging from a single word (2a, b) to a whole clause (2c,d), it is tempting to make use of several different variants of the participial affix in an analysis, but the more challenging (hence probably more interesting) option is to try to stick to the 'single -*vA*' hypothesis, seeking a more unified account og the full set of constructions. In this vein, I will propose to treat the syntax of the -*vA* participles in an antilexicalist framework, which will be an exercise in pushing the idea of having a single affixal lexical item with variable locus of merging it into the syntactic projection of the host category, rather than positing several homonymic lexical items (as a more traditional and/or lexicalist analysis would have it). The conceptual advantage of this single-item approach is obvious (no need to multiply lexical entries, with different alleged selectional properties and semantic effects), but it is a viable alternative only so far as no significant price is paid somewhere else — which I hope to be able to show here not to be the case.

2 Previous treatments of the -*vA* participles in the generative tradition

There have been several attempts to analyse the (morpho)syntax and semantics of the -*vA* participles in the literature, and the discussion has revolved around two main issues: (i) how far do these participles project: are they word-level, phrase-level, or clause-level entities; (ii) is there a single -*vA* affix, or do we need (at least) two distinct such affixes in the lexicon to account for various subtypes of the -*vA* participle constructions — the crucial point here is an active ~ passive alternation, in an oft-alleged correlation between the manner ~ state distinction in construal: (3a) = unergative base V, 'active'; (3b) = unaccusative base V, 'active'; (3c) = transitive base V, 'active'; (3d) = transitive base V, 'passive'.[4]

(3) a. *Laci   mosolyogva válaszolt.*
    Laci   smile-vA   answered(3sg)
    'Laci answered smiling.'

b. *Teljesen   megszáradva(,) a festék védi   a fát.*
completely dry-vA   the paint protect(3sg) the wood-ACC
'Completely dried, the paint protects the wood.'

c. *Laci   az újságot   olvasva jött   be a szobába.*
Laci the newspaper-ACC   read-vA came(3sg)   in the room-into
'Laci came into the room reading the paper.'

d. *(Az ellenségtől)   bekerítve   a csapat megadta magát.*
the enemy-from   in-surround-vA the team   surrender itself-ACC
'Surrounded (by the enemy), the team surrendered.'

The manner ~ state split apparently obtains between unergatives and active transitives (manner) *vs.* unaccusatives and passive transitives (state) – a seemingly clear distinction, easily captured by referring to argument structure (presence *vs.* absence of an external argument). As will be shown later, in section 4., the semantic distinctions (partly concerning argument structural properties) are much more complicated and fine-grained than this, which suggests (to me) that the relevant semantic variables are interpretive, rather than generative, in the case of adverbial participles: they apply (nondistinct) syntactic structures at the level of interpretations, and cannot reasonably be assumed to *drive* the syntactic derivations.

Most of the earlier accounts have been built up on the manner~state duality, without paying attention to the facts that (i) not all instances of the *-vA* participle fall into either of these two readings (see, e.g., (2f)), and that (ii) the two readings cannot always be neatly told apart, especially in the 'transparent adverbial' (cf. Geuder 2004, and section 4.1. below) cases:

(4) a. [*Kezében   puskát   **tartva**]   bukkant   fel a vadász*
   hand-3sg-in   gun-ACC   hold-vA emerged(3sg)   up the hunter
   a   bozótból.
   the bush-from
   'The hunter emerged from the bush holding a gun in his hand.'

b. *Az ingujját   sem **tűrve** fel(,) a kondérban turkált.*
the sleeve-3sg-ACC nor   roll-vA   up   the cauldron-in poked(3sg)
'Not even rolling up his sleeves, he was poking around in the cauldron.'

In this section, I will sketch the most important accounts, to set up the scene for my own analysis.

2.1. Lexical solutions

2.1.1. Komlósy (1992) – a single -vA suffix

Komlósy's lexical solution uses a single suffix *-vA*, which can attach either to an active stem, or a lexically passivized one, where passivization involves a null-affix (or conversion), to account for the paradigm in (3):

(5) a. LEXICAL PASSIVIZATION
    1. subject $\rightarrow$ oblique   (demotion)
    2. object $\rightarrow$ subject   (promotion)
    3. AGENT is existentially bound (optional; if it applies, it yields an agentless passive)

   b. ADV-FORMATION
    -vÁn: $[V_{\text{stem/non-passive}} \underline{\quad}]_{\text{Adv}}$
    -vA: $[V_{\text{stem}} \underline{\quad}]_{\text{Adv}}$

As is clear from these rules, for Komlósy, participle forming is a lexical derivational operation, yielding an *adverb*. For unergatives, unaccusatives, and non-passivized transitives, the rule is a simple case of V $\rightarrow$ Adv derivation, while for cases like (3d), the passivization defined in (5a) must precede the Adv-formation. Two points of criticism apply to this account:

− It needs a stipulation to the effect that the null-passives formed by (5a) cannot surface without undergoing some further operation, because we do not find null-passivized finite verb forms in Hungarian. The stipulative constraint he offers is given in (6).

− It does not tell us how/why the Adv's formed by (5b) project their own modificational domain, which can reach full clausal status (see the examples in (2) and (3)), and how certain argument roles of the base V are identified with arguments in the matrix domain. The reason for the lack of information on these points resides in the sketchy nature of the analysis, since Komlósy's focus was on *adjectival* participles in that paper.

(6)   The categories of tense/mood-marking and agreement only apply to active stems in Hungarian.

2.1.2. *Laczkó (2000) – two* -vA *suffixes*

Laczkó, primarily on the basis of his critique of Komlósy's account, develops an analysis that makes use of two *-vA* affixes in the lexicon, such that *-vA₂* involves a feature of passivization in itself, hence it primarily attaches to passivizable stems (transitives), but since this 'passivization' suboperation is about the promotion of an internal argument, it also applies (in a sense vacuously) to unaccusatives. *-vA₁*, on the other hand, involves no passivization, and occurs with active transitives and unergatives. This solution establishes a pattern of 'active_transitive/unergative' *vs.* 'passive_transitive/unaccusative' grouping, which (Laczkó claims) matches the traditional 'manner' *vs.* 'state' distinction in interpretation. In fact, the chief motivation[5] for him to combine unaccusatives with *-vA₂* (when, in principle, unaccusatives would fit the structural description of the *-vA₁* rule, too) is precisely the possibility of correlating the *-vA₁* ~ *-vA₂* opposition with the 'manner' ~ 'state' opposition.

(7)

	passive reading	-*vA₂* state *összekötözve feküdt* PV-tie-vA lay(3sg) 'she was lying tied up'
transitive	active reading	-*vA₁* manner *a csokrot összekötözve leült* the bouquet-ACC PV-tie-vA down-sat(3sg) 'having tied the bouquet she sat down'
	unerg. base	-*vA₁* manner *kiabálva rohangált* shout-vA run-FREQ-PAST(3sg) 'she was running around shouting'
intransitive	unacc. base	-*vA₂* state *kimelegedve rohangált* out-warm-ADVPRT run-FREQ-PAST 'she was running around sweating hot'

The particulars of Laczkó's analysis are summarized in the following:[6]

(8) a.   **-vA₁**   V + [-*vA₁*]ₚᵣₜ → [V + -*vA₁*]ₚᵣₜ

      (i)   the highest argument with a non-objectlike role becomes the
             subject

      (ii)   subject is realized as PRO

   b.   **-vA₂**   V + [-*vA₂*]ₚᵣₜ → [V + -*vA₂*]ₚᵣₜ

      (i)   the object argument becomes the subject

      (ii)   subject is realized as PRO

Apart from the neatness of match between -*vA₂* and the state reading, there is some further motivation for assuming that unaccusatives take -*vA₂*, rather than -*vA₁*: this makes it possible to establish the generalization that it is the -*vA₂* participles that occur predicatively in a copular construction:

(9) a.   * *Laci mosolyogva   van.*   – unergative (-*vA₁*)
        Laci smile-vA   is
        'Laci is smiling.'

   b.   * *Laci meg van írva a levelet.*   – active transitive (-*vA₁*)
        Laci ᴘᴇʀꜰ is write-vA the letter-ᴀᴄᴄ
      * 'Laci is written the letter.'

   c.   *A levél meg van   írva.*   – passive transitive (-*vA₂*)
        the letter ᴘᴇʀꜰ is   write-vA
        'The letter is written.'

   d.   *A festék   meg van száradva.*   – unaccusative (-*vA₂*)
        the paint   ᴘᴇʀꜰ is dry-vA
        'The paint is(= has) dried.'

One weakness of the analysis is that it says nothing about the identification of the PRO subjects of these participles. A more serious problem, though, is that this account sees too much into the 'manner' ~ 'state' distinction, and would therefore need considerable augmentation to cater for (i) other, non-manner non-state adverbial readings; and (ii) interesting grammaticality effects unrelated to the argument structural factors referred to in the lexical rules, such as the following contrast type (my take on which will be presented in section 4.2. below):

(10)   TEMPORAL ANTERIOR VS. STATE:
  a. *Szépen/Gyorsan felöltözve(,)   elindult   munkába.*
     neatly/quickly up-dress-vA   away-start   work-into
     'Dressed up neatly/quickly, he left for work.'

  b. *Szépen/*Gyorsan felöltözve   találtuk / ült   a   szobájában.*
     neatly / quickly   up-dress-vA found-1pl/sat(3sg)   the room-3sg-in
     'We found him / He was sitting neatly/*quickly dressed in his room.'

(11)   'PURE' STATE VS. REASON/STATE:
  a. (?*Orvul)   hátbadöfve   *feküdt   a   földön.*
        sneakily back-into-stab-vA lay(3sg) the   ground-on
     'He was lying on the ground, stabbed in the back (*sneakily).'

  b. *Orvul   hátbadöfve(,)   a   földön   feküdt.*
     sneakily back-into-stab-vA the ground-on   lay(3sg)
     'Stabbed sneakily in the back, he lying on the ground.'

(12)   'PURE' STATE VS. TEMPORAL/REASON:
  a. (*Véletlenül) kiborulva   *találták   a   levest   az asztalon.*
        accidentally   out-spill-vA found-3pl   the soup-ACC the table-on
     'They found the soup spilt over the table (*accidentally).'

  b. *Véletlenül   kiborulva*(,) *a   leves az egész asztalt*
     accidentally out-spill-vA the soup the whole table-ACC
     elborította.
     away-covered(3sg)
     'Having spilt out accidentally, the soup covered the whole table.'

In closing this section, mention must be made of Németh's (2007) recent contribution to the topic, which does not offer any precise technical analysis, but suggests that at least in the copular predicative 'V-*vA van*' construction, a lexical solution where -*vA* affixation is sensitive to aspectual verb classes could account for a wide variety of semantic/pragmatic limitations on the availability of -*vA* participles.

2.2. Syntactic solutions

There is another line of research that has attempted to devise some syntactic account for deriving the adverbial participles and their behavior. Some of these (e.g., É. Kiss 1998, Bene 2005) have essentially followed the lead of the lexical analyses, reorchestrating them in the domain of (narrow) syntax, while others (e.g., Kenesei 2000) have tried to look upon the issue from a completely different angle, arguing that participles are special inflectional forms of verbs, thus they naturally project full clauses, and have no derivational properties, so that all of their peculiarities must have a syntactic (rather than lexical, argument structural) explanation. But the most thorough and successful syntactic analysis to date is Tóth's (2000), which recognizes that -*vA* affixation can target different syntactic domains (VP, VoiceP, TP), giving rise to units of different status and function. As will be clear in later sections, my present proposal essentially follows her lead, reproducing its key insights in a different model.

2.2.1. Bene (2005) – Two -vA *suffixes, transposing Laczkó's key ideas to syntax*

Bene analyses the -*vA* (and, irrelevantly for us, also the -*vÁn*) participles as cases of V → Adv derivation in syntax, in an articulated VP shell structure, positing two distinct -*vA* suffixes, explicitly calling them 'manner -*vA*' and 'state -*vA*'. Manner -*vA* always attaches to the largest extension of the VP (i.e., *v*P if present, VP otherwise) — this applies to unergatives and active transitives (at *v*P, (13a)), as well as unaccusatives (at VP, this being the largest V-projection, (13b)).

```
(13)  a.     AdvP                      b.          AdvP
          3                               ei
        Adv        vP                    Adv              VP
         !          3                     !                ri
      -vA_manner  PRO        v'        -vA_manner    V          DP
               3                        !
             v_ACT    VP              PRO
                   6
```
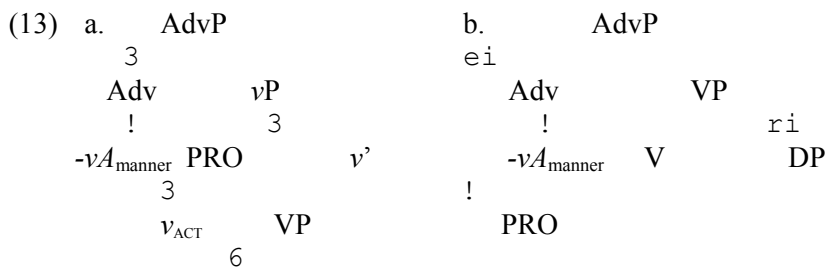
Note that she recognizes that unaccusatives can host the 'manner' type suffix, too, as in the following examples (Bene 2005: 83):

(14) a. *A labda* [*pattogva*] *gurult.*
      the ball   bounce-vA rolled(3sg)
      'The ball was rolling bouncing.'

    b. [*Peregve*] *hullik*   *a falról*   *a vakolat.*
      trickle-vA fall(3sg) the wall-from   the plaster
      'The plaster is falling trickling from the wall.'

While the presence of *v* can take care of the accusative case of some internal argument, the external argument in spec,*v*P remains without nominative (presumably because the AdvP projected by the participial suffix cannot merge with a T, and the whole AdvP is an island), so its only option is to be represented as a PRO, which can then be identified with some argument in the matrix domain.

'State -*vA*', on the other hand, attaches to VPs whose highest argument is a PATIENT, and this highest argument is realized as a PRO, again for case reasons (no *v* present to check/assign accusative):

(15)   AdvP
        3
    Adv   VP
     !   3
  -*vA*$_{state}$ V   PRO

This precludes combining it with unergatives (no PATIENT at all), and forces it to apply to the core VP in transitives, before the *v*P layer would be built, since at that point their highest argument is still a PATIENT. Whether this is a welcome consequence depends on how you define 'state adverbial' — but the following examples suggest that finding the appropriate definition for 'state adverbial' may not be an easy job ((4a) is repeated here as (16a)):

(16) a. [*Kezében*   *puskát* **tartva**] *bukkant*   *fel a vadász a*
      hand-3sg-in gun-ACC hold-vA emerged(3sg)   up the hunter the
      bozótból.
      bush-from
      'The hunter emerged from the bush holding a gun in his hand.'

    b. ?[*A maciját*   *szorongatva*] *találtak rá*   *az.*
      the teddy.bear-3sg-ACC clutch-vA   found-3pl onto the

> *eltévedt kislányra   az erdészek*
> lost   little-girl   the foresters
> 'The foresters found the lost little girl (as she was) clutching her
> teddy bear.'

(4a)/(16a) is a good example of the 'state + manner' ambivalence of transparent adverbials: 'holding his gun' is certainly not the manner of emerging any more than the condition of the hunter on emerging from the bush. And in (16b), the participle is much like a depictive, which is probably the core case of a 'pure state adverbial' in a language where depictives are adverbials, rather than bare predicative adjectives.

   Bene also notes that the AGENT of a transitive V may optionally surface as an oblique phrase (17), and that "this allows us to conclude that the notion of causation is there in the state adverbial participles derived from transitive verbs, independently of the fact that […] no *v*P is projected." (Bene 2005: 86).

(17)   *Laci **útonállóktól   /   útonállók   által** megverve   feküdt*
       Laci highwaymen-from / highwaymen by   PERF-beat-vA   lay(3sg)
       az úton.
       the road-on
       'Laci was lying on the road beaten up by highwaymen.'

   All in all, her analysis suffers basically from the same empirical problems as Laczkó's (which is no surprise, given that she regards that account as the basis for her own), while on the theoretical side I think she has moved in the right direction, but incurred severe problems and difficulties because of the scantily worked out technicalities (e.g., she ends up with an AdvP, whereby it would be tricky for her to manage to erect the (clause-like) functional superstructure often found (especially in the case of 'high', sentence-level adverbials) in the participial construction (more on this in 4.5. below).

2.2.2. É. Kiss (1998) – a sketch of an account in terms of an 'expanded VP'

É. Kiss in her concise syntax of Hungarian touches upon the issue of adverbial participles cursorily, and suggests that they can best be treated as 'expanded VPs' — this makes room for the projection of various functional layers, but also allows for the absence of tense in these almost clausal participial phrases. She depicts these participial structures as "VPs on a non-

finite base which the -*va/-ve* derivational affix turns into [something] assuming an adverbial role".[7] Since the V-form is non-finite, it can only have a PRO subject. As regards the manner ~ state distinction, she suggests a (quite important) difference: while the manner adverbial participles indeed project a full-fledged VP, possibly including its own topic and focus positions, and its PRO subject is invariably controlled by the matrix **subject**, the state adverbial participles are possibly lexically derived adverbs (with their subject argument demoted, and the internal one promoted), given the fact that they can never have surface objects. She clearly relies on Komlósy's idea of lexical null-passivization preceding the V → Adv derivation. Moreover, the PRO subject (if it has any) can be controlled by either the matrix subject or the matrix object. She notes, however, that the fact that the V-modifier can sometimes excorporate from the "derived Adv" (e.g., *el van vetve* / away is cast-vA / '(it) is cast away') is a problem for this lexical derivation analysis.

2.2.3. Kenesei (2000) – an account in terms of inflection

This, again, is not a well wrought out analysis for the adverbial participles: Kenesei offers an inflectional treatment of Hungarian participles in general, and while most of his arguments against a derivational analysis, and for regarding them as inflectional V-forms, apply to the adverbial participles as well, he only fleshes out a technical account for the **adjectival** participles, which happens to fail to carry over directly to the **adverbial** type. His crucial arguments for the inflectional view are the following:

–   The alleged word class (category) of 'participles' does not independently exist: these classes would contain no underived items.
–   The participles cannot be input to any sort of further derivation, in fact, they can hardly take further word-level affixes (and the adverbial participles cannot take any further affix at all). The reason why they cannot be further derived is that the participial affix is a non-finite inflection (tense-marking).
–   They display the same argument structure as their base verb, and project full-fledged clausal domains (topic/quantifier/focus slots, negation, binding domain).

His proposed analysis, however, fails to solve the single most problematic and widely discussed aspect of the syntax of adverbial participles: the issue of stem passivization. To wit: he posits an empty relative operator (*Op*)

for the case of adjectival participles, which can neatly fill in the role of an unpronounced internal argument in the 'passive' cases:

(18)   [$_{DP}$ *az*   [$_{NP}$ [$_{IP}$ *egymáshoz*   Op$_{PAT}$ PRO$_{AG}$ *átküldött*   ]
         the   each.other-to   over-send-PAST.PRT
       diákok]]
       students
       'the students (who are/were) sent to each other'

However, this is only available because the adjectival participles serve to modify a head noun (much like a preposed relative clause). Our *adverbial* participles, on the other hand, do not stand in any such modificational relation, so positing some empty operator in a like fashion would be unmotivated and far-fetched. In the absence of such an available empty element, we are back to square one with respect to the null-passivization problem.

2.2.4. Tóth (2000)

Tóth's account falls in the 'single -*vA* affix' line of tradition, and is set in a not strictly lexical model, where -*vA* is a head category that can enter the syntactic structure at various levels/points, and many properties of the emerging construction is derivable from the locus of its insertion. I think that most of the generalizations that she based her analysis upon are perfectly valid, and therefore it is hardly surprising that my account, to be developed below, mostly differs from it on the level of technical implementation, while many insights of her account will be preserved.

   She assumes that the affixal lexical item -*vA* can enter the structure at three points, corresponding to three structural and functional variants of the participial unit:

- It can fill T^0, and attract V there. T is thus non-finite, hence no nominative, so no overt subject is licensed. This yields a non-finite clause (with a complete set of left-peripheral projections) which serves as an adverbial adjunct clause within a matrix domain, its PRO subject identified logophorically. This is where it (almost) freely alternates with the -*vÁn* participle. No restriction whatsoever obtains with respect to the verb type it combines with.
- Alternatively, it can fill a Kratzerian Voice^0, but in this case there can be no clausal projections above, hence no nominative for an overt subject, though Voice licenses an accusative for V's internal

argument, if it has one. This participial VoiceP is then adjoined to the matrix VoiceP: it must be almost strictly adjacent to the overt copy of the matrix V. These participial phrases function as secondary predicates; the base verb can have either an active or a passive construal, depending on its aspectual properties.

- Finally, *-vA* can head it own specific functional projection, taking a VP complement. No VoiceP is projected, so neither nominative nor accusative case is licensed. The *-vA* phrase itself merges with a phonetically zero affixal Asp^0. This gives rise to what she terms 'stative resultatives', which constitute a primary predicate, and cooccur with a supportive copula, to carry tense/agreement morphology, and provide case for the subject of the *-vA* phrase.

The following examples illustrate the above options:

(19) a. [$_{CP1}$ [$_{CP2}$ *Furcsa hangot* **hallva**], *benyitott a*
          strange sound-ACC   hear-vA in-opened(3sg) the
          szobába]].
          room-into
          'Hearing / Having heard some strange sound, (s)he opened the door to the room.'

    b. [$_{CP1}$ [$_{CP2}$ … *furcsa hangot*$_x$ … [$_{TP}$ *PRO*$_y$ [$_{T'}$ *hall*$_z$+**va** [$_{VoiceP}$ t$_y$ [$_{Voice'}$ t$_z$ [$_{VP}$ t$_y$ t$_z$]]]]]] …]

(20) a. *János* [$_{VoiceP1}$ [$_{VoiceP2}$ *kötelekkel megkötözve*] [$_{VoiceP1}$ *ült*
          János   ropes-with   PERF-tie-vA   sat(3sg)
          a szobában]].
          the   room-in
          'John was sitting in the room tied up with ropes.'

    b. … [$_{VoiceP1}$ [$_{VoiceP2}$ *PRO* … [$_{Voice2'}$ *megkötöz*$_x$+**ve** [$_{VP}$ t$_x$ …]]] [$_{VoiceP1}$ *ült a szobában*]]

(21) a. *A levél meg van írva.*
          the letter PERF is   write-vA
          'The letter is written.'

    b. [$_{TP}$ *A levél*$_x$ [$_{?P}$ *meg*$_y$ [$_?$ *van* [$_{AspP}$ t$_y$ [$_{Asp'}$ [*ír*$_z$+**va**]$_p$+∅ [$_{FP}$ [$_{F'}$ t$_p$ [$_{VP}$ t$_z$ t$_x$ …]]]]]]]]][8]

Quite recently, Márkus (2008) has criticized Tóth (2000) in several points, two of which are notable:

- An important point of Tóth's account is that there is no (verbal) passive in Hungarian, i.e., the derivation of constructions like (21a) involves no passivization. Márkus argues, however, that a variant of this copular predicative construction, with *lesz/lett* 'become/became' in lieu of *van* 'is', displays all properties generally associated with verbal passives.
- Tóth does not account for the 'unergative gap', i.e., the fact that the stative predicative construction does not, in general, occur with unergative predicates (cf. (8a)). In fact, she demonstrates that there is a set of unergatives (only having an expletive subject pro argument) do partake in this construction.[9]

While in the first point Márkus is actually pushing her own agenda, the fact that Tóth's analysis does not cover the *lesz/lett* ('become') cases and the more typical unergatives does invite some further work to be done on her account.

To recapitulate the findings of this section: there have been various proposals for analysing the Hungarian -*vA* participles, but some of them (Komlósy, É. Kiss, Kenesei) are too sketchy to stand up to careful scrutiny, while the others (such as Bene's) are problematic, empirically (for the greater part), and also theoretically (to a lesser extent). There is, however, one account (Tóth's) that manages to capture the significant properties of -*vA* participles quite well, and were it not for the subsequent development of syntactic frameworks, it would only need relatively minor corrections, additions, and embellishments. Given some recent trends and results of syntacticist approaches to morphology, however, I have decided to devise an entirely new account, instead of just trying to improve on hers.

3. What a proper account must provide for

From the above sections it is clear that a viable account must cover at least the following properties:

- The adverbial participles can (though not necessarily do) project clausal domains, involving (at least) topic, focus, and negation.

- The participial phrase/clause thus projected may appear in various modifier positions (at least at VP/*v*P-level and clause level), as well as the predicate of a small clause.
- The subject of the participial phrase/clause is never overtly expressed within its own domain — it is either PRO, or some other empty category (identified from outside), or just implied.
- As a rule, on a 'manner' reading, the empty subject is identified with the matrix *subject*; on a 'state' reading it is identified by either the matrix *subject* or *object* (but not any other argument, such as oblique-case or PP complements)
- Transitive verbs can be participialized in two ways ('active' vs. 'passive'), unergatives always follow the 'active' pattern, while unaccusatives can in principle behave either way, though at least in the copular construction they clearly go the 'passive' way.
- The 'active' ~ 'passive' pattern partly corresponds to the range of available functional readings: the passive ones are more readily (but not exclusively) interpreted as 'state' adverbials, while the active ones have a strong tendency for a 'transparent adverbial' (manner of action + state of some participant) reading. Neither type seems to be able to predicate of just the event (variable), so they are never construed as pure manner adverbials.

At this point, it is interesting and enlightening to take a short detour and look at the major findings of yet another work, dealing with the predicative use of *-vA* participles: Kertész (2005). The most important conclusion of that work is that there are numerous very delicate constraints on the use/usability of the 'state' adverbial participles (in strong contrast with the rather unrestricted 'manner' adverbial participles), especially in the copular predicative construction (as in (1b)) and most of these constraints are about the lexical semantics of the base verb.[10] To spell out but a few:

- 'state' *-vA* can only attach to verbs that have an argument that undergoes a change of state:[11] (22a, b)
- predicative *-vA* participles are more acceptable if (i) the result state after the change is 'clearly visible', (ii) the resulting state holds for a longer period, (iii) the resulting state is relevant and more in quality than just the result of the given change (22c, d), (iv) some agent is implied (22e, f)
- of the unaccusatives, only those may occur in the predicative construction that are telic (23a, b), but not even all of them, e.g., verbs

of creation, although telic, do not occur in this construction: (23c); etc.

(22) a.*	*Laci énekelve van.* – no change-of-state (unergative)
          Laci   sing-vA   is
          'Laci is sung.' (intended: 'Laci is singing.')

       b.*	*Laci látva van / meg van látva.* – no change-of-state (transitive)
          Laci   see-vA is / PERF is   see-vA
          'Laci is (being) seen.'

       c.	*Az autó össze van törve.* – relevant for the car
          the car   PERF is   break-vA
          'The car is crashed broken.'

       d.??	*A váza össze van törve.* – not relevant for the vase: it has
           the vase PERF is   break-vA   ceased to exist
          'The vase is broken to pieces.'

       e.	*Az autó meg van javítva.* – an agent is implied
          the car   PERF is   repair$_{tr}$-vA
          'The car is (= has been) repaired.'

       f.	*Az autó meg van javulva.* – no agent is implied
          the car   PERF is   repair$_{unacc}$-vA
          'The car has become good.'

(23) a.*	*A hinta pörögve van .* – atelic
          the swing   spin-vA is
          'The swing is spun. (intended: The swing is spinning.)'

       b.	*A motor fel van pörögve.* – telic
          the engine   up   is   spin-vA
          'The engine is revved up.'

       c.*	*Egy vendég van érkezve.*
           a   guest   is   arrive-vA
          *'A guest is arrived.'

The complex and complicated nature of this set of restrictions questions the usefulness and viability of basing the structural analysis of adverbial participles on these semantic distinctions. Even though these constraints appear to be selectional in nature, it is highly unlikely that syntax (whether lexical or not) should be sensitive to such grammar-external notions like 'relevance', or 'length of the period, and visibility, of the resulting state'. Instead, it is more promising to let syntax more freely generate these structures, and let the semantic interpretation (and/or pragmatics) sort out the possibilities.

4. The syntax of adverbial participles

4.1. The ingredients of the analysis

For the analysis, I will assume the basics of Marantz's (1997, 2001) view of the syntacticization of morphology, including a decompositional/VP-shell treatment of predicates. Under this view, the building blocks of syntax are morphemic roots, which are turned into category-specified words by syntactic processes (such merging them with category specifying heads like (various flavors of) *v/voice*, *n*, D, etc.). This model also frees us from having to try to force the traditional categorization of derivation *vs.* inflection on participial morphology: as can be seen quite clearly from the literature, there is a considerable amount of uncertainty whether participle formation is derivational (and yields a peculiar kind of category) or inflectional (though its relation to tense-marking is left vague). We can now afford to ignore this terminological issue completely, and establish that the participial affix can merge at different points of projecting VP (or clause) structure, with different consequences.

In particular, I will assume, following the lead of Pylkkänen (2002) and Alexiadou (2006), both building on Kratzer (1996), that all predicates are syntactically structured as shown in (24). Each atomic component, represented by a separate syntactic head, introduces at most one argument of the whole 'predicate' in the traditional sense of the word.[12] The root is responsible for the innermost argument, while Voice closes off the projection of the entire 'predicate' by adding (if need be) the 'external argument'. Little *v* is the verbalizing morpheme, defining the predicate as a verb (since roots are category neutral in themselves), and CAUS is the morpheme introducing the notion of causation (agentivity) into the compositional structure. Little *v* also

constitutes the borderline between 'inner' and 'outer' affixation (see Marantz 2001).

(24)   [(*external arg*) *Voice* [CAUS [*v* [√ROOT (*internal arg*)]]]]

I want to break with a certain tradition, and avoid basing the analysis on the 'manner' ~ 'state' duality (because, as we have seen, it is neither a duality, nor a clear cut distinction), which means that we will posit a single -*vA* affixal morpheme, as the null hypothesis. As regards the various adverbial interpretations of our participles, I assume the approach taken by Geuder (2004) to be both valid and relevant, and although not much hinges upon the choice of a particular semantic account (as long as it does not try to drive the syntactic analysis), I will rely on Geuder's classification and assume the semantics proposed by him.

In Geuder's treatment of manner and state adverbials, there is a spectrum ranging from *pure manner adverbials*, which merely predicate of the event variable, as illustrated in (25), through *transparent adverbials* (as in (26)), which denote a transparent relation between the event and an individual (represented by one of the arguments), to *depictives*, or pure state adverbials (see (27)), in the case of which there is just an incidental temporal overlap between the event and a stage-level property of an argument-individual (where the extent of the overlap is determined pragmatically).

(25)   a. *Max solved the problem **quickly**.*
       b. *Max was **quick**.*   (25a) –/→ (25b)
       c. VP = λx [∃e [*solve*(e, x, *the problem*) & *quick*(e)]

(26)   a. *He discovered sadly /* $^{??}$*sad that the solution was wrong.*
       b. *Joe angrily left the meeting.*

(26′) a. VP = λx [∃e [*discover*(e, x, p) & ∃s [*sad*(s,x) & s O e &
          CAUSE(e,s)]]
       b. VP = λx [∃e [*left*(e, *the meeting*, x) & ∃s [*angry*(s,x) & s O e &
          R$_{motivate}$(s,e)]]

(27)   *Max ate tired.*

(27′) VP = λx [∃e [*eat*(e,x) & ∃s [*tired*(s,x) & s O e]]

Due to inferences, the (semantically clear) border between manner and transparent adverbials can easily become blurred in actual interpretations, as in the following example:

(28)   *She walked out calmly.*
     ∃e [*walk-out*(e, *she*) & *calm*(e)]
     + inference: visual evidence → *calm*(*she*) may be true as well

As is clear from the examples presented in the previous sections, the Hungarian adverbial participles are never construed as pure manner adverbials: they always predicate of an individual involved in the event. That is, the 'classic' cases of the manner readings of these adverbial participles are in fact transparent adverbials in Geuder's terminology, while the state readings (as far as we can tell at all, given the lack of any precise definition of the term in the literature) are either typical instances of depictives, or transparent adverbials, hence not genuinely distinct from the 'manner' ones.[13]

The following points summarize the basic assumptions for my proposal:

– As a null-hypothesis, I assume that there is a single adverbial participial affix in the (narrow) lexicon, corresponding to the affixal vocabulary item -*vA* (whereby I will refer to it in the rest of the paper as '-*vA*').

– The various adverbial readings (manner, depictive, transparent) emerge only at the level of semantic interpretation, and they are influenced by manifold semantic and pragmatic factors (cf. Kertész 2005, and Section 3. above).

– Affixal -*vA* can, in principle, enter the structure at any point in the extended projection of the predicate, and the actual point of entry has consequences both for the further projection of the predicate and its arguments, and for the available interpretations. In particular:
   o the higher it is inserted, the stronger the tendency for a transparent adverbial reading;
   o the controller of the unpronounced argument of the participle (see below for the details) can only be a DP that has an A-position (A-chain-link) higher in the matrix domain that the position of the participial phrase/clause;
   o the higher -*vA* enters the structure of the participial phrase, the higher the position of the participle within the matrix domain.[14]

In the next subsections, I will turn to the various insertion options of *-vA*, and the emerging syntactic and semantic structures.

4.2. Low insertion

When a root is picked from the lexicon, the first step to be taken is invariably the merging of this root with its (sole) argument, if it has any — that is, we must satisfy its selectional requirements as a first step. This cannot be preceded by any other merge operation. Note, though, that its relation to its innermost argument is not always direct, as depicted in (29b), but may sometimes be indirect, via a small clause structure, in which the argument of the root is the subject, and some aspectual (delimiting/measuring) secondary predicate is the small clause predicate (loosely following here Winkler's 1996 suggestion, and the leading idea concerning the semantics, though not the actual syntactic analysis, of Hungarian V-modifiers (VM) in É. Kiss 2006), see (30c).

In principle, we could now merge in the adverbial participial head *-vA*, as an 'inner affix' in Marantz's (2001) sense. Inner affixation, however, is associated with the potential of idiosyncratic combination with the root, and a decreased level of productivity, neither of which characterizes *-vA*, which is a hallmark case of 'outer' affix (cf. its productivity and transparent, predictable semantic combination with the base verb). Furthermore, on the basis of its attachment pattern illustrated with a certain verb type in (29), we can conclude that it necessarily enters the structure after/outside little *v*: as seen here, the verbal(izing) suffixes *-(U)l* 'ergative/unaccusative' and *-(i)t* 'transitive', which are rather obvious instances of *v*, precede the participial affix *-vA*.

(29) *gur-ul-vA,*   *gur-ít-vA;*   *sü-l-ve,*   *sü-t-ve*
      roll-ERG-vA   roll-TR-VA   bake-UNACC-VA bake-TR-VA
      'rolling'   'rolled'   'being baked'   'baked'

Suppose now that we merge in *-vA* immediately after verbalization (by *v*) takes place. ((30a) shows this for unergatives (no internal argument), and (30b, c) for other root-types).

(30a)   *-vA*   (30b)   *-vA*
            ei   ei
    -vA   *v*   *-vA*   *v*
            ri   eu
        v   √ROOT   *v*   √ROOT
                                                                ri
                                                            √ROOT   DP

(30c)   *-vA*
          eu
   -vA   *v*
            ri
         v   √ROOT
                          ri
            √ROOT   SC
                       ei
                   DP   VM
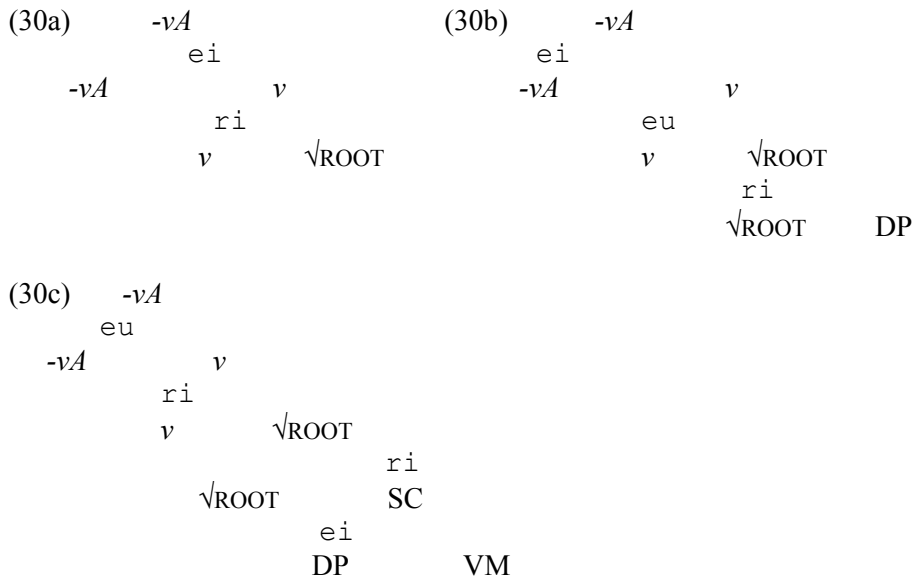
    This step disrupts the further projection of the root (in particular: no fur-
ther V-component/shell (e.g., CAUS), and importantly, no *Voice*-layer is
built), and yields a participial phrase with relatively little internal structure.
No external argument is projected (it is at best implied), and even when
there is an internal argument, no accusative case is available for this DP. The
root then picks up the *v* and *-vA* affixes by some appropriate mechanism.[15]
These are the participials found in the copular (or: stative) predicative con-
struction, embedded under some copular verb (such as *van* 'is', *volt* 'was',
lesz 'will be / become', *lett* 'became'). The basic options are schematized in
(31), and exemplified in (32):

(31)   a. COP [V-*vA* [DP VM]] → VM COP [[V-*vA* [DP ~~VM~~]] →
           → [T [vp VM-COP [V-*vA* DP ~~VM~~]]
                z---- case ----m
or:
       b. COP [V-*vA* DP] → V-*vA* COP [~~V -vA~~ DP] →   …
or:
       c. COP [V-*vA* DP] → XP_adj COP [V-*vA* DP] →   …

(32)   a.   [$_{TP}$ [$_{VP}$ *Le*   *van* [*mosva*   [*az   autó ~~le~~*]]]].
                  down is   wash-vA   the car
                  'The car is washed down.'

     b.   [$_{TP}$ [$_{VP}$*Festve*   *van* [~~*festve*~~   *a   pad*]]]].
                  paint-vA is   the bench
                  'The bench is (= has been) painted.'

     c.   [$_{TP}$ [$_{VP}$ *A   földre*   *van* [*dobva*   *a   kulcs*]]]].
                  the   ground-onto is   throw-vA the   key
                  'The key is thrown on the ground.'

   As seen in these examples, the internal argument will be promoted to become the subject of the clause built on the copula, whereby it will avail itself to nominative case-marking/checking in relation to the finite matrix domain, too.[16] Some key properties of the construction are given in (33):

(33)   COP [V-*vA* X] = 'X is in the state expressed in "V-*vA*" '
     → [V-*vA* X] must denote either a resulting state (34), or a process
        viewed as stativized (35–36)[17]
     → V must therefore be either telic or a process verb
     → X cannot be an external argument (EA): the V-root (√STATE) expresses the relevant state, and it predicates of the internal argument (IA): (37)[18]

(34)   a.   *A levél el   van   küldve.*   cf. **A levél küldve van.*
                  the letter away is   send-vA
                  'The letter is (= has been) sent.'

     b.   *A szalag   ketté   van   szakadva.*   cf. **A szalag szakadva*
                  the ribbon   two-into is   tear$_{unacc}$-vA   *van.*
                  'The ribbon is torn into two.'

(35)   a.   *A   szoba (épp) takarítva   van.*   – progressive
                  the room (just) clean-vA   is
                  'The room is (being) cleaned (just now).'

     b.?*A   bajai szerelvény (ma)   dízellel   van   vontatva.*
                  the Baja train   (today) Diesel-with is   haul-vA
                  'The Baja train is hauled with a Diesel today.'

(36)   a. *Kati   haja   (mindig/gyakran) aranyfésűvel   van fésülve.*
         Kati   hair-3sg (always/often)   gold-comb-with   is comb-vA
         'Katie's hair is always/often combed with a golden comb.'
         (generic/habitual)

      b. *Ezen   a   lemezen   a jól   ismert   dal   szokatlan*
         this-on   the record-on   the well known   song   unusual
         módon   alt   hangon   van   énekelve.
         way-on   alto   voice-on is   sing-vA
         'On this record, the well-known song is sung by an alto voice.'

(37)   a.* *Laci   vissza   van   futva   a   házba.*
         Laci   back   is   run-vA the   house-into
       * 'Laci is run back into the house.'

      b.* *Laci   be van   vásárolva.*
        Laci   in is   shop-vA
       * 'Laci is shopped.'
        (intended: 'Laci has done/finished the shopping.')

      c.* *Laci   le   van győzve   Jocit.*
        Laci   down   is   beat-vA   Joci-ACC
       * 'Laci is beaten Joci.' (intended: 'Laci has beaten Joci.')

      d. [%]*Laci el   van   utazva /   fel van mászva a   fára.*[19]
        Laci   away   is   travel-vA / up is   climb-vA the   tree-on
        'Laci is (lit.: traveled) away. / Laci is (lit.: climbed) up the tree.'

A possible reason why only transitives and unaccusatives partake in this game is that the unergatives truncated by *-vA* have no argument to offer as a subject. The illusion of 'passivization' of the transitive V is due to the essential similarity of this scenario to genuine passivization: no external argument is projected, the internal argument is deprived of accusative-marking, and a subject position opens up as a dual remedy for both of these 'problems'.

Since no agent role is projected for the transitives, it is predicted that even a demoted, oblique representation of an agent is impossible, and this is borne out to a large extent:

(38) a. *A   festék le   van   mosva (*Laci   által / Lacitól).*
       the   paint down is   wash-vA Laci by / Laci-from
       'The paint is (= has been) washed off (by Laci).'

     b. *Az autóm   meg van   javítva   (*a   szerelő*
       the car-1sg PERF is   repair-vA   the   mechanic
       által / szerelőtől).
       by /   mechanic-from
       'May car is (= has been) repaired (the mechanic).'

There are surface exceptions though:

(39) a. *A   levél közjegyző   által   van   hitelesítve.*
       the letter notary.public by   is   certify-vA
       'The letter is certified by a/the notary public.'

     b. *A levél hitelesítve van közjegyző által.*
       '= (39a)'

     c. *A   kép   híres   festő   által van   festve.*
       the picture famous painter   by   is   paint-vA
       'The picture is painted by a famous painter.'

     d.**A kép festve van híres festő által.*
       '= (39c)'

     e. ?? *A   kép   Mari / egy   barátom   által van   festve.*
       the picture Mari / a   friend-1sg by   is   paint-vA
       'The picture is painted by Mary / by a friend of mine.'

But this adjunct-represented agent can only appear in this construction, if it specifies and characterizes the effected object (or, possibly, the result state), cf. (40), with attributive counterparts:

(40) a. *Ez egy   közjegyző   hitelesítette   levél / ...   híres*
       this a   notary.public   certify-PAST.PART letter / …   famous
       festő   festette   kép.
       painter   paint-PAST.PART   picture
       'This is a letter certified by a notary public / … a picture painted by a famous painter.'

BUT:

> b.#*Ez   egy   Péter lemosta   /   megjavította*
> this a   Peter down-wash-PAST.PRT /   PERF-repair-PAST.PART
> *autó.*
> car
> 'This is a car washed / repaired by Peter.'

Moreover, since the lowest layer of the VP essentially denotes some state that can undergo a change just in case it is brought into relation with an event, and eventivity would be introduced by a separate, higher head (CAUS), no event[20] is involved at this lower level, hence we predict that no event-related modifiers are possible — which seems to be a correct prediction:

(41)   a. *szépen / *gyorsan fel van öltözve*
       neatly / * quickly   up is   dress-vA
       'is dressed up neatly/*quickly'
       (*gyors* 'quick' must predicate of some event *e*)

     b.**könnyen el   van   törve*
      easily   away is   break-vA
     * 'is broken easily'
      (*könnyű* 'easy' must predicate of some event *e*)

Note how some of these ill-formed examples are ameliorated if the matrix copular verb itself denotes an event of change (licensing the manner adverb), rather than a state:

(42)   *könnyen el   lesz   törve*
     easily   away will.be   break-vA
     'will be broken easily'
     (*lesz* in the 'become' sense, not the 'will_be' one)

4.3. Insertion above CAUS

As depicted in (24) above, if *-vA* (or anything else) does not intervene, the projection of the predicate will be taken to the next level: CAUS, a head related to causation,[21] as well as eventivity. This leads us to a distinction be-

tween transitives and unaccusatives: even though the two types are similar up to this point since only IAs have been merged in as yet, the transitives are now expanded with CAUS, while plain unaccusatives are not. This should have the obvious consequence that any modification of transitives can now involve the notions of eventivity and causation. And in fact, two relevant patterns can be detected in -*vA* participles, on the (by our terms natural) assumption that the -*vA* head can merge in above CAUS, just as well as it could merge in before (and precluding) the projection of the predicate to the level of CAUS. First, post-CAUS -*vA* participles of transitives, which can still be embedded in the copular construction presented in the previous subsection, have the option of modification by certain circumstantial adverbs (cf. the availability of instrumentals and *by*-agents in Alexiadou & Anagnostopoulou's (2007) account of Greek participles), an option not open for unaccusatives, which necessarily lack a CAUS layer:

(43) a. *A hús zsírban van megsütve / * megsülve.*
      the meat fat-in is PERF-fry$_{tr}$-vA / PERF-fry$_{unacc}$-vA
      'The meat is (= has been) fried in fat.'

    b. *A festék forró levegővel van ?megszárítva/*megszáradva.*
      the paint hot air-with is PERF-dry$_{tr}$-vA/PERF-dry$_{unacc}$-vA
      'The paint is (= has been) dried with hot air.'

    c. *A festék forró levegővel van szárítva.*
      the paint hot air-with is dry$_{tr}$-vA
      'The paint is (being) dried with hot air.'
      (cf. (43b) – this one is a process)

Second, there is a relevant matching effect: those copular matrix verbs that themselves contain an eventivity component ('BECOME'), namely, *lesz* (on its 'become' reading) and *lett*, only embed the CAUS-transitive -*vA* participles:[22]

(44) a. *A hús meg lett sütve / *sülve.*
      the meat PERF became(3sg) fry$_{tr}$-vA / fry$_{unacc}$-vA
      'The meat has become fried.'

    b. *A   festék   meg   lett   szárítva / * száradva.*
      the paint   PERF   became(3sg)   dry$_{tr}$-vA / dry$_{unacc}$-vA
      'The paint has been dried.'

Thus the generalization that emerges is the roughly the following:

(45)   a. *-vA* below CAUS → no circumstantial adverbial modification
      b. *-vA* above CAUS → certain circumstantial adverbials are possible

4.4. Insertion above Voice

Another option for merging in the *-vA* affix is to wait until a *Voice* layer (Kratzer 1996) is built on the VP. This will have two straightforward structural consequences: (i) the projection, i.e., the syntactic representation of an EA is now possible in the spec of Voice, and (ii) accusative marking/checking by the Voice head is now available for any IA. But the EA will still have to rely on further functional projections for case, so if TP is not projected (for whatever reason) then the EA can only be represented by some caseless category. On the other hand, a TP superstructure could license an overt EA, if T has the appropriate feature content. This, however, never happens with *-vA* participles, since the participial head projects its own non-verbal category, which will not be extended by the usual clausal architecture (TP, CP). Thus the only chance for the EA within a *-vA* participle phrase to license any structural case is to be embedded in a raising (or ECM) type of matrix domain, as was the case in the copular structure in 5.1., for instance. Another such context will be treated presently. But in the majority of cases, the *-vA* participles built on VoicePs function as adjunctive, left-branch (hence opaque) domains within their embedding construction, leaving the EA without structural case, whereby these EAs must often be non-overt.[23]

4.4.1. Predicative complements

One type of construction where the participial expression functions as a predicative (small clause) complement is where it is embedded under the matrix predicates *hagy* 'leave' or *talál* 'find': *talál* [$_{SC}$ X$_{acc}$ V-*vA*] 'find X V-ed/in a state of V'; *hagy* [$_{SC}$ X$_{acc}$ V-*vA*] 'leave X V-ed/in a state of V'. Some illustration is given in (46):

(46) a. *Lacit   vérbe   fagyva   /   a   kamrába   zárva*
Laci-ACC   blood-into   freeze-vA /   the pantry-into lock-vA
találtuk.
found-1pl
'We found Laci in a pool of blood / locked up in the pantry.'

b. *A húst   kihűtve   /   kihűlve   hagytuk.*
the meat-ACC   out-cool$_{tr}$-vA / out-cool$_{unacc}$-vA   left-1pl
'We left the meat cooled off.'

c. *A húst   zsírban   sülve   /   ?sütve   találtuk.*
the meat-ACC   fat-in   fry$_{unacc}$-vA /   fry$_{tr}$-vA   found-1pl
'We found the meat frying/fried in fat.'

d.?*A konyhában vacsorázva   hagytuk / találtuk   Lacit.*
the kitchen-in   have.supper-vA left-1pl   /   found-1pl Laci-ACC
'We left/found Laci having his supper in the kitchen.'

Given the availability of (i) circumstantial adverbials in the participle phrase, and (ii) an EA for the participle, we conclude that in these cases the base predicate projects a CAUS layer (for transitives), and optionally a Voice layer. The accusative marking that occurs on either the EA, when there is one, or the IA, is licensed from outside, by the matrix V, in an ECM fashion (whatever its technical execution). Examples like (46d) testify that the 'passive' flavor characteristic of the participle in the copular construction is absent here, as is the telicity condition. On the semantics side, these are hallmark cases of 'state' adverbials, of the depictive type, with the participle denoting a state or process temporally overlapping with (in fact: containing) the matrix event time, i.e., the time of finding/leaving.

4.4.2. Adjunct secondary predicates

The other construction involving a VoiceP-based -*vA* participle is where the participial phrase constitutes a depictive or a transparent adverbial with adjunct status. As established by Tóth (2000), these cases involve participials that are (minimally?) VoicePs themselves (though?) with some information-structural architecture possible, and which occupy a position left-adjoined to the matrix VoiceP — only focus or negation may intervene between them and the overt copy of the matrix verb. Consider these examples:

(47) a. *Laci* [PRO~L/M~ *mosolyogva*] *fotózta* *le* *Marit.*
Laci   smile-vA   photograph down Mari-ACC
'Laci photographed Mary smiling.'

    b. *Laci* [PRO~L/*M~ *az* *autóban* *fáradtan* *üldögélve*]
Laci   the car-in   tired-ADV   sit-FREQ-VA
mesélt   *Marinak.*
tale.told(3sg)   Mari-DAT
'Laci was telling stories to Mary sitting tired in the car.'

    c. *Laci* [PRO *a* *kabátja* *gallérját* *teljesen* *felhajtva*]
Laci   the coat-3sg collar-3sg-ACC completely   up-lift-vA
álldogált   *a*   *hidegben.*
stood(3sg)   the cold-in
'Laci was standing in the cold with the collar of his coat fully lifted up.'

    d. *Laci* [PRO *kötelekkel* *megkötözve*] *ült*   *a*   *szobában.*
Laci   ropes-with   PERF-tie-vA sat(3sg) the   room-in
'Laci was sitting in the room tied up with ropes.'

(48) a. *A* *vízbe*   *esett* *kisfiút* [PRO~I/*he~ *kimerülve*]
the water-into   fallen little-boy   exhaust~unacc~-vA
követtem   *a* *hullámok*   *közt.*
followed-1sg   the waves   among
'I was following the little boy (who had) fallen in the water exhausted.'

    b. *A* *vízbe*   *esett* *kisfiút* [PRO~I/he~ *kimerülve*]   *húztam*
the water-into   fallen little.boy   exhaust~unacc~-vA pulled-1sg
ki   *a*   *partra.*
out   the   shore-onto
'I pulled the little boy (who had) fallen into the water out to the shore exhausted.'

Semantically, there is again a temporal overlap between the matrix and the embedded eventualities, which may either be unmotivated, yielding a depictive reading for the participle, or in the motivation relation characteristic of transparent adverbials, as in Geuder's (2004) typology.

Just as was the case with the predicative complements in the previous subsection, neither the 'passivization' effect, nor the telicity requirement is valid here: the PRO subject of the participle can equally well represent an agent or a patient, and process or state predicates can serve as the base of the participle without a hitch (as in (47a, b)).

Another important aspect of the construal of these structures concerns the question of the reference of the PRO subject of the participial domain. As shown in the examples above, the subject of the matrix domain is always a potential controller for this PRO, but in some cases, like (47b, 48b), the matrix object may control it, as well. Given Tóth's (2000) assumption about the locus of the participial phrase within the matrix domain (left-adjoined to the matrix VoiceP), the subject control facts are as expected, but object control is somewhat problematic, since the highest A-chain-link of object phrases is in spec,VoiceP (as is widely assumed in the minimalist literature), i.e., even the highest A-chain-link of the controller is lower in the structure than the adjunct containing the controllee.[24] The next subsection will show that if a participial phrase/clause is attached even higher in the matrix structure, the option of controlling its PRO subject by a matrix object is completely lost, i.e., the height of attachment figures significantly in the computation of control possibilities, which suggests that here, for the cases at hand, we must seek a solution that makes reference to the relative height of the controller and the adjunct containing the controllee. The most straightforward move is to place the participial phrase lower in the matrix structure: to somewhere below the outer specifier of Voice. But it will still have to be higher than the position of the overt copy of the matrix verb, which (in view of the general word order facts of Hungarian amply discussed in the literature[25]) is not likely to be lower than $Voice^0$. This leaves $Voice'$ as the adjunction site for the participial phrase, at least for the object control depictive cases.[26]

At the same time, there is a correlation between the choice of controller and the adverbial interpretation of the participle, too: with object control, the participle functions as a pure depictive (no motivation relation between the event — in (47a), Mari's smiling is not necessary related to / induced by the photographing event; in (48b) the boy is surely not exhausted by being pulled to the shore), while with subject control, a transparent adverbial reading is possible (or maybe even preferred): there is a sense of motivation between the act of photographing Mary, and the smile on Laci's face, and, likewise, between the act of pulling the boy to the shore, and the exhaustion of the savior.

4.5. The -vA participle as a sentential modifier

In full agreement with Laczkó (2000) and Tóth (2000), I distinguish a final
case of -*vA* participles the two key properties of which are:

–   The participle projects a full clause, with the entire functional layer,
    including positions associated with CP-space functions (topic, focus,
    distributivity), as well as some of those of the IP-space (like nega-
    tion, tense). This clause has its own non-finite tense (see below), so
    it cannot license an overt subject, just a covert one (PRO).
–   The participial clause enters into the matrix structure rather high,
    somewhere in its clausal functional architecture, whereby its own
    PRO subject cannot be controlled by any other argument of the ma-
    trix domain than the subject, whose topmost A-chain-link is high
    enough in the structure to c-command the participial clause.

Some illustration is given in (49):

(49)   a. [PRO *kabátját   lazán   a   vállára   vetve*]
               coat-3sg-ACC   loosely   the shoulder-3sg-on throw-vA
           Laci   reggel   kilépett   a   kapun.
           Laci   morning   out-stepped(3sg)   the gate
           'Throwing his coat loosely over his shoulder, in the morning Laci
           stepped out of the gate.'

       b. *Laci* [PRO *a   következményektől   egyáltalán   nem   is*
               Laci   the consequences-from   at.all   not   too
           félve]   *benyitott   a   szobába.*
           fear-vA   in-opened(3sg)   the   room-into
           'Not fearing the consequences at all, Laci opened the door of the
           room.'

For most speakers who actively use the -*vÁn* participles in their dialect,
the -*vA* and -*vÁn* participles are usually interchangeable in this construction
(Tóth 2000):

(50)   a. [superscript %] [pro *kabátját lazán a vállára vet**vén***] *Laci reggel kilépett a*
           kapun.   cf. (49a)

       b. [superscript %] *Laci* [pro *a következményektől egyáltalán nem is fél**vén***]
           benyitott a szobába.   cf. (49b)

No wonder, therefore, that Tóth proposed to analyse *-vA* in this use as an exponent of T^0, in line with her (and Sárik's (1998)) assumption that *-vÁn* is T^0, the only crucial difference being that *-vÁn* has the capability of licensing non-null case on its subject, unlike the entirely non-finite, non-agreemental *-vA*. My proposal differs minimally from Tóth's: since I essentially consider *-vA* to be a single lexical item, I do not find it a good idea to allow for a categorial choice there (Asp/Voice/T). Instead, keeping to the leading idea of this paper, I assume that is heads its own projection, but this time it merges with some clausal functional category built above VoiceP:[27]

(51)   *-vA*
        ro
    -vA   FP
               6
        a   kabátját   a   vállára   vet-
        the coat-3sg-ACC the   shoulder-3sg-on throw-

Temporally, the event/state expressed in the participial clause can be simultaneous or anterior/posterior to the event time of the matrix clause. For such temporal relations to be expressible, and in view of the architectural richness of this type of *-vA* participles, it is reasonable to assume that such participial clauses always include a (non-finite, dependent) T^0, and they attach to some functional category of the matrix clause below TP, from where they may undergo further movement to the C-space (as, e.g., in (49a)).

The temporal relation between the matrix and the participial clause can technically captured as dependency relations between their Ts, but there is some reason to believe that it falls under a particular application functional principle of temporal sequencing (PTS), attributed to Tai (1985):

(52) PRINCIPLE OF TEMPORAL SEQUENCING
      The interpretation that an event depends on the event preceding it is based on our understanding of the real world, in which events unfold along a time dimension.

The particular way Tai thought this principle applied to syntactic structures is that the linear ordering of real-world events and that of their linguistic expression is isomorphic: a linguistic unit *u1* expressing an event *e1* that precedes another event *e2* is bound to precede the unit *u2* expressing the latter event in the linear order of the linguistic units:

(53) $e1 < e2$ ⇔ $u1 < u2$

Some illustration of this functional principle at work in the Hungarian adverbial participial constructions is given in (54–55):

(54) a. *Kinyitotta   az   ablakot,   utat   **engedve***
         out-opened(3sg) the   window-ACC   way-ACC allow-vA
         a   füstnek.
         the   smoke-DAT
         '(S)he opened the window, giving way to the smoke.'

    b. ***Kinyitva***   *az ablakot,   utat   engedett*
         out-open-vA the window-ACC   way-ACC   allowed(3sg)
         a   füstnek.
         the   smoke-DAT
         'Opening the window, (s)he gave way to the smoke.'

(55) a. [#]*Utat engedve a füstnek, kinyitotta az ablakot.*   cf. (54a)
      b. [(#)]*Utat engedett a füstnek, kinyitva az ablakot.*   cf. (54b)

Quite obviously, the two clauses in these examples are more or less on a par, either can serve as a participial modifier within the other one, but their ordering is functionally determined in either case, roughly along the lines of the PTS and (53). Any detailed investigation of such effects lies beyond the scope of this chapter, though, and is therefore left for future work.

On another note, mention must be made of the fact that (possibly in correspondence with the relative independence of these clausal participial units, as compared to the cases treated in the preceding subsections) the clausal -*vA* participles have a much wider range of available adverbial interpretations: apart from the accessibility of transparent state readings comparable to those of the lower-attached -*vA* participles, we find (at least) temporal, purpose, and reason adverbials here, too (witness the temporality of (49a, 54), the reason/purpose component in (54a, b)).

As briefly mentioned already, the reference of the covert subject of the clausal -*vA* participles is both more limited and less restricted, at the same time, than was the case with the VoiceP-level ones. Here the general pattern is subject control — object control is entirely impossible, given the low A-positions of the (chain of the) object DPs relative to the locus of the -*vA* clauses. However, as pointed out by Tóth, logophoricity must be allowed as

an option, too: (56a). Interestingly, though, this only seems available in the absence of an appropriate syntactic controller, and even then, the logophoric controller cannot be something deeply embedded:

(56) a. [PRO$_x$ *furcsa   hangokat   hallva*]*, természetes volt*
              strange sounds-ACC hear-vA natural   was
      számára$_x$ benyitni.
      for.him/her   in-open-INF
      'Hearing strange sounds, it was natural for him/her to open the door.'

    b. [PRO$_{y/*x}$ *furcsa   hangokat   hallva*]*, Laci$_y$ megpróbált*
      .
              strange   sounds-ACC hear-vA Laci   PERF-tried(3sg)
      neki$_x$ segíteni
      (s)he-DAT   help-INF
      'Hearing strange sounds, Laci tried to help him/her.'

    c. *[PRO$_x$ *hazugságoka   kiabálva*]*, természetes*
                lies-ACC   shout-vA   natural
      lett volna   megverni   őt$_x$.
      would.have.been   PERF-beat-INF   him/her
      'Shouting lies, it would have been natural to beat him/her up.'

4.6. Summary

To conclude this section: we have established the basic attachment patterns/possibilities of *-vA* in the (extended) projection of its host predicate, and found that there are at least four crucial merge points, yielding constructions with markedly different properties:

- **Merge right above** *v* → a minimal participial phrase emerges, which can then be embedded in a copular matrix domain; the sole projected overt IA of the host root is then promoted to be the subject of the copula clause, getting its case licensed there. No EA can appear, because the structure is too minimal for that. The participle serves as the main semantic predicate.
- **Merge above CAUS, but below Voice** → a somewhat richer structure emerges, with an event variable that licenses further modifiers;

the embedding construction is still copular, with further structural and semantic properties identical with the previous type.

- **Merge above Voice** → this gives rise to predicative complement or adjunct participials (appearing in a small clause selected by certain matrix predicates in the former case, appearing as adverbial modifier to a matrix VoiceP in the latter). Here the Voice-layer licenses the case of any IA, and allows for projecting an EA, but in the absence of a case licenser for the latter, it surfaces as a covert DP (PRO), the reference of which is determined by syntactic (subject or object) control. The participial phrase is construed as a secondary predicate, with a depictive or a transparent adverbial reading.

- **Merge in the IP-space** → this yields a clausal structure for the participle, which then appears as a 'high' adverbial in the matrix domain. The participial clause has a rich clausal functional structure, but its T being non-finite, its subject is still covert, and (syntactically or logophorically) controlled.

## 5. Conclusion, with some speculation about the 'matching effect'

This chapter has aimed to show that an account of *-vA* participles relying on the variable merge point of a single affixal morpheme in the syntactic structure, in a Marantzian antilexicalist framework is viable, and can explain the behavioral pattern of the *-vA* participles to a large extent (faring no worse than the previous accounts). For the greater part, I believe that I have succeeded; however, there remains at least on crucial effect in the system that has not been explained: this is the effect of matching in the size of the participial domain and its hosting matrix domain, mentioned in 4.1. above:

(57)   The higher *-vA* enters the structure of the participial phrase, the higher the position of the participle within the matrix domain.

The fact that larger participial chunks don't occur lower in the matrix structure can largely be derived independently: the copula in the predicative constructions needs a small and transparent domain to operate on, and the invariable temporal overlap semantics of depictives and transparent adverbials is easiest to derive if the modifier and the modifyee share the same T above them. If I had a good account of the inverse direction of matching, i.e., of why the smaller participials don't occur in higher positions in the matrix, the story could (and should) end here, and the effect in (57) could probably be

waved away as insignificant and epiphenomenal. In the absence of such a good account, though, I must speculate somewhat on how (57) can be derived, so that I can patch the cooccurrence account this way.

The essential idea is that *-vA* is a conjunction forming element: it takes two arguments in a special kind of coordination, in an asymmetric syntactic configuration:

(58)   Conj$_{-vA}$
        ei
        X   Conj$_{-vA}$
                ei
            Conj$_{-vA}$ Y
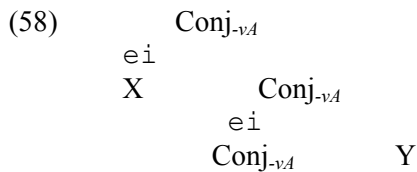
The first argument (Y in (58)) is what is turned into a participial phrase/clause morphosyntactically, while the second one (X in (58)) corresponds to the 'matrix domain'. Initial motivation comes from the semantics of the VoiceP-level and clause-level participial constructions. Consider (47d) again, repeated here as (59), with its Geuder-type semantic representation:

(59)   *Laci* [PRO *kötelekkel   megkötözve*]   *ült   a   szobában.*
       Laci   ropes-with   PERF-tie-vA   sat(3sg) the room-in
       'Laci was sitting in the room tied up with ropes.'

(59′) VoiceP = λx [∃e [*sit_in_room*(e,x) & ∃s [*is_bound_up*(s,x) & s ◯ e]]
(59″) [$_s$ *x   kötelekkel   megkötözve*] & [$_e$ *x ült   a   szobában*]
           x   ropes-with   PERF-tie-vA &   x sat(3sg) the room-in

That is, if we think of the structure of (47d) as a VoiceP-coordination under a common (ATB) subject, instead of a finite matrix clause embedding a participial VoiceP adjoined to the matrix VoiceP, we arrive at the intended meaning in a straightforward way.

A minimally modified version of (49a), given here as (60), illustrates the same for the clause-level participial:

(60)   *Laci* [PRO *kabátját   a   vállára vetve*]   *kilépett*
       Laci   coat-3sg-ACC the shoulder-3sg-on   out-stepped(3sg)
       a   kapun.
       the   gate-on
       'Throwing his coat over his shoulder, Laci stepped out through the gate.'

(60′) [$_s$ *x kabátja   x vállára   vetve*]   & [$_e$ *x   kilépett*
         x coat-3sg   x shoulder-3sg throw-vA &   x   out-stepped(3sg)
      a   kapun]
      the gate-on

If we accept this hypothesis then the matching effect follows from a general constraint on coordinative structures: that the conjoined items must be of the same category. In our particular cases: conjoin a VoiceP with a VoiceP, or a clause with a clause. The final (surface) orders are then reached by various movements into a clausal functional superstructure above the ConjP. For example, in the particular case of (47d), *Laci* would be topicalized in that domain, while the participial VoiceP would move to a focus-like position; in (49a'), *Laci* would again be topicalized, while the participial clause would move to some position typical of sentential adverbials.[28]

Turning now to the 'low insertion' cases, I assume that what we have there as the participial phrase is just the downstairs part of the conjunction: *-vA* and its first argument. Conj-*vA* being unsaturated, it behaves as a predicate phrase, and is selected by the embedding construction (the copular construction, or the *hagy/talál* verbs) as such.

Needless to say, this is just a rough speculative idea, with many details waiting to be spelled out (e.g., the 'control' patterns), and it will take further research to confirm or disprove its validity, but at first sight it appears as a promising path to follow.

Notes

1. The writing of this paper owes very much to the persistence and patience of Katalin É. Kiss, for which I am greatly indebted. I also wish to express my gratitude to all members of our project group for very helpful discussions and suggestions, especially to Balázs Surányi and Barbara Ürögdi. Earlier versions of this paper have been presented at the MaMaNyelv7 conference (Szeged, 2007), and at a public lecture in the Research Institute for Linguistics (Hungarian Academy of Sciences); I am grateful for all comments of those audiences.

2. The use of capital for the letter of the vowel in the affixes abbreviatively reflects the fact that they are involved in vowel harmony, i.e., they have variable forms with harmonizing vowels: *-va/-ve and -ván/-vén*, the choice depending on phonological properties of the vowels of the hosting stem.

3. There are lexical exceptions (paradigm gaps?): *lesz* 'become/will be' only has the *-vÁn* form: *lévén*, but not **léve*, and for the verb *hisz* 'believe' the *-vA* form is rather marginal: *hívén*, but [??]*híve*. Naturally, in these cases the only available form is the one with *-vÁn*, and these are used for every accessible adverbial role (if used at all).

4. These examples are taken from, or based on examples in, Laczkó (2000).

5. It must be noted, though, that the behavior of adverbial participles as predicatives, as in (2a, b), also favors analysing unaccusatives as taking the *-vA$_2$* suffix, on grounds of simplicity (Laczkó 2000: 447).

6. Some aspects of the technicalities have been simplified here to avoid lengthy but not directly relevant technical discussions, partly on LFG, partly on the morphology of Hungarian — for the precise details the reader is referred to the original source.

7. This suffers from terminological looseness, of course: it glosses over the question whether this is a genuine category changing derivation. For this reason, it is difficult to assess the viability of this proposal.

8. As regards the category (and exact make-up) of the domain hosting the copula I am necessarily vague: Tóth does not specify this.

9. An example of this type (Tóth 2000: 252, (24b)):

(i) (*A szobákban*) pro *ki   van   takarítva.*
    the rooms-in   out   is   clean-vA
    lit.: 'It is/has been cleaned (in the rooms).' [= The rooms have been cleaned.]

10. Most of these constraints had been established in the literature before Kertész's work (esp. Laczkó 1995, Alberti 1996, 1997, É. Kiss 2004), but she gives a very comprehensive survey and summary of whatever had been found out about this.

11. Note in this context that the lexical reflexive predicates (e.g., *felöltözik* 'dress up', *levetkőzik* 'undress', *megfürdik* 'take a bath') pattern with unaccusatives, and do occur in the stative predicative (copular) -*vA*-construction, as expected, since their sole argument is of the undergoer type:

(i) *Fel vagy   öltözve?*   (ii) *Meg   vagyok   fürödve.*
    up are.2sg dress-vA   PERF am   bathe-vA
    'Are you dressed up?'   'I am (= have) bathed.'

12. I will completely ignore the question of where an applicative head appears for ditransitives, and abstain from using examples involving this complication, to keep the discussion reasonably simple.

13. This way, as an extension to Geuder's typology of the 'category – function' matchings, Hungarian embodies the option where both transparent adverbials and depictives are represented by adverb-like entities, as opposed to English, where depictives are adjectives and transparent adverbials are adverbs, and to German, where both are adjectives (Geuder 2004: 155).

14. This observation was made by Balázs Surányi (p.c.).

15. This may be head movement (à la Baker 1988), morphological merger (Halle & Marantz 1993), or morphosyntactic merger (Bartos 2003, 2004), depending on one's favorite theory of syntactic affixation – we do not pursue this issue here.

16. And often the participle or the verbal modifier predicate of the SC raises to the left of the finite V (*van*) for reasons having to do with aspectual and/or prosodic properties of the copula, irrelevantly for us here.

17. Note that the examples in (35–36) describe the process, not the resulting state, cf. the use of time adverbials in (35), for example.

18. X may be implicit:

(i) *Tálalva   van / Ki   van   takarítva.*   (cf. Tóth 2000)
    serve-vA is   / out   is   clean-vA
    'It is served. / It is cleaned.' [intended: The meal is served. / The place is has been cleaned.]

19. Pragmatic factors can obviously cause interference (occasionally, a state can be predicated of an EA, too), therefore the combination of unergative verbs and -*vA* is not morphosyntactically ill-formed, but semantically inappropriate, hence the possibility of pragmatic overriding. As regards the origin of the subject, the simplest assumption is that here they are 'occasional' IAs, merged with the root, so these examples are not built upon genuine unergative predicates, but 'occasional' unergative-turned-unaccusatives.

20. Here we make a distinction between 'event' in the wider, general sense (= eventuality) and in the more specific sense (eventivity, event as opposed to state), making use of the more specific sense.

21. This CAUS category is not the same as the (affixal) head introducing *external causation* (-*tAt*) corresponding to the *make X do sth.* construction in English — the latter head is higher up in the structure, above VoiceP.

22. For more on the differential behavior of stative vs. eventive (*van* 'is' vs. *lesz* 'become') copulas in the stative/predicative construction, see Márkus (2008).

23. For simplicity's sake, I assume here that these non-overt D(P)s are PROs, which need no structural case, and disregard the 'null-case' tradition of the literature on PRO and control. A more precise, more detailed (and complicated) account of the licensing of these non-overt EAs would certainly involve some sort of weak T in the participial phrases.

24. Control by any other argument (or adjunct) is impossible – and this is all the more notable because non-participial adverbials in similar functions do allow such a construal, cf. (ii):

(i) *Az elemeket* [PRO$_{I/batt./*M}$ *teljesen   kimerülve*]   *adtam   át   Marinak.*
the batteries   completely   exhausted-vA gave-1sg   over   Mari-dat
'I gave the batteries to Mary completely exhausted.'

(ii) a. [PRO$_{we/*he}$ *súlyosan megsebesülve*]   *is   bíztunk   a   parancsnokban.*
               seriously wounded   too   trusted-1pl the commander-iness
'We trusted in the commander even when ([OK]we were/[NOT]he was) seriously wounded.'

  b. [[PRO$_{we/he}$ *súlyos sebesült*]-*en*]   *is   bíztunk   a   parancsnokban.*
              serious wounded-ADV   too trusted-1pl   the commander-iness
'We trusted in the commander even when (we were/he was) seriously wounded.'

25. For a recent detailed presentation see É. Kiss (2002).

26. Note that I completely and consistently ignore here the effects of various A′-movements of all the parties involved (subject, object, participial VoiceP), to the operator domain in the matrix clause, in relation to information structural and other functions (such as topic, focus, distributive quantifier). My reasons: (i) these are not expected to interfere with binding/control relations, which are exclusively linked to A-positions; (ii) these A′-type movements yield an immense number of word-order variants, impossible to treat fully within the limits of a book chapter of this size.

27. In this scenario, -*vÁn* could possibly be analysed as the morphological merger of -*vA* and -*Vn*, the latter occupying T^0, and -*vA* adjoining to it.

28. Such an account would of course face various technical challenges (such as: why/how these structures can disobey the coordinate structure constraint?), but would also open up interesting new paths (e.g., the shared subject of the clausal participial construction could possibly be analysed as ATB-moved, hence the

subject of the participle would in fact be a trace/copy, not a PRO, whose case deficiency would then be circumvented by the ATB movement).

Adverbial (dis)ambiguities. Syntactic and prosodic features of ambiguous predicational adverbs
Barbara Egedi

1. Introduction

Chapter 2 of this volume provides a comprehensive analysis that accounts for the placement of Hungarian adverbial adjuncts, deriving all of their word order possibilities, scope relations and prosody. In this paper I present novel data concerning the behavior of a narrower class of adverbs, so-called predicational sentence adverbs, discuss the role of prosody in relation to their syntactic and semantic properties, and propose an analysis that accounts for these additional facts as well.

In the first part of the chapter, I concentrate on ambiguous predicational adverbs exhibiting both manner and clausal readings (e.g. *szokatlanul* 'oddly', *okosan* 'cleverly'), and my aim is to show that their stress properties and prosodic integration can be derived from their syntactic position (determined by their semantically motivated selectional requirements) in the same way as in the case of ordinary adverbs. However, ambiguous adverbs, being semantically underspecified, have more than one possible sites to be adjoined to and their interpretation will depend on the structural level at which their adjunction takes place. In postverbal position, owing to the free word order and neutralized prosodic environment, the normal disambiguating strategies (see section 3.1) fail to function. The wide scope and sentential reading of an ambiguous adverb become available only by blocking the so-called 'intonational phrase restructuring' rule (the fusion of two intonational phrases), in other words, by preserving the intonational autonomy of the high adjoined adverb (3.4.3).

In the second part of this chapter I show that a special type of ambiguity emerges within the sentence adverb class as well. There is a group of epistemic adverbs that shows two sets of distributional and stress properties, one of which can be attributed to a special function. Unlike canonical sentence adverbs, these epistemic adverbs (expressing conviction on behalf of the speaker) are linked exclusively to verum focus when they bear primary stress. In this usage they escape all the usual generalizations established for sentence adverbs: they can appear in questions, or in the scope of other operators, including negation. (In this sense, they behave

more like pragmatic particles.) I propose to integrate this function with the model established for adjunct licensing by means of allocating a verum phrase and a related adjunction site specifically for this particular group of adverbs.

The chapter is organized as follows. Section 2 presents the theoretical background, the syntactic and semantic models applied throughout the paper. Section 3 discusses Hungarian sentence adverbs with particular attention to ambiguous predicational adverbs having both clausal and manner readings: their distribution, their interaction with intonational patterns, their distinct structural positions, and finally, the consequences of right-adjunction, namely, the way that postverbal ambiguous adverbs are disambiguated by prosodic means. Section 4 is devoted to the special case of ambiguity mentioned above. The case of the adverb *biztosan* 'certainly' illustrates a whole class of sentence adverbs that show irregular prosodic and distributional properties. The structural and functional analysis of the phenomenon suggests that these adverbs can be adjoined lower in course of the derivation than canonical sentence adverbs and in this position they modify a special type of focus structure, the so-called assertive or verum focus. The intriguing three-way "ambiguity" of *biztosan* 'certainly' is derived from the three possible adjunction sites available for it, while my analysis also accounts for the different prosodic properties of the sentence types including such adverbs.

2. Theoretical background

Bellert (1977) refines Jackendoff's (1972) classification of adverbs (VP-adverbs, subject-oriented, speaker-oriented) subdividing adverb classes into more refined categories on a semantic basis, and taking into account distributional properties other than position alone. I will rely on Bellert's assumptions regarding primarily the subclasses of the speaker-oriented group, which she shows not to be a homogeneous one.

With regard to the theoretical model, providing the general mechanism for the distribution of adjuncts, I follow Ernst's (2002) adjunction-based syntax and event-based semantics, according to which several layers of event types and proposition types can be built on a basic event until the representation of the proposition for the whole sentence is completed. Adverbs of different subclasses have selectional requirements for a specific type of semantic argument, namely, an event, a proposition, or a fact – a Fact-Event Object (FEO) in Ernst's terminology –, and the compositional

rules responsible for their combination are referred to as the FEO Calculus. Ernst's model can derive the relative order and the scope relations of the different adverb types with the same effectiveness as the more restricted feature-checking theory of Cinque (1999). Furthermore, Ernst allows right-adjunction, and his framework provides a more adequate analysis when it comes to Hungarian data.

According to Ernst (2002: 45), the hierarchy of predicational adverbs on lexico-semantic grounds is as follows:

(1)   discourse-oriented > evaluative > modal > evidential > subject-oriented > negative > manner

This hierarchy practically corresponds to the one established by Cinque (1999: 11-13) for "higher AdvPs":[1]

(2)   speech act/pragmatic adverbs > evaluative > evidential modal > epistemic modal > *'forse'* > subject-oriented

In fact, this is also the normal ordering of Hungarian sentence adverbs in the preverbal field. Observe (3) and (4), where the scope hierarchy is reflected by the rigid order of the evaluative and epistemic adverbs.

(3)   a.   *Hugó szerencsére valószínűleg feldíszítette a   karácsonyfát.*
              Hugo luckily   probably   decorated   the Christmas tree
              'Luckily, Hugo probably has decorated the Christmas tree.'
       b.   **Hugó valószínűleg szerencsére feldíszítette a   karácsonyfát.*
              Hugo probably   luckily   decorated   the Christmas tree
              Intended: 'Probably, Hugo luckily has decorated the Christmas tree.'
(4)   *Hugó valószínűleg feldíszítette szerencsére a   karácsonyfát.*
       Hugo probably   decorated   luckily   the Christmas tree
       'Luckily, Hugo probably has decorated the Christmas tree.'

Hungarian adverbs may appear both preverbally and postverbally, but only their preverbal order is strictly fixed. In the postverbal field the order of the elements is relatively free in spite of the fact that the adverbs maintain their scope, and usually their stress properties, as well. A postverbal sentence adverb may have scope over a preverbal one (4), and two postverbal adverbs may also show scope hierarchy independently of their position and relative order in the sentence.

In chapter 2 É. Kiss derives the postverbal positions and free order of adverbs by allowing right adjunction, and positing an independently motivated assumption that the postverbal section of the Hungarian sentence is linearized freely in PF. Thus, right-adjoined sentence adverbs, still c-commanding their scope at the syntax-LF interface, can be ordered randomly in the postverbal string. A challenge for such an analysis is raised by ambiguous predicational adverbs that have both manner and clausal readings, and seem to be underspecified in the lexicon. As they can be combined with at least two types of FEO arguments, their proper interpretation will depend on which point of the derivation they are adjoined to the structure. Distinguishing between the two readings in the preverbal field is straightforward since the adverbs show the same syntactic and stress properties in their manner adverb and sentence adverb function as their non-ambiguous counterparts. (These properties and rules established for manner and sentence adverbs will be enumerated in the next section.) However, in postverbal position, where word order and under focus and negation also prosodic properties are neutralized, the obligatory preservation of the independent intonational phrase of the high adjoined adverb will assure its clausal reading.

3. Ambiguous predicational adverbs

In order to show the problems concerning ambiguous adverbs, the general properties of sentence adverbs in comparison with manner adverbs will be demonstrated first, both in preverbal and postverbal positions. Three tests will be provided to separate sentence adverbs from other adverb types in the preverbal field, followed by a proposal about their proper adjunction sites. Lastly, it will be demonstrated that our tests cease to function postverbally due to stress neutralization effects. The complete integration of right-adjoined sentence adverbs into the intonational phrase constituted by an operator and its scope will not be a realizable option for ambiguous adverbs. In such a syntactic configuration, they will be disambiguated purely by prosodic means, i.e. preserving their intonational independence.

3.1. Properties of sentence adverbs versus manner adverbs in preverbal position

3.1.1. Word order
The least marked position for all predicational adverbs (both manner and clausal) in Hungarian is after the topic constituent, preceding the predicate:

Manner adverbs:
(5)   *Hugó gyönyörűen feldíszítette a karácsonyfát.*
      Hugo beautifully decorated   the Christmas tree
      'Hugo has decorated the Christmas tree beautifully.'
(6)   *Hugó szorosan megkötötte a cipőfűzőjét.*
      Hugo tightly   tied   his shoelaces.
      'Hugo has tied his shoelaces tightly.'

Sentence adverbs:
(7)   *Hugó valószínűleg feldíszítette a karácsonyfát.*
      Hugo probably   decorated   the Christmas tree
      'Hugo has probably decorated the Christmas tree.'
(8)   *Hugó bizonyosan   megkötötte a cipőfűzőjét.*
      Hugo undoubtedly   tied   his shoelaces
      'Hugo has undoubtedly tied his shoelaces.'

In general, Hungarian adverbs may also be inserted in other sentence positions relatively freely. Nevertheless, while sentence adverbs may show up in every possible position (9), manner adverbs usually cannot precede the topic constituent ((10)-(11)) – at least with normal intonation pattern –, and are more closely related to the predicate prosodically, too.

(9)   *(Valószínűleg) Hugó (valószínűleg) feldíszítette (valószínűleg)*
      probably   Hugo   probably   decorated   probably
      a karácsonyfát   (valószínűleg).
      the Christmas tree   probably
(10) *(*Gyönyörűen) Hugó (gyönyörűen) feldíszítette (gyönyörűen)*
      beautifully   Hugo beautifully   decorated   beautifully
      a karácsonyfát   (gyönyörűen).
      the Christmas tree   beautifully
(11) *(*Szorosan) Hugó (szorosan) megkötötte (szorosan)*
       tightly   Hugo tightly   tied   tightly
      a cipőfűzőjét (szorosan).
      his shoelaces tightly

3.1.2. Appearance in focus position
A more reliable syntactic test to identify sentence adverbs is their (dis)ability of being focused. While manner adverbs ((12)-(13)) as well as so-called framing adverbials, temporals and locatives (14) may occur in the

structural focus position, subject- and speaker-oriented adverbs (15) cannot be focused (Of course, if the adverb in question is ambiguous, in focus position only the manner reading is available.):[2]

(12)　*Hugó <"gyönyörűen díszítette fel a karácsonyfát.>*
　　　Hugo　beautifully　decorated PRT　the Christmas tree
　　　'Hugo decorated the Christmas tree BEAUTIFULLY.'

(13)　*Hugó <"szorosan kötötte meg a cipőfűzőjét.>*
　　　Hugo　tightly　tied　PRT　his shoelaces
　　　'Hugo tied his shoelaces TIGHTLY.'

(14)　*Hugó <"tegnap/három óra alatt/23-án/most/a nagyszobában*
　　　Hugo　yesterday/in three hours/on the 23rd/now/in the living room
　　　díszítette fel a karácsonyfát.>
　　　decorated PRT　the Christmas tree
　　　'Hugo decorated the Christmas tree YESTERDAY/IN THREE HOURS/ON THE 23rd/NOW/IN THE LIVING ROOM.'

(15)　**Hugó <"bizonyára/valószínűleg/szerencsére díszítette fel*
　　　Hugo　surely/probably/luckily　decorated PRT
　　　a karácsonyfát.>
　　　the Christmas tree

3.1.3. Stress

Neutral sentences in Hungarian are characterized by evenly distributed (non-contrastive) stress on every constituent, where each of the phonological phrases has a similar falling contour. After a structural focus bearing primary stress, however, stress reduction of the other constituents may be observed, moreover, the finite verb must be entirely destressed. Other preverbal operators may display the same effects (Hunyadi 2002; Vogel and Kenesei 1987). As stressing the topic constituent(s) is optional, the characteristic intonation contour of neutral sentences starts off with the first obligatory primary stress on PredP, whose head position is occupied by the verb, and whose specifier may be filled by a particle or other so-called 'verb-modifier'.[3] If an adverb directly precedes a complex consisting of a verb-modifier followed by a verb, primary stress falls on the adverb as well (16). Sentence adverbs in the same position do not have to be assigned stress at all (17), whereas an unstressed manner adverb is ungrammatical (18).[4]

(16)　*Hugó "szorosan "megkötötte a "cipőfűzőjét.*
　　　Hugo　tightly　PRT-tied　his shoelaces

'Hugo has tied his shoelaces tightly.'
(17) *Hugó valószínűleg "megkötötte   a "cipőfűzőjét.*
      Hugo probably   PRT-tied   his shoelaces
      'Hugo has probably tied his shoelaces.'
(18) **Hugó szorosan "megkötötte a "cipőfűzőjét.*
      Hugo   tightly   PRT-tied   his shoelaces

3.2. Ambiguous adverbs preverbally and their stress properties

In ambiguous cases – where the predicational adverbs have both a manner and a clausal reading – the two readings are disambiguated by prosody:

(19) *Hugó "okosan "megválaszolta a "kérdést.* (manner)
      Hugo cleverly PRT-answered the question
      'Hugo has answered the question cleverly.' i.e. Hugo's answer was clever.
(20) *Hugó ⁽ʼ⁾okosan "megválaszolta a "kérdést.* (clausal)
      Hugo   cleverly PRT-answered the question
      'Cleverly, Hugo has answered the question.' i.e. It is clever of Hugo to have answered the question (while the content of his answer may have been unintelligent).

As the primary stress falls on the beginning of the PredP/FocP, if the adverb bears only secondary stress or no stress at all, it will be interpreted as a sentence adverb because sentence adverbs tend to be unstressed. In (20) the adverb *okosan* is a subject-oriented adverb. While an ambiguous adverb like *okosan* may precede the topic (21) and may appear in focus position (22), in these positions, as expected, only one of the readings is available in accordance with the restrictions detailed above:

(21) *Okosan Hugó megválaszolta a kérdést.* (only clausal reading)
      cleverly Hugo PRT-answered the question
      'Cleverly, Hugo has answered the question.'
(22) *Hugó <okosan válaszolta meg a kérdést.>* (only manner reading)
      Hugo   cleverly answered PRT the question
      'It was in a clever manner that Hugo answered the question.'

Nonetheless, we need not suppose two homonymous adverbs in the lexicon. Ernst (2002: 38) claims that the lexical entry for an adverbial may be underspecified so that it may combine with different semantic objects

according to different compositional rules. The fact that *okosan* is able to take two types of semantic arguments results in two different readings.

   Similar cases may be easily found in the speaker-oriented subclass as well: adverbs with both manner and epistemic modal readings (e.g. *természetesen* 'naturally'), with manner and evaluative readings (e.g. *szokatlanul* 'unusually'), and with manner and discourse-oriented or pragmatic readings (e.g. *röviden* 'briefly'). Nevertheless, the adverb with manner reading is often preferable in structural focus position (24b), and the discourse-oriented reading of an ambiguous adverb normally favors the foremost position, even preceding the topic constituent (25b).

(23) a. *Lola ''természetesen ''végigvonult   a ''színpadon.* (manner)
           Lola   naturally   along-walked the stage
           'Lola walked along the stage naturally.'
      b. *Lola ⁽⁾természetesen ''végigvonult   a ''színpadon.* (clausal)
           Lola   naturally   along-walked the stage
           'Naturally, Lola walked along the stage'
(24) a. *?Hugó ''szokatlanul ''feldíszítette   a ''karácsonyfát.* (manner)
           Hugo   oddly   PRT-decorated the Christmas tree
           'Hugo decorated the Christmas tree oddly'
      b. *Hugó <''szokatlanul díszítette fel   a ''karácsonyfát.>* (manner)
           Hugo   oddly   decorated PRT the Christmas tree
           'Oddly, Hugo decorated the Christmas tree.'
      c. *Hugó ⁽⁾szokatlanul ''feldíszítette   a ''karácsonyfát.* (clausal)
           Hugo   oddly   PRT-decorated the Christmas tree
           'Oddly, Hugo decorated the Christmas tree.'
(25) a. *Lola ''röviden ''elmesélte   a ''kalandjait.* (manner)
           Lola   briefly   PRT-narrated her adventures
           'Lola narrated her adventures briefly.'
      b. *Röviden Lola ''elmesélte   a ''kalandjait.* (clausal)
           briefly   Lola PRT-narrated her adventures
           'Briefly, Lola narrated her adventures.'

3.3. Defining the adjunction sites for adverbs

The different prosodic properties and the different readings of one and the same adverb follow from the fact that it can be adjoined at distinct points in the course of the derivation. In particular, the ambiguity of such adverbs is claimed to be due to their potential association with two different

adjunction sites. The difference in structural positions can be tested straightforwardly in the presence of a quantifier phrase. The two adjunction sites illustrated in (26) correspond to two different readings. The clausal reading is not available in the scope of the quantifier.

(26) *Lola (okosan$_{CLAUSAL}$) mindenkinek (okosan$_{MANNER}$) megválaszolta*
Lola cleverly to everyone cleverly answered
a kérdést.
the question
'(Cleverly,) Lola has answered the question to everyone (cleverly).'

The identification of the two positions with different functions becomes straightforward in an example where only one of the readings (the subject-oriented one) is interpretable (27a). The adverb *okosan* can neither appear in the scope of the quantifier (27b), nor be focused (27c) since in such cases it could have the manner reading only. However, the manner adverb *okosan* makes little sense in these examples.

(27) a. *Lola okosan mindenkinek elküldte a levelet.*
Lola cleverly to everyone PRT-sent the letter
'Lola was clever (enough) to send everyone the letter.'
b. **Lola mindenkinek okosan elküldte a levelet.*
Lola to everyone cleverly PRT-sent the letter
Intended: 'Lola has sent everyone the letter cleverly.'
c. **Lola mindenkinek <okosan küldte el a levelet.>*
Lola to everyone cleverly sent PRT the letter
Intended: 'It was in a clever manner that Lola sent everyone the letter.'

The two readings are clearly distinguishable in the negated counterparts of (19) and (20) since their implications are distinct. Noticeably, sentence adverbs are not within the scope of negation.

(28) *Hugó nem válaszolta meg okosan a kérdést.* $-\!/\!\to$
'Hugo did not answer the question cleverly'
Hugó nem válaszolta meg a kérdést.
'Hugo did not answer the question'
(29) *Hugó okosan nem válaszolta meg a kérdést.* $\to$
'Cleverly, Hugo did not answer the question'
Hugó nem válaszolta meg a kérdést.

'Hugo did not answer the question'

(30) *Hugó nem díszítette fel szokatlanul a karácsonyfát.* –/→
    'Hugo did not decorate the Christmas tree oddly'
    Hugó nem díszítette fel a karácsonyfát.
    'Hugo did not decorate the Christmas tree'
(31) *Hugó szokatlanul nem díszítette fel a karácsonyfát.* →
    'Oddly, Hugo did not decorate the Christmas tree'
    Hugó nem díszítette fel a karácsonyfát.
    'Hugo did not decorate the Christmas tree'

Since positing two distinct lexical entries for such ambiguous adverbs seems infelicitous, I claim instead in line with Ernst (2002) that these adverbs are underspecified in the lexicon: they can select for different FEO arguments according to different compositional rules. The task to be completed here is to determine these compositional rules, namely, what the exact points of derivation are at which the adjunction of such ambiguous adverbs takes place.

Despite the possible surface homonymy, the adjunction sites prove to be absolutely distinct, with no overlapping area. As demonstrated above, manner adverbs are closely related to the predicate, being located below the universal quantifier(s) and negation. The adverb itself can be focused (15)-(16), but cannot precede a topic constituent (cf. (10), (11) and (21)). Relying on the basic sentence structure defined for Hungarian (É. Kiss 2006c, 2008, and section 3 of chapter 2 in this volume), the typical adjunction site for manner adverbs is assumed to be PredP, and the highest position they can occupy is the structural Focus position (Spec,FP). Sentence adverbs, on the other hand, seem to fall outside the predicative portion of the sentence; they can be neither focused, nor negated. They precede even the quantifiers, which are supposed to be adjoined to PredP, FocP or NegP (in other words, to the neutral or non-neutral predicate). Adjunction to the Topic Phrase could be a straightforward solution, but topics can also precede the sentence adverbs. Furthermore, such adverbs can appear in topicless sentences as well. This leads us to consider an additional functional layer higher than the already identified functional material in the derivation, but potentially below the Topic Phrase, which can be both preceded or followed by the sentence adverbs.

Haegeman (2002) claims that in every syntactic pattern, which is in broad terms a speech act (i.e. has illocutionary force), there must be a functional layer responsible for speaker-anchoring. She modifies Rizzi's

(1997) 'split CP hypothesis' by making a distinction between the head that encodes 'force' and the head that serves merely to subordinate the clause (Sub). As she puts it, "the presence of the functional head Force (…) directly correlates with what is referred to as 'illocutionary force', the fact that the speaker takes on the proposition as part of a speech act (assertion, prediction, question)" (Haegeman 2002: §7.2). Moreover, she argues that Topic and Focus (being "Force-related projections") depend on the presence or absence of such a speaker-related functional head.

Subsequently, Haegeman (2006: 1662-1663) dubs Force as "speaker-deixis" (SD) following Tenny (2000: 317-319), who proposes that the relation of adverbs to functional projections is defined by means of semantic characteristics. Tenny regroups Cinque's universal hierarchy of functional projections into six semantic zones. The topmost 'point of view' or 'speaker-deixis' zone "contains those mood and modality elements that necessarily introduce the point of view of the speaker, and therefore also introduce the speaker as a sentient, deictic argument", namely, speech-act, evaluative, evidential and epistemic expressions.

Situating sentence adverbs in such a speaker-related functional projection of the CP domain that serves as an interface between the propositional content and its context seems reasonable. Sentence adverbs are attitude markers that provide additional information that is external to the proposition expressed by the core sentence. Speaker deixis may also host 'force' features (declarative, question, etc.) in Hungarian.[5] Since such adverbs seem to occur only in assertive contexts (see 4.2.1) an additional restriction must be formulated about their adjunction, namely, that they can be adjoined to sentences conveying an assertive/declarative speech-act. Nevertheless, the shortcoming of such an analysis undoubtedly is the increase in number of the functional projections in sentence structure.

3.4. Adverbs in postverbal position
3.4.1. Non-ambiguous adverbs postverbally

The fact that each type of adverbs may occur postverbally as well raises further difficulties. In accordance with É. Kiss's theory, adverbs in postverbal position maintain their original scope, as they are right-adjoined, inserted high in the structure, and subject to free linearization only at PF. They are supposed to be prosodically integrated in the sentence, i.e. not set off by comma intonation. The neutral sentences (32) and (33) illustrate a postverbal manner and an epistemic speaker-oriented adverb respectively. After a focus constituent or other logical operator that starts a characteristic

intonation contour and effects stress reduction in its scope, the adverbs remain unstressed, or may receive optional secondary stress at most. The examples in (34) and (35) demonstrate that the word order following the finite verb is completely free.

(32) *Hugó ''megkötötte ''szorosan   a ''cipőfűzőjét.*
      Hugo PRT-tied   tightly   his shoelaces
      'Hugo has tied his shoelaces tightly.'
(33) *Hugó ''feldíszítette   'valószínűleg a ''karácsonyfát.*
      Hugo PRT-decorated   probably   the Christmas tree
      'Hugo probably has decorated the Christmas tree.'
(34) a. *<''Hugó kötötte meg ⁽'⁾szorosan a cipőfűzőjét.>*
            Hugo tied   PRT   tightly   his shoelaces
          'It was Hugo who tied his shoelaces tightly.'
      b. *<''Hugó kötötte meg a cipőfűzőjét ⁽'⁾szorosan.>*
            Hugo tied   PRT his shoelaces   tightly
          'It was Hugo who tied his shoelaces tightly.'
(35) a. *<''Hugó díszítette fel   ⁽'⁾valószínűleg a karácsonyfát.>*
            Hugo decorated PRT   probably   the Christmas tree
          'Probably, it was Hugo who decorated the Christmas tree.'
      b. *<''Hugó díszítette ⁽'⁾valószínűleg fel   a karácsonyfát.>*
            Hugo decorated   probably   PRT the Christmas tree
          'Probably, it was Hugo who decorated the Christmas tree.'
      c. *<''Hugó díszítette fel   a karácsonyfát   ⁽'⁾valószínűleg.>*
            Hugo decorated PRT the Christmas tree probably
          'Probably, it was Hugo who decorated the Christmas tree.'

(36) shows an evaluative adverb combined with negation. The adverb *szerencsére* 'luckily' is not ambiguous, and clearly has wider scope than the negation: the English equivalent of (36) would be (37a) and not (37b):

(36) *Hugó nem válaszolt szerencsére a kérdésre.*
      Hugo not   answered luckily   to the question
(37) a. Luckily, it is true that Hugo did not answer the question.
      b. It is not true of Hugo that he luckily answered the question.

The fact that neither prosody nor word order signals how high the sentence adverb is adjoined (above NegP, supposedly to the SD projection) stirs up no storm, since non-ambiguous adverbs are lexically conditioned to select

for a high ranked FEO argument (in line with Ernst); thus, they are readily interpretable at LF, independently of their surface position.

3.4.2. Ambiguous adverbs postverbally

The situation becomes more complicated with ambiguous adverbs, since the neutralized prosodic environment of the postverbal domain cannot disambiguate the manner and the clausal readings. In (38) and (39), the adverbs should have a clausal reading, too, with scope over the negation; however, contrary to the above illustrated unambiguous sentence adverbs, such interpretation is not accessible here, only the manner reading is available.

(38) *Hugó nem válaszolt okosan a kérdésre.*
  Hugo not answered cleverly to the question
  'Hugo did not answer the question cleverly.'
(39) *Hugó nem válaszolt szokatlanul a kérdésre.*
  Hugo not answered oddly to the question
  'Hugo did not answer the question oddly.'

As a matter of fact, the clausal reading can still be called forth, but only by a marked prosodic pattern, involving a short interval before and after the adjunct, i.e. by insertion of a pause. (□ = pause)

(40) *Hugó nem válaszolt □ okosan □ a kérdésre.*
  Hugo not answered cleverly to the question
  'Cleverly, Hugo did not answer the question.'
(41) *Hugó nem válaszolt □ szokatlanul □ a kérdésre.*
  Hugo not answered oddly to the question
  'Unusually, Hugo did not answer the question.'

The same phenomenon may be observed under identificational focus: an unambiguous evaluative sentence adverb can freely appear in its unmarked position after the topic (42a), or else in postverbal position (with the same sentential scope), and at the same time remain unstressed (42b). On the other hand, an ambiguous right-adjoined adverb will be interpreted in one way only: in the scope of focus with no clausal reading available (43).

(42) a. *Hugó szerencsére <az 'első kérdést válaszolta meg*
   Hugo luckily the first question answered PRT
   az elnöknek.>

to the chairman
'Luckily, it was the first question that Hugo answered to the chairman.'

b. *Hugó <az 'első kérdést   válaszolta meg szerencsére*
Hugo   the first question answered PRT luckily
az elnöknek.>
to the chairman
'Luckily, it was the first question that Hugo answered to the chairman.'

(43) a. *Hugó okosan <az 'első kérdést   válaszolta meg*
Hugo cleverly the first question answered PRT
az elnöknek.>   (only clausal)
to the chairman
'Cleverly, it was the first question that Hugo answered to the chairman.'

b. *Hugó <az 'első kérdést   válaszolta meg   okosan*
Hugo   the first question answered PRT   cleverly
az elnöknek.>   (only manner)
to the chairman
'It was the first question that Hugo answered to the chairman cleverly.'

c. *Hugó <az 'első kérdést válaszolta meg □ okosan □ az elnöknek.>*
Hugo   the first question answered PRT   cleverly   the chairman
(clausal)
'Cleverly, it was the first question that Hugo answered to the chairman.'

3.4.3. IP restructuring and its blocking

I propose that sentence adverbs, either left-adjoined or right-adjoined to a projection, constitute an intonational phrase (IP) of their own. Nonetheless, basic IPs may undergo restructuring under certain circumstances (cf. the 'IP restructuring rule' of Vogel and Kenesei 1987: 259-260 with further references), which means that shorter IPs to the right of a constituent marked [+SC][6] may optionally be joined into a larger IP.

Therefore, in the course of the syntax-phonology mapping, after intonation contours are assigned and intonational phrases are set according to the melody rules,[7] a right-adjoined adverb may unite with the preceding intonational phrase, as illustrated in (44b). Such an operation may be followed by free linearization of the postverbal elements, as a consequence

of which sentence adverbs may appear in several positions within the IP constituted by the comment (cf. 44c).

(44) a. [Hugó]_{IP} [nem válaszolt a kérdésre]_{IP} [szerencsére]_{IP}
      Hugo   not answered the question luckily

    b. [Hugó]_{IP} [nem válaszolt a kérdésre   szerencsére]_{IP}
      Hugo   not   answered the question luckily

    c. [Hugó]_{IP} [nem válaszolt szerencsére a kérdésre]_{IP}
      Hugo   not answered luckily   the question

In unambiguous cases, restructuring may apply with no difficulties since such adverbs have their sentential scope feature coded ab ovo in the lexicon. The selectional requirement of *szerencsére* 'fortunately' for a 'fact' (in terms of Ernst) will be legible at LF independently of its surface position in the clause. Ambiguous adverbs, however, may take at least two different types of FEO arguments, their selectional requirements being underspecified in this respect. In a neutralized prosodic environment generated by the postverbal IP-restucturing and subsequent free linearization, one of the possible interpretations disappears: a prosodically integrated ambiguous adverb will be automatically interpreted as a manner adverb with a narrow scope reading, since manners are always adjoined low in the derivation, namely, directly to the predicate (PredP). To achieve the speaker- or subject-oriented sentential reading, prosody must reflect the wider scope by means of retaining the original intonational phrasing – simply for reasons of perception. The mixing of postverbal elements is still possible in such cases, but the independent intonational phrase of the adverb with the (intended) sentential function must be preserved through PF mapping.

(45) a. [Hugó]_{IP} [nem válaszolt a kérdésre]_{IP} [szokatlanul]_{IP}
      Hugo   not answered the question unusually

    b. [Hugó]_{IP} [nem válaszolt]_{IP} [szokatlanul]_{IP} [a kérdésre]_{IP}
      Hugo   not answered   unusually   the question

According to the general conditions on intonation setting, no IP can contain another IP (cf. Selkirk 1984: 26). Hence, as a consequence of free postverbal mixing, the original large IP (in which the character contour starts on a certain operator) splits into two or more IPs separated by the sentence adverb itself. The IP boundaries are clearly marked by pauses – as illustrated by (40), (41) and (43c).

The outcome of the above survey is remarkable, since it seems to raise a challenge for the essential validity of the T-model.[8] If PF rules apply mechanically, relying on syntactic structure only (i.e. with no access to logical form), nothing prevents IP restructuring from being applied in all cases. Such phonological rules are not considered to reckon with semantic type features. However, in case of ambiguous adverbs, the optional IP restructuring rule must be blocked to prevent real surface ambiguity. Investigating what ensures the emergence of the manner interpretation as default in the case of (38), (39) and (43b), we might refer to an extended version of the so-called 'recoverability constraint on deletion' in terms of Chomsky (1981). In other words, the IP boundary can be deleted provided that the recoverability of the original adjunction level is not affected.

4. Multiple "ambiguity": the case of stressed sentence adverbs
4.1. Prosody and interpretation

Surprisingly enough, there are adverbs in Hungarian that show ambiguity also in their sentence adverb use. In (46a) and (46b), *biztosan* 'surely, certainly' has a manner reading. On the one hand, it is manifested by its position on the left edge of the predicate (46a); on the other hand, the adverb may optionally occupy the focus position as well (46b). The other two sentences below contain the same adverb with a sentential reading, but with a slight difference in meaning: (46c) expresses strong probability, while (46d) actual certainty.[9] It is the prosody that disambiguates the two readings: the sentence adverb carries primary stress in (46d), just like a manner adverb in such a position, but, in addition, stress reduction may be observed in the subsequent domain – signaled here by angle brackets.

(46) a. *Hugó ''biztosan   ''eltalálta a ''céltábla ''közepét.* (manner)
          Hugo confidently hit   the target   in the middle
          'Hugo hit the bull's eye confidently.'
      b. *Hugó <''biztosan   találta el a céltábla közepét.>* (manner)
          Hugo   confidently hit PRT   the target in the middle
          'It was confidently that Hugo hit the bull's eye.'
      c. *Hugó 'biztosan ''eltalálta a ''céltábla ''közepét.* (clausal$_1$: probability)
          'Very probably, Hugo hit the bull's eye.'
      d. *Hugó <''biztosan eltalálta a céltábla közepét.>* (clausal$_2$: certainty)

'Certainly, Hugo hit the bull's eye.'

When negated, the clausal and manner readings show the contrast already demonstrated in section 3.3, but now an additional property may be observed: the implications of the two negated sentences containing these slightly different sentence readings will not be the same, either:

(47) a. *Hugó 'biztosan ''nem találta el a céltábla közepét.* –/→
      'Hugo very probably did not hit the bull's eye'
      Hugó nem találta el a céltábla közepét.
      'Hugo did not hit the bull's eye.'
   b. *Hugó ''biztosan nem találta el a céltábla közepét.* →
      'Hugo certainly did not hit the bull's eye'
      Hugó nem találta el a céltábla közepét.
      'Hugo did not hit the bull's eye.'

Moreover, in postverbal position, the unstressed adverb can be interpreted not only as a manner adverb, but also as a sentence adverb (48a), at least in the sense introduced in (46d). To evoke the other clausal reading (that of strong probability) the above mentioned pauses should be applied (48b). Note that in (48) the negation has scope over the adverb (Neg>*biztosan*), unlike to (47) where it was the other way round (*biztosan*>Neg).

(48) a. *Hugó ''nem találta el biztosan a céltábla közepét.* (manner or clausal$_2$)
      Hugo   not   hit   PRT certainly the target in the middle
      'Hugo did not hit the bull's eye confidently.' or
      'It's not certain that Hugo hit the bull's eye'
   b. *Hugó ''nem találta el □ biztosan □ a céltábla közepét.* (clausal$_1$)
      Hugo   not   hit   PRT   certainly the target in the middle
      'Hugo, very probably, did not hit the bull's eye.'

The question arises whether this type of ambiguity should be treated as an isolated case, or whether it is possible to identify a certain class of adverbs of the same kind. By definition, sentence adverbs in Hungarian are usually unstressed (Kiefer 2005: 136). Observing the data, it may be confirmed that the majority of these adverbs does avoid being stressed. Ambiguous predicationals evoke the manner reading when they carry primary stress (cf. 3.1). However, there is a small number of sentence adverbs with an unambiguously clausal reading (such as *mindenképpen* 'by all means'*,*

feltétlenül, okvetlenül 'definitely') that sound undeniably better when they carry the primary stress of the sentence and at the same time effect stress reduction to their right:

(49) a. *Hétvégére   "feltétlenül elolvad a hó.*
         By the weekend definitely   melt   the snow
         'There's no doubt, the snow will have been melted by the weekend'
     b. **Hétvégére feltétlenül "elolvad a hó.*
(50) a. *Hugó "okvetlenül eljegyzi   Lolát.*
         Hugo definitely   is engaged to Lola
         'Hugo will be engaged to Lola under any circumstances.'
     b. **Hugó okvetlenül "eljegyzi Lolát.*

In addition, there are further adverbs that oscillate between being stressed or not. It is notable that even though they are not ambiguous in respect of the clausal/manner opposition (having an exclusively sentential function), they show the same difference in meaning (strong probability vs. certainty) as *biztosan* in its sentential use:

(51) a. A macska "*kétségtelenül* megette a madárfiókát.
         the cat   undoubtedly   PRT-ate the nestling
         'There's no doubt that the cat has eaten the nestling'
     b. A macska '*kétségtelenül* "megette a madárfiókát.
         the cat   undoubtedly   PRT-ate the nestling
         'The cat very likely has eaten the nestling'

The problem is how to specify the common features of this special group of adverbs. They all seem to belong to the class of epistemic modals since they express the speaker's commitment to the truth of the proposition based on his/her own belief or evidence. Shall we label them directly as *evidential* adverbs? For the moment, it can be posited that they all come near 'certainty' in their meaning, and it is this semantic characteristic that contributes to their special behavior. In the next section it will be demonstrated that beyond admitting stress assignment, such adverbs are capable of being used in syntactic environments that are normally not available for the members of their class.

4.2. Distribution
4.2.1. General distributional restrictions

A rather intriguing property of the members of this special class of stressed sentence adverbs is that they also seem to escape further generalizations established for speaker-oriented adverbs.

Bellert (1977) observes that speaker-oriented adverbs such as evaluatives (*fortunately*), evidentials (*evidently*) and modals (*possibly*) have a rather restricted distribution: they are degraded in questions, imperatives and antecedents of conditionals, and they do not occur in the scope of negation. Discussing the domains that resist such adverbials, Nilsen (2004) proposes an analysis of speaker-oriented adverbs that treats them as positive polarity items (PPIs), since they are excluded from the same types of environments that license negative polarity items (NPIs). Nilsen interprets the restrictions on sentence adverbs as a consequence of the general restrictions on PPIs. According to Haegeman (2006:1653), however, the restrictions must have another source, since the relevant class of speaker-oriented adverbials is banned from a wider range of adverbial clauses (certain temporal adverbial clauses, purpose clauses, etc.), which are not all NPI-licensing contexts. Further, Haegeman demonstrates that there are cases where these adverbial clauses admit speaker-oriented adverbs, and shows that these apparent exceptions are due to the fact that such adverbial clauses are *discourse-related,* rather than to their polarity. She proposes that discourse-related conditionals (and adverbial clauses) have a more complex functional structure than their event-related counterparts, and they are adjoined to the host clause at a much later point in the derivation. Following Declerck and Reed (2001: 83), Haegeman states (2006:1655) that these more complex, peripheral conditional clauses are echoic in nature. Meanwhile, Christopher Piñón (p. c.) explains the distributional restrictions from a different point of view: in his semantic approach, modal adverbs can modify *assertions*, and the property that speaker-oriented adverbials are banned from contexts like questions, conditionals, etc. follows from the fact that none of those contexts are assertive.

Independently of the above discussions, similar observations have been made in the descriptive literature on Hungarian as well. The word class *módosítószó* ('modifier word'), which by and large corresponds to our sentence adverb class, is claimed to occur mostly in declarative sentences (Kugler 2001). Furthermore, Kiefer (2000: 325) proposes that the 'modifier word' and the 'modifier adverb' are such modal operators that always have the widest scope, and cannot fall within the scope of another operator.

4.2.2. The exceptional behavior of stressed sentence adverbs in questions

In fact, *prima facie* the same distributional restrictions hold for Hungarian speaker-oriented adverbs. After repeating Bellert's English examples (1977: 342 and 344; (52) and (56) in our examples), some Hungarian data are given below to demonstrate the ungrammaticality of these adverbs in questions. According to Hungarian speakers' judgments, the sentences below are ill-formed or marginal.[10]

(52) *Has John suprisingly arrived?
(53) *Hugó szerencsére megérkezett?*
      Hugo   fortunately arrived
      Intended: 'Has Hugo fortunately arrived?'
(54) *?Hugó szerencsére "megtalálta a gyűrűjét?*
      Hugo   fortunately PRT-found his ring
      Intended: 'Has Hugo fortunately found his ring?'
(55) *?Hugó "megválaszolta szerencsére a kérdést?*
      Hugo   PRT-answered fortunately the question
      Intended: 'Did Hugo fortunately answer the question?'

(56) *Has John probably come?
(57) *Hugó valószínűleg megérkezett?*
      Hugo probably   arrived
      Intended: 'Has Hugo probably arrived?'

Even if these sentences are accepted, one has to consider them echoic, i.e. closely related to the discourse. Unfortunately, the judgment whether a proposition is echoic or not proves to be somewhat problematic, since there is no straightforward test to decide it.[11]

    Interestingly, however, questions with the sentence adverb *biztosan* in its "certainty" meaning (cf. (46d)) are absolutely acceptable and grammatical.

(58) *Hugó "biztosan megszerelte a mosógépet?*
      Hugo certainly repaired   the washing-machine
      'Is it certain that Hugo has repaired the washing-machine?'
(59) *"Biztosan megveszed a jegyeket?*
      Certainly buy-2sg   the tickets
      'Is it certain that you are going to buy the tickets?'

The same irregular behavior characterizes the epistemic adverbs that were shown above to be able to bear primary stress (Cf. 4.1.), for instance, *feltétlenül, okvetlenül* (with a strong preference for being stressed) *nyilvánvalóan, kétségkívül* (oscillating group).

(60) *Hugó "okvetlenül feldíszíti   a karácsonyfát?*
      Hugo   definitely PRT-decorate the Christmas tree
      'Is it definite that Hugo will decorate the Christmas tree?'
(61) *A macska "kétségkívül   megette a madárfiókát?*
      the cat   undoubtedly PRT-ate the nestling
      'Is there no doubt that the cat has eaten the nestling?'

4.2.3. The exceptional appearance of stressed sentence adverbs in the scope of operators

Sentence adverbs are claimed not to appear in the scope of negation. As mentioned above, if such Hungarian adverbs apparently occur to the right of negation, it is the result of the right-adjunction and the subsequent PF linearization of the postverbal elements; the sentence adverb maintains its wide scope over negation (Cf. section 3.3). This is not true of *biztosan* and other adverbs like it, which can be understood to be in the scope of negation.

(62) *Lola nem érkezett meg biztosan.*
      Lola not   arrived PRT certainly
      'It is not certain that that Lola has arrived.' or 'It is not true that Lola has certainly arrived.'
(63) *Hugó nem házasodik meg   feltétlenül.*
      Hugo not   be married PRT inevitably
      'Hugo won't inevitably be married.'

A further example may be found under (48a) in section 4.1. Accordingly, sentence adverbs that are major-stressed in declaratives *can* fall within the scope of another operator such as negation, which suggests that these adverbs are adjoined lower in derivation, before negation is projected. In section 4.1, a few sentence adverbs (*mindenképpen, feltétlenül, okvetlenül*) were introduced that always seem to be major-stressed. Another peculiarity of this group is that they can appear directly adjacent to the negation word.

(64) *Hugó nem feltétlenül házasodik meg.*

Hugo not necessarily be married PRT
'Hugo won't be married inevitably.'

The same feature cannot be observed with the *'biztosan'* type.

I will argue in the next section that the apparent oddities of these special adverbs, inasmuch as they can be questioned, negated, and may appear in various types of adverbial clauses that normally do not admit sentence adverbs can be explained in a unitary fashion by assuming that it is the position or level of their adjunction that determines all their properties.

4.3. Adjunction sites for stressed sentence adverbs

In the following section, a unitary syntactic analysis will be provided to account for the special behaviour of certain Hungarian (ambiguous) sentence adverbs reviewed here for the sake of explicitness. These adverbs carry primary stress and trigger stress reduction in their c-command domain, they can appear in questions and other syntactic environments otherwise inaccessible to sentence adverbs, and, as regards their lexical semantics, they all express some kind of 'certainty' on behalf of the speaker, at least in one of their uses.

4.3.1. Adjunction to verum focus

In the preceding sections, I have already alluded to the possibility that these adverbs are adjoined lower than prototypical sentence adverbs in course of the derivation. Now an additional piece of evidence will be given to demonstrate that they do not occupy the previously supposed speaker-related functional projection 'SD' (a position introduced to host sentence adverbs that reflect some sort of speech act or attitude), and definitely appear below the position they are required to occupy universally (cf. (1) and (2) in section 2). As regards the preverbal ordering, speaker-oriented adverbs normally precede the subject-oriented ones. Yet a major-stressed sentence adverb seems to violate the scope hierarchy and occupy an alternative position. It appears to dominate the predication part (PredP in neutral sentences and FocP/NegP in non-neutral ones[12]) directly, as a consequence of which the ambiguous adverb in its scope can only be interpreted as a manner adverb (65). The fact that no clausal reading is available here becomes clear in (66), where the manner interpretation is

excluded for lexical reasons.[13] Since the ambiguous adverb *okosan* 'cleverly' has another (subject-oriented) interpretation, one would expect the adverb to figure as a sentential one, but in such a context that reading does not become available.

(65) *Hugó "biztosan okosan megválaszolta a kérdést. (with clausal$_2$ 'certainty' reading)
Hugo certainly cleverly answered the question
Intended: 'It is certain that Hugo was clever for having answered the question'

(66) *Lola "biztosan okosan elküldte a levelet.
Lola   certainly cleverly PRT-sent the letter.
Intended: 'It is certain that Lola was clever (enough) to send the letter.'

If the combination of a subject-oriented adverb and the stressed version of *biztosan* is wanted, the former will be in the higher position, thus preceding the evidential in linear order (67). Undoubtedly, the subject-oriented adverb has scope over the epistemic one, which seems to contradict the generalizations concerning the relative order of sentence adverbs.

(67) Hugó okosan "biztosan megvette már   a vonatjegyeket.
Hugo cleverly certainly bought   already the railway tickets
'It is clever of Hugo to have certainly bought the railway tickets'

Based on the data shown so far, I propose that *biztosan* and the other major-stressed sentence adverbs are adjoined exclusively to propositions involving a so-called verum focus (to be elaborate below). As a matter of fact, there is group of Hungarian pragmatic/modal particles[14] *(valóban/tényleg/csakugyan/igazán,* all of them meaning 'indeed, really') whose properties and function are comparable to those of the sentence adverbs under investigation. They are obligatorily stressed (see (68) and (69)), can appear in questions and imperatives (70), and cannot be focused but can modify a focus constituent (71):

(68) a. *A macska valóban "megette a madárfiókát.
      b. A macska "valóban megette a madárfiókát.
          the cat   really   PRT-ate the nestling
          'The cat has really/in fact eaten the nestling.'

(69) a. *Hugó tényleg "feldíszítette   a karácsonyfát.

     b.   Hugó "tényleg feldíszítette   a karácsonyfát.
           Hugo really   PRT-decorated the Christmas tree
           'Hugo has really decorated the Christmas tree.'

(70) a.   A macska "valóban megette a madárfiókát?
           The cat   really   PRT-ate the nestling
           'Has the cat really eaten the nestling?'

     b.   Hugó "tényleg feldíszítette   a karácsonyfát?
           Hugo really   PRT-decorated the Christmas tree
           'Has Hugo really decorated the Christmas tree?'

(71) "Tényleg a macska ette meg a madárfiókát.
       really   the cat   ate PRT the nestling
     'It was really the cat that ate the nestling.'

The role of these particles is quite transparent: they function as some kind of focus particles, modifying focused sentences. They typically modify propositions comprising a so-called verum focus as in the examples (68) and (69), but can appear with constituent focus as well (71). In my view, the sentence adverbs of the *biztosan*-type approximate the function that these particles fulfill, and it follows from their meaning: all of these epistemic speaker-oriented adverbs express the speaker's strong commitment to the truth of the proposition, so much so that they may directly take the special function of modifying a semantic identification. Kugler (2003: 49-50) performed an empirical test with native speakers concerning Hungarian epistemic adverbs ('modifier words' in her terminology) and the types of communicative attitude the speakers assign to them. Not surprisingly, the lexical entries investigated in the present chapter turned out to occupy the first or second position on her 'certainty scale'.

    As regards the meaning of *verum*-focus, it emphasizes on the truth of the proposition; or in other words, it reasserts or denies the hearer's presupposition. It is also called *polarity focus* as it contrasts the interpretation of the whole sentence to its negation. The exact meaning of the following utterances is that Hugo did or did not miss the train – contrary to all expectations.

(72) a.   *Hugó <"lekéste   a vonatot.>*
           Hugo   PRT-missed the train.'
           'Hugo did miss the train'

     b.   *Hugó <"nem késte le   a vonatot.>*
           Hugo   not   missed PRT the train.'

'Hugo did not miss the train'

Similarly to pragmatic particles, stressed sentence adverbs can adjoin to verum focus. Consequently, the primary stress will be assigned to the adverb itself.

(73) a. *Hugó <"biztosan lekéste   a vonatot.>*
           Hugo   certainly PRT-missed the train.'
           'Hugo certainly did miss the train.'
      b. *Hugó <"biztosan nem késte le   a vonatot.>*
           Hugo   certainly not missed PRT the train.'
           'Hugo certainly did not miss the train.'

The associated intonation pattern involves stress reduction (or syntactically motivated deaccentuation, cf. Varga 2002) after the major stress, in the same way as in contrastive focus structures. The only difference is that the major stress falls on the left edge of the predicate instead of a constituent moved to structural focus position (Spec, FP). In terms of Kenesei (1998: 74), verbs carrying phonological focus here are 'assertive' or truth-functional, that is, they are contrasted with the nonexecution of the same action.

The term 'verum focus' was introduced by Höhle (1992: 114), who claims that the focal stress on the verbs marks the presence of an illocutory predicate or operator VERUM. According to the definition given by Han and Romero (2004: 190), VERUM is a conversational epistemic operator that applies to a proposition *p* to yield a proposition that is true if the speaker is certain that *p* should be accepted as true and added to the common ground. This function is expressed through focal intonation on the finite verb also in Hungarian. However, there is a further issue: where it should be located in syntax. Han and Romero (2004: 192) claim that the VERUM operator is syntactically placed above C^0, but below Q, in the left periphery of the CP domain. Kenesei (1998:75), treating Hungarian assertive focus, argues that instead of the (lexical) verb it is the Tense head that is marked for focus. As the verb has to move to Tense to check its φ-features, the head of the TP moving on into the head of the Focus Phrase carries along the verb adjoined to it.

The key question that concerns us here is the precise location of the verum feature or VERUM operator in syntax. The basis of Kenesei's approach is the unitary treatment of constituent focus and VERUM, in that they both are related to the focus phrase. Such an analysis, however, leaves

open the question what ensures the PRT-verb surface order in the presence of 'assertive focus', contrary to the standard focus structures where the verb itself moves up into the Focus head (or, according to recent theories, to the non-neutral head, cf. Olsvay 2000; É. Kiss 2006c), leaving behind the verb-modifier particle. In order to solve this problem it may be assumed that FP has an EPP-feature, so its specifier must be filled in any case. In the absence of a focused constituent, the PRT moves to satisfy such a requirement. The rule can be translated for analyses involving the non-neutral phrase: the VERUM will be associated with the non-neutral head (NN) or the focus head, and the FP projection, in order to be licensed, must contain some kind of phonologically realized element. It is a reasonable requirement, since focus intonation (primary stress followed by stress reduction) also needs a meaningful element to start from.[15]

A further difficulty arises when combining negation with focus. In Hungarian, negation usually triggers verb movement as well, but if negation has scope over focus, the verb does not move further than the focus head (or non-neutral head) as illustrated in (74). Consequently, the above assumptions allocating VERUM in the focus phrase will over-generate, producing sentences like (75), where the PRT-verb complex is intended to be a VERUM-focus, the adverb *biztosan* being adjoined to it.

(74) *Nem Hugó találta el   a céltábla közepét.*
      not Hugo hit   PRT   the target in-the-middle
      'It was not Hugo who hit the bull's eye'

(75) *[$_{NegP}$*Nem* [$_{FP}$ *biztosan* [$_{FP}$ *eltalálta a céltábla közepét.*]]]
              not   certainly   PRT-hit the target in-the-middle
      'It's not certain that he hit the bull's eye'

Assuming that VERUM cannot be negated would be an easy way to solve our difficulties, but sentences like (48a), where negation obviously has scope over *biztosan*, provide a sufficient counter-example. Investigating biased yes/no questions with respect to negation and VERUM, Romero and Han (2002) confirm that there exists scopal ambiguity between them, schematized in (76).[16]

(76) [not [VERUM p]]
      [VERUM [not p]]

The 'VERUM in FP approach' has an additional shortcoming: in case VERUM focus has scope over negation as in (73b), no phonologically realized material fills either the head or the specifier of the focus projection.

(77) [FP biztosan [FP VERUM [NegP nem [NNP találta el …]]]
         certainly   not   hit   PRT (…)

In view of the above discussion, there is considerable evidence that Hungarian structural focus position and VERUM must be treated separately. Accordingly, I propose to introduce a distinct projection to house the operator, i.e. a VERUM phrase (VERUMP), which has a VERUM head of its own. VERUMP appears lower than the *SD/Force* head since a sentence extended with a VERUM operator can be questioned (cf. 4.2.2). On the other hand, it can be merged with both neutral and non-neutral predicates, that is, a PredP (73a), a NegP (73b) and even an FP (see (71) and (78) below). In the latter case, the focus-structure is extended by an additional VERUM operator located in VERUMP.

(78) [VERUMP *Biztosan* [FP *Hugó találta el a céltábla közepét.*]]
            certainly   Hugo hit PRT   the target in the middle
         'It was surely Hugo who hit the bull's eye'

Assuming that structural focus is a kind of identificational predicate (or operator) in Hungarian, the meaning of (78) asserts the truth of the identification. Thus, adverbs like *biztosan* (and the pragmatic particles), instead of being adjoined to the focus phrase, are located in VERUMP. It seems plausible to assume that the adverb is in an adjoined position here (rather than in the specifier), since the option of right-adjunction is also available (80).

(79) *Biztosan a macska ette meg a madárfiókát.*
         certainly the cat   ate PRT the nestling
         'Certainly, it was the cat that ate the nestling.'
(80) *A macska ette meg biztosan a madárfiókát.*
         the cat   ate PRT certainly the nestling
         'Certainly, it was the cat that ate the nestling.'

In case negation has scope over VERUM, that is, [not [VERUM *p*]] is to be derived, the verb moves to the higher Neg-head (or NN head), generating sentences like (81-82):

(81) *Nem találta el biztosan   a céltábla közepét.*
      not   hit PRT   certainly the target in the middle
      'It is not certain that he hit the bull's eye'
(82) *Nem találta biztosan el   a céltábla közepét.*
      not   hit   certainly PRT the target in the middle
      'It is not certain that he hit the bull's eye'

Summarizing the above observations, the adverb *biztosan* and other sentence adverbs that show oscillation in picking up stress have two possible adjunction sites. If stressed (triggering stress reduction), they adjoin to the VERUM phrase; otherwise, they remain unstressed (or possibly have secondary stress) and occupy the higher position established for speaker-oriented sentence adverbs (SD, see section 3.3). Furthermore, the adverb *biztosan* 'certainly' proved to be unique in terms of ambiguity, yielding three interpretations for one and the same lexical entry. When describing the compositional rules that hold for the three different readings, three possible adjunction sites have been proposed above: the adverb can be adjoined to the predicate phrase directly (as a simple manner adverb), to the SD (as an epistemic modal adverb), and finally to the VERUM phrase. The real ambiguity observed in the postverbal neutralized prosodic context (48a) follows from the fact that in such cases negation may be positioned above two of these adjunction sites, hence not only does the manner adverb fall within its scope, but so does the VERUM modifier adverb. At the same time, in (48b), the real epistemic sentence adverb is outside the scope of negation, which is signalled by its independent intonational phrase and the insertion of pauses.

4.3.2. The individual cases of *feltétlenül, okvetlenül* and *mindenképpen*

In sections 4.1 and 4.2.3 a small group of sentence adverbs was mentioned, namely the adverbs *mindenképpen* 'by all means', *feltétlenül, okvetlenül* 'definitely' (in the sense 'under any circumstances') which always seem to carry primary stress, having no unstressed counterpart in preverbal position. They are not akin to 'high adverbs' (associated with SD) because of their stress properties. They are not manner adverbs either because they cannot be focused (84).

(83) *Lola ''feltétlenül   becsomagolja az ajándékokat.*
      Lola by all means PRT-wraps   the gifts

'Lola will wrap the gifts by all means'
(84) *Lola ''feltétlenül   csomagolja be az ajándékokat.
      Lola by all means wraps PRT   the gifts
      Intended: 'It is by all means that Lola will wrap the gifts'

They always seem to be adjoined to verum focus. The fact that they cannot modify a negated statement (85) can be due to their individual selectional restriction on negation (*[Neg])) since the adverbs themselves morphologically contain a negative element *'–lenül'*.

(85) *Lola ''feltétlenül   nem csomagolja be az ajándékokat.
      Lola by all means not wraps PRT   the gifts
      'Lola by all means will not wrap the gifts'

There is another semantic (or rather lexico-semantic) peculiarity of the members of this group: interestingly, they are not readily accommodated in past contexts.

(86) ?Lola ''feltétlenül   becsomagolta az ajándékokat.
      Lola by all means PRT-wrapped the gifts
      'Lola has wrapped the gifts by all means'

Based on its possible syntactic positions, the adverb *mindenképpen* 'by all means' is similar to quantifiers, and seem to be adjoined to PredP or NNP, from the left or right direction, respectively.[17] It is also subject to negative concord since the lexeme *mindenképpen* is replaced by its negative counterpart *semmiképpen* 'noways' (88).

(87) Lola ''mindenképpen becsomagolja az ajándékokat.
      Lola by all means   PRT-wraps   the gifts
      'Lola will wrap the gifts by all means'
(88) Lola ''semmiképpen nem csomagolja be   az ajándékokat.
      Lola noways   not wraps   PRT the gifts
      'Lola will wrap the gifts in no way'

The quantifier-like analysis of this adverb is also motivated by its morphological make-up: *minden-képpen* (approx. 'all+manner/way+by').

5. Conclusion

In this paper I have discussed the syntactic and prosodic features of Hungarian predicational adverbs, paying special attention to ambiguous adverbs with both manner and clausal readings. The crucial idea followed throughout this paper was the assumption that the stress properties and prosodic integration of such adverbs can be derived from their syntactic position in the same way as in case of ordinary adverbs. Since ambiguous adverbs are semantically underspecified, they have a number of possible sites to be adjoined to, and their proper interpretation will depend on the structural level at which their adjunction takes place. In postverbal position, however, due to the neutralized prosodic environment and free word order, the normal disambiguating strategies fail to function. The sentential reading of an ambiguous adverb becomes available only by blocking the fusion of the intonational phrases, that is, by preserving the original intonational independence of the high adjoined adverb.

Observing the behavior of the Hungarian adverb (*biztosan* 'certainly'), a sort of three-way "ambiguity" was discovered. Investigating its distributional and stress properties (and those of a certain group of epistemic adverbs with similar meaning), a special function and adjunction site was distinguished: it was proven not to occupy a canonical sentence adverb position, but rather to appear at a lower site, modifying the so-called verum focus. Such an analysis can account for this adverb's primary stress, capacity of being questioned, and exceptional relation to negation.

Notes

[1] Note, however, that the order of evidentials and epistemic modals is reversed in the two models. In my view, this might be due to a categorial uncertainty concerning evidentials. For the concept of evidentiality, see the special issue of *Journal of Pragmatics* (33. 2001) with seven selected papers on this topic, especially that of Dendale and Tasmowsky, which summarizes the possible relation types between the notions of evidentiality and modality, and how these terms are used in the relevant literature.

[2] That the adverbs are located in focus position in these examples is shown by the reversed order of the verb-modifier particle (PRT) and the verb, in addition to the post-focus stress reduction signaled here by angle brackets.

[3] Verb-modifiers are secondary predicates expressed by a verbal particle or a bare nominal complement directly preceding the verb (consult É. Kiss 2006a for a detailed analysis). For Hungarian sentence structure see section 3 of Chapter 2 with further references.

[4] Primary stress will be indicated by a double stress mark ("), secondary stress by a single stress mark (') and non-stress will remain unmarked.

[5] Topics will actually precede such a node, which does not raise problems for this analysis. They always constitute an independent intonational phrase; the characteristic interrogative contour starts on the first major-stressed syllable after the topic.

[6] According to their terminology (p.255), [+SC] marks quantifiers with the widest scope. As far as I can judge, operators in general are included in their rule, so my following examples with negation are equally convenient to demonstrate the phenomenon. The same thing would happen, of course, in the presence of a focus construction. The original idea for IP resructuring comes from Nespor and Vogel 1986.

[7] For a detailed account of Hungarian intonational patterns and stress assignment, consult Varga 2002.

[8] Varga (2002: 6), indeed, proposed a slight modification of T-model, first of all because of Hungarian yes-no questions which are syntactically identical to their declarative counterparts and are distinguished only by their fixed intonation. In his view, this fact shows the special contribution of intonation to the full meaning of the utterance. As interrogative intonation may be easily derived by introducing a phonologically null 'question operator', his argument seems superfluous from the point of view of our investigation.

[9] The difference shown in (46c) and (46d) was pointed out also by Kiefer (2005:136). In his wording, the former usage suggests only a supposition on the speaker's part like in sentences containing *feltehetőleg* 'supposedly', *valószínűleg*

'probably', etc. The latter, stressed *biztosan* expresses the speaker's belief that the state of things corresponds to what figures in the proposition.

[10] Ramat – Ricca (1998) managed to find examples for evaluatives and modals in questions in certain European languages, but the occurrences cannot be extended to whole classes of adverbs, and judgments are marginal even in the isolated cases.

[11] The sentences become more readily interpretable with a special intonation typical of declaratives preceding tag questions, where the end of the character contour does not fall towards the baseline (i). Another possibility would be an even intonation with rising intonation sequences and primary stress on each word of the sentence, which expresses surprised and/or skeptical attitude of the speaker (ii). The precondition of both intonation patterns is that the propositional content should be familiar to the speaker.

(i)   *Hugó szerencsére megválaszolta a kérdést, nem?*
        'Hugo luckily answered the question, didn't he?'
(ii)   *"Hugó "váratlanul "megválaszolta a "kérdést?*
        Hugo unexpectedly answered   the question

[12] For the functional projections recognized for Hungarian see É. Kiss (2006c) and the introductory chapter of that volume.

[13] (65) and (66) would be grammatical with primary stress on the finite verb. In that case *biztosan* would be interpreted in its strong probability (clausal$_1$) meaning, or else with a narrow scope spanning over the subject-oriented *okosan* only.

[14] The term *pragmatic particle* is used by Kugler (2003, 44), while Kiefer (1988) calls them *modal particles*.

[15] Note that an additional rule is needed: The primary stress will be assigned to the first element of the extended focus phrase. If an adverb like *biztosan* is adjoined to FP, the adverb itself will be assigned primary stress.

[16] Negated VERUM can be found in Höhle (1992) as well.

[17] It is long-standing observation that Hungarian quantifiers are situated to the left of Focus and to the right of topic(s), c-commanding their scope at surface structure. The field available for universal and various distributive quantifier phrases (QP) was referred to as the 'quantifier field' in the earlier literature (É. Kiss 1994), which later corresponded to the (recursive) DistP of Szabolcsi (1997) analysis. Recently, the adjunction theory of quantifiers has been revived, which assumes that Hungarian quantifiers can be left- or right-adjoined to PredP (in neutral sentences) and the so-called non-neutral phrase (NNP).

Temporal adverbial clauses with or without operator movement

Barbara Ürögdi

1 Introduction

In this chapter[*] I discuss syntactic strategies for forming temporal adverbial clauses. The central observation is that temporal relative clauses differ as to whether the relative operator moves from inside the clause to the left edge (as in standard relative clause formation[1]) or originates in a high position.[2] Taking my core data from Hungarian, I look at standard temporal relative clauses, 'IP-relatives' (as proposed by Lipták 2005), and temporally interpreted embedded CPs (introduced by a complementizer). When a P takes a temporal expression as its complement, the formation of the adverbial clause involves a standard relative clause derivation. Meanwhile, when the P selects the entire embedded event or proposition, there is no operator movement from inside the adverbial clause. In the main part of the paper I focus on diagnostics and syntactic/semantic effects associated with this division within the P-class in Hungarian. The two Ps that turn out to be the most interesting from this perspective are the suffix *–ig* 'until/for/while' and the postposition *óta* 'since'. I look at the properties of *–ig* in detail, with special attention to its interaction with negation and other operators, as well as the bearings of the Hungarian facts on the 'until-debate'. At the end, I turn to data from English to show that the distinctions drawn here seem to be relevant there as well. In particular, I discuss long-distance dependencies in temporal adverbial clauses (Geis 1970; Larson 1990) and outline the relevance of the findings of this paper to the said construction in English.

The three constructions mentioned above are illustrated in (1-3):

(1)　*Nem　láttam　**(az-óta),　(a)mi-óta**　dolgozik.*
　　　Neg　I-saw　　AZ-since　(AZ-)MI-since　he-works
　　　'I haven't seen him since he's been working.'
(2)　*Nem　láttam　**(az-óta),　(a)mi-óta**　elkezdett　dolgozni*
　　　Neg　I-saw　　AZ-since　(AZ-)MI-since　he-began　work-INF
　　　'I haven't seen him since he started to work.'

(3) *Nem* *láttam* **az-óta,** **hogy** *elkezdett* *dolgozni.*
      Neg   I-saw   AZ-since   Comp   he-began   work-INF
      'I haven't seen him since he started to work.

Without going into detail at this point, the three structures above are distinguished by whether or not the times of the two clauses are shared (yes in (1) and no in (2-3)). They also differ structurally: while the embedded clause in (1-2) is formally a relative clause, in (3) it is clearly a full-fledged CP, as evidenced by the presence of a complementizer.

In the examples above, I have not glossed "*az-*" (or its allomorph "*a-*") or "*mi-*" because it is hard to find a suitable gloss for these. "*Az*" is the distal demonstrative pronoun/definite article in Hungarian, which can function as the pronominal head of relative clauses, while it also constitutes part of the relative pronoun. "*Mi*" is a default wh-word meaning "what" that also serves as the wh-expletive in partial movement constructions. The combination of the two ("*a-mi*") is the relative pronoun "which". In what follows, I will gloss them as Dem and Wh respectively as these two elements appear relevant for relative clauses. To avoid confusion, I have glossed the finite complementizer as Comp (not as "that").

The morphosyntactic criteria separating the constructions above are whether or not the pronominal element co-indexed with the temporal clause (Dem+P) can or must be present in the matrix clause, what sort of element (relative pronoun or complementizer) heads the embedded clause, and – in the case of the relative pronoun – whether or not it is introduced by *a-*. The availability of each construction in (1-3) is restricted by the P used. Lipták (2005) gives a thorough analysis of structures (1-2) and the variation therein, focusing on how different suffixes and postpositions[3] behave in this construction, and how each type of P interacts with the syntactic properties of the temporal clause. She observes that Ps fall into two different classes with respect to which of these constructions they can participate in, and what the syntactic and semantic properties of the resulting complex sentence will be. While it will turn out that her data are taken from one particular dialect in Hungarian and a number of counterexamples can be found to her generalizations, I retain the basic spirit of her analysis. I hope to show that the counterevidence I present can be accommodated via an intuitively appealing modification of Lipták's system, which also allows us to predict the availability of construction (3).

The paper is organized as follows. The first part of the discussion reflects and hopefully improves upon Lipták's (2005) analysis of the relative clause constructions illustrated in (1-2). In Section 2, I summarize

Lipták's proposal, the main contribution of which is the appealing idea that Hungarian employs two kinds of relativization strategies in temporal clauses – standard relativization and IP-relativization –, which explains the diverging properties that the two classes of P elements show with respect to constructions (1-2). I continue by presenting apparent counterevidence to Lipták's claims, and then advancing my proposal for accommodating the new data in a modified version of her system. In Section 3, I outline some evidence to show that the suggested modification in the classification of temporal suffixes and postpositions actually follows from the semantics of these P elements. I primarily focus on the exceptional properties of –*ig* 'until/while' and *óta* 'since'. Both of these Ps will turn out to have dual distribution, and thus their behavior with respect to Lipták's diagnostics is expected. In particular, -*ig* is able to form both regular relative clauses (relativizing a temporal modifier of the embedded predicate) and IP-relatives (originating outside the adverbial clause) – a distinction that is evidenced by the availability of long-distance dependencies, the licensing of negative quantifiers, and a host of other syntactic and semantic effects. I argue that, despite the structural ambiguity and other (dialectal) complexities observed with –*ig*, the Hungarian data can be analyzed without positing two lexical entries for the suffix. At the end of Section 3, we arrive at a structural division with Ps taking times as their complement and forming standard relative clauses via operator movement on one side, and Ps selecting events and acting basically as connectives with no movement from inside the adverbial clause on the other.

In the next part of the paper, I turn to construction (3). In Section 4, I discuss an interesting outcome of the modified classification presented in Sections 2 and 3, namely that the group of P elements that can take an event (IP) as their complement is the same as the group that can select a proposition (CP) and thus participate in a construction like (3) above. I discuss the properties of CP-temporals, contrast these with causal embedded clauses, which often feature the same P elements, and show that there are steadfast syntactic diagnostics for telling the two types apart. Section 5 presents the extension of the account to long-distance dependencies in English temporal adjunct clauses, and the role of specificity in the type of operator movement relevant to the topic at hand (e.g. movement of the relative operator out of a weak island). I suggest that the two relativization strategies demonstrated for Hungarian are attested in English as well, and differences with respect to the availability of the so-called 'low readings' with particular P elements are due to the fact that in English prepositions always originate outside the adverbial clause

regardless of the base position of the relative operator, while in Hungarian the P element and the operator are generated in a local relationship.

2   Lipták's (2005) classification of temporal P-elements

In her paper on temporal adjunct clauses, Lipták (2005) argues that in Hungarian there are two fundamental types of suffixes/postpositions, which in turn are used to construct two classes of temporal relative pronouns, the 'a-type' (a.k.a. 'since-type') and the 'a-less type' (a.k.a. 'before-type'), and that there are systematic differences between the syntactic structures formed with these two classes. The classes are defined in the lexicon, so all P elements (suffixes or postpositions) belong to one or the other class. The two types are the following:

a-type / since-class:
-kor "at"; *-korra* "by"; *óta* "since"; *-ig* "until/for"
a-less type / before-class:
előtt "before"; *után* "after"; *alatt* "during"; *közben* "during"

The properties that set apart the two classes for Lipták are as follows:
Property 1: Only since-type relative pronouns feature the "a-" element
Lipták notes that while relative pronouns formed with 'since-class' Ps can optionally be introduced by *a-* without resulting in any meaning difference (4a), 'before-class' postpositions normally do not combine with *a-*, and if they do, the meaning changes, and the relative pronoun is interpreted specifically as referring to the event of the main clause (4b):

(4)   a. *Péter   boldog   (a)mi-óta   Anna itt   van.*
         Peter   happy   Dem-Wh-since Anna here   is
         'Peter has been happy since Anna has been here.'
       b. *Tamás   megjött, (*a)mi-után   Zsuzsa   elment.*
         Thomas   arrived   Dem-Wh-after   Susan   left
         'Thomas arrived after Susan left.'
       c. *Tamás   megjött, ami   után Zsuzsa   elment.*
         Thomas   arrived   Dem-Wh   after Susan   left
         'Thomas arrived, after which Susan left.'[4]

4

Lipták concludes that (4c) is standard clausal relativization, where the relativized element is the main clause. When used as a temporal connective, relative pronouns formed with the 'before-class' cannot feature the *a-*[5].

Property 2: Combination with nouns
While the members of the 'since-class' can readily combine with nominal heads, the members of the 'before-class' cannot:

(5)   a. *A nap   **(a)mi-kor**   Anna megjött emlékezetes   Péternek.*
             the day   Dem-Wh-at Anna arrived   memorable   Peter-DAT
             'The day when Anna arrived is memorable for Peter.'
    b. **A nap   **mi-után**   Anna megjött emlékezetes Péternek.*
             the day   Wh-after   Anna arrived memorable Peter-DAT
             Intended: 'The day after Anna's arrival is memorable for Peter.'

Property 3: The availability of long-distance dependencies
Long-distance dependencies (so-called 'low readings') in temporal constructions in English have been discussed in the literature, the classic example being the ambiguous (6) (Larson 1990):

(6)   *I saw Mary in New York **before** she claimed she would be there.*

The relevant thing to note about (6) is that, in addition to the so-called 'high reading' (where *before* takes one of its temporal arguments from the middle clause) a 'low reading' is also available, where the time of the lowest clause event supplies one of the arguments for the preposition. On this reading, the sentence means: 'Mary's claim was that she would be in New York at time *t*. I saw her in New York before *t*.' In Hungarian (as in English), not all Ps allow the long-distance dependency leading to the 'low reading' above – according to Lipták, only members of the 'since-class' are compatible with this reading. The contrast is illustrated below:

(7)   a. ***Add-ig***   *maradok,* ***a-medd-ig***   *mondod, hogy maradjak.*
             Dem-until   I-stay   Dem-Wh-until you-say Comp I-stay-Sub
             High: 'I will stay as long as you keep saying I should stay.'
             Low: 'You tell me I should stay until time t. I'll stay until time t.'
    b. ***Az-után***   *indulok,* ***mi-után*** *mondod, hogy Péter elindult.*
             Dem-after   I-leave   Wh-after you-say Comp Peter left
             High: 'I'll leave after the time of you telling me that Peter left.'
             *Low: 'I'll leave after time t. You tell me that Peter left at time t.'

Based on the diagnostics above[6], Lipták convincingly shows that the 'a-class' ('since-class') and the 'a-less class' ('before-class') are not simply lexical categories, albeit on her account the presence or absence of the *a*-element, as well as a particular P's membership of this or that class, is a property specified in the lexicon. Nevertheless, the fact that the above four properties coincide with a particular P's class membership leads her to posit two different syntactic structures for the two classes – shown below:

The members of the 'since-class' form **run-of-the-mill relative clauses**:

(8)   *a-mi-óta   ismeri Annát*
        [$_{CP}$ Dem-Wh-since$_i$ [$_{IP}$ he knows Anna e$_i$]]

where a temporal expression from inside the embedded clause is relativized in the standard manner. Crucially, the P involved in this construction also originates inside the relative clause. Thus, (8) reads something like "The time since which he has known Anna..."

Meanwhile, the postpositions in the 'before-class' form '**IP-relatives**':

(9)   *mi-közben   Anna vásárolt*
        [$_{PP}$ during [$_{DP}$ [$_{CP}$ [$_{RelP}$ Wh [$_{IP}$ Anna shopped]]]]]

where "*mi*" is a relative determiner that takes an IP (an event) as its complement (it is generated in the head of RelP and subsequently moves up via head-movement to combine with P). In a very intuitive sense, IP-relativization is understood as an alternative to nominalization, so the meaning of (9) is akin to "during Anna's shopping".[7] I will not concern myself with the technicalities of the two constructions here - the crucial contrast between (8) and (9) that I will focus on in what follows is that (8) involves relativizing an expression from inside the adverbial clause via movement, which results in the sharing of this expression between the two clauses, while (9) treats the relativized IP as a closed unit, with no movement taking place out of it, and interpreted as an indivisible event. In the latter case, the P element functions as a temporal connective.

Since it will turn out that the presence or absence of "*a-*" does not differentiate clearly between the two groups (in another dialect, members of the 'before-class' are also consistently able to combine with *a-*) and I will later argue for a revision of Lipták's classification that will result (among other things) in partially moving *since* from the 'since-class' to the 'before-class', I will abandon these labels in order to avoid confusion. For the rest

of the chapter, I will refer to the first class of P elements as the 'temporal relativization' class and to the second as the 'IP-relativization' class.

In what follows, I adopt the basic spirit of Lipták's analysis, namely that there are two (partially overlapping) classes of P elements in the Hungarian temporal domain, and these two classes employ at least two different strategies for forming temporal adverbial clauses. The intuitive appeal is clear: For some Ps (like *–kor* 'at', for example) the correct interpretation obtains if we take the relativized chunk to be a time expression inside the embedded clause (resulting in a classic relative clause situation where the relativized phrase – in this case a time expression – is shared between the two clauses), while for other Ps (like *előtt* 'before' or *után* 'after') such a representation would yield the wrong interpretation.[8] In some cases, this clearly has to do with the semantics of these Ps: while some P elements take time expressions as their complement, others take events (or, as we will see later on, even larger chunks, propositions). Thus, Ps taking part in the IP-relativization strategy are essentially connectives taking two events as their arguments and relating these to each other (which means that there is no operator movement from inside the adverbial clause, and thus no necessary "shared" time between the two clauses – as there is indeed none with *before* or *after*, which involve no temporal overlap).

Unfortunately, the intuitive basis for this classification only extends so far. There are two members of the IP-relativization class (*közben* and *alatt* both meaning 'while, during') that could go either way as far as their interpretation is concerned. The correct meaning of an expression like (9), for example, could easily be derived through standard relativization since 'during' is symmetrical, so the times of the two events always overlap. Lipták herself mentions this (her example (39)). She also notes, however, that while *közben* and *alatt* are not necessarily classified as 'IP-relativization' postpositions based on their semantic properties, their syntactic behavior still likens them to 'before' and 'after', suggesting that the characteristics dividing the Ps into two classes are essentially syntactic in nature. Before I turn to these syntactic diagnostics, let me discuss this point in some detail, since it will lead up to the in-depth discussion of the two P-classes in a straightforward way.

There are two related diagnostics that seem to unambiguously place *közben* and *alatt* in the IP-relative class:

a. In Hungarian, **question words cannot be formed with Ps from the IP-relative class**: **mi-előtt* 'before-wh?' **mi-után* 'after-wh?' **mi-közben?* 'during-wh' **mi-alatt?* 'during-wh?'

Lipták attributes this fact to a lexical gap, namely that for some reason these question words do not exist in Hungarian. This explanation has a descriptive flavor since it is unclear why these particular combinations should not exist. Note that the strings – even reanalyzed as single words – do exist as relative pronouns, so these postpositions can presumably take *mi* as their complement. Note also that even in questions these strings can appear – as Lipták also notes (her example (43)) – but in this case the question must refer to a specific event, not to a time:

(10) ***Mi közben*** *aludtál – az előadás   vagy a vita   közben?*
Wh during   you-slept the talk   or   the discussion   during
'During what were you sleeping – the talk or the discussion?'

This, however, should come as no surprise. Unlike the 'temporal relativization' suffixes and postpositions, these Ps do not specify the relationship of an event to a time point/period, but the temporal relationship between two events. The "mi" part of these wh-phrases can thus only refer to an event, not a time – and as such, these *mi*+P complexes exist both in questions (as evidenced by (10) above) and as relative pronouns (as Lipták shows in the IP-relative cases).

b. **No member of the IP-relative class can easily combine with a nominal head** (see (5))
Once again, if we take the basic defining property of the IP-relative class to be that they take two events as their arguments and specify the relationship between these two events, this fact falls out naturally. Actually, we might expect that nouns with a strongly eventive interpretation would accept PPs containing an IP relative as their modifier, and this is borne out[9]:

(11) a. *A **beszélgetés -**   **mi-közben*** *Dezső   a lányokat,   Varga*
the conversation   Wh-during Dezső   the girls-ACC Varga
János   a lovakat   nézte   szakértő szemmel –
John   the horses-ACC   watched expert   eyes-INSTR
ilyenformán   alakult:
this-way   went
'The conversation, while Dezső was watching the girls, and János Varga the horses with expert eyes, went on this way:'

b. ? *A **beszélgetés**   **mi-után*** *Anna megjött   kellemetlen volt.*
the conversation   Wh-after Anna arrived   unpleasant   was
'The conversation after Anna's arrival was unpleasant.'

c. *?*A nap*   *mi-után*   *Anna*   *megjött*   *emlékezetes volt.*
    the day   Wh-after   Anna   arrived   memorable   was
    'The day after Anna arrived was memorable.'
d. *Jól*   *telt*   *az 1 óra*   *mi-alatt*   *anya*   *számot*
    well   went   the 1 hour   Wh-during   mother   proof-ACC
    adott   *tudásáról.*
    gave   her knowledge-of
    'The hour while Mother gave proof of her knowledge went well.'

If the semantics of *közben* 'during' and *után* 'after' requires that they take two events as their arguments (one specified by the temporal IP) then the only way they can combine with a nominal head is if that head can be interpreted as an event with its own temporal reference. Thus, without a context, a simple temporal noun like *nap* 'day' does not work here. In (11d), however, we see that when the context forces the eventive interpretation of the nominal head (something that "went well" – esp. since the embedded clause provides the content – is certainly an event) the sentence is grammatical. This, I believe, is good news for Lipták's account since in my view this is what we should expect, rather than a strict ban on IP-relatives combining with nominal heads. Her explanation for this alleged ban is that IP-relatives only *contain* a relative clause but are externally PPs. This may be so, but it is unclear why a PP could not combine with a nominal head? The examples in (11) show that under certain circumstances (having to do with interpretation) these structures can in fact modify a noun. Thus, I suggest that this restriction is semantic, rather than structural.

Based on the above, I will therefore take the P's *selectional properties*, the presence or absence of *operator movement internally to the adverbial clause*, and the resulting *temporal relationship between the two clauses* to be the defining features of the two P-classes – and I will continue to operate under the assumption that whenever a P selects a time expression as complement, it will participate in the standard relativization strategy, which in turn results in shared temporal reference between the two clauses, while a P that takes an event as complement will use the IP-relativization strategy, and in this case the two events may or may not overlap. In the next section I return to Lipták's syntactic tests, and show that this is in fact the most straightforward way of differentiating the two classes as well as accommodating what look like severe counterexamples to her generalizations. As it turns out, Ps that do not seem to fit the picture from a semantic point of view also misbehave syntactically, and vice versa.

3   A new classification of temporal P elements

In this section I aim to show that, albeit there is a lot of speaker variation with respect to constructions (1-2), there do emerge certain clear-cut patterns. My goal is to demonstrate that while counterexamples exist to many of Lipták's generalizations, these do not undermine the basic tenets of her theory. The main points of this section are the following:

i) While in fact the members of the IP-relativization class can also often be introduced by the *a-*, thus invalidating (at least for the dialect I deal with here) the distinction that is based on this morphological property, it turns out that there are two kinds of speakers in this regard: speakers who truly do not allow *a-* with these Ps, and speakers who allow *a-* with all Ps, and for whom the presence of *a-* results in a syntactic/semantic effect (albeit to varying degrees). For the dialect that allows *a-* with the 'IP-relative class', the properties of *a-* for the two classes are still somewhat different, suggesting a difference in the internal structure of the pronoun.

ii) The syntactic diagnostics – I deal in some detail with the availability of low readings – do not always place Ps in the "correct" class according to Lipták's predictions. It turns out, however, that the P elements that exhibit unruly behavior with respect to the syntactic tests also induce unexpected interpretations. Accepting that the two related defining characteristics of the temporal relativization class are: a) that the P should take a time expression from inside the embedded clause as its complement; and b) that this time should be shared between the two clauses as a consequence of operator movement to the left edge of the adverbial clause, we can proceed to redraw the line between the two groups. We find that this re-grouping actually makes for a scenario where the original prediction (namely, that only members of the temporal relativization group should allow the long-distance dependency) is borne out.

3.1   The availability of the 'a-forms'

As mentioned in the introduction, there is a dialect of Hungarian where the 'a-forms' are only available for certain P elements, namely the temporal relativization class. In this dialect, the difference seems to be lexicalized. There exists another dialect, however, where 'a-forms' are available with all P elements – see an example for each P below:

(12) a. ***Ami alatt***   *a nőstény*   *ül,*   *azalatt*   *a hím*
       Dem-Wh during   the female   sits   Dem-during the male
       hord   *neki*   *ennivalót.*
       brings   3rd sg-DAT   food-ACC
       'While the female is sitting, the male brings her food.'
       (source: online edition of an encyclopedia)

    b. *Novemberben,*   ***amielőtt***   *hazamentem,*   *teljesen*
       November-in   Dem-Wh-before   I-home-went   completely
       meghalt   *a PC-m.*
       died   the PC-my
       'In November, before I went home, my PC crashed completely.'
       (source: online newspaper)

    c. *Majdnem elsírtam*   *magamat,*   ***amiközben***   *olvastam.*
       nearly   PRT-I-cried self-ACC   Dem-Wh-during   I-read
       'I nearly started to cry while I was reading it.'
       (source: blog entry)

    d. ***Amiután***   *elindult,*   *pár másodperc*   *után*   *leállt.*
       Dem-Wh-after   PRT-started few seconds   after   stopped
       '(The program) stopped a few seconds after starting up.'
       (source: online chat about computer problems)

As the above examples show, the a-form is actually possible with all of the IP-relative class Ps, and it occurs in a wide range of registers (from an encyclopedia to the language of chatrooms). While some speakers do not accept these forms, this may be due to prescriptive factors or dialectal differences. In either case, speakers who do accept examples like those in (12) often report a meaning difference between the a-forms and the a-less forms, namely that the a-forms seem strange when used in a generic situation. Interestingly, the contrast is not so strong in the standard relativization class (14) as in the IP-relativization class (13):

(13) *Azonnal*   *leáll*   ***(??a-)miután***   *megnyomod*   *a gombot.*
      immediately stops Dem-Wh-after   you-press   the button-ACC
      '(The program) stops immediately after you press the button.'

(14) *Azonnal*   *leáll*   ***(%?a-)mikor***   *megnyomod*   *a gombot.*
      immediately stops Dem-Wh-at   you-press   the button-ACC
      'The program stops immediately when you press the button.'

I return to a possible explanation for this contrast in the last section. For now, suffice it to say that the presence or absence of *a-* certainly does not

place a P element into one or the other class. Thus, I will pursue the line that the distinction lies in the P's selectional properties, which in turn result in syntactic effects such as the availability of long-distance dependencies.

3.2   Long-distance dependencies

The reader will recall that the so-called 'low readings' are only available for members of the temporal relativization class and this fact is related to their status as run-of-the-mill relative clauses – see (7a)/(15):

(15) ***Add-ig***   *maradok,* ***a-medd-ig***   *mondod, hogy maradsz.*
      Dem-until I-stay   Dem-Wh-until you-say   Comp you-stay
      High: 'I'll stay as long as you keep saying you will stay.'
      Low: 'You say you'll stay until time t. I will stay until time t.'[10]

However, the construal of the low reading only seems to work if the times between the two clauses are in exact match – thus, the following sentence does not have the relevant low reading:

(16) ***Add-ig***   *maradok,* ***a-medd-ig***   *mondod, hogy   megjössz.*
      Dem-until   I-stay   Dem-Wh-until   you-say   Comp you-arrive
      High: 'I'll stay as long as you keep saying that you'll arrive.'
      *Low: 'I'll stay until time t. You tell me that you'll arrive by time t.'

As noted earlier, only Ps that select a time (rather than an event) as their complement and thus result in temporal matching between the two clauses via standard relative clause formation allow the low reading. The times picked out by the two events in (16) do not match up because arrival is a point in time, while staying is durative. A fundamental characteristic of the temporal relative class is that - like in a regular relative clause – the times of the two events are shared; any case when this interpretation is not possible (e.g. the use of –*ig* 'until' and *óta* 'since' with a punctual event in the adverbial clause, as well as Lipták's original 'a-less class') is derived via a strategy that does not involve an operator-variable chain. IP-relativization is, as noted above, an alternative to nominalization – basically converting an event into a referring expression that can serve as the complement to a preposition – and this is mirrored in the fact that the use of –*ig* with a punctual event in the relative clause is actually freely paraphrasable as a nominalized structure:

(17) a. *Maradok* **a-medd-ig** *Péter meg-érkezik.*
      I-stay   Dem-Wh-until Peter   PRT-arrives
      'I will stay until Peter arrives.'
   b. *Maradok   Péter   (meg)érkezésé-**ig**.*
      I-stay   Peter   PRT-arrival-3rd sg-until
      'I will stay until Peter's arrival.'

It should also be noted that, on Lipták's account, temporal relatives are derived in a way that the P element originates inside the embedded clause, and it is the *P+mi* complex that moves up to RelP. This analysis works well for some examples of these Ps (see (8) for example) but not for other instances of the same suffixes and postpositions. Take *–ig* as used in (17a):

(18)   a-medd-ig   Péter megérkezik
       [$_{CP}$ Dem-Wh-until$_i$ [$_{IP}$ Peter arrives e$_i$]]

In (18) it is the relative pronoun *ameddig* 'until-which-time' that starts out as the temporal modifier in the embedded clause ("Peter will arrive *until time t*") – and this clearly does not yield the correct interpretation. We can conclude that the use of *–ig* in (16-18) - unlike the use of *-ig* in (15) - does not conform with the requirements for belonging to the temporal relative class. The times of the two clauses do not match up, and the resulting construal cannot give rise to the low reading of the temporal expression. Meanwhile, the problematic use of *–ig* is correctly interpreted along the lines of the IP-relative class, with which it patterns syntactically as well.
    The same effects can be shown for the 'punctual' use of *óta* 'since':

(19) a. ***Azóta*** *vagyok ideges,* **amióta** *Péter*
      Dem-since I-am   tense   Dem-Wh-since Peter
      meg-érkezett   /Péter   itt   van.
      PRT-arrived   /Peter   here is
      'I have been tense since Peter arrived/since Peter has been here.'
   b. ***Azóta*** *vagyok ideges,* **amióta** *mondtad,*
      Dem-since I-am   tense   Dem-Wh-since you-said
      hogy   Péter   meg-érkezett.
      Comp   Peter   PRT-arrived
      'I have been tense since you said Peter arrived.' (* low reading)
   c. ***Azóta*** *vagyok ideges,* **amióta** *mondtad,*
      Dem-since I-am   tense   Dem-Wh-since you-said
      hogy   Péter   itt   van.

	Comp	Peter	here	is

'I have been tense since you said Peter has been here.' (low reading OK)

(20) a. *Ideges*   *vagyok*   **amióta**   *Péter*   *meg-érkezett.*
     tense   I-am   Dem-Wh-since Peter   PRT-arrived

    b. *Ideges*   *vagyok*   *Péter*   *(meg)érkezése*   **óta.**
     tense   I-am   Peter   PRT-arrival   since

     'I have been tense since Peter arrived/Peter's arrival.'

As (19) attests, *óta* 'since' also shows dual behavior: when the event denoted by the temporal clause is durative, *óta* allows the low reading, but when the relativized event is punctual, the low reading becomes unavailable. And as (20) demonstrates, it is precisely the problematic point-in-time use that can be easily paraphrased as a nominalized form.[11] Once again, if we tried to derive the meaning of (19b) via the temporal relativization strategy, we would arrive at the wrong result, something like 'Peter arrived since time t' constituting the embedded clause, while interpreting the example as an instance of IP-relativization (with the postposition as well as the relative operator originating outside the adverbial clause) yields the right meaning.[12]

Therefore, if we want to maintain the structural correlation that only real relatives, but not IP-relatives, make the low reading possible, we simply have to modify the classification slightly, and say that *–ig* and *óta* are able to form standard relative clauses (where they combine with a temporal operator inside a durative event) or IP-relatives (where they combine with a punctual event from the outside). I return to the question of whether this ambiguity is lexical or structural in the next section. In either case, the former, but not the latter, use of these P elements patterns with the temporal relative class. The use of these two Ps that features a punctual event in the temporal adverbial clause, however, belongs in the IP-relative class, which now contains the following P elements:

(21) **IP-relative class** (revised): *előtt* 'before'; *után* 'after'; *közben* 'during'; *alatt* 'during'; *-ig* 'until'; *óta* 'since, time pt.'

In the next section I discuss in detail how the structural ambiguity observed with *–ig* manifests itself in Hungarian. Then I turn to the finite CP strategy, which turns out to be available precisely for the Ps listed under (21), the members of the IP-relative class.

3.3   Adverbial clauses with –*ig* and the 'until-puzzle'

The syntactic and semantic properties of temporal clauses featuring –*ig* 'while, until' vary greatly across regional dialects as well as individual speakers of Hungarian. In what follows, I will start out by discussing the least restrictive dialect (spoken primarily by speakers born and raised in the capital city Budapest), which displays the three-way contrast illustrated below in (22). After looking closely at the three constructions and proposing an analysis to derive them, I turn to dialectal differences. [13]

(22) a. *Itt   maradok,   **ameddig**   Emma   át-jön.*
          here   I-stay   Dem-Wh-until Emma   over-comes
      b. *Itt   maradok,   **ameddig**   Emma   **nem** jön   át.*
          here   I-stay   Dem-Wh-until Emma   not   comes over
      c. *Itt   maradok,   **ameddig**   Emma   át   **nem** jön.*
          here   I-stay   Dem-Wh-until Emma   over not   comes
          'I'll stay here until Emma comes over.'

The three sentences in (22) are truth-conditionally equivalent but have diverging pragmatics. (22a), as discussed in the previous section, is an IP-relative construction with –*ig* originating outside the adverbial clause, and involves no relative operator movement from inside the clause. This is confirmed by the fact that this construction does not allow the low reading in multiple embedding (see (16)). In this use, -*ig* functions as a connective between the durative main clause event and the punctual event defined by the temporal clause. The examples in (22b) and (22c), both involving negation in the lower clause, also differ in terms of implicatures. (22b) is simply a statement about two simultaneously occurring states/activities, with no further implications. In the concrete (22b) scenario, the sentence asserts that my staying will coincide with Emma's not having come over. At the same time, (22c) seems to implicate that, once the event in the lower clause takes place, the situation will reverse – so: I will leave when Emma appears. [14]

    The discussion is organized into the following sections. First, 3.3.1. presents a brief overview of the main issues in the 'until-debate' based on relevant recent literature. The aim of the section is to outline the general direction my analysis will take, as well as to provide sufficient context for the data. In a nutshell, I argue that the Hungarian facts can be accounted for without positing two homophonous –*ig* suffixes (I thereby join the 'single-until' line of analyses) and without admitting 'expletive negation' into the

model. In 3.3.2., I look at syntactic and semantic differences among the three constructions illustrated in (22), putting aside pragmatic effects for the time being. I show that the examples (22b) and (22c) are differentiated structurally by the position where the negation is interpreted (higher than its surface position for (22c)), which leads to a number of syntactic contrasts (the scope of negation with respect to other operators, the licensing of negative quantifiers) as well as semantic effects (the lack of a 'stativizing' effect of negation – which in turn results in a punctual reading on the temporal clause). In 3.3.3., I return (rather briefly) to two dialects that allow only a subset of (22). As mentioned above, the dialectal discussion will be limited to outlining tendencies and the beginnings of an analysis of the variation observed, focusing primarily on syntactic diagnostics.

3.3.1 *Until* and negation

The exceptional semantic (and, to a lesser extent, syntactic) properties of *until* among temporal connectives/adpositions, especially its interaction with negation, have been discussed by a number of authors (see, among many others, Piñón (1991) on Hungarian; Giannakidou (2002) on Greek and for a good overview of the issues and the most influential proposals in the literature; Español-Echeverría and Vegnaduzzo's (2000) work on Spanish and Italian; and Eilam and Scheffler (2007) on Hebrew). In the discussion of the Hungarian facts below, I focus primarily on syntactic diagnostics to detect differences in structure – while in this section I take a quick look at the central questions raised in the literature on *until*.

How many 'until'-like elements are there in the lexicon? Based on English data like (23), the existence of at least two types of 'until' – punctual and durative – has been discussed:

(23)   a. *John slept / didn't sleep until 5 pm / until Jane left.*
       b. *John didn't arrive until5 pm / until Jane left.*
       c. **John arrived until 5 pm / until Jane left.*

Sentences like (23b) raise a number of interrelated issues. While the use of *until* here has been called punctual[15] (since the matrix verb is eventive), the until-clause is only licensed if the matrix predicate is negated (compare (23c)). This observation has led to two diverging types of explanation. One line of reasoning says that the negation in (23b) functions as a stativizer (cf. Mittwoch (1977) and her later work) – thus, there is only one, durative kind

of *until*. More specifically, the *until*-phrase or –clause supplies the endpoint to the activity or state with which it combines. Negation and *until* are claimed to scope freely with respect to one another, yielding two possible readings for (24a) but only one for (24b):

(24)   a.   *John didn't sleep until 5.*
          Neg > until: It is not the case that John slept until 5 (because he woke up earlier than that).
          until > Neg: Until 5, John was awake (maybe fell asleep after).
       b.   *John didn't arrive until 5pm.*
          *Neg > until: It is not the case that John arrived until (by) 5.
          until > Neg: Until 5, John was in the state of not having arrived.

The unavailability of the Neg>until reading in (24b) follows from the fact that *until* is unambiguously durative on this account, so it can only combine with an eventive predicate after it has been stativized by negation. At the same time, Giannakidou (2002), rejecting the 'single-*until*' account, argues that a Mittwoch-style analysis has trouble explaining the different entailments that are associated with (24a) and (24b). On her view, (24a) entails nothing about what happened after 5, even on the wide scope reading of *until*. Meanwhile, (24b) entails a switch in the state of affairs that happened at the time specified by the until-phrase (in this case: John was in the state of not having arrived until 5pm, and then switched to having arrived at 5pm) and so the English (24b) is only felicitous if John actually arrived at 5pm or soon thereafter. Instead, following Karttunen (1974), Giannakidou claims that at least two types of *until* must be posited: stative-until and NPI-until (the latter licensed in English sentences like (24b) and also corresponding to a distinct lexical item in Greek). NPI-until is eventive, and thus leads to the said entailment.[16] It is a debated issue, however, whether the pragmatic import associated with sentences like (24b) is in fact a case of entailment (as in Giannakidou (2002)), a presupposition (e.g. Declerck (1995)), or a cancelable implicature (Mittwoch (2001)).[17] The issue is far from settled, and – due to limitations of space – I will confine the discussion of this matter to the presentation of such facts and observations as relevant to the syntactic structure of these constructions. In particular, it is worth noting that focusing the adverbial clause (achieved in English by prosodic means) brings out the 'switch' entailment in (24a) just as easily as in (24b) (contrast (25a) and (25b) with main stress indicated in bold) – and that 'not-until' fronting, a syntactic means of putting focus on the *until*-clause, makes the entailment obligatory (as in (25c)):[18]

(25) a. *I **won't** sleep until you get home. (I will wake up earlier and cook you dinner.)*
    b. *I won't sleep until you **get home**. (I'll be too worried to sleep.)*
    c. ***Not until** you get home will I sleep.*

This fact will become relevant for Hungarian, where the construction that most naturally lends itself to the 'switch-reading' ((22c)) typically involves focus – but (22a) and (22b) can also be given the 'switch' interpretation if we focus the adverbial clause, just like in English. This suggests that the entailment is probably not construction-specific, and thus the existence of the 'switch-reading' is not a reliable syntactic diagnostic.

Analyses that posit lexical ambiguity of *until*-type elements generally tie together two distinct properties of *until* (semantic restrictions on the type of predicate/eventuality the P is able to combine with, and syntactic restrictions on the polarity of the environment in which it occurs). It is worth noting that these two properties need not go hand in hand. It is entirely possible for *until* to always combine with the same two arguments (a state/activity and an endpoint to this) while retaining some sensitivity to polarity and other construction-specific factors. In particular, the fact that the relative scope of negation and *until* does not fully explain the pragmatic effects associated with negated *until*-constructions does not necessarily mean that the 'single-until' approach should be abandoned.

This brings us to the second major issue, the role of negation.

Is there such a thing as 'expletive negation'? Given the entailment illustrated for (24b) above, the 'expletive' nature of the negation in these constructions has been argued for by various authors. The argument goes like this: The role of negation in (24b) is not to stativize the verb but only to license NPI-until. Moreover, this instance of negation does not share with run-of-the-mill negation its most fundamental characteristic, since it does not affect the truth conditions in the usual way. (Concretely, (24b) does not mean that John did not arrive – in fact, it entails or at least implicates just the opposite.) To avoid diverting the discussion into unrelated territory, I will not review the relevant arguments here.[19] Suffice it to say that, in addition to semantic considerations, there are a number of syntactic effects as well that pertain to the 'expletive negation' debate. In particular, Abels (2005) discusses the role of negation in Russian *until*-clauses. In Russian, negation in a number of constructions has been labeled expletive because, while it licenses genitive of negation, it fails to license negative quantifiers

(unlike standard instances of negation). Arguing that 'expletive negation' is an unnecessary (and semantically unlikely) complication to the syntactic model, Abels proposes an account whereby negation originates in the same designated functional projection (call it NegP) in every case, and derives the relevant licensing facts by having the negation LF-move out of the adverbial clause to enter into a local relationship with *until*. Once outside the adverbial clause, negation cannot license negative quantifiers (which require a clausemate licensor) but can agree with a genitive-of-negation direct object at some earlier point during the derivation (as genitive of negation allows 'online' licensing).

In general, there is no clear consensus on what exactly is 'expletive' about seemingly spurious occurrences of negation. From a semantic perspective, negation that does not alter the truth conditions of the clause it appears in is usually claimed to be expletive. 'Stativizing' negation is not expletive in this sense, since it affects event structure – presumably by negating some part (e.g. the culmination). In either case, the interpretation we expect negation to induce depends crucially on its syntactic position – both in surface syntax and at LF. Thus, I focus on this question below.

3.3.2 Three *until*-constructions in Hungarian[20]

How many until's? As pointed out earlier, 'single-until' analyses rely crucially on two assumptions: (i) negation can influence aspect, in particular, a negated eventive predicate will be interpreted as stative; and (ii) various interpretational effects (semantic and/or pragmatic) result from scope relations between *until*, negation (and possibly other operators). In what follows, I will look back at the three-way contrast shown under (22) (repeated below) and outline how these examples can be viewed from the perspective of the above. Of the two tenets of the 'single-until' approach, I assume (i) without argumentation, and show that – when interpreted in its base position – negation does result in a stative interpretation. As for (ii), I will suggest that the LF position of negation is what counts for semantic interpretation, and that focus is the crucial factor influencing the pragmatics.

(26) a. *Itt maradok, **ameddig** Emma át-jön.*
        here I-stay   Dem-Wh-until Emma over-comes
      b. *Itt maradok, **ameddig** Emma **nem** jön át.*
        here I-stay   Dem-Wh-until Emma Neg comes over
      c. *Itt maradok, **ameddig** Emma át **nem** jön.*
        here I-stay   Dem-Wh-until Emma over Neg comes

'I'll stay here until Emma comes over.'

From the discussion in the previous sections, the reader may recall that I have argued for two different *distributions* of the suffix *-ig*. One instance of this suffix (patterning with the temporal relative class) occurs when the embedded event is durative rather than punctual, for example:

(27) *Itt   maradok,   **ameddig**   Emma   munkában   van.*
     here   I-stay   Dem-Wh-until   Emma   work-in   is
     'I will stay here as long as Emma is at work.'

In such cases, *-ig* forms a regular relative clause, whereby the time periods covered by the embedded and the matrix events are in full overlap. The 'IP-relative' use of *–ig* (as in (26a)), meanwhile, takes a time point (when the embedded punctual event takes place) and relates it to the duration of the matrix event, setting it as the endpoint of the latter. At first glance, it seems that these two uses exemplify 'punctual' and 'durative' *until* but this is not necessarily the case. In fact, *-ig* – at least as far as (26a) and (27) attest – always takes a durative event and a point in time as its two arguments. The only difference is that the temporal relative use of *–ig* relativizes the time point, so it remains implicit. On this interpretation, a sentence like (28) involves relativization of the endpoint of both events, resulting in a reading where the two periods (reference time to endpoint) overlap:

(28) *Várok,   **ameddig**   Péter   sétáltatja   a kutyát.*
     I-wait   Dem-Wh-until   Peter   walks   the dog-ACC
     'Peter will walk the dog until time *t*, and I will wait until *t*.'

This means that, so far, we have no evidence for positing two different kinds of *–ig* (durative and punctual) in Hungarian, despite the fact that the distribution of the suffix is clearly of two kinds so *–ig* can apparently take either a temporal expression (a time point) or a punctual event as its point-in-time argument.[21] Clearly, sentences like (28) could also be analyzed as involving a different lexical item that is homophonous with the one used in (26a) and whose meaning mirrors that of English 'as long as' – so far we can only say that this pair of sentences *can* be analyzed without lexical ambiguity. The importance of positing a single lexical item with uniform selectional properties will become clear below, when I turn to the discussion of the derivation of (26c).

The role of negation. We now turn to the negated example (26b) to see whether the 'single-until' approach can work here as well. The stativizing effect of negation (which is attested in English in cases like (23b)) can be tested in Hungarian in a number of ways. Firstly, while punctual predicates are normally compatible with adverbials like *egyszer csak* 'all of a sudden', duratives do not tolerate such modifiers. If, as claimed above, (26a) involves a punctual event in the adverbial clause and (26b) a durative one, then (29a) should be fine with this adverbial, while (29b) should be just as bad as the trivially unacceptable (29c). This is so:

(29) a. *A szobában   beszélgettünk,   **ameddig**   egyszer csak*
          the room-in   we-talked   Dem-Wh-until   all-of-a-sudden
          kialudt   a villany.
          PRT(out)-slept   the light
          'We talked in the room until, all of a sudden, the lights went out.'
      b. *A szobában   beszélgettünk,   **ameddig**   (*egyszer csak)*
          the room-in   we-talked   Dem-Wh-until   all-of-a-sudden
          ***nem** aludt   ki   a villany.*
          Neg   slept   PRT(out)   the light
          'We talked in the room as long as the lights didn't go out.'
      c. *A szobában   beszélgettünk,   **ameddig**   (*egyszer csak)*
          the room-in   we-talked   Dem-Wh-until   all-of-a-sudden
          főtt   a vacsora   a konyhában.
          cooked   the dinner   the kitchen-in
          'We talked in the room while dinner was cooking in the kitchen.'

Given the apparent stativizing effect of predicate negation in (29b), we expect this negated construction to parallel relative clauses formed with inherently durative predicates in the relevant ways. In particular, the suffix *-ig* in (30a) is claimed to participate in standard relative clause formation, and should give rise to the low reading just as easily as in (30b) - observe:

(30) a. (*Addig*)   *maradok*   *a gyerekekkel,*   **ameddig**
          Dem-until   I-stay   the children-with   Dem-Wh-until
          *mondtad,   hogy   Emma   **nem** jön   haza.*
          you-said   Comp   Emma   Neg comes   home
          Low reading: 'You told me that Emma will not come home until time t. I will stay with the children until time t.'
      b. (*Addig*)   *maradok*   *a gyerekekkel,*   **ameddig**
          Dem-until   I-stay   the children-with   Dem-Wh-until

mondtad,   *hogy*   *Emma*   *munkában*   *van.*
you-said   Comp   Emma   work-in   is
Low reading: 'You told me that Emma will be at work until
time t. I will stay with the children until time t.'

From the brief discussion above, we can safely conclude that run-of-the-mill predicate negation acts as a stativizer in Hungarian. It is an interesting question – one that would lead us too far off course – how exactly negation achieves this effect, or, more specifically, what needs to be negated in order to create a state out of a punctual event. Observe the following examples:

(31)   a.   *A sorban*   *álltunk,*   ***ameddig***   ***nem***   *kaptuk*
           the line-in   we-stood   Dem-Wh-until   Neg   we-received
           meg   *az ebédet.*
           PRT   the lunch-ACC
           'We stood in line until we received our lunch.'
   b.   *Péter*   *ideges*   *volt,*   ***ameddig***   ***nem***   *látta*
           Peter   nervous   was   Dem-Wh-until   Neg   saw
           meg   *a házat.*
           PRT   the house-ACC
           'Peter was nervous until he spotted the house.'

Both examples can only be understood as accomplishments – so, they must involve a preparatory period before the culmination, and it is the culmination that seems to be negated. (This is why adverbial modifiers like 'all of a sudden' are not compatible with this construction.) (31a) is more natural with this reading because standing in line is understood as waiting for lunch to be served. Meanwhile, (31b) must be read as Peter searching for the house that he ends up seeing. It therefore seems that it is the culmination of these events that is removed by the stativizing negation, and the remaining part (the process or preparatory phase of an accomplishment) is the duration that is interpreted. For this reason, true achievements are strange in this construction – or force an accomplishment reading that comes out pragmatically odd in (32):

(32)   #***Ameddig***   ***nem***   *halt*   *meg*   *a beteg,*   *az orvosok*
        Dem-Wh-until   Neg   died   PRT   the patient the doctors
        küzdöttek   *az életéért.*
        fought   the his-life-for
        'The doctors fought for the patient's life until he died.'

(Odd because it sounds like the doctors were anticipating the patient's death – despite fighting for his life.)

We now turn to the question of how the third available construction (26c) bears on the issues, namely, the selectional properties of –*ig* and the role of negation. We will see that the diagnostics shown in (29-32) above yield very different results for the (26c)-type construction. I will claim, however, that this contrast does not warrant the introduction of a special type of negation, or – for this dialect – of a special Neg position.

Two types of negation? The properties of the Prt-Neg-V order are illustrated below – note the contrasts to the Neg-Prt-V variety:

(33) *A szobában   beszélgettünk, ameddig   egyszer csak*
       the room-in   we-talked   Dem-Wh-until all-of-a-sudden
       ki   nem   aludt   a villany.
       PRT(out) NEG   slept   the light
       'We talked in the room until, all of a sudden, the lights went out.'
       (cf. 29b)

(34) **Addig   itt   maradok   a gyerekekkel,   ameddig*
       Dem-until   here   I-stay   the children-with Dem-Wh-until
       mondtad,   hogy   Emma   haza   nem   jön.
       you-said   Comp   Emma   home   Neg   comes
       *Low reading: 'You told me that Emma will not come over until
       time t. I will stay here with the children until time t.' (c.f. (30a))
       (The high reading is excluded due to the tense of the middle clause.)

(35) ***Ameddig   meg nem halt a beteg,   az orvosok***
       Dem-Wh-until   PRT Neg died the patient the doctors
       küzdöttek   az életéért.
       fought   the his-life-for
       'The doctors fought for the patient's life until he died.' (cf. 32)

As (33) shows, the Prt-Neg-V construction allows the insertion of 'all of a sudden', suggesting that the relative clause is interpreted as describing a punctual event. This is confirmed by (35), where we see that the natural reading of this sentence (where the patient dies 'without preparation', suddenly, despite the doctors' efforts) emerges. Thus, this construction patterns for all intents and purposes with the connective use of –*ig* (as in (26a)), which was analyzed as involving an IP-relative without operator movement from inside the adverbial clause. (Recall that, due to the

selectional properties of the suffix *–ig*, this use is only possible when the adverbial clause is able to specify the endpoint to the duration of the main clause.) In accordance with the predictions of the earlier sections of this chapter, the low reading becomes unavailable in (34), suggesting that the Prt-Neg-V order surfaces in IP-relative configurations.

The natural question to raise is whether we are dealing here with negation that is somehow 'special'. Rather than posit the existence of an unusual type of negation that, for some reason, does not achieve the stativizing effect observed in the Neg-Prt-V order above, I will argue that negation in the Prt-Neg-V order is generated in the same position as run-of-the-mill predicate negation but is not interpreted inside the adverbial clause. Following Abels (2005) with some modifications, I will suggest that negation in this construction moves outside the clause at LF and takes scope just outside *–ig*. On this scenario, the P element originates outside the clause, so we have no operator movement from inside the adverbial clause, and the lack of the low reading is predicted in (34). Interpreted in this high position, negation cannot achieve the stativizing effect observed in the Neg-Prt-V order. For ease of exposition (and somewhat pre-theoretically) I will from now on refer to the IP-relative construction involving negation that is interpreted outside the adverbial clause (to be demonstrated below) as the 'Neg-raising construction' and the temporal relative variety (where we observe the stativizing effect of negation, which is interpreted in its base position) as the 'Neg-as-stativizer construction'. The rough representations of the surface structure of the two constructions are given in (36):

(36) a. (=26b) $[_{\text{NegP}}$ nem jön $[_{\text{TP}}$ át … $]]$ (Neg-as-stativizer)
     b. (=26c) $[_{\text{FocP}}$ át $[_{\text{NegP}}$ nem jön … $]]$ (Neg-raising)

Before going on to present evidence for the LF raising of negation from its base position illustrated in (36b) above, a note on the word order will be instructive. Given the fixed hierarchy of the functional projections dominating the VP in Hungarian (relevantly: FocP>NegP>TP>PredP>VP), the only way to get the Prt-Neg-V order without positing a special position for negation is to assume that the particle is in focus in a construction like (26c). This is in fact what is suggested by Piñón (1991). Although some adjustments of this simplified picture will be required to account for dialectal differences, and it will also turn out that focusing the particle is not absolutely necessary (albeit preferred) in the Neg-raising construction, the schematic representation given in (36) will suffice for the purposes of the main portion of this discussion.

In addition to its attractiveness for proponents of the 'single-until' approach (i.e. making it possible to analyze *–ig* as having a single selectional grid), the Neg-raising analysis of (26c) also receives support from a number of syntactic observations. I discuss these below, before turning my attention to the issue of motivation for Neg-raising, and the particularities of the Prt-Neg-V word order.

The first observation concerns the licensing of negative quantifiers. Since the Hungarian data are similar in this respect to the Russian facts discussed by Abels (2005), I will not dwell on them too much here. Unlike in Russian, however, in Hungarian there are two different *until*-constructions that involve negation. Without going into the details of n-word licensing, it is sufficient to note here that negative quantifiers are only licensed in the 'Neg-as-stativizer' construction, and disallowed in the 'Neg-raising' construction[22]:

(37) a. ***Ameddig   nem*** *veszünk fel*   <u>*senkit,*</u>
    Dem-Wh-until Neg we-hire PRT nobody-ACC
    többet   kell   dolgoznod.
    more-ACC   must you-work-INF
    'Until we hire someone, you have to work more.'
  b. ****Ameddig   fel   nem*** *veszünk* <u>*senkit*</u> *...*
    Dem-Wh-until PRT Neg we-hire nobody-ACC…

As shown by the contrast in (37), run-of-the-mill predicate negation has no trouble licensing the negative quantifier *senkit* 'nobody-Acc' in object position inside an *–ig*-clause, while the same configuration is ungrammatical in the Prt-Neg-V order. If we want to maintain that negation is always generated in the same position (cf. (36)), it seems like an obvious step to relate this fact to the posited Neg-raising in this construction, and claim that (just like in Russian) this instance of negation is unable to license negative quantifiers because these require a clausemate licensor but negation is too high at LF for this.

Stronger evidence for the LF raising of negation in the Prt-Neg-V order comes from scope facts. To start, observe the scope relations between the sentence adverb *biztosan* 'surely, certainly' and negation:

(38) a. *Itt   maradok,*   ***ameddig***   *Emma*   ***biztosan***
    here   I-stay   Dem-Wh-until Emma   certainly
    nem   *alszik*   *el.*
    Neg   sleeps   PRT

Adv>Neg: 'I will stay during the time period for which it is certain that Emma will not fall asleep.'

b. *Itt maradok, **ameddig** Emma **biztosan***
here I-stay Dem-Wh-until Emma certainly
*el **nem** alszik.*
PRT Neg sleeps
Neg>Adv: 'I will stay as long as it is not true that Emma has certainly fallen asleep.'

c. *Emma **biztosan** **nem** alszik el.*
Emma certainly Neg sleeps PRT
Adv>Neg: 'Emma will certainly not fall asleep.'

As (38c) indicates, the relative scopes of the adverb and negation normally reflect the surface order (cf. Egedi (this volume, Chapter 5) for extensive discussion of sentence adverbs and their scope properties). This is mirrored in the Neg-V-Prt construction in (38a), which is a case of regular predicate negation being interpreted in its surface position. (38b), at the same time, presents a non-linear scope order that is not attested in non-raising contexts. The Neg-raising analysis accounts for this fact straightforwardly.

Interaction with focus. I now turn to some rather intricate data to show that the instance of negation that is left-adjacent to the verb on the surface and LF-raises to a position outside the adverbial clause in what I have labeled the 'Neg-raising' construction also takes scope over focus in the relative clause – and, conversely, that when the wide scope of negation over focus is observed, that reading is only compatible with the IP-relative diagnostics. The data are complicated by the fact that focus neutralizes the word order difference between the 'Neg-raising' and the 'Neg-as-stativizer' constructions, given that we always have the surface order demonstrated in (39), with the focused element preceding negation:

(39)   [$_{\text{FocP}}$ XP [$_{\text{NegP}}$ nem V …]]

In order to build up the argumentation, however, I must take a step back and say a few words about an issue that I have glossed over so far. Until now, I have only presented Neg-raising examples that feature the Prt-Neg-V word order, which is arguably derived by focusing the particle. (As noted above: without positing a special position for negation in these examples, this is in fact the only way to get this order – although see below on dialectal and historical issues related to this order, and also on other

constructions featuring this word order without Neg-raising). It is true that, by and large, the Prt-Neg-V order is the most prevalent configuration in the Neg-raising construction, which has led Piñón (1991), for example, to argue that this construction features obligatory focusing of the particle. The most convincing argument for this assumption is that – in the dialect at hand that has the difference between Neg-raising and Neg-as-statvizer constructions – another focused element is impossible before the particle, making (40) ungrammatical:

(40) *Itt   maradok,   **ameddig**   *JÁNOS*   *fel*
       here   I-stay   Dem-Wh-until John   PRT
       nem   *lép.*
       Neg   steps
       Intended: 'I will stay here until it is John who steps out on stage.'

Note, however, that this observation only shows that negation must be in its regular position so that only one focused element can appear to its left. It does not prove that this focused element must be the particle, or that there must be focus in this construction at all. So there are two factors that need to be teased out here. First, since – as far as the discussion to this point shows – there is no necessary connection between focus and Neg-raising, it seems like Neg-raising should be derivable with focus on an element other than the particle, or possibly even without focus. Second, if it is indeed the case that Neg-raising is independent of focus, it should be clarified why Neg-raising examples involving focus (and, in particular, focus on the particle) are preferred by many speakers. The first issue will be highlighted in the discussion that follows immediately. Since word order differences between the Neg-raising and the Neg-as-statvizer constructions disappear under focus, we will need to appeal to diagnostics such as the ones used above (scope of negation, licensing of n-words) to tell the two constructions apart. It will be shown that examples involving focus on any element are compatible with the Neg-raising reading, invalidating the conclusion of Piñón (1991) that focus on the particle is obligatory. The examples will thus support the Neg-raising analysis by demonstrating that negation takes scope over focus in these cases. The question of why Neg-raising examples with focus are preferred will be briefly addressed in section 3.3.3.

    To start, witness the ambiguity in (41) below:

(41) *Itt   maradok,   **ameddig**   *JÁNOS* *nem* *lép* *fel.*
       here   I-stay   Dem-wh-until John   Neg   steps PRT

Focus > Neg: 'I will stay as long as the following holds: It is John (and not someone else) who is not performing on stage.'
Neg > Focus: 'I will stay as long as the following does not happen: It is John (and not someone else) who steps out on stage.'

The Foc>Neg reading is interpreted in a scenario where there is always a single person who is not on stage (but sitting in the back) and the *until*-clause refers to the time period while this person is not John. The Neg>Foc reading, on the other hand, is the more likely scenario where there is always one person on stage, and the adverbial clause picks out the point in time when this one person is John. While the surface scope order is not surprising (Hungarian is well-known for displaying scope relations overtly in most cases), the Neg>Focus scope order is arguably derived via Neg-raising. This example illustrates that, for Neg-raising, it need not be the particle that is in focus – it can be another element – if in fact the inverse scope in (41) is derived via the same covert Neg-raising that I have posited for (26c) above. There are a number of distinct predictions if the reasoning above is on the right track, that is, if the Neg>Focus reading of (41) involves a (26c)-type construction (while the Foc>Neg reading is a (26b)-type temporal relative). First, to the extent that a negative quantifier is licensed in the ambiguous (41), it should only be compatible with the non-Neg-raising (Focus>Neg) reading (see (42)). (Recall that negative quantifiers are not licensed in the Neg-raising configuration.) Second, to the extent that the low reading can be constructed with (41), it should also enforce the Focus>Neg interpretation (see (43)). (Once again, low readings are out with the IP-relative construction, of which the Neg-raising examples are a subtype.) Third, if we insert *egyszer csak* 'all of a sudden' into the example, we should end up with the Neg>Foc reading, since this adverb is only compatible with a punctual reading on the event in the relative clause (which, in turn, requires Neg-raising) (see (44)):

(42) *Itt   maradok, **ameddig**   JÁNOS   nem   nyer meg*
       here   I-stay   Dem-Wh-until   John   Neg   wins PRT
       semmit.
       nothing-ACC
       Focus>Neg: 'I will stay as long as it is JOHN who wins nothing.'
       *Neg>Focus: 'I will stay as long as it is not true for anything that John has won it.'

(43) *Itt   maradok, **ameddig**   mondtad,   hogy*
       here   I-stay   Dem-Wh-until   you-said   Comp

> *JÁNOS   nem   lép   fel.*
> John   Neg   steps   PRT
> Focus>Neg: 'You told me that up until time t it will be John who is not performing on stage. I will stay until time t.'
> *Neg>Focus: 'You told me that until time t it will not be the case that it is John who is performing on stage. I will stay until time t.'

(44)   *Unatkoztam,   **ameddig**   egyszer csak   JÁNOS*
      I-was-bored   Dem-Wh-until all-of-a-sudden   John
      nem   lépett   a színpadra.
      Neg   stepped   the stage-onto
      'I was bored as long as it did not happen that, all of a sudden, it was John who stepped out on the stage.'

All three predictions above are borne out, suggesting that the Neg>Foc scope order in (41) is in fact a result of the Neg-raising posited in the IP-relative examples (like (26c)). Given the claims of this paper, the lack of the low reading in (43) furnishes evidence that *–ig* in this case originates outside the adverbial clause, and there is no relative operator movement involved in the construction. This gives us a clue as to the motivation for the raising of negation. If we accept that negation in its usual position has a stativizing effect (an assumption that seems unavoidable in light of the Neg-as-stativizer examples), a scenario where we have negation in the adverbial clause and *–ig* starting out from the left edge leads to a mismatch since one of the arguments of *–ig* must be punctual. I suggest that raising the negation to take *–ig* in its scope resolves this mismatch. This means that the motivation for Neg-raising is specific to *until*-constructions but does not have the consequence that *–ig* must be treated as an NPI. In accounting for the dialect that displays the three-way contrast in (26), this is a welcome result because we can make do with one *–ig* suffix (with one set of selectional requirements). In light of (26a) – the non-negated IP-relative example – it is clear that in this dialect *–ig* does not require the presence of negation. Due to its selectional requirements, however, it does not tolerate a durative event in the adverbial clause it selects in the IP-relative configuration. When we have the configuration in (45), therefore, raising negation to a position outside the adverbial clause saves the sentence:

(45)   [PP *–ig* … [RelP *mi* … [NegP *nem* …]]]

Before turning to some dialectal variation, let me sum up the findings of this section. Despite its complexities, the least restrictive dialect of

Hungarian – the one that displays the three-way contrast illustrated under (22)=(26) – can be accounted for without reference to lexical ambiguity of the –*ig* suffix, or having to evoke a special type or position of negation. Rather, it has been argued that there is only one lexical item –*ig* involved in all three constructions. This suffix takes two arguments (one durative and one punctual), fixing the latter as the endpoint of the former. This strict view of the suffix's selectional properties necessitates a covert operation (raising negation from its usual position in NegP to a position outside the adverbial clause) in configurations where the P element originates outside the adverbial clause as a connective (the IP-relative scenario) because negation would otherwise create a stative event in the adverbial clause, which is incompatible with the P's requirements. This raising of negation at LF was evidenced by a number of diagnostics (scope relations between negation and sentence adverbs or focus, the inability of this negation to license negative quantifiers inside the adverbial clause, and the lack of stativizing effect displayed by the raised negation).

Thus, the account outlined for the examples in (26) supports the 'single-until' line of approaches. In addition, it shows that the two (or rather, three) distinct occurrences of –*ig* can be analyzed in terms of structural ambiguity (that is, this P can form both temporal relatives and IP-relatives), where the rest of its properties (particularly, its interaction with negation) are explained by and in turn influence the semantics of each construction.

Before returning to the core topic of this chapter, I will briefly discuss the properties of two dialects that are more restrictive than the one described in this section, and show that – despite the fact that these dialects have very different properties from the ones outlined above – the single-until approach and the Neg-raising analysis can be maintained.

3.3.3. Dialectal differences

As mentioned above, the properties of temporal adverbial clauses featuring –*ig* 'until, while' vary greatly across regional dialects as well as individual speakers. While the dialect analyzed in the previous section is more or less uniform among younger speakers born and raised in Budapest, this can by no means be called a standard. Further, there are many speakers who only accept a subset of the constructions in (26) and have different judgments about some of the data presented above. In this section, I sketch two relatively clear-cut tendencies that display systematic differences in comparison with the 'liberal' dialect. The full-scale testing and analysis of such microvariation, however, falls outside the scope of this paper.

One strong tendency is that there are a large number of speakers (even among natives of Budapest) who do not accept a non-negated eventive verb inside an –*ig*-clause, so sentences like (26a) are ungrammatical for them. It is interesting to note that the majority of speakers who judge both (26b) and (26c) (but not (26a)) as grammatical pattern with speakers accepting all three constructions in all other respects. In particular, they consider Neg-raising examples to involve a punctual event in the adverbial clause (as evidenced by the grammaticality of an adverbial like 'all of a sudden', cf. (33)), accept the low reading in Neg-as-stativizer (but not in Neg-raising) examples (cf. (30a), (34)), and disallow the licensing of negative quantifiers in Neg-raising constructions (cf. (37)). This means that, apart from requiring negation in the IP-relative construction, this dialect displays the same diagnostics for Neg-raising and for a single kind of –*ig* suffix as does the non-restrictive dialect accepting all three versions. The question then becomes what the crucial difference is between (26a) and (26b) such that these two constructions are judged so differently by some speakers. While I do not have anything conclusive to say about this question, I would like to suggest that the central factor at play here is focus (recall that (26c) involves focus on the particle), which in turn appears to be responsible for the 'switch-reading'. It is highly possible that, just like in English, raising negation to take –*ig* in its scope reinforces the focus reading on the –*ig*-clause (cf. the English (25c)), which seems to be preferred by this group.

More interestingly, however, there is an even more restrictive dialect (spoken primarily in Eastern Hungary and Transylvania – although, as I said, there are no clear-cut dialectal divides in this respect) that only fully accepts (26c) of the triplet discussed in the previous section:

(46)   *Itt*   *maradok,*   **ameddig**   *Emma*   *át*   **nem**   *jön.*
       here   I-stay   Dem-Wh-until   Emma   over   Neg   comes
       'I'll stay here until Emma comes over.'

At first glance, this fact can be explained away easily by positing that the distribution of -*ig* is simply even more constrained in this dialect, such that it can only participate in an IP-relative construction and also requires combination with negation (so: only the Neg-raising construction is derivable). This is corroborated by the fact that diagnostics for the IP-relative construction work in this dialect as well (the low reading is not supported in examples like (34)). We find evidence for Neg-raising as well (negation scopes over sentence adverbs as in (38b), and it also does not

have a stativizing effect in the relevant examples (the construction tolerates adverbials like 'all of a sudden', cf. (33)).

Complications begin when we look at examples involving focus. Firstly, in stark contrast to what was observed in the previous section (cf. (40)), this dialect tolerates a focused element before the Prt-Neg-V order, suggesting that the particle cannot possibly be in focus in the construction:

(47) *Addig   maradok,* **ameddig**   *JÁNOS fel* **nem** *lép.*
    Dem-until   I-stay   Dem-Wh-until   John   PRT   Neg   *steps*
    'I will stay until it is John who steps out on stage.'
    (ungrammatical in the non-restrictive dialect)

This word order cannot be derived by positing that the particle is in focus (hence the contrast), so we must examine the possibility that this dialect features a Neg position that is lower than run-of-the-mill predicate negation. At the same time, it is crucial to note that even in this construction Neg-raising must take place since the example in (47) only has the Neg>Foc scope reading. This, taken together with the lack of stativizing effect and the wide scope of this negation over sentence adverbs, strengthens the conclusion of the preceding section that Neg-raising is not tied to any particular position, but is rather driven by a semantic mismatch.

A tentative structure for the relevant part of (47) is given below:

(48)   [$_{TP}$ fel [$_{NegP}$ nem lép [$_{PredP}$ …]]]

Although I do not have much to say here about this construction, there are a couple of comments to be made. Firstly, the Prt-Neg-V order, which is quite exceptional in present day Hungarian, was the prevalent order in Old Hungarian (about 10th-16th centuries).[23] At present, this word order only survives in a small number of contexts – here are two examples:

(49) a. *Fontos,   hogy   János   meg   **ne**   tudja.*
        important   Comp   John   PRT   Neg   know-Subj
        'It is important that John should not find out.'
    b. *Fel   **nem**   foghatom,   hogy…*
        PRT   Neg   I-grasp-Mod   Comp
        'I cannot understand…' (emphatic; approx. 'It's beyond me.")

What is interesting to note about these contexts is that, in a neutral case, they do not license focus:

(50) *JÁNOS   fel   nem   foghatja,   hogy…
      John   PRT Neg   grasp-Mod Comp
      'It's JOHN who cannot understand…'

But in an embedded context, when the subordinate clause itself is in focus, focusing an element in the embedded clause becomes fully natural, and higher negation also becomes available – just as it does in the *–ig*-clauses of the restrictive dialect that normally only allows (26c) (compare (52)):

(51) a. **AZ**   *a fontos,*   *hogy JÁNOS   meg*   **ne**   *tudja.*
         Dem   the important   Comp John   PRT   Neg   know-Subj
     b. **AZ**   *a fontos,*   *hogy JÁNOS*   **ne**   *tudja*   *meg.*
         Dem   the important   Comp John   Neg   know-Subj   PRT
         'What is important is that JOHN should not find out.'
(52) **Csak addig**   *unatkoztam,*   **ameddig**   *JÁNOS*
      only Dem-until   I-was-bored   Dem-Wh-until   John
      nem   *lépett*   *a színpadra.*
      Neg   stepped   the stage-onto
      'I was only bored until it was JOHN who stepped out on stage.'

Based on the above, I will tentatively suggest that, at least in a subset of subordinate contexts, the availability of the high Foc and Neg positions in this restrictive dialect hinges upon the information structural status of the clause in which they appear. (A number of recent papers have argued that background clauses have a less articulated left periphery than contextually new clauses that constitute the information focus of the complex sentence, e.g. Haegeman (2006), Larson and Sawada (2004)) Clearly, this restriction is no longer active in present day Hungarian, and only survives in a few contexts where it seems that the full-fledged left periphery only projects when the clause plays an informationally prominent role. Otherwise, only the lower Neg position is available, which is also subject to Neg-raising.

   Although the discussion above is admittedly brief and rather on the speculative side, there are two conclusions that can be drawn. First, given the most restrictive dialect's properties, it becomes clear that Neg-raising and focus are independent of one another – Neg-raising takes place even in a construction that presumably does not involve a Focus projection (i.e. (46), where the particle is arguably in Spec,TP and negation is even lower). Second, these dialects, while displaying properties distinct from the 'liberal' dialect, still conform to the predictions of the 'single-until'

approach: whenever negation is interpreted low (thus yielding a stative event in the adverbial clause) we have evidence for a temporal relative derivation, while punctual events in the adverbial clause (resulting from Neg-raising, and evidenced by adverbial modification) are only compatible with an IP-relative analysis (as shown by the lack of 'low readings').

Based on the above discussion of the complex properties of –*ig*-clauses in Hungarian, I conclude that the idea that –*ig* has two distinct distributional possibilities is on the right track, as it leads the way to an explanation for the three-way contrast exemplified in (26), as well as a number of related syntactic observations. The analysis of temporal adverbial clauses involving –*ig* that I have proposed posits a single lexical item –*ig* that takes a durative event (from the matrix clause) and a time point (in the form of either a punctual event denoted by the adverbial clause, or the endpoint of a durative event inside the temporal clause that is then relativized and shared as endpoint with the matrix clause event) as its arguments. We have seen that when the punctual argument of -*ig* comes from inside the adverbial clause (thus, the matrix and embedded events share an endpoint) we are dealing with a regular relative clause, while the suffix can also originate outside the adverbial clause, in which case an IP-relative will be formed, and the relativized IP must denote a punctual event (in order to serve as the punctual argument of –*ig*). Since negation creates a state out of an eventive predicate, Neg-raising (which is evidenced by a number of syntactic and semantic diagnostics) is required in IP-relatives where the adverbial clause contains negation. The single-until analysis, coupled with the mechanisms for forming temporal relative clauses as well as IP-relatives with –*ig* and aided by the operation of Neg-raising to resolve event structural mismatches, accounts for the three-way contrast in (26). In the next section I look at yet another type of temporal adverbial clause, finite CPs that are formed with the same class of P elements as IP-relatives.

4 Finite CPs as temporal modifiers

As mentioned in the introduction and illustrated under (3), there is yet another strategy in Hungarian for constructing temporal modifiers. This strategy involves a full-fledged CP (as evidenced by the presence of the complementizer *hogy*) that is most natural on the right edge of the sentence, with the demonstrative pronominal *az+P* representing it in various positions in the main clause. The modified classification of the two types of

P elements – temporal relatives and IP-relatives – gives us the class of Ps that can participate in this construction readily: the class selecting a propositional complement (syntactically a CP) turns out to be the same as the class taking an event (an IP). Examples with each of the relevant Ps (all postpositions and the single suffix –*ig*) are given below:

(53) a. ***Addig***   *kavargattam*   *a levest,*   ***hogy*** *felforrt.*
      Dem-until   I-stirred   the soup-ACC   Comp PRT-boiled
      'I stirred the soup until it started to boil.'
   b. ***Azóta,***   ***hogy*** *elmentél,*   *szomorú vagyok.*
      Dem-since   Comp you-left   sad   am
      'I have been sad since you left.'
   c. ***Azelőtt***   ***hogy*** *a Lufthansához*   *állt, másodpilóta volt.*
      Dem-before Comp the Lufthansa-to   stood co-pilot   was
      'Before he went to work for Lufthansa, he was a co-pilot.'
   d. *Sok barátod lett* ***azután,***   ***hogy*** *híres lettél?*
      many friends   became   Dem-after   Comp famous you-became
      'Did you start having a lot of friends after you became famous?'
   e. ***Azalatt,***   ***hogy*** *a csizmáját*   *lehúzta,*   *imádkozott.*
      Dem-during Comp the boot-Poss-ACC pulled-off   he-prayed
      'While he was pulling off hits boots, he was praying.'
   f. ***Aközben***   ***hogy*** *fórumozok,*   *az államvizsga tételeimet*
      Dem-during Comp I-chat   the final exam   questions-ACC
      dolgozom   *ki.*
      I-prepare   PRT
      'While I am chatting (on the internet), I'm working on my final exam questions.'

To show that the construction is in fact limited to members of the IP-relative class, let us first ascertain that the temporal relative uses of –*ig* and *óta* are not possible here:

(54) a. ***Azóta,***   ***hogy*** *megérkeztél…*
      Dem-since   Comp   you-arrived…
      'Since you arrived…'
   b. ??***Azóta,***   ***hogy***   *itt*   *vagy…*
      Dem-since   Comp   here   you-are…
      'Since you've been here…'
   c. ***Azóta,***   ***amióta***   *megérkeztél / itt vagy…*
      Dem-since   Dem-Wh-since PRT-you-arrived / here you-are…

'Since you arrived… / you've been here…'
d. ***Addig,*** ***hogy*** *felforrt* *a víz…*
  Dem-until   Comp   PRT-boiled the water…
  'Until the water started to boil…'
e. *****Addig,*** ***hogy*** *forr* *a víz…*
  Dem-until   Comp   boils   the water…
  'As long as the water is boiling…'
f. ***Addig,*** ***ameddig*** *felforrt / forr* *a víz…*
  Dem-until   Dem-Wh-until PRT-boiled/boils   the water…
  'Until the water started to boil… / As long as the water is
  boiling…'

While (54e-f) attest that durative events are possible in the embedded CPs of this construction, examples with *közben* and *alatt* 'during' are admittedly not all that common. Given this, and the fact that only the 'punctual' uses of –*ig* and *óta* are possible, we might suspect that the restriction in fact has nothing to do with the temporal relative vs. IP-relative distinction. It would seem that CP-temporals are simply restricted to time points. This, however, does not turn out to be correct, since the remaining time-point suffixes (-*kor* 'at' and –*korra* 'by') are ungrammatical in this construction:

(55) *****Befejezem* *a vacsorát* ***akkor / akkorra*** ***hogy*** *megjössz.*
    I-finish   the dinner-ACC Dem-at / Dem-by Comp you-arrive
    'I will finish the dinner when / by the time you arrive.'

Since all of the IP-relative Ps are (more or less freely) allowed in the CP-relative construction, I conclude that the restriction governing this construction is the same semantic classification that separates the IP-relatives from run-of-the-mill temporal relatives. Namely, the P in question must be allowed to take a complement larger than a time expression – an event or proposition.

I take these CP-constructions to be simple factive clauses, which are contextually old propositions with truth value but no assertive force. Such CP's are not asserted but only mentioned as referential entities (in this case, as time specifications). In fact, these 'CP-temporals' share a number of properties with factive object clauses. Most crucially, CP-temporals are distinguished from IP-relatives by the fact that they do not allow counterfactual readings. It is well-known that certain temporal adjunct clauses – mostly *before*-clauses – can be interpreted as counterfactual, meaning that they refer to situations that were not realized (usually as a

result of what happens in the main clause). This type of reading is incompatible with CP-temporals, claimed to be factive propositions with a presupposed truth value, but should be compatible with IP-relatives, which are events and thus do not have a truth value. This is so:

(56) a. *Elindulok,* **mielőtt** *lekésem* *a buszt.*
I-leave Wh-before PRT-I-miss the bus-ACC
'I'm leaving before I miss the bus.'
b. **Elindulok* **azelőtt,** **hogy** *lekésem* *a buszt.*
I-leave Dem-before Comp PRT-I-miss the bus-ACC
Intended: same as (56a)

While (56a) can be interpreted as the English translation (where my leaving will prevent me from missing the bus) (56b) does not have this reading, only the absurd reading where my plan is to leave and thereafter miss the bus. This property is clearly related to the fact that CP-temporals are contextually old, while IP-relatives (like temporal relative clauses in general) introduce new information. As CP-temporals are normally presupposed, they show a certain similarity to non-temporal embedding (see also Larson and Sawada (2004) for discussion of the contrast between presupposed causal embedded clauses and contextually new temporal adjunct clauses). In fact, these embedded CPs can have meanings that are closer to a causal reading, and, just like in English, some of the same P's can also function as causal connectives even in relative clause constructions:

(57) **Miután** *nem tudom* *a nevét,* *Benőnek* *hívom.*
Wh-after Neg I-know the name-his-ACC Benő-DAT I-call-him
'Since I don't know his name, I always call him Benő.'

In the IP-relative realm where the two uses can look identical (like (57), which could also be a temporal construction, albeit with an unlikely meaning), however, there are a number of important differences between the temporal and non-temporal uses of these P elements that suggest that we are dealing with two different constructions. In a causal use, temporal postpositions cannot form a relative pronoun starting with *a-* and cannot be coreferential with an *az+P* element in the main clause:

(58) *Így* *hívom* **(*azután) (*a)miután** *nem tudom* *a nevét.*
so I-call-him Dem-after Dem-Wh-after Neg I-know his-name
'I call him this way since I don't know his name.'

Interestingly, full CP's combined with a relative pronoun are also marginally possible with the same set of postpositions, and this highly marked construction is subject to the same constraint:

(59) ?*Nem láttam   (*az-óta),   (*a)mi-óta   hogy* elkezdett dolgozni.
  Neg   I-saw   Dem-since Wh-since   Comp began   work-INF
  'I haven't seen him since he began to work.'

In this respect, the marginal temporal construction in (59) bears strong resemblance to causal constructions. Further, as it turns out, the combination '*mi+P hogy*' – only marginally acceptable in the temporal domain – is quite common with causal Ps:

(60) *Késő̋n   érkeztem **m-ert-hogy** / **mi-vel-hogy**   dugó   volt.*
  late   I-arrived Wh-for-Comp / Wh-with-Comp traffic jam   was
  'I arrived late because / since I ended up in a traffic jam.'

Due to this similarity between (59) and causal constructions, as well as the marginality of this type of construction in the temporal realm, I suggest that (59) is in fact a non-temporal construction and thus falls outside our scope of investigation here. At the same time, CP-temporals do not share the relevant properties with non-temporal constructions, so I will assume that these are truly temporal in meaning. They are factive propositional CP's that specify a time at which the statement denoted by the CP is (or becomes) true. The suffix or postposition relating this time to the time of the main clause takes this proposition as its complement.

5 Extensions and conclusions

In this final section I discuss two related aspects of the typology of temporal embedding I have presented above. First, I look at long-distance dependencies in English temporal constructions that were first discussed in detail in Larson (1990). I examine how the conditions on the availability of the low reading in Hungarian fare against the English data. Then I turn to a sub-issue of such dependencies, specificity, and consider the possibility that Hungarian *a-* (as it surfaces at the beginning of relative pronouns) is an indicator of specificity.

5.1   Long-distance dependencies in English temporal constructions

Larson (1990) (citing Geis (1970) as the source of the observation) discusses the availability of the so-called low reading in temporal relatives in English. To sum up the relevant facts: Larson notes that the prepositions that make the long-distance dependency possible (namely *before*, *after*, *until*, *since*) are the ones that can take both an NP and a CP as their complement. Prepositions that can accept only a CP (like *while*) or only an NP (like *during*) are not possible in this scenario. In his analysis of these facts, Larson appeals to case assignment. The idea is that a P like *before* retains its case assignment ability even when taking a CP complement. Thus, an operator-chain whose lowest element is a temporal variable inside the adjunct clause and whose head is in Spec,CP immediately under *before* can be assigned case by the preposition. This is what saves the derivation. Since the trace at the bottom of the chain (being an adjunct) fails to receive case, it would cause the derivation to crash if the head of the chain was not assigned case by the preposition.[24] Meanwhile, a P like *while* – which can never take a nominal complement – does not have the ability to assign case, so the relevantly similar derivation with this P crashes.

It is interesting to note that the state-of-affairs as presented by Larson differs from Hungarian in two important respects. First, the set of P elements that allow the low reading is not by far the same in the two languages. Second, the conditions for the availability of the low reading seem very different (at least as formulated above), and it is not immediately obvious how to reconcile the two explanations. Recall that, building on Lipták's (2005) analysis, I have assumed that it is the temporal relative/IP-relative distinction that makes the difference in Hungarian. Without going into the details of her account, the basic idea is this: In a regular temporal relative clause, the relative pronoun+P complex forms a constituent early on in the derivation, and is subsequently extractable via regular wh-movement. The identical string in the IP-relative case, however, is a complex head that takes the IP as its complement. The relative determiner *mi* raises up to adjoin to the P via head movement. As such, the relative pronoun is not available for long-distance extraction. The only alternative would be to move the entire RelP, an option that Lipták excludes appealing to the ECP. The prediction, then, is that whenever we see the availability of the low reading, we are dealing with a temporal relative.

Attempting to extend this analysis to English, we have to say that the prepositions in English that allow the long-distance dependency (*before*, *after*, *since*, *until*) form run-of-the-mill relative clauses, while the ones that

do not allow the low reading (like *while*) participate in IP-relatives (or some other construction where the relevant movement is excluded). Larson's analysis is compatible with this idea, given that his derivation for the ambiguous sentences involves the movement of an NP-category operator to the Spec,CP immediately dominated by the preposition. Retaining the selectional motivation for the temporal relative/IP-relative distinction, we can say that the construal of the low reading requires that the relative pronoun pick out a time. Since Larson takes temporal variables (including *when*) to be of the category NP, it follows that only prepositions that are possible with an NP complement will allow the long-distance dependency.

Recall, however, that the strongest argument for banning *before* and *after* from the temporal relative group was that analyzing them on a par with *at* yielded the wrong interpretation. For example, for (61) to have the interpretation as in the English gloss, it had to be assumed that the P originates outside the IP – thus classifying it as an IP-relative:

(61) *János megnézte   a meccset   **mi-előtt**   Panni megjött.*
      John   PRT-watched the match-ACC Wh-before Annie PRT-came
      'John watched the match before Annie got home.'

If we want to maintain that the English gloss in (61) is a regular relative clause (as attested by the fact that *before* in English allows the long-distance construal) we still have to ensure that the preposition originates outside the adjunct clause to yield the correct temporal relations. Thus, I propose that in English temporal prepositions always start out outside the adverbial clause, but the two constructions (temporal relatives and IP-relatives) are regardless differentiated by the presence or absence of operator movement to the position dominated by the preposition.

On this account, *while* is analyzed as forming an IP-relative, a construction that (in English) would be differentiated from run-of-the-mill temporal relatives *not by the position where the P element originates* (in English it always starts out on top of the adjunct clause) but only *by what the category of the complement of the preposition is*. Although Larson explicitly states that "the distinction does not correspond to whether these objects are times, propositions, etc." I believe that the criteria used above can still be maintained. So, in a temporal relative clause, the P takes a time (a nominal expression) as its complement; this temporal variable is moved from its base position inside the adverbial clause to the left edge, which I take to be a precondition on the availability of the long-distance construal. Meanwhile, in an IP-relative, the complement of the preposition is a fully-

formed event. This is not so far from what Larson says about these Ps (he mentions *while* as well as causal prepositions): "Presumably, prepositions like *while*, *although* and *because* must combine semantically with their complements in a way that does not involve variable binding." He goes on to suggest that *while* receives one of its temporal arguments from the embedded Tense node.

This approach receives support from a recent proposal by Haegeman (2007), who also argues for operator movement in temporal adjunct clauses. She claims that, among other diagnostics, the ungrammaticality of a speaker-oriented adverb in the relative clause is indicative of an operator-variable construal. (For the details of the analysis, the reader is referred to the paper.) Although she cites Larson (1990) as one of the early proponents of the idea that temporal clauses in English are relative clauses, Haegeman does not make the distinction between *before*-type and *while*-type clauses. Nevertheless, such a contrast does seem to exist in this respect:

(62)   a.   *I didn't dare go in before John (had) (* probably) left the room.*
       b.   *I didn't dare go in while John was (probably) in the room.*

If Haegeman is correct in saying that the unavailability of the adverb in (62a) is related to operator movement from inside that clause, then the fact that the same modification is impossible in (62b) supports the analysis of this example as an IP-relative not involving operator movement.

Of course, the English facts would not be so interesting if *while* was the only P that did not allow the low reading – we could simply say that *while* is banned from this construal due to some idiosyncratic lexical property. This is not the case, however. First, as Larson points out, causal Ps like *although* or *because* systematically disallow the low reading. Since the IP-relative group of P elements also patterns in many ways with causal Ps in Hungarian, this is perhaps not so surprising. In fact, it strengthens the correlation noted above: namely, that Ps that can form IP-relatives are also able to take (often presupposed) propositional complements. Second, the ambiguous *since* (which was shown above to exhibit dual behavior with respect to the temporal-/IP-relative split in Hungarian) also patterns with *while* on one of its readings. In its temporal use, *since* allows the low reading when taking a durative event as complement, but not when the adverbial clause denotes a point in time:

(63)   a.   *John hasn't entered since he believes Peter's been in the room.*
           (low reading OK)

b. *John hasn't gone inside since he believes Peter entered the room.*
(low reading *)

As expected, *since* behaves like a temporal-relative P when occurring with a durative event, and like an IP-relative P when its complement is punctual. This mirrors the behavior of *óta* 'since' in Hungarian, and shows that the behavior of *while* in English is not a lexical accident.

Based on the above, I conclude that the availability of the long-distance construal can be analyzed in a similar fashion in English and Hungarian. While the relative clause status of temporal adverbial clauses is quite well-founded in both languages, there does appear to be a major difference. While the P originates inside the adverbial clause in Hungarian temporal relatives and the PP participates in wh-movement together, in English the preposition starts out as a connective, taking the relativized temporal expression (an empty operator that is moved out of the temporal clause) as one of its arguments. Still, temporal relatives in both languages are differentiated from what I have been referring to as IP-relatives by the fact that the latter does not involve operator movement from inside the temporal clause. Rather, the P in these cases takes the entire embedded event as its complement. The Ps in this class – both in English and in Hungarian – also share the property that they pattern with causal prepositions in certain respects. The same P elements can have non-temporal meanings (like *since* or *while*), their complement clauses are often presupposed, and they do not allow the low reading.

5.2 Specificity conditions on long-distance operator movement

Before concluding this discussion, it is worth noting that – in English – having a nominal-selecting P is not the sole condition on the availability of the low reading. An argument for claiming that the movement in these constructions is regular wh-movement is that it is subject to the same restrictions. Larson (1990) notes that this extraction respects complex NP islands. A perhaps lesser-known fact is that it is also influenced by an intervening weak (factive) island:

(64)　*I saw Mary in New York before Tom **knew/discovered** she would be there.* (low reading *)
Intended: Tom knew/discovered Mary would be in New York at a certain time. I saw her before that.

Example (64) lacks the low reading, which is likely due to the intervening semifactive *knew*/factive *discovered*. This suggests that whatever the moving element is here (in Larson's view an NP-type operator that is the silent counterpart of *when*) it is clearly non-specific, or otherwise it should be able to escape a weak island. This can be verified by using a specific expression like *the time*, which presumably is only compatible with a specific (silent) time expression. Forcing a specific interpretation, the example becomes grammatical on the relevant reading:

(65) *I saw Mary in New York before the time Tom knew she would be there.* (low reading OK)

If the reasoning above is correct, (65) improves because the movement of a specific time expression is allowed out of the weak island that bans the extraction in (64).

While both (64) and (65) in English feature the movement of a silent element, making the explanation above rather abstract, in Hungarian the relative pronoun participating in the movement is overt. Recall that the relative pronoun is made up of the following three morphemes:

(66) *(a)- mi-   kor*
      Dem Wh   P
      "when" (relative pronoun)

As is immediately obvious, the three parts correspond to the elements we are looking for. The wh-element (also a question word) constitutes the variable portion of the pronoun (corresponding to the English *when*) while the *a-* portion should contribute specificity. In fact, historically the relative pronoun consisted of a demonstrative/definite determiner and a question word:

(67) *Hogy akkor   meg nem holtam, **az** **mikor**   egy kígyó*
      Comp Dem-at PRT Neg I-died   Dem Wh-at   a snake
      ez sebet   rajtam ejtette vala!
      this wound-ACC   on-me   inflicted Aux-Past
      'Why didn't I die when a snake wounded me?'[25]

The morphology attests that the relative pronoun is in fact made up of a non-specific variable and a specific determiner. In present day Hungarian, there is still indication that the specificity distinction between the 'a-less

forms' and the 'a-forms' is somewhat productive. Without attempting to provide a complete analysis of this effect, let me simply point out a few indicators that the specificity effect associated with *a-* is still around.

a. Relative pronouns introducing generic events are strange for many speakers (cf. (13)-(14)).

b. Causal relative pronouns are not introduced by *a-* (cf. (58)) It is interesting to note that the only causal relative pronoun (as far as I know) that can feature the *a-* is *amiért* 'for which reason', which can also be read specifically. Compare:

(68) a. *Haragszom rád   (azért),   **amiért/mert**   csalsz.*
           I-am-angry you-on Dem-for   Dem-Wh-for/Wh-for you-cheat
      b. *Haragszom rád   (*azzal)   (*a)mivel   csalsz.*
           I-am-angry you-on Dem-with Dem-Wh-with   you-cheat
           'I am angry with you because you cheat.'

What is noteworthy about the examples in (68) is that the availability of the *a-* (lending specificity to the relative pronoun) also correlates with the possibility of doubling the relative clause by the Dem+P element in the matrix clause. This fact goes hand in hand with the information structural relationship of the two clauses: while the relative clause can be contextually new in (68a), it is normally presupposed in (68b).

c. For some speakers, the long-distance dependency discussed above is easier to get if the relative pronoun features *a-*:

(69) Judgments for the low reading (available with *a-* for everyone) by some speakers:
      ***Akkorra** készültünk el   a kocsival,   ??(a) **mikorra** mondtad,*
      Dem-by we-prepared   the car-INSTR   Dem-Wh-by   you-said
      hogy   jönnek   érte.
      Comp   they-come   for-it
      'We were finished with the car by the time when you said they would come for it.'

Although the facts presented here are far from conclusive with respect to the productivity of the *a-* element as a specificity marker, I believe that research into the internal structure of the relative pronoun and the Dem+P pronominal double, as well as their relationship, would be worthwhile.

5.3   Summary

Taking Lipták (2005) as my starting point, I have argued above for the existence of two different strategies for forming temporal relative clauses in Hungarian – run-of-the-mill relatives, where a temporal expression from inside the adverbial clause is relativized via operator movement, and IP-relatives, which involve no movement from inside the adverbial clause and thus result in a connective reading on the P element. I have demonstrated that this distinction corresponds to robust syntactic effects, esp. in the realm of long-distance dependencies. Looking at the properties of the suffix *–ig* in detail has shown that, despite the dual distribution of this P (originating either inside the adverbial clause and taking a time expression as its complement, or starting out as a connective between two events), the Hungarian facts support the 'single-until' line of analyses. The three-way contrast among uses of this suffix (involving no negation, predicate negation, and Neg-raising out of the adverbial clause) was shown to follow from the interaction of *–ig*, negation and event structure. Based on the observations made about Hungarian, I have extended this analysis to English temporal adjunct clauses, proposing that the same temporal relative vs. IP-relative division can be exploited there as well to account for the availability of long-distance dependencies. Several issues that I have touched upon in this paper (among others: the role of specificity in operator movement, the precise analysis of the lower occurrence of negation in Hungarian *until-* and subjunctive constructions, or the connection between IP-relatives and causal constructions) are left open for further research.

6 Notes

[1] Cf. Larson (1990) for an early discussion of this issue – I return to Larson's analysis and offer an update to cover his data as well as some additional observations. For more recent accounts of temporal adverbial clauses as relative clauses, see Lipták (2005) and Haegeman (2007), both of which I discuss below.
[2] See Hulsey and Sauerland (2006) and references cited therein for arguments that run-of-the-mill English relative clauses also come in two varieties: 'raising relatives' that involve the movement of the head from its base position inside the relative clause to the left edge, and 'matching relatives' where the head of the clause originates externally. The authors argue that matching relatives also involve operator movement *internally* to the relative clause, and this internal head is later

elided upon identity with the external head, which is base-generated outside the relative clause. In this paper, I focus on whether or not there is movement *out of* the temporal clause, and for reasons of space will not discuss the possibility that a Sauerland-style 'matching relative' analysis would work for the cases where there is not. (If such an analysis of the contrast observed here were correct, this would liken the contrast to that between wh-movement vs. wh-expletive structures.)

[3] In Hungarian, temporal (and other) relations are marked by suffixes (bound morphemes) and postpositions. The distinction will not play an important role in this discussion.

[4] The examples in this section are taken from Lipták (2005), sometimes with minor, inconsequential modifications to facilitate exposition.

[5] In Section 3.1 I show that this generalization only holds for one dialect of Hungarian, while another dialect allows the a- even in cases like (4b).

[6] Lipták discusses a fourth property that distinguishes temporal constructions, namely the availability of multiple relativization (see Lipták (2000) for discussion). In what follows, I do not talk about this diagnostic, limiting my attention to the other three characteristics, because multiple relativization structures are highly marginal for some speakers (including myself) and I do not want to further muddle the already complex dialectal picture I present. This choice has no bearing on the conclusions of this paper since Lipták convincingly shows that multiple relativization only occurs with "true relatives", a claim I am happy to accept as is.

[7] It is not immediately obvious that this structure must necessarily be treated as a relative clause, since this makes it difficult to explain why the movement of a relative operator from inside the adverbial clause is impossible when the postposition itself originates outside the clause. (In Section 5, I suggest that this is in fact what happens in English in some cases.) A number of possible answers come to mind. The reason might be found in morphology (a locality requirement between the postposition and the operator it takes as its complement). It is also possible that the IP selected by these postpositions is an island to such extraction. Alternatively, one can envision a structure similar to (9) where 'mi-' is not a relative determiner (and thus does not originate in an operator position at all) but a clausal expletive similar to that attested in wh-expletive constructions. In any case, the semantics one needs to account for is that the P element in these cases functions as a connective, taking the embedded and the main clause events as its arguments.

[8] See Lipták (2005), p. 148. for detailed exposition of this point.

[9] Examples (11a) and (11d) are from the internet, Google search. Examples (11b-c) were constructed.

[10] I have removed the imperative from the embedded clause in Lipták's original example (cf. (7a)) to avoid giving the false impression that the subjunctive has anything to do with the availability of the low reading.

[11] It should be noted that, in the nominal domain, -*ig* and *óta* can stand with nominals referring to time periods or points in time:

(i) a. *Két hét óta* / *Szerda óta*   nem   láttam.

two weeks since   Wednesday since   Neg   I-saw
'I haven't seen (him) for two weeks / since Wednesday.'
  b. *Két hét-ig   / Szerdá-ig   maradok.*
two weeks-for Wednesday-until   I-stay
'I will stay for two weeks / until Wednesday.'

In the clausal domain, *óta* behaves uniformly across speakers, while *két hét óta* ('for two weeks', i.e. the period use of *óta* with nominals) is marginal for some. This may be due to a blocking effect by another P (the suffix *–(j)a/-(j)e*), which – unambiguously – conveys the same meaning, yielding the form *két hete* 'for the past two weeks'). Meanwhile, the use of *–ig* is quite uniform in the nominal domain, and varies greatly when it takes a clausal complement (discussion of this diversity follows). I leave the question of nominal complementation aside for now.

[12] As mentioned in footnote 5, and discussed in detail in Section 5 with reference to English, there is no necessary connection between the base positions of the operator and of the P element. So the punctual use of *–ig* and *óta* could, in principle, also be analyzed as the temporal expression moving from inside the adverbial clause to the left edge, and combining with the P there, thus resolving the meaning mismatch noted above. This would make it possible to derive both uses of *–ig* and *óta* via standard relativization, the difference being the position where the P originates (inside the clause for the durative use, and outside for the punctual one). This derivation does actually exist – this is what happens in the temporal relative class in English (which allow the long-distance dependency along the operator-variable chain). In Hungarian, however, if we posit the existence of this strategy, we lose the correlation between the availability of the low reading and operator movement from inside the clause, leaving the lack of this reading in (16) and (19b) without an explanation. Thus, it seems that in Hungarian the relative operator and the postposition/suffix always start out in a local configuration. (Thanks to Anikó Lipták (p.c.) for calling my attention to this point.)

[13] Due to limitations of space, and also to avoid getting completely lost in details, I will focus on clear judgments and tendencies among speakers. Only the most robust correlations found are discussed here; the rest is left for future research.

[14] I will make some comments on the emergence of the so-called 'switch-reading' in 3.3.3. It is an unresolved question in the literature whether this reading is an implicature associated with certain combinations of 'until' and negation, or an uncancellable entailment (see Giannakidou (2002) for arguments for the latter position with respect to English). On some accounts, the 'switch-reading' is due to a cause-effect interpretation associated with the construal exemplified by (22c) - see, for example, Español-Echeverría and Vegnaduzzo (2000). Several authors assume that the switch-reading is brought about by the presence of negation in the temporal clause, which would contrast (22a) against (22b-c). In Hungarian, however, (22b) – which also involves negation – normally lacks the switch-reading.

[15] For recent discussion, see Condoravdi (in press).

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[16] For brevity's sake, in what follows I will refer to the families of analyses outlined above as the 'single-until' and the 'lexical ambiguity' analyses.

[17] All three sides of this debate cite some convincing examples to prove their point. Giannakidou (2002) brings this sentence (taken from Karttunen (1974)) as evidence that the switch entailment in sentences like (23b) cannot be canceled:

(i) #Nancy did not get married until she died.

This sentence is claimed to be pragmatically odd because it entails the following: 'Nancy got married when or soon after she died.'

Meanwhile, the presupposition account is strengthened by the fact that the inference associated with such sentences can be canceled in the same way that presuppositions normally can (example taken from Mittwoch (2001)):

(ii) If Mary started working at all, then she didn't do so until May 1st.

Mittwoch claims, however, that we are dealing with simple implicatures here, and that this implicature can often be canceled without any special mechanism:

(iii) Knowing Mary, she won't start working until the last moment, if then.

[18] Cf. Mittwoch (2001)'s suggestion that 'not-until' is in fact on its way to becoming a focus particle in English. Also noteworthy is the fact that the element Giannakidou (2002) calls 'NPI-until' in Greek is actually a focus particle ('only').

[19] For a recent account claiming that until-constructions are a subtype of exeptives, and 'expletive negation' is a boolean complementation operator, just like regular instances of negation, see Español-Echeverría and Vegnaduzzo (2000).

[20] Bear in mind that all the data judgments in this section hold for the dialect that displays the three-way contrast illustrated in (22). As mentioned earlier, there is a great amount of dialectal variation in this respect, to which I return in 3.3.3.

[21] Note that positing an argument structure for –ig involving a time point and a durative event precludes the IP-relative use when the embedded event is durative.

Note 2: The same argument carries over to English, which a number of authors have pointed out – in favor of the 'one-until' family of analyses.

[22] In fact, the situation is somewhat complicated by the fact that negative quantifiers in Hungarian can appear in a number of different positions (inside VP, in a higher position to which they QR, and potentially in focus; see Olsvay (2006) and Surányi (2006) for discussion) and they receive different interpretations in these positions. Preliminary findings indicate that the position (and hence interpretation) of the n-word also plays a role in the acceptability of the data discussed here. I leave this question open for future research.

[23] Katalin Gugán, p.c.

[24] Crucially, Larson assumes that the category of the temporal variable is NP. See Larson (1985).

[25] Source: Bálint Balassi (Hungarian poet, 16th century).

Adverbial versus adjectival constructions with BE[*]
Edith Kádár

1. Aims

In this paper I will compare the syntax of 'BE + AdvP' and 'BE + AdjP' constructions in Hungarian, which in certain circumstances seem to have a similar surface structure (and – in exceptional cases – even the same meaning), as illustrated by the Hungarian examples in (1):

(1) a. [*A   ruha?*] *Jó*$_{Adj}$ *volt az   úgy,   ahogy én varrtam.*
        the dress   good was that that-way COMP I   sewed
    b. [*A   ruha?*] *Jól*$_{Adv}$ *volt az   úgy,   ahogy én varrtam.*
        the dress   well was that that-way COMP I   sewed
    Both: '[The dress?] It was all right the way I sewed it.'

What is conspicuous about the Hungarian examples, however, is that in present tense sentences with a 3rd person subject they have no (overt) BE with the adjectival predicate (2a), while there is an overt BE with adverbials (2b). As the contrast in (3a–b) shows, it is not only AdvPs that seem to have this distibution: in neutral sentences with a topicalizable theme subject KPs/PPs also prefer the preverbal slot that I will assume to be the specifier of a PredP projection above a VP headed by BE.

(2) a. *János jó*$_{Adj}$.   b. *János jól*$_{Adv}$ *van.*
        John   good   John well is
        'John is good.'   'John is well.'

(3) a. *A gyűrűd   arany*$_{Adj}$*?*   b. *A gyűrűd   aranyból*$_{KP/PP?}$ *van?*
        the ring-2SG gold   the ring-2SG gold-ELAT   is
        'Is your ring gold?'   'Is your ring made of gold?'

The questions I seek to answer are how the syntactic structures of these sentences differ from each other, and how the differences relate to the categorial status of their preverbal constituent. This involves an examination of the phrase types that can occur in such BE-contexts, and an analysis of the BEs featuring in these constructions.

The article is organized as follows: in section 2 I will have a look at the phrase types that can form a kind of a complex predicate with BE. The data show that in these BE-contexts adverbs and other adverbials – that is, nouns marked by adverbial cases, nouns with postpositions, and verbal particles – have the same distribution. Building on various considerations I will propose the conflation of adverbial case markers and Ps on the one hand, and adverbs and verbal particles on the other, and I will also raise the possibility of assimilating AdvPs to PPs. In sections 3–5 I will show that the BEs that AdvPs and AdjPs occur with are different, the former involving a lexical V, the latter involving a copula inserted under T. In section 3 I will propose an analysis for the 'BE + AdvP/PP' construction. In section 4 I will contrast the syntactic properties of this structure with those of the 'BE + AdjP' construction. Section 5 will be devoted to the structural analysis of the 'BE + AdjP' pattern. I will conclude in section 6 that AdjPs can, whereas AdvPs/PPs cannot, function as primary predicates in Hungarian – thereby supporting the typological findings of Stassen (1997).

2. Adverb(ial)s

2.1. Distribution

From a distributional point of view adverbs behave just like other adverbials – with BE and with other verb types alike. As the sentences in (4a–d) below show, case-marked noun phrases, noun phrases with a postposition, adverbs and verbal particles (PRT) can all appear as adverbial adjuncts with a one-place verbal predicate, (here) sharing a core spatial meaning (location, direction); in (5a–d), on the other hand, the same adverbials are complements selected by a verb:

(4) a. *Péter-hez*   szalad   (5) a. **(munká-hoz)*   kezd
     Péter-ALLAT runs   work-ALLAT   starts
     'runs to Péter'   'gets down to work'
   b. *a   sínek **mellett** szalad*   b. **(az iskola **mellett)** lakik*
      the rails along   runs   the school near   dwells
      'runs along the rails'   'lives near the school'
   c. **haza(fele)**   szalad   c. **(haza(fele))*   tart
      home(towards) runs   home(towards)   heads
      'runs home'   'sets his face for home'

d. *el-szalad*　　　　　　　d. **(el)-esett*
　　　PRT-runs　　　　　　　　PRT-fell
　　　'runs off'　　　　　　　　'fell'

The line between case suffixes, postpositions, adverbs and verbal particles has been drawn in different ways for Hungarian.[1] The overlap in form, meaning and distribution among these categories is not accidental, as case endings, postpositions, verbal particles and adverbs correlate diachronically in many ways. The majority of Hungarian adverbs are historically nominals and pronominals bearing obsolete case suffixes; verbal particles and postpositions mainly derive from adverbs; other postpositions were formed from (suffixed) nominals and pronominals; whereas adverbial case suffixes mainly stem from postpositions. In fact, very informally, we could say that it depends on the diachronic stage under examination what category (suffix, postposition, particle, case-marked noun phrase) is to be associated with the adverbial(izing) function.

The similar distribution of the types of constituents filling the preverbal slot in (4)-(5) must be due to their categorial and functional similarity. In the next subsection I will briefly argue for the conflation of (adverbial) case endings and postpositions under the label P, on the one hand, and of adverbs and verbal particles under the label Adv on the other. Finally, the possibility of conflating PPs and AdvPs under the label PP will be attempted.

2.2. PPs and AdvPs

2.2.1. Adverbial case endings are Ps

Hungarian has an extensive case system that is realized in the form of suffixes on nouns (and pronouns). Kiefer (2000), for instance, acknowledges 18 such case suffixes, and reclassifies some others as derivational (adverb-forming) suffixes. The majority of the adverbial case suffixes enter into vowel harmony with the noun (cf. (6a–b) vs. (6c–d)), which is assumed to indicate that the nominal and the suffix form a word.

(6) a. *Katá-nál*　　　　　　b. *Péter-nél*
　　　Kate-ADESS　　　　　　Peter-ADESS
　　　'at Kate'　　　　　　　'at Peter'
　　c. *holnap-ig*　　　　　　d. *péntek-ig*

<div align="center">

tomorrow-TERMIN   friday-TERMIN
'till tomorrow'   'till Friday'

</div>

A case marker accompanying a pronoun or a silent *pro*, on the other hand, does not participate in vowel harmony (7a–b), which suggests that the pronoun and the case marker do not constitute a word.[2] A case marker with a pronominal complement – similar to postpositions with a pronominal complement – bears an agreement marker.

(7) a. *(én)   nál-am*   b. *(én) *nél-em*
     I   ADESS-1SG
     'at me'

Thus case morphemes appear to be phonologically dependent in full nominal contexts but they seem to form an independent word in pronominal contexts.[3]

Adpositions are by all accounts closely related to case markers, and hence to the functional category K proposed for instance by Bittner and Hale (1996). There are two types of postpositions in Hungarian: a type taking a caseless noun phrase complement (see (8a–b) for full nominal and pronominal contexts), and a type taking a noun phrase complement with an adverbial case (9a–b) (cf. Marácz 1986). Ps taking a caseless nominal agree with their pronominal complement, therefore, they are referred to as agreeing Ps.

(8) a. *az ablak   fölött, a   kályha mellett, a   gyerek után*
     the window above, the stove beside, the child   after
   b. *(én) fölött-em, (te) mellett-ed, (ő)   után-a*
     I   above-1SG you beside-2SG he/she/it after-3SG

(9) a. *a fiú-val   együtt, a   város-hoz   közel*
     the boy-COM   together, the city-ALLAT near
 * b. *(én) együtt-em,   (te) közel-ed,*
     I   together-1SG you near-2SG

Agreeing Ps show a behaviour very similar to case suffixes from a morpho-syntactic point of view – apart from the fact that they can be coordinated (for details see É. Kiss 2002: 181–183). Non-agreeing postpositions (illustrated in (9)), on the other hand, can also be used intransitively, in which case they are nondistinct from adverbs:

(10) a. *Együtt   vagyunk.*   b. *Közel lakik.*
   together are-1PL   near   dwells
   'We are together.'   'He /She lives nearby.'

Building partly on Asbury (2005), but diverging from her conclusions in some respects, I treat adverbial case suffixes as Ps with a [+suffix] feature, which is responsible for their forming a word with their complement. This is assumed to be a case of morpho-syntactic merge (affixation at the phrase level – see Bartos 2000), as a result of which the case suffix gets affixed onto the noun phrase (11b).[4] Non-agreeing postpositions are Ps with a PP complement (11c).

(11) a.   b.   c.
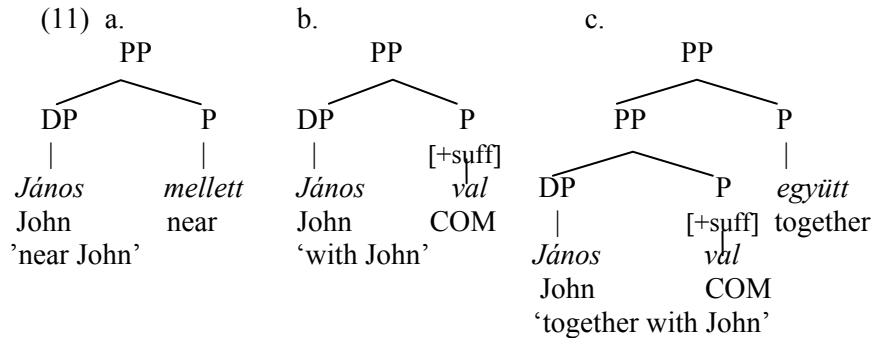
2.2.2. Adverbs are PPs

Whereas traditional grammars treat adverbs as a word class, a grammatical category that can only have an adverbial syntactic function, historically they are mostly nouns or pronouns with an obsolete adverbial case suffix. As the following examples show, they are morphologically non-transparent synchronically, and/or have a non-compositional (adverbial) meaning.

(12) *gyalog* 'on foot', *egyedül* 'alone', *reggel* 'in the morning', *örömest* 'with pleasure', *alig* 'scarcely', *otthon* 'at home', *bent* 'inside', *itt* 'here', *szerencsére* 'fortunately' etc.

It is not difficult, however, to find synonymous case-marked nominals and adverbs with a similar distribution that only differ in the obsolete versus productive character of their suffix:

(13) a. *Öröm-est   segítenék,   ha lenne   időm.*
      gladly   help-COND-1SG if be-COND time-POSS.1SG
      'I would help gladly, if I had time.'
    b. *Öröm-mel   segítenék,   ha lenne   időm.*
       pleasure-INSTR help-COND-1SG if be-COND time-POSS.1SG
      'I would help gladly, if I had time.'

A further fact indicating the categorial similarity of adverbs and PP adverbials is that they can be coordinated:

(14) a. *itt   és   az ágy mögött*   b. *otthon és   az   iskolában*
        here and the bed behind   at.home and the school-INESS
        'here and behind the bed'   'at home and in the school'

Furthermore both adverbs and other PP adverbials are modifiable by an adverb.

(15) *Péter egy ufót   látott leszállni vélhetően pontosan   ott*
      Peter a   UFO-ACC saw   land-INF probably exactly   there
      / a dombtetőn /a   ház   mellett
       the hilltop-on /the house near
       'Peter saw a UFO landing presumably exactly there/on the hilltop/
       next to the house.'

These facts suggest that the label PP applied to noun phrases with adverbial case endings and postpositions might also be extended to the word class traditionally called adverbs. Crucially, adverbs do not behave like Ps, but act like PPs. This could be conceived of as a result of a diachronic process of NP incorporation into P. Another route is intransitivization of P, as in the case of verbal particles (an idea going back to Emonds 1985).

There are two classes of adverbs that might seem difficult to reconcile with the above proposal. A small set of adverbs, among them *rég* ('long ago'), *tegnap* ('yesterday'), *vasárnap* ('(on) Sunday') seem to involve an obsolete nominal stem with no adverbial suffix. I treat these cases as including a null P, which is in line with diachronic evidence (cf. *rég-en, tegnap-on, vasárnap-on*). This approach is broadly consonant with Huddleston and Pullum's (2002: 612–616) proposal to analyse English locative and temporal adverbs as adpositions.

A further class of Hungarian adverbs can be productively derived from adjectives with the suffixes *-(A)n* and *-(U)l.* Most of these adverbs express manner, for example:

(16) *szépen* 'beautifully', *óvatosan* 'circumspectly', *gyakran* 'frequently', *rosszul* 'badly', *természetesen* 'naturally', *különösen* 'especially', *esetlenül* 'gracelessly', etc.

The suffixes *-(A)n* and *-Ul* are adverbial case suffixes (the former is the superessive suffix, the latter the essive suffix), which I tentatively analyze as Ps taking a noun phrase complement with an empty N head (meaning 'mood', 'way', 'manner') having an adjectival modifier ([PP [NP[AdjP] [N]] P]). The case suffix (P) is attached to the empty noun head and thus it surfaces on the adjectival modifier of the noun. [5,6]

2.2.3. Verbal particles are PPs

The most common type of adverbial element filling the immediately preverbal position, also the position preceding the Hungarian equivalent of *be*, is the verbal particle.[7] A PRT+V unit can be considered to be semantically some kind of a 'complex predicate' – see chapter 3. Syntactically, however, particles behave as independent units. In what regards their syntactic position, they immediately precede the verb in a neutral sentence forming a phonological word with it, while in the presence of a focus or negation they stay behind the verb (no adjacency is required). They are 'head-like' (in that they take no complement), though their syntactic behaviour is clearly phrase-like: they can move non-locally, i.e. they can function as a verb modifier of a (semi-)auxiliary in a superordinate clause; they can undergo focussing and contrastive topicalization; they can serve as a short answer to a *yes–no* question, i.e., they can function as an elliptical sentence; etc.

A particle type particularly interesting for the present inquiry is that of locative particles that can (and in some circumstances must[8]) appear in sentences denoting existence or spatial configuration in a given location, among them sentences with BE. É. Kiss (2006a) proposes a syntactic analysis which treats the particles in general as secondary predicates predicated of the theme argument. As for their syntactic position, she considers Spec,PredP to be the landing site of verbal particles where they receive primary stress and become the information focus herewith.

Following É. Kiss (2006a), I will take this Spec,PredP to be the locus of verbal modifiers in general, and I assume that (adverbial) case-suffixed noun phrases, nouns with agreeing postpositions, transitive and intransitive AdvPs and verbal particles (that I take to be phrasal) all occupy this Spec,PredP in neutral sentences with BE.

In the literature we find converging views regarding the syntactic category of verbal particles. Horváth (1978) argues that verbal prefixes should not be assigned to a specific category of their own, but should be analysed as belonging to the category of (intransitive) postpositions; É. Kiss (2002) analyses them as AdvPs consisting of a mere head, Hegedűs (2007) claims that on the basis of their semantic properties and their distribution (e.g. locative verbs can take either a single particle/adverb or a full PP/case-marked noun phrase as their argument) these elements are best regarded as adpositions occupying the outermost layer of the adpositional phrase which hosts the full PP (a possibility raised independently by Surányi (this volume), who compares this analysis to an alternative involving apposition). É. Kiss (2002) also treats a subtype of verbal particles as PPs.

Thus my tentative proposal is that both adverbs and verbal particles be analysed as subtypes of PPs. Ps should not be considered case assigners, but the realizations of inherent case (cf. Asbury (2005, 2008)); as a consequence, PPs should be taken to be constituents bearing (spatial, thematic or other) semantic roles independently of whether there is a predicate selecting them (argument PPs) or not (adjunct PPs).

Accordingly, adverbs (and verbal particles) do not form a category in syntax, i.e., adverbial status is a question of internal structure and function. From a syntactic point of view they can be regarded as PPs with a synchronically non-transparent structure. Therefore in the following I will use the term 'adverbial' as a name of a syntactic function (that is: I will talk about the 'adverbial use' of certain constructions), and 'Adv(P)' as denoting a PP with a synchronically non-transparent structure. 'Particles' represent a subclass of the adverbs thus defined.

3. The 'BE + adverbial' construction

In the previous section I advanced the idea that adverbials can be assigned a homogeneous categorial structure. In what follows I will show their uniform behavior in contructions with BE. In 3.1. I summarize the

empirical facts to account for, and in 3.2. I assign a structure to the construction from which the facts attested follow.

3.1. The facts

3.1.1. Complex predicate formation

It is cross-linguistically attested that verbs denoting nothing more, or scarcely more, than existence (like *van* 'be') are semantically not substantial enough to represent the predicate by themselves. From this point of view, complex predicate formation is first and foremost a semantic and an information structural issue. Hungarian *van* 'be' can form a complex predicate in many ways, depending on the specificity of its subject and complement. For instance in neutral sentences with a locative and a [+specific] theme subject we find the word order in (17) (the [+specific] theme subject is topicalized, but it could also stay postverbal). The locative (that could also be an (adverbially) case-marked DP, a verbal particle, a proadverb or an adverb) lands in Spec,PredP, the verb being raised to the Pred head.

   (17) *A bicikli   a   ház   előtt van.*
       the bicycle the house before is
       'The bicycle is in front of the house.'

(18) shows that in case the theme argument is non-specific (represented here by a bare nominal), it occupies Spec,PredP, where it is understood to form a complex predicate with the V, whereas the [+specific] locative is normally topicalized.

   (18) *A   ház   előtt*   sövény *van.*
       the house before hedge   is
       'In front of the house, there is a hedge.'

If both the theme subject and the locative are non-specific, one raises to Spec,PredP to form a complex predicate with the verb, and the other is preferably moved to contrastive topic position (19).

   (19) *Hátul*   kacatok   *vannak.*
       at-the-rear rattletraps are

'At the rear, there are rattletraps.'

3.1.2. Phonological characteristics

Beyond semantic reasons (the verb being in need of substantiation) there are phonological considerations as well. In Hungarian the main stress of the clause falls on the left edge, i.e., on the leftmost element of the predicate phrase (which thus represents the information focus of the sentence as well).[9] There is a class of phonologically defective verbs that require a designated argument/adjunct to precede them in neutral sentences – presumably because they cannot bear phrasal stress. Komlósy (1989) calls these verbs 'stress-avoiding'. Now, Hungarian BE is known to be such a 'stress-avoiding' verb,[10] resembling in this respect (semi-) auxiliaries that cannot occupy the most heavily stressed leftmost position of a predicate phrase either (see Szendrői 2003). Thus in the case under discussion there is an extra requirement for the movement of a constituent to Spec,PredP (which accordingly will be the carrier of main stress, hence the information focus of the sentence).

3.1.3. AdvPs/PPs with BE are thematically non-restricted

In the literature on copula constructions locative predicates have attracted much attention (see, for instance, Lyons 1967, Freeze 1992), mainly because of their relationship with existential and possessive sentence types; the similarities of these three types have been well proven across languages (cf. Clark 1978). In Hungarian locative BE-constructions (illustrated in (17) above) behave on a par with other, non-locative PP/AdvP-containing clauses: in neutral sentences the DP subject is preferably topicalized and the PP/AdvP precedes BE, forming one phonological word with it. See (20) for some examples:

(20) a. *A   cipőm   bőrből   van.*
       the shoe-POSS.1SG leather-ELAT is
       'My shoes are made of leather.'
   b. *A   tábornok is   a   háború **ellen** van.*
       the general   also the war   against is
       'The general is against the war, too.'

c. *(Ők) Sokan*   *vannak (a   szobában.)*
    they many-SUPERESS are   (the room-INESS)
    'There are many of them (in the room).'

Not all preverbal AdvPs/PPs occupy the SpecPredP (verbal modifier) position; some occupy the specifier of the focus projection (FocP) subsuming PredP. This is shown by the fact that the morphologically non-compositional negative existential verb *nincs* 'is not' does not give equally grammatical results with the examples in (20) (cf. (21)), whereas they are all perfectly grammatical with a FocP-negating *nem* 'not' (cf. (22)):

(21) a. ??*A cipőm*   *nincs bőrből.*
      the shoe-POSS.1SG not-is leather-ELAT
      Intended: 'My shoes are not made of leather.'
   b. ?*A tábornok nincs a   háború **ellen**.*
     the general   not-is the war   against
     'The general is not against the war.'
   c. *(Ők) nincsenek **sokan**   (a   szobában.)*
     they not-is-3PL many-SUPERESS (the room-INESS)
     'There are not many of them (in the room).'

(22) *A cipőm*   *nem bőr**ből**   van.*
     the shoe-POSS.1SG not   leather-ELAT is
     'My shoes are not made of leather.'

According to É. Kiss (2006d) the focus position is also a predicative position, but while the PredP projection hosts predicational predicates, the constituent in Spec,FocP is interpreted as a specificational/identificational predicate. In the case of (20a), for instance, we have the adverbial in Spec,FocP (as the negated examples in the parallel (21a), (22) show). Though it is far from clear when an adverbial is difficult to interpret as a predicational predicate, the problem seems to be related to issues of information structure. If the adverbial is in Spec,FocP, this introduces an existential presupposition (e.g., (20a) expresses the presupposition that my shoes are made of something, and asserts that what they are made of is leather). When negation targets the constituent in focus position, it leaves the existential presupposition intact; thus (22a) means that my shoes are made of something which is not identical with leather. As compared to this, *nincs* is not only morphologically non-compositional, but also semantically: it describes the state of not-being, that is why (23) is easily interpretable.

(23) *Nincs cipőm   bőrből.*
     not-is shoe-1SG leather-ELAT
     'I dont't have leather shoes.'

3.2. The syntactic structure

Under the view presented above, the semantic roles encoded in these adverbials (cf. (20)) are not related to theta assignment by a particular predicate, nor is the argument or adjunct status of these constituents deducible from the semantic roles they bear. Moreover, as the examples in (20) show, it would be a problem to postulate a two-place verb BE that has an invariable theme theta role to assign to its subject, and another specific theta role for its second argument, as there is a wide variety of semantic roles that these constituents seem to reveal (source, locative, benefactive, etc.), which would suggest that we have to postulate a different BE for all these theta-role pairs (theme+locative, theme+benefactive etc.). This would certainly lead to an unwanted proliferation of BEs.

Instead one can take these adverbials in (20) for adjuncts (for the notion of 'obligatory adjuncts' and some related issues see chapter 8, and Peredy (2007) and the reference cited therein). The sentences in (20) would all be ungrammatical without the adverbial, as *van* 'be' is a definiteness-effect verb (cf. Szabolcsi 1986), thus a definite (theme) subject with *van* cannot form a grammatical sentence (except maybe the case of 'list reading'). Moreover, in case there is no (filled) PredP (or FocP) projection above *van*, its meaning is confined to an existential meaning that constrains its use. Peredy (this volume) argues that the reason why a *van* with a specific DP subject must be preceded by an adverbial bearing the main stress of the sentence is neither the stress-avoiding property nor the semantic defectiveness of the verb. *Van* is a verb of existence taking a non-specific theme subject. This non-specificity requirement is lifted if there is an information focus in Spec,PredP or Spec,FocP, permitting everything else to be presupposed.[11]

Thus the adverbial adjunct adjoined to the VP is moved to the specifier of the PredP projection dominating VP (cf. É. Kiss 2006a, and chapter 2 of this volume). The verb moves to the Pred head, while the subject is preferably topicalized. In case the adverbial itself has modifiers, they can all end up in Spec,PredP; its (post-head) complement, however, must be

extraposed before movement takes place, as the constituent in Spec,PredP/FocP needs to be head-final. For example:

(24) [$_{TopP}$ Ők$_i$ [$_{PredP}$ sokan$_j$ [$_{Pred'}$ vannak$_k$ [$_{VP}$ t$_j$ [$_{VP}$ t$_i$ [$_{V'}$ t$_k$]]]]]]
          they   many-SUPERESS   are
     'They are many.'

As we have seen, the adverbial can also move to Spec,FocP. In this case, the V moves from Pred to the head of a functional projection labelled Non-Neutral Phrase (for details, see É. Kiss 2006c, and chapter 2 of this volume):

(25) [$_{TopP}$ A cipőm$_i$ [$_{FocP}$ bőrből$_j$ [$_{NNP}$ van$_k$ [$_{PredP}$ t$_j$ t$_k$ [$_{VP}$ t$_j$ [$_{VP}$…]]]]]]]
       the shoe-POSS.1SG leather-ELAT is
    'My shoes are made of leather [What my shoes are made of is leather].'

In both cases the prosodically light verb *van* is exempt from bearing phrasal stress and featuring as the main assertion/informational focus of the sentence, which would lead to ungrammaticality.

Thus the reason for the movement of the adverbial constituent to Spec,PredP is threefold: (a) there is a need for an information focus so that the rest of the sentence could be presupposed and the [+specific] feature of the subject be licensed, (b) *van* 'be' is a stress-avoiding verb, thus it cannot appear as the leftmost element of the PredP in neutral sentences with a specific theme subject, (c) the semantically 'impoverished' BE needs substantiation (cf. Szabolcsi 1986). It might be the case – as Peredy (this volume) argues for – that (a) is the fundamental condition, (b) and (c) being derivable from (a).

4. 'BE + adverbial PP' versus 'BE + AdjP'

In this section I will argue that the similarities of the Hungarian 'BE + AdvP' and 'BE + AdjP' constructions illustrated in (1a,b) are merely superficial. I will contrast the syntactic behaviour of adjectives and adverbs in their relation to BE in three respects: (i) the presence vs. the lack of BE in present tense declarative sentences with a 3rd person subject; (ii) predicate clefting, and (iii) BE fronting. The facts will suggest that the two constructions do not involve the same BE: the BE that appears with

AdvPs/PPs is a full verbal element, while the one featuring in adjectival predications is a copula, presumably inserted under Infl.

4.1. Spelt-out versus missing BE

The minimal pair in (26) involving a lexical adjective and an adverbial derived from this adjectival root, both modified by a degree adverbial, shows that in present tense (as opposed to past tense) no BE appears with adjectives (26a) as opposed to adverbials (26b). This suggests that adjectives make good (primary[12]) predicates in Hungarian, while adverbials do not – a fact that fits well with the typological findings of Stassen (1997).

> (26) a. *Péter (nagyon) gyenge_{Adj} 0/volt.*
>   Peter very   weak   was
>   'Peter is/was (very) weak.'
>   b. *Péter (nagyon) gyengén_{Adv} van/volt.*
>   Peter very   weakly   is was
>   'Peter is/was (very) unwell.'

4.2. Predicate clefting

Predicate clefts are predicates copied into clause-initial position, involving a special interpretation commonly associated with contrastive topics or contrastive foci, and a specific rising-falling intonation. As the contrast in (27)–(28) below illustrates, there is a systematic difference between adjectival and adverbial copula constructions in whether the cleft phrase does or does not contain a verbal element.

   In Hungarian both verbal and non-verbal predicates can be clefts; the former also take along the constituent in Spec,PredP that they form a complex predicate with. Verbal predicate clefts bear an infinitival suffix, while non-verbal (nominal or adjectival) ones appear with a dative suffix (both as clefts and in a subset of secondary predication constructions, as a matter of fact). As Ürögdi claims (cf. Ürögdi 2006) this difference in morphological form is due to the fact that there is a uniform functional projection FP dominating the lexical projection of the predicate (VP, AP or NP), and the spell-out of V in F is the infinitive, while the spell-out of N and A in F is the N/A+dative. A predicate spellt out in T/Infl won't bear the infinitive/dative ending. Crucially, if BE is inserted under V (below FP),

14

we expect it to appear with an infinitival ending as a predicate cleft, whereas if it is inserted higher than FP (in T/Infl), no such expectation arises.

(27) a. *Péter boldog volt, hogy látott?*
    Peter happy was that saw-3SG
  'Was Peter happy to see you?'

   b. *Boldognak boldog volt, csak nem volt rám ideje.*
    happy-DAT happy was only not was SUBL-1SG time-3SG
   'As for being happy, he was happy, but he had no time for me.'

   c. **Boldog(nak) lenni[13] boldog volt, csak ...*
    happy(-DAT) be-INF happy was only

(28) a. *Péter otthon volt?*
    Peter at-home was
   'Was Peter at home?'

   b. *Otthon lenni otthon volt, csak nem nyitott ajtót.*
    at-home be-INF at-home was only not opened-3SG door-ACC
   'As for being at home, he was, but he didn't open the door.'

   c. **Otthonnak otthon volt, csak nem nyitott ajtót.*
    at-home-DAT at-home was only not opened-3SG door-ACC

As the examples show, no copula appears with the cleft copy of the adjective as opposed to the adverb. It is only in the BE + AdvP/PP construction that *van* 'be' behaves as a verbal element. Thus the contrasts between the sentences in (27) and (28) can be taken as evidence for the high insertion of the copula in (27), i.e., it seems that in BE + AdjP sentences the predicative head position is occupied by the adjective (it is the adjective in itself that is fronted) not by a copula (which is presumably inserted under Infl). This means that contrary to previous analyses (e.g., Alberti–Medve 2002), the copula in non-verbal predication is not a (raising) verb.

4.3. BE fronting

Ürögdi (2006) points out a further difference in the fronting possibilities of BE+Adj and BE+Adv/PP constructions: the former, i.e., copular, BE cannot (29a), whereas the latter, verbal BE can be topicalized on its own (29b) as long as its complement is focused:

(29)a. *Lenni   GAZDAG volt, de nem volt boldog.*
          be-INF rich   was but not was happy
   b. *Lenni MELLETTEM volt, de az agya láthatóan máshol   járt.*[14]
       be-inf next-to-me   was   but the brain obviously elsewhere went
       'He was actually next to me, but his mind was obviously
          somewhere else.' (Ürögdi 2006: 319 (34))

The impossibility of the topicalization of BE accompanying the AdjP in (29a) falls out if it is a mere function word, the carrier of tense.[15]

As (26)–(29) suggest, BE + adverbial constructions differ syntactically from adjectival predication regarding (i) the presence or absence of BE in present tense declarative sentences with a 3rd person subject, when there is null tense and agreement inflection; (ii) the presence or absence of BE in the topicalized phrase in predicate clefts, due to the lower (V^0) or higher ($Infl^0$) insertion of BE; (iii) the (im)possibility of topicalizing BE on its own. These differences can be best accounted for if we regard the BEs appearing in these two constructions to be different. More precisely, while there is no argument against treating BE as verbal (i.e. as being inserted under a verbal node) in the adverbial constructions discussed in section 3, it seems worth considering the analysis of BE in adjectival constructions as a feature bundle inserted under Infl. In the following section I will pursue this line of thoughts, bringing some more data in favour of this analysis.

5. The 'BE + AdjP' construction

In this section I claim that BE in non-verbal predication is generated in the Infl head. If inflection is phonologically null, it can be picked up by the adjective moved to Infl, whereas if it is non-null, copula support applies and 'remnant-AP' movement to Spec,IP takes place driven by morpho-phonological constraints. The structure assigned to these non-verbal sentences seems to correctly predict word order constraints.

5.1. The copula is an auxiliary inserted under Infl

16

As has been illustrated by some examples above, there is no (phonologically realised) copula in present indicative sentences involving an adjectival predicate and a 3rd person (singular or plural) subject.

(30) *Péter okos*$_{AdjP}$.
Peter smart
'Peter is smart.'

Now, there is a third way of predicate fronting in addition to those mentioned in (27)–(29), which is a kind of contrastive topicalization available both for specific and non-specific/predicative elements of a sentence, for arguments and adjuncts alike. This (in contrast with those presented in (27)–(29)) does not involve doubling. As (31a) shows, the contrastive topicalization of an adjectival predicate leads to ungrammaticality. However, the construction becomes perfectly grammatical (cf. (31b)) when there is a phonologically realised copula in the sentence (see É. Kiss 1981: 197; 2002: 73; Kálmán 2001: 21, 115–120).

(31) a. ??*[$_{CT}$ Okos [$_{FocP}$ JÁNOS]], szép pedig PÉTER.*
smart   John   nice but   Peter
Intended: 'As for being smart, John is that, but Peter is the nice one.'
     b. *[$_{CT}$ Okos [$_{FocP}$ JÁNOS volt]], szép pedig PÉTER (volt).*
smart   John   was   nice but   Peter   was
'As for being smart, John was that, but Peter was the nice one.'

Another contrast between adjectival predicates with an overt copula and those with no (overt) copula can be observed in non-neutral sentences involving a focused constituent. When there is an overt copula (in past tense sentences, or sentences with a non-3rd person subject), it has to immediately follow the focused element (and in these cases the adjectival element can stay anywhere to the right of it – cf. (32a)), while if there is no (overt) copula, the predicative adjective has to immediately follow the focus (cf. (32b)).

(32) a. *[$_{FocP}$ JÁNOS volt beteg a   honvágytól /   a   honvágytól beteg]*
John   was sick the homesickness-ABL
'It was John who was homesick.'
    b. *[$_{FocP}$ JÁNOS beteg a   honvágytól /   *a   honvágytól beteg]*
John   sick   the homesickness-ABL

'It is John who is homesick.'

Regarding the syntactic status of BE in 'BE + AdjP' constructions, the predicate clefting and fronting examples in (27)–(29) and (33) below indicate that the level at which the complex of the adjectival predicate and the copula is formed is higher than the predicative phrase affected by topicalization, as no form of BE can appear in the fronted/clefted predicate.

(33) [*Büszkének (*volt/*lenni)] büszke volt.*   (Ürögdi 2006: 297 (9))
     proud-DAT was/ to-be   proud was
     'As for being proud, he was.'

Copular *volt* cannot be taken for a (raising) verb (cf. Alberti–Medve 2002), as in that case the Dative suffix marking the predicate of small clauses would appear on the adjective. Compare (34a–b): while in (34a) we have both a primary predication (with the verbal predicate *látszik*) and a secondary predication (mediated by some small clause head, surfacing as a dative suffix, cf. Ürögdi 2006, Dikken 2006), in (34b) there is only one (primary) predication, directly dominated by tense, thus no Dative suffix can appear on the adjective.

(34) a. *Péter okosnak   látszik.*
      Peter smart-DAT seems
      'Peter seems to be smart.'
    b. **Péter okosnak   volt.*
       Peter smart-DAT was
      Intended: 'Peter was smart.'

5.2. The structure

On the basis of the above data it seems plausible to assume that in Hungarian the Infl head can also subcategorize for an AP (or NP as a matter of fact), in contrast to the English Infl obligatorily subcategorizing for a VP. The structure associated with the neutral (35a) is that in (36a), and (36b) illustrates the structure of (35b) with the overt copula.

(35) a. *Péter büszke a   fiára.*
      Peter proud the son-POSS.3SG-ELAT
      'Peter is proud of his son.'

b. *Péter büszke volt a   fiára.*
    Peter proud   was the son-POSS.3SG-ELAT
    'Peter was proud of his son.'

(36) a.   b.
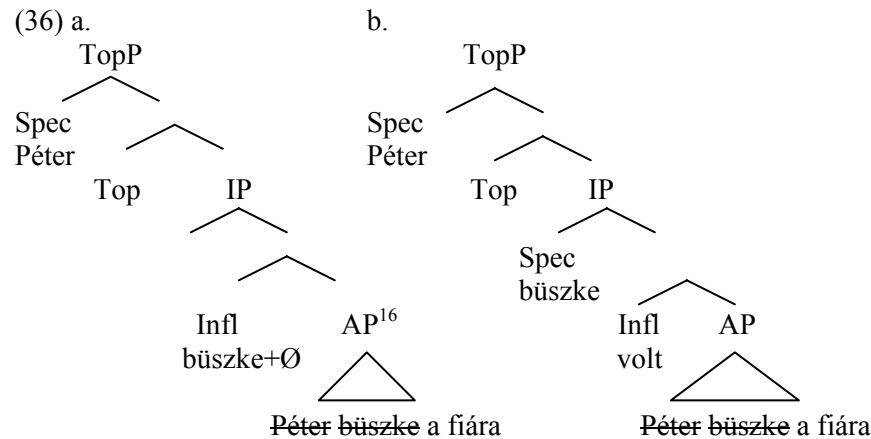
As (36) illustrates, the AP predicate introduces the subject (possibly in the specifier of a small clause), which will typically move to topic position in a neutral sentence. Tense (and agreement) features are hosted by the Infl head, and if these are non-null, copula support applies (36b). In case the tense (and agreement) features in Infl happen to be Ø (in present tense with a 3rd person subject), this can be directly combined with the adjective, with no mediation of a copula. The inflection, being a bound morpheme, needs some phonologically realized carrier, though it is less 'picky' than inflection having a phonological form, in that it can attach to adjectival predicates, too. The (possibly modified) adjectival head raises to Infl to provide a non-null carrier for the bound morpheme sitting there.

When copula support applies, there is no such reason for the movement of the adjective as we saw in (36a). Nevertheless the copula cannot bear phrasal stress, unless it is intended to be the main predicate (the information focus) of the sentence. Thus in neutral sentences it is the adjective that has to fill the specifier of Infl and thereby become the information focus of the sentence. Therefore we have 'remnant AP' movement to Spec,IP, following the extraposing of the complement.

As we have seen in (32) above, in non-neutral sentences the constituent in focus must be adjacent to the copula (nothing can intervene), while if there is no copula it must be adjacent to the (possibly modified) adjective

head (cf. (32b)). This restriction can be explained by the structures given for (37) in (38):

(37) *A   JEGYEI MIATT (volt) büszke Péter a   fiára.*
     the grades   because was proud   Peter the son-3SG-ELAT
     'It is because of his grades that Peter is/was proud of his son.'
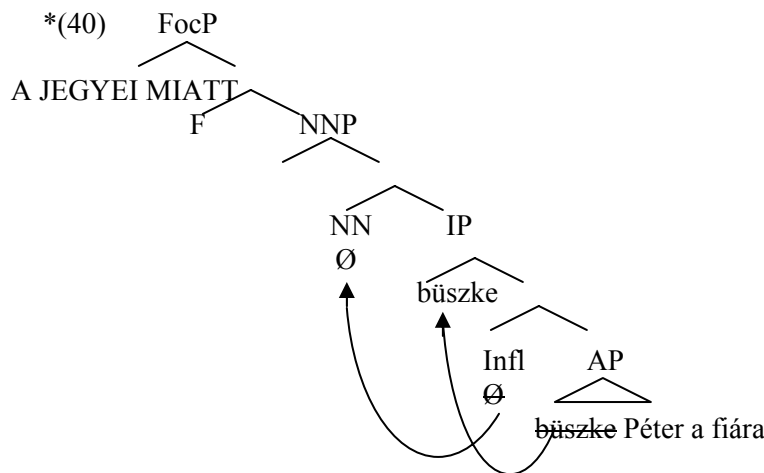
(38) a.   b.
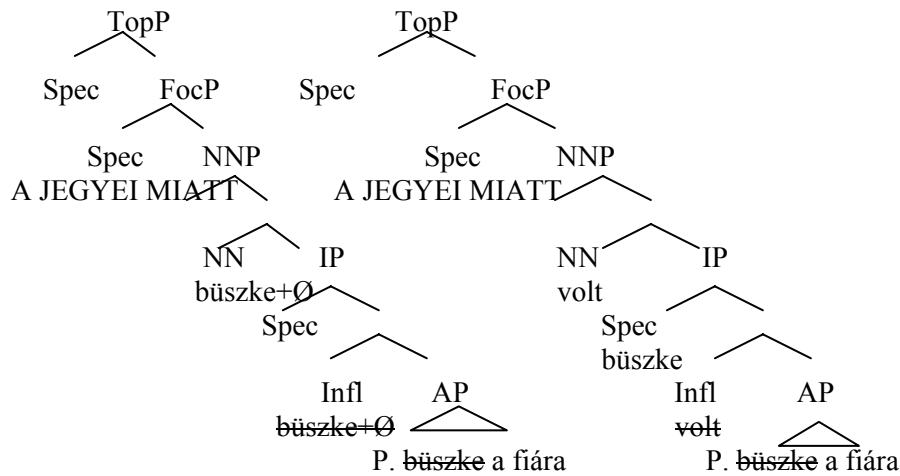
In non-neutral sentences the IP is dominated by a Non-Neutral Phrase (cf. Olsvay 2000). In parallel with verbal sentences movement to the NN head of the tense-bearing element is postulated (cf. chapter 2). As (38) shows, the focussed constituent will precede the copula, if there is one, otherwise it precedes the adjectival predicate itself.

The proposed analysis could also shed light on the nature of the contrast in (31). It can be asserted as a generalization that the tense-bearing element (that is, the adjective in (31a) and the copula in (31b)) cannot be extracted as that would leave the predicate 'headless'.

Similarly, the free word order observed after the copula is an instance of a more general pattern (free word order attested on the right of the highest copy of the tense-bearing element – see chapter 2 of this book). This also supports the analysis in (38a): we would expect (39) to be grammatical, contrary to fact, if Ø inflection was not attached to the adjectival head but moved on its own into the NN head, while remnant-AP movement of *büszke* 'proud' worked analogously to the examples where copula support

20

applies (cf. (38b) and (40)). That is, we would expect free word order on the right of the highest copy of the inflection in NN^0, which is not the case.

(39) *A   JEGYEI MIATT   Péter büszke a   fiára.
       the grades   because Peter proud the son-3SG-ELAT
Intended: 'It is because of his grades that Peter is proud of his son.'

*(40)   FocP
A JEGYEI MIATT
         F'   NNP
              NN   IP
              Ø
                  büszke
                  Infl   AP
                  Ø
                      b̶ü̶s̶z̶k̶e̶ Péter a fiára

Another way to account for the grammaticality of (37) and the ungrammaticality of (39) is to postulate a structure for (35a) analogous to that of the past tense sentences represented in (36b). In this case we would have 'remnant AP' movement to Spec,IP, following the extraposition of the complement in both present and past tense sentences. In case the tense (and agreement) features in Infl happen to be Ø (in present tense with a 3rd person subject), Infl cliticizes to the adjectival predicate, which, by reanalysis, becomes a host for the Ø inflection: the (possibly modified, but head-final) adjectival predicate moves to the specifier of the IP to provide a non-null carrier for the bound morpheme in Infl^0.

This unified analysis of (35a) and (35b) is, however weakened by the cliticization process it involves. Moreover, treating cases like (35a) as instances of head movement would assimilate these examples to the class of verbal predicates that also pick up inflection by cyclic head movement. One stipulation needed concerns the selectional properties of verbs versus adjectives. While verbs can pick up phonologically null or non-null inflections alike, adjectives in Hungarian can only pick up null inflection. This restriction is not unparalleled, however, since verbal predicates are not completely unrestricted in this sense either. A verbal predicate can be

combined with all of the verbal morpho-syntactic projections if their heads are phonologically null but cannot carry, for instance, both a past tense inflection and a phonologically non-null mood inflection. For the latter copula support applies (cf. *ment volna* go-PAST be-COND)

One more complicating factor arises with adverbial modifiers. In verbal sentences, adverbials of manner and degree are analysed by É. Kiss (cf. chapter 2 of this book) to be typically left-adjoined to PredP in a focusless sentence. In the presence of a focus, however, they can only surface postverbally (41a–d):

(41) a. *[TopP János[PredP* nagyon*[PredP elszomorodott]]]*
         John   very   Prt-saddened
     'John became very sad.'
   b. **JÁNOS* nagyon *szomorodott el.*
   c. *JÁNOS szomorodott el* nagyon.
   d. *JÁNOS szomorodott* nagyon *el.*
      (É. Kiss 2002: 85 (21a–d))

If we look at the parallel examples in the domain of non-verbal predication we find that the adverb can optionally intervene between the focus and the adjectival predicate:

(42) a. *CSAK OTTHON nagyon büszke Péter a fiára.*
         only at-home   very   proud Peter the son-3SG-SUBL
       'It is only at home that Peter is/was very proud of his son.'
   b. *PÉTER elragadóan kedves mindenkivel.*
        Peter   extremely kind   everyone-COM
   'Peter is extremely kind with everyone.'

For (42) I assume that the adverbial is not attached to AdjP, but modifies the adjectival head (cf. (43)), hence Adj movement to Infl and to NN can take it along. (However, it is still a question why head adjunction is not available with verbal heads.)

(43) AdjP

22
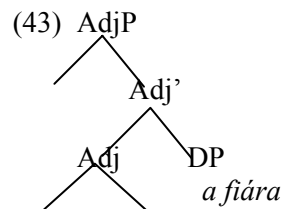
AdvP   Adj   the son-3SG-SUBL
nagyon   *büszke*
very   proud

That this is not the only option is shown by the grammaticality of sentences such as that in (44), where the frequency adverb and the adjectival head are not adjacent. This suggests that the structure in (45) can also exist.

(44) *A JEGYEI MIATT büszke Péter nagyon   a   fiára.*
     the grades   because   proud   Peter very-much the son-3SG-ELAT
     'It is because of his grades that Peter is very proud of his son.'

(45) AdjP

AdvP   AdjP
nagyon
very
          A   DP
       büszke   *a fiára*
       proud   the son-3SG-SUBL
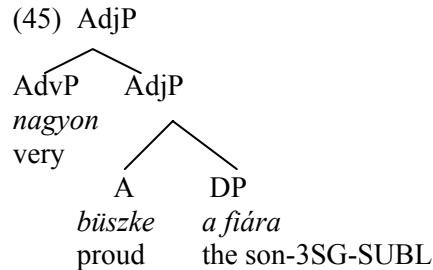
As a conclusion we may say that taking the copula in non-verbal predication to be generated in the Infl head, we can correctly predict the syntactic differences between 'BE + AdvP/PP' and 'BE + AdjP' constructions, including the word order constraints in effect both before and after the tense-bearing element.

6. Conclusion

In the present paper I have sketched the syntax of two Hungarian BE-constructions: one involving an adjectival phrase and the other containing an adverbial phrase. I examined how the syntactic structures of these sentences differ from each other, and how the differences relate to the categorial status of their preverbal constituents.

First, I argued for the categorial homogeneity of adverbials accompanying the copula. On the basis of distributional and historical grounds, I proposed the conflation of adverbial case markers and Ps, on the one hand, and adverbs and verbal particles on the other, and also raised the

possibility that adverbs (including verbal particles) represent a subtype of PPs (with their complement incorporated). Second, in sections 3 through 5 I have shown that despite their superficial similarities, 'BE + AdvP/PP' and 'BE + AdjP' constructions are fundamentally different. In the former BE is verbal (i.e. is inserted under a verbal node), in the latter it is a copula generated in the Infl head, the predicate being represented by the adjective itself. This result is paralleled by a similar conclusion reached by Doherty (1996) and Becker (2004), who argue in favour of an analogous categorial and positional distinction in Irish and English, respectively.

The proposed analysis predicts a number of syntactic differences between the two constructions which are borne out by the facts of Hungarian, namely: (i) the presence vs. the lack of BE in present tense declarative sentences with a 3rd person subject, when there is a null tense inflection; (ii) the presence vs. the lack of BE in the fronted phrase in predicate clefts, due to higher (Infl^0) or lower insertion (V^0) of BE; (iii) the possibility of topicalizing the verbal BE of BE+AdvP/PP constructions, and the impossibility of topicalizing the copula on its own.

The facts observed indicate that AdvPs/PPs cannot function as primary predicates in Hungarian as opposed to VPs, AdjPs (and also NPs). The findings are in accordance with the typological generalizations of Stassen (1997). According to Stassen locative predications are characteristically encoded by a PP and a verbal „support" element, other cases being relatively rare. Among the 410 languages investigated there are only 52 in which locative PPs seem to be available to be directly predicated of subjects (that is, languages in which PPs can be directly juxtaposed with a subject, or can be inflected like verbs).[17]

Notes

[1] For some approaches see Kenesei (1994: 581–586), Payne–Chisarik (2000), É. Kiss (2002: 185), Asbury (2005, 2008), Hegedűs (2007).
[2] Ackermann (1987) and É. Kiss (2002) do not treat these as personal pronouns bearing a case marker, but as postpositions with a *pro* or pronoun complement, on a par with agreeing postpositions such as *(te) mellett-ed* 'you near-2SG', building on the historical fact that adverbial case endings emerged from postpositions (cf. É. Kiss 2002: 194).

[3] Some suffixes, however, cannot combine with pronominals, e.g. the essive-formal *-ként*, translative *-vá/-vé*.

[4] For alternative analyses see Bartos (2000: 699–701) and Asbury (2005, 2008).

[5] The superessive suffix is actually a mere *-n*, which is linked to stems ending in a consonant by various linking vowels. The linking vowel appearing on nominal stems (*-on/-en/-ön*) is only partially identical with the linking vowel appearing on adjectival stems (*-an/-en*).

[6] Kiefer (2000) discards the adverbial case ending analysis of *-An* and *-Ul*, and treats them as derivational suffixes.

[7] For analyses of the verbal particle see Piñón (1995), É. Kiss (1998c, 2002, 2006a, 2006b), Surányi (2002, this volume), Szendrői (2003), Olsvay (2004), Csirmaz (2004) and the references cited therein.

[8] Cf. Deme (1959), É. Kiss (2006a), Surányi (this volume). Example (i) below shows that the locative particle can function as the proadverbial double of a locative noun phrase; what (ii) illustrates is that the locative noun phrase can also replace the locative particle in its canonical, preverbal position. In both (i) and (ii) BE is a verb that expresses the position/static configuration of the subject, and the particle or the case suffixed noun denotes its location. What the particles differ in from their phrasal counterparts is that they lack a descriptive content.

(i) *Éva **itt** van (az ablaknál).*   (ii) *Éva **az ablaknál** van (*itt).*
     Eve here is   (the window-ADESS)   Eve the window-ADESS is   here
     'Eve is here at the window.'   'Eve is at the window.'
     (É. Kiss 2006a, 50b)   (adapted from É. Kiss 2006a, 53c)

[9] In (i) the leftmost element of the predicate phrase and thus the information focus of the (neutral) sentence is a locative. That the obligatoriness of the complex predicate formation at the level of PredP has relevance from an information structural point of view is shown by the infelicitousness of (ii) with *valahol* 'somewhere' in Spec,PredP: as the DP subject is associated with an existential presupposition, there is no point in asserting its being somewhere in space. However, (iii) is perfectly acceptable with the preverbal proadverbial functioning as the double of a postverbal locative.

(i) *A könyv a   polcon   van.*   (ii) *A könyv valahol   van.*
   the book the shelf-SUPERESS is   the book somewhere is
   'The book is on the shelf.'   *'The book is somewhere.'

(iii) *A könyv ott   van valahol (a   polcon).*
    the book there is   somewhere the shelf-SUPERESS
    'The book is there somewhere (on the shelf).'

[10] These verbs, including *van* 'be', are not strictly speaking stress avoiding as such. It is the case – as Komlósy notes (Komlósy 1989: 174) – that the majority of stress-avoiding verbs can bear phrasal stress and still be interpretable provided their theme argument is non-specific, cf. (i), (ii) and (iii). While in (i) *van* bears phrasal stress and the sentence is interpreted as thetic (introducing a new discourse

referent), in (ii) with a bare NP subject it has to bear focal stress (verum focus). (iii) with a specific theme argument is ungrammatical. Cf. also chapter 8.

(i) *Van egy légy a   levesben,   nehogy megedd*! (a legyet/   ?a levest)
   is   a   fly the soup-INESS   don't Prt-eat   the fly-ACC the soup-ACC
   'There is a fly in the soup, don't eat it.'

(ii) *VAN légy a   levesben,   nehogy megedd!* (a levest/   *a legyet)
    is   fly the soup-INESS don't Prt-eat   the soup-ACC the fly-ACC
   'There IS a fly in the soup, don't eat it!'

(iii) **Van/VAN   a légy a   levesben.*
     is/IS   the fly the soup-INESS

[11] This information structural account does not explain cases when a non-specific theme subject in Spec,PredP still needs an adverbial in postverbal or topic position. However, this seems to be more a semantic (and/or pragmatic) issue than a syntactic one. For the examples in (i), the adverbs appear to be adjuncts, their obligatoriness in some contexts being due to various semantic and pragmatic constraints.

(i)   a. *Kés van *(a kezében/   nála).*
       knife is   the hand-INESS   ADESS-3SG
      'He has a knife in his hands/ on him.

    b. *Nem mehetek   el, vendég van *(nálam).*
      not go-POT-1SG awayguest is ADESS-1SG
     'I can't leave, I have guests.'

    c. *Nem mehetek   el,   vendégek vannak ?(nálam).*
      not go-POT-1SG away guests   are   ADESS-1SG
     'I can't go with you, I have guests.'

    d. *Nem mehetek   el,   vendégeim vannak (*nálam).*
      not go-POT-1SG away guests-1SG are   ADESS-1SG
     'I can't go with you, I have guests.'

    e. *Este   van.*
      evening is
     'It is evening.'

In (i), movement of the bare NP subject is triggered by the fact that no predicative element can be licensed in the complement of a verb in a neutral clause (cf. Alberti 1997); in neutral sentences it is the specifier of PredP that can host predicative elements that semantically form a complex predicate with the verb in the Pred head. If this complex predicate has an implicit spacio-temporal argument that can be predicated about (ie) or if it can otherwise be anchored (as in (id), where the possessive suffix does the job), no adverbial is needed (or allowed).

[12] I use the term primary predicate for predicates directly dominated by TenseP.

[13] Note that Hungarian *van* 'be' has only a suppletive infinitival form *lenni*.

[14] There is some variation in the judgments of sentences involving predicate clefting and fronting. I have adopted the judments of Ürögdi (2006), which I share.

[15] This is supported by the fact that this type of BE can also be marginally fronted if the target of contrastive topicalization is tense. In the following example, the copula has a perfect ('ever') interpretation, contrasted with the present situation.

(i) a. *(Peti volt már házas, nem?)*
   'But Pete WAS married before, wasn't he?'
   b.??*Volni   volt házas,   de   elvált.*
    vol-INF was married but Prt-divorced-3SG
   'He HAD been married, but he divorced.'

Notice that *volni* is a 'pseudo-infinitive', obtained by attaching the infinitive suffix (*-ni*) to the *vol-* root of the verb BE appearing before the past tense suffix (*vol-t* 'was'). Whereas *lenni* in (29a, b) is derived by syntactic copying, the *volni* of (ib) is the result of phonological copying.

[16] Whether this is a layered AP (analogously to the layered VP) or an asymmetrical SC (e.g. a PredP as proposed in Baker (2003) for nominal and adjectival predicates) is of less importance for now, as both views would generate the subject in an AP-external position (Spec,aP or Spec,PredP). (The PredP proposed in Baker (2003) is, however, different from the PredP used in the present paper.)

[17] Beyond these 52 languages there are languages where the verbal copular element is omitted only in the unmarked present tense (e.g. Russian, Palestinian Arabic), and others in which the only locative elements that can be predicated directly of subjects are 'proadverbials' like *here, there, where*. Hungarian is a case in point – the syntax of these deictic elements differs from that of 'full AdvP/PPs' in that the copula is not obligatory in present tense:

(i) *Hol   (van) a   kulcs? – Ott   (van) az orrod   előtt.*
    where (is)   the key –   there (is)   the nose-2SG in-front-of
    'Where is the key?' – 'There, right in front of you.'

Obligatory Adjuncts Licensing Definiteness Effect Constructions[1]

Márta Peredy

0. Introduction

This chapter addresses the role of adverbials appearing obligatorily in existential constructions in Hungarian (i.e. 'obligatory adjuncts'). One focus of the discussion will be the grammatical function of such adverbials: while they are generally held to be arguments because of their contribution to event structure, I will argue for their adjunct status. The semantic basis of 'presentation' will also be explored in general, with particular attention to the case of adverbials. In what follows, I will use the term 'presentation' to mean the introduction of a new and persistent discourse referent, i.e. the pragmatic function of existential constructions.

Examples (1-4) demonstrate the phenomenon; (1) contains a goal, (2) a beneficiary, (3) a source and (4) a purpose adverbial. It is widely held that it is the verbs that prescribe the existential construction in Hungarian but in examples (1-4) the verbs cannot establish an existential construction on their own. This leads to the first question to be answered. Does this mean that adverbials licensing the existential reading trigger a kind of definiteness effect of their own, similar to Hungarian DE-verbs?[2]

(1) *Ütöttem   egy tojást   *(a   serpenyőbe)… és jól megkavartam.*
     cracked-I an egg-ACC the pan-into
     'I've cracked an egg into the pan… and stirred it well.'
(2) *Dobtam egy csontot   *(a   Bodrinak)… de nem tudta elkapni.*
     threw-I a   bone-ACC the Bodri-DAT
     'I threw a bone to Bodri… but he couldn't catch it.'
(3) *Szakítottam egy virágot *(a   bokorról)… és a hajamba tűztem.*
     plucked-I   a   flower   the bush-from
     'I plucked a flower from the bush… and stuck it in my hair.'
(4) *Hegyeztem   egy ceruzát   *(a   levélíráshoz)… de eltűnt.*
     sharpened-I a   pencil-ACC the letter-writing-for
     'I sharpened a pencil for the letter-writing… but it disappeared.'

Existential constructions are usually characterized by the definiteness effect, i.e., a non-specificity requirement on the theme argument. A related problem to

be addressed is the case of existential constructions with a definite DP[3], e.g., (5), forming exceptions to the definiteness effect. Such examples are generally considered to be semantically non-productive, representing instances of a purely pragmatic phenomenon. Our second question is whether it is possible to modify the notion of definiteness effect in such a way that it can be extended to these cases, too.s

(5)   *Vettem azt   a kis pöttyös ruhát.   Szerinted jól áll nekem?*
        bought-I that-ACC the little polkadot dress-ACC
        'I bought that little polkadot dress. Do you think it suits me?'

The present proposal is a unified answer to these two questions, suggesting a necessary and sufficient semantic condition of presentation. Namely, the semantic basis of presentation is claimed to be the *instantiation of an intentional entity*. Moreover, it will be argued that instantiation corresponds to the identity relation of natural language, the logical subject of which is an intentional entity (implicit in the sentence), which is identified by its actual instance referred to by the DP (the presented element). This proposal is antilexicalist in not assuming any lexical constraint responsible for the properties of existential constructions encoded in the lexical entry of either the verbs or the determiners or the whole construction. In this framework, the definiteness effect is confined to the semantic condition suggested.

This chapter is organized as follows. In Section 1, I describe the definiteness effect (henceforth DE) which lies in the point of departure of the phenomena in question and then redefine it on the basis of presentation. The usefulness of the new definition will be proved throughout this chapter. In Section 2, the role of the DP subject to DE, the verb and the adverbial of an existential construction will be discussed on the basis of previous accounts. In Section 3, I outline a model in the terms of which I will phrase the proposal in section 4. Subsections 4.2-4.5 will be dedicated to the components of the proposal. First, the antilexicalist aspect of the proposal, then the possibility of non-specific definites will be discussed. Intentional entities, the heart of my proposal, will be introduced into the semantic model in subsection 4.4. Then, in 4.5, the other main idea the explanation is based on, the view of syntactic arguments as nominal predicates of the thematic arguments of the main verb, will be presented. Section 5 applies the results of previous sections to the case of adverbials licensing presentation. First, in 5.1, the adjunct status of these adverbials will be tested and the insufficiency of aspectual role as a condition of argumenthood will be demonstrated. In 5.2 information structure[4], rather than the close semantic relation of these adverbs to the verb, will be identified as the

source of their obligatoriness. Subsections 5.3 and 5.4 will be dedicated to the semantics and syntax of the adverbials, and in 5.5 further clarification concerning the status of sources and locatives will follow. Section 6 draws the conclusions.

1. Background: Definiteness effect

Definiteness effect, forming the background of this whole chapter, goes back to Milsark's (1977) observation that English *there*-constructions license some DPs (they were called 'weak'), while prohibit others ('strong ones') – observe:

(6)   a. *There is/are a/some/many mug(s) in the sink.*
       b. **There is/are the/every/those mug(s) in the sink.*

Szabolcsi (1984, 1986) examined the DE-phenomenon in Hungarian and found a large class of verbs, called DE-verbs, the theme argument of which is constrained in the same way as the DPs of *there*-constructions, e.g. (7). Sentences containing such verbs will be called *DE-constructions* in the case of Hungarian. As a certain class of verbs seems to form DE-constructions while other verbs do not, the accounts of DE in Hungarian are based on the lexical properties of the verb (Szabolcsi 1984, 1986, Maleczki 1995, É. Kiss 1995, Kálmán 1995, Bende-Farkas 1995, Maleczki 2001, Bende-Farkas 2002a, Kálmán and Varasdi 2005, Piñón 2005, 2006a). In contrast, this paper aims at an antilexicalist explanation. (The grammaticality judgments concern the intended DE-construction readings. Examples involving a durative event, e.g., (7b) and (7d), are grammatical with a specific theme under an imperfective reading.)

(7)   a. *Van egy/néhány/sok/ *a /*minden bögre a   mosogatóban.*
         is   a / some / many/the/ every   mug the sink-in
         'There is/are a/some/many/*the/*every mug(s) in the sink.'
       b. *Építettem egy/*a   házat.*
         Built-I   a / the house-ACC
         'I have built a/the house.'
       c. *Érkezett egy/*a   vendég.*
         Arrived a / the guest
         'A/The guest arrived'
       d. *Hoztam   föl Ø/*a   bort.*

brought-I up Ø/ the wine-ACC
'I've brought up some/the wine'

DE-constructions are characterised as follows:

(8) *DE-construction* (first approximation): DE-constructions are neutral[5], perfective sentences consisting of a DE-verb carrying the main stress of the sentence and a post-specific internal argument (plus the other arguments of the verb, if any, as well as optional adverbials).

Szabolcsi (1983) adopted the notion of post-specificity from Wacha (1978). A post-specific noun phrase, in addition to being non-specific, also introduces a new persistent discourse referent.[6] (The *there*-associate in *there*-constructions also has this property.)

As was already mentioned in the introduction, our basic examples (1-4) behave as DE-constructions in the presence of the adverbials – see (9a), but do not have this reading in the lack of the adverbials – see (9b):

(9)　　a. *Ütöttem egy/*a tojást　　a　serpenyőbe.*
　　　　　cracked-I an/　the egg-ACC the pan-into
　　　　　'I've cracked an/the egg into the pan.'
　　　　b. *Ütöttem egy/a tojást.*
　　　　　 cracked-I an/ the egg-ACC
　　　　　*'I've cracked an/the egg.'
　　　　　'I was beating an/the egg.'

A line of explanation that presents itself readily is that verbs can have more than one different subcategorisation frame. The instances occurring in the examples require a goal (1), beneficiary (2), or source (3) argument, and show the definiteness effect, see e.g. (9a), while the verbs without adverbials, (9b), do not and have only imperfective reading. At the same time, it would be hard to construct an account that assigns argument status to the purpose adverbial in (4). In fact, common syntactic tests of argumenthood do not verify the argument status of the other three adverbials either (see 5.2); they all turn out to be adjuncts, although obligatory for the presentational reading. This means that the definition in (8) does not cover these cases. In order to extend the definition, we need to eliminate the implicit assumption that it is the DE-verb that governs the phenomenon:

(10) *DE-construction* (second approximation): DE-constructions are neutral, perfective sentences including a post-specific internal argument.

Deictic presentational sentences[7] containing a definite internal argument, e.g. (5), represent a problem even for this DE definition. These examples are usually excluded from semantic analyses. For example, Keenan (2003) argues that they are not productive, i.e., their sense is not preserved under negation or polar questioning, compare (11) with (5).

(11) a. **Nem vettem azt   a kis pöttyös ruhát.*
           not   bought-I that-ACC the little polkadot dress-ACC
           'I didn't buy that little polkadot dress.'
      b. **Vetted   azt   a kis pöttyös ruhát?*
           bought-you that-ACC the little polkadot dress-ACC
           'Did you buy that little polkadot dress?'

Keenan, and purely semantic approaches in general, take the risk of ruling out felicitous sentences like (5) via the radical assumption that strong determiners[8] result in ungrammatical sentences. Barwise and Cooper's (1981) analysis, also accepted by Szabolcsi (1984), is more moderate in this sense. According to these authors, strong determiners in this construction result in tautologies or contradictions instead of ungrammaticality.[9] My analysis presented in Section 4 will be even more lenient; cases like (5) will not turn out to be tautologies. In this spirit, I extend the definition of DE-constructions to cover the deictic presentational use as well:

(12) *DE-construction* (third approximation): DE-constructions are neutral, perfective sentences including a post-specific, or a definite but presentationally used internal argument.

Some clarification of the terminology is in order here. I use the term *presentation*, which goes back to Hetzron's (1975) work, for the introduction of a new and persistent discourse referent without any reference to the definiteness or scope of the presented expression. In subsection 4.3, presentation via a DP and the post-specificity of that DP will turn out to be basically the same thing.

Throughout this chapter, I will focus exclusively on presentation through DPs, i.e. DE-constructions, although there is another subclass of presentational constructions presenting the event described by the whole sentence[10]. This latter type will not be discussed here. Furthermore DE-constructions in embedded

contexts will not be looked at here either since the notion of presentation is not defined in embedded contexts.[11]

2. Previous accounts

The schematic representation of English *there*-constructions and Hungarian DE-constructions is shown in (13). Apart from the role of *there*, we can say that these constructions consist of three units: the verb, the determiner phrase and the adverbial represented by a PP. While the obligatoriness of the PP in (13b) is explained by its argumenthood in previous accounts (Bende-Farkas 2002a, Kálmán és Varasdi 2005) , I will claim that not all DE-constructions contain a PP.

(13)   a. *there* BE DP PP
        b. V DP (PP)

Accounts of DE differ as to what role they assign to the three units. I look at these in turn below.

2.1 The role of the DP

Previous semantic analyses (among them Milsark 1977, Barwise and Cooper 1981, Keenan 1987, Zucchi 1995, Keenan 2003) address the question of what determiners are available in *there*-constructions. A first step toward an information structural account is Barwise and Cooper's above mentioned conclusion that strong determiners lead to tautologies instead of ungrammaticality. The second step was taken by Zucchi, who defined the set of strong determiners through the property of presuppositionality, although strong determiners are strictly ungrammatical in his analysis.

Enç (1991) presents a pragmatically motivated account of specificity, although she only mentions *there*-constructions in passing. By acknowledging that an adjective like *following* can influence the specificity of a definite DP, see (14), she admits that, strictly speaking, specificity cannot be an inherent feature of the determiner. Equating strong DPs with specific ones, and at the same time considering specificity as an information structural (rather than truth-conditional) notion corresponds to a pragmatic analysis of the DE.[12]

(14)   *There are the following / *above counterexamples to Streck's theory.*

2.2 The role of the verb

A large class of verbs appearing in Hungarian DE-constructions have particle verb counterparts that can appear in a perfective construction only with a specific internal argument. For approaches aiming to point out a similar contrast in English, see Szabolcsi (1986), É. Kiss (1998), Piñón (2006b) and Peredy (2007). Hungarian DE literature focuses mainly on the role of the verb and formulates both lexico-semantic and syntactic constrains on DE-verbs. Moreover, noting the information structural aspect of DE-constructions, Piñón (2006a), Kálmán (1995) and Bende-Farkas 2002a explicitly refer to pragmatics in the lexicon. The assumption that DE is a lexical property of the verb faces the following problems:

1. The most important feature, and in my view the biggest problem, of these lexicalist accounts is that the DE-construction in (15c), and the other two constructions containing the same verb form (the imperfective process in (15a) and the perfective particle verb construction in (15b)) are derived from different lexical units.

(15) a. *Épül   egy/a   ház.*   b. *Megépült   egy/a   ház.*
         build$_{unacc}$ a /the house   PRT-built$_{unacc}$ a /the house
         'A/The house is being built.'   'A/The house has been built.'

     c. *Épült   egy/*a   ház.*
        built$_{unacc}$ a / the house
        'A/The house was built.'

A lexical solution is to postulate particular sort shifters that derive one verb type from the other (e.g. Piñón 2005). This is, however, a tenable solution only if the postulation of lexical transformations saves some work for other modules. If, however, the same complexity is required in syntax and pragmatics with or without these lexical rules, then a simpler lexicon is more economical. The accounts mentioned above make both syntactic and semantic assumptions instead of replacing one with the other.

2. A second problem, which Maleczki (2001) draws attention to, is that constructions with DE-verbs are not the only ones that can contain post-specific DPs. She discusses examples like (16), in which the locative adverbial seems to have a crucial role. Her observation supports the replacement of the original DE definition in (8) with that in (10).

(16) *Néhány szarvas legelészik a   mezőn*.
     some   deer   graze   the meadow-on
     'There are some deer grazing in the meadow.'

3. Whereas (15c) does not allow a definite subject under the DE-construction reading, the definite subject is licit in the presence of a focus, see (17). If the lexical entry of DE-verbs prescribed the weak DPs, then one would have to postulate different lexical entries for the verb *épül* 'be built' in the neutral sentence and in the sentence containing the focus-moved constituent, which is highly counterintuitive.

(17) *TAVALY épült   a   ház.*
     last-year built$_{unacc}$ the house.
     'It was last year when the house was built.'

2.3 The role of the adverbial

2.3.1 An argument of the verb?

Bende-Farkas (2002a) and Kálmán and Varasdi (2005) address the role of adverbials in DE-constructions. These authors claim that every DE-verb has a "generalised goal argument" (a term coined by Bende-Farkas), which enters into an intimate relationship with the theme as a result of the culmination of the event (in terms of Kálmán and Varasdi). On the basis of this, they would clearly conclude that the adverbials in (1-4) are obligatory because they are arguments of a DE-verb.

Interpreting generalized goals as arguments of the verb is motivated by the intuition that presentation always takes place with some purpose of the speaker. A sign of this is that even if a generalised goal is not present overtly, it can be calculated in the given context. This intuition will be reworked into the notion of intentional entities in the present account. The two accounts mentioned above, however, face the following problems.

1. The final state of the event is established by the interaction of two separate arguments of the verb: the generalised goal and the internal argument, since in these accounts the internal argument is also considered to refer to the final state instead of the actual theme. However, it is undesirable that one thematic relation (the generalised goal) be expressed by two arguments.

2. The final state of telic events is the information focus of perfective sentences. In Hungarian, the structural position of information focus is the

immediately preverbal position carrying the main stress[13]. In DE-constructions this position is empty; neither one of the two relevant arguments appears there. Bende-Farkas (2002a) fills this position with a covert perfectivity operator, which is the introducer of the final state. Earlier Szabolcsi (1986) also assumed that a phonologically empty associate of the internal argument occupies the preverbal slot. The present proposal, however, instead of assuming covert elements, will argue that neither the adverbial nor the internal argument has the function of referring to the final state, which is why they do not have to occupy the preverbal position.

3. DE-constructions do not necessarily imply the onset of the state described by the adverbial, which indicates that the state they bring into the discourse cannot be an actual final state:

(18) *Dobott egy csontot   a   Bodrinak, de végül a   Bundi kapta el*.
        threw a   bone-ACC the Bodri-to   but finally the Bundi caught PRT
        'He threw a bone to Bodri but finally it was Bundi who caught it.'

4. Adverbials present in DE-constructions may appear in the perfective particle verb constructions and in the imperfective constructions as well, but they are claimed to be arguments only in DE-constructions. Meanwhile in the other two cases they would probably be analysed as adjuncts. What motivates this distinction?

5. Although the adverbials are obligatory with some verbs, they are optional with others, e.g., with real creation verbs. Bende-Farkas suggests that they can be represented by a domain or world variable in the latter case. The assumption of such variables is an extremely strong tool, in my judgment, and the question remains: what are the restrictions of their use.

2.3.2 A restrictor of the domain of evaluation

Turning to analyses that address the role of the adverbial, called *coda*, in *there*-constructions in English, I will now discuss Zucchi's (1995) and Keenan's (2003) accounts briefly. According to Zucchi's Coda Condition, the coda provides the domain of evaluation of *there*-sentences. This idea was formalised by Keenan. Weak determiners have the following property: for every A and B subset of the domain E: $D(A,B) = D(A \cap B, B)$. For example, the sentence *There are three girls in the garden* is equivalent to *There are three in the garden who are girls in the garden*. This formalisation reflects Zucchi's intuition in that one

should only consider the girls in the garden in order to judge the truth of the whole sentence, while girls outside the garden do not count.

Accepting this formulation, it becomes clear that the observation that the meaning of the adverbial seems to affect to the meaning of the verb, e.g., in (1-4), does not imply argumenthood but is a consequence of the adverbial restricting the DP argument.

Both authors emphasize that their analysis is valid only on the level of semantics, as the DP and the coda do not form a constituent in syntax. In 5.3 I will propose for Hungarian that these adverbials originate inside the DP: they are DP-adjuncts, that is, semantics still maps to syntax.

3. Model

3.1. Syntax

The pragmatic feature of specificity plays an important role in the studied phenomenon. It is natural to raise the question how to represent specificity in the syntactic analysis. Chomsky's (1995) inclusiveness condition explicitly claims that only those features can figure in syntactic computations that represent properties of lexical items, or, in the same spirit, Chomsky (2005) maintains that notions of information structure do not figure in the syntactic derivation, at least not in the sense of being formally responsible for movement. Therefore I will not use an information structurally motivated specificity feature in syntax. Instead, I will assume that specificity is entirely determined by structural position. The detailed syntactic framework is beyond the scope of this chapter, but I tentatively adopt a modified version of Diesing's (1992) Mapping Hypothesis, assuming that non-specificity is the result of existential closure, the domain of which is the VP.

3.2. Semantics

The formal language I will use is *conjunctivist*. The basic idea of conjunctivism (Pietroski 2005) is that syntactic concatenation (merge) of expressions signifies conjunction of predicates as opposed to the functionist view of Montagovian semantics where concatenation signifies function-application. DRT also exploits this idea (Kamp and Roßdeutscher 1994) but does not operate with existential closures at all. In the conjunctivist model, existential closure converts a predicate into something evaluable as true or

false. To combine this with Diesing's MH on the one hand and with information structure on the other hand, I will assume that the existential closure of a variable inside VP corresponds to the assertion of its existence (non-specificity) while the closure of the rest (i.e., DPs outside VP) corresponds to existential presuppositions (specificity). Otherwise, the formalism is neo-davidsonian event semantics.[14]

A further motivation for using this framework is that the conjunctivist representation captures Bach's (1970) insight according to which parts of speech playing seemingly different roles in the sentence are underlyingly of a uniform nature. Bach claims that noun phrases originate in relative clauses in the deep structure (E.g., *The one who is a man is working → The man is working*). The idea of treating syntactic argument DPs as nominal predicates of the thematic argument of the verb, which I will exploit in section 4.4, has its roots in Bach's work, although I will not accept it as a syntactic analysis.

3.3. Discourse representation

For the study of the semantic/pragmatic interface one also needs a discourse model. The present proposal will capture the presentational function by incorporating an identity relation holding between an implicit thematic argument and the discourse referent of a DP; hence a model that keeps thematic arguments of predicates distinct from discourse referents introduced by DPs is needed. Farkas and de Swart (2003) propose such a model in the DRT framework. I will adopt their basic ideas without adopting the DRT formalism here. In their model, semantic predicates introduce their thematic arguments into the discourse, while determiners and pronouns introduce discourse referents. They define a rule by which discourse referents replace thematic arguments in the course of constructing the meaning of the sentence, and another rule called *unification*, which replaces the relevant thematic argument of a predicate by the thematic argument of another predicate. E.g. in the case of incorporation, which is the focus of their interest: *vendég érkezik* 'guest arrive' → *guest(x) & arrive(y)* and due to unification $x = y$.

The following example demonstrates how to derive the semantic representation of a sentence using thematic arguments ($x, y, …$), discourse referents ($u, v, …$) and the conjunctivist description. Determiners and pronouns correspond to some predicate $p_u(x)$. $p_u(x) = 1$ iff the discourse referent u introduced by the corresponding determiner or pronoun replaces the thematic argument x. The formulas serve demonstrative purposes, a strict formal analysis is beyond the scope of this chapter.

(19) *Tolom   a   talicskát.*
      push-I-(NOM)   the cart-ACC

push(e) & p_u(x_1) & Θ_{AG}(e,x_2) & p_v(y_1) & cart(y_2) & Θ_{TH}(e,y_3)
a. unification: *unif(x_1, x_2), unif(y_1, y_2, y_3)*
    push(e) & p_u(x) & Θ_{AG}(e,x) & p_v(y) & cart(y) & Θ_{TH}(e,y)
b. existential closure:
    ∃e∃x∃y [push(e) & p_u(x) & Θ_{AG}(e,x) & p_v(y) & cart(y) & Θ_{TH}(e,y)]

4. The proposal and its components

4.1 The semantic condition of presentation and the role of adverbials

(20) A construction *presents* a discourse referent represented by a determiner iff it establishes an instantiation relation between the actual thematic argument of the DP and an intentional thematic argument of some predicate of the sentence.

The discourse referent introduced by the DP is interpreted as post-specific.

(21) *Obligatory adjuncts in DE-constructions*: An adverbial adjunct is obligatory in a DE-construction iff the DP instantiates the intentional argument of the adverbial.

The following subsections will discuss the components of the proposal, while Section 5 summarizes the consequences with respect to obligatory adjuncts.

4.2 The antilexicalist view of the definiteness effect

This proposal is an antilexicalist one in not holding any lexical requirement responsible for presentation (and definiteness effect). The present approach attempts to avoid the problems mentioned in Section 2 by making the following assumptions:
- there is no reference to information structure in the lexical entries,
- verbs licensing DE-constructions, as well as those appearing in the perfective particle verb construction and the imperfective construction constitute one and the same lexical entry,

- state adverbials may also license DE-constructions,
- the definiteness effect is confined to pragmatic effects plus the semantic condition suggested,
- no special syntactic constraint is postulated.

The two major arguments against the lexicalist view are discussed and reflected upon below.

4.2.1 Definiteness effect: requirement or licensing of post-specific arguments?

In this subsection, I argue for considering DE as the licensing, rather than the requirement, of weak DPs. I show that the requirement view simply does not work without hypothesizing that the lexical entry of the verb of the DE-construction is different from the other uses of the same verb. As was already mentioned, the present proposal returns to the null hypothesis, i.e., postulates only one lexical entry. This assumption leads to the following interpretation of the data below. Durative events, either expressing an activity as in (a), a change of state process as in (b) or a creation (i.e., coming into existence or becoming available) as in (c), have an imperfective reading when the argument is specific – see the (i) examples in (22a-c). This reading is not available in the case of non-durative events – see the (i) examples in (23a-c). (The reason why they are sometimes marked with question marks instead of stars is the possibility of a coerced imperfective.) The DE-construction is generally unavailable – as shown by the (ii) examples, but there are some events that license a weak internal argument, see the (c) examples. Finally, although not demonstrated below, all event types can be perfectivized by an appropriate verbal particle: *gurul* 'roll' → *el-gurul* 'PRT-roll', *pirul* 'become-red' → *meg-pirul* 'PRT-become-red', etc.

(22) durative events: strong DP   weak DP
    a. activity: i. *Gurul   a   labda*.   ii. **Gurult egy labda*.
                rolls   the ball   rolled   a   ball
                'The ball is rolling.'   'A ball rolled.'
    b. change   i. *Pirul   a   hús*.   ii. **Pirult   egy hús*.
       of state: browns the meat   browned a   meat
                'The meat is browning.'   'A meat browned.'
    c. creation: i. *Épül   a   ház*.   ii. *Épült   egy ház*.
                builds$_{unacc}$ the house   built$_{unacc}$ a   house
                'The house is being built.'   'The house was built.'
(23) non-durative events: strong DP   weak DP

a. activity: i. ?*Pattan   a   labda.*   ii. **Pattant egy labda.*
              bounces the ball   bounced a   ball
              'The ball is bouncing.'   'A ball bounced.'

b. change   i. **Törik a   váza.*   ii. **Törtem egy vázát.*
   of state: break the vase   broke a   vase
              'The vase is breaking.'   'A vase broke.'

c. creation: i. ?*Érkezik a   vendég.*   ii. *Érkezett egy vendég.*
              arrives the guest   arrived a   guest
              'The guest is arriving.'   'A guest arrived.'

In sum, in the framework postulating just one lexical entry, some verbs are special in *licensing* the non-specific internal argument. In the case of the obligatory adverbials in DE-constructions (1-4), it is even more obvious that they can form grammatical sentences with strong DPs as well (resulting in an imperfective reading), so they do not require, just license the weak DPs and, through this, the DE-constructions, e.g., (24).

(24)   a. *Öntöm a   vizet   a   serpenyőbe.*
         pour-I the water-ACC the pan-into
         'I was pouring the water into the pan.'
    b. *Öntöttem valamennyi vizet   a   serpenyőbe.*
         poured-I some   water-ACC the pan-into
         'I poured some water into the pan.'

4.2.2 The internal argument plus verb complex

In this subsection I point out that verbs licensing a post-specific internal argument do not constitute a verb class since the licensing of post-specificity depends not only on the verb but on the verb + argument pair. Although both *tol* 'push' and *tör* 'break' are unacceptable as DE-constructions in (25), they become fully acceptable, (26), (although somewhat substandard in (26a)) if the theme argument is changed.

(25)   a. **Toltam   egy talicskát.*   b. **Törtem egy vázát.*
         pushed-I a   cart-ACC   broke-I a   vase-ACC
         'I pushed a cart.'   'I broke a vase.'
(26)   a. *Toltam   egy sms-t.*   b. *Törtem egy darab kenyeret.*
         pushed-I an sms-ACC   broke-I a   piece bread-ACC
         'I sent an sms.'   'I broke a piece of bread.'

In defence of the lexicalist view, one could say that the lexical transformation that yields DE-verbs also changes the selectional criteria of the verb; but, no doubt, in entirely unpredictable ways. The other possibility, which I am advocating, is *contextual licensing*. That is, the syntax and semantics of DE-constructions do not exclude any verb; it is merely the felicity judgement that varies from one verb plus argument pair to the other according to the world knowledge of the speaker and the addressee. If the event expressed by a certain pair can be conceptualized as one making available the theme argument, then the sentence is felicitous. Actually, even *toltam egy talicskát* 'I pushed a cart' may serve as a DE-construction in a context where the pushing of the cart is the final phase of the production of a cart.

Further evidence for this view is provided by the fact that even activity verbs like *olvas* 'read' or *játszik* 'play', and statives like *lát* 'see' or *hall* 'hear' constitute DE-constructions.

(22) durative events: strong DP   weak DP
   a'. activity: i. O*lvassa a   könyvet.*   ii. *Olvasott egy könyvet.*
                  read-I   the book-ACC   read   a   book-ACC
                  'She is reading the book.'   'He read a book.'
   a''. stative: i. *Látja a   vulkánt.*   ii. *Látott egy vulkánt.*
                  sees   the volcano-ACC   saw   a   volcano-ACC
                  'He sees the volcano.'   'She saw a volcano.'

4.3 Specificity and definiteness

The presented entity, as was said earlier, has to be discourse new. Whatever is discourse new is non-specific according to Enç (1991). But the deictic type of presentational sentences contains (usually deictic) definite, i.e., specific, expressions, see (5). This apparent contradiction can be resolved using accurate definitions. According to Enç, both definiteness and specificity require that their discourse referents be linked to previously established discourse referents. What distinguishes the two is the type of linking. For definite DPs the relevant linking relation is identity, while for specific DPs it is inclusion. I agree with the types of links but suggest a slight modification, following Lambrecht (1994), in distinguishing the text internal and text external world, as regards the domain of linking.

(27) a. *Specificity*: A DP is specific iff its discourse referent is (assumed to be)[15] linked to a previous discourse referent (i.e. linked discourse internally) by the inclusion relation.
b. *Definiteness*: A DP is definite iff its discourse referent is (assumed to be) linked either to a previous discourse referent (i.e. discourse internally) or directly to a discourse external entity (via deixis or unique identification) by the identity relation.

Deictic reference (*this/that horse*) or reference to a known but previously unmentioned entity (*the horse*) establishes definite, but non-specific, i.e., discourse internally non-linked reference.[16]
Making the precise distinction between discourse-internal and -external worlds available to the speech participants has the consequence that the definite DPs of deictic constructions, which are non-specific in this modified sense, count as post-specific.[17] That is, the DE-definitions in (10) and (12) have turned out to be equivalent.

4.4 Intentional entities

I claim that the internal argument of the DE-construction in (15c) differs ontologically from that of the other two variants (the perfective particle verb construction (15b) and the imperfective construction (15a)), in addition to the information structural difference attested (the post-specificity of the former one and the specificity of the latter ones). The ontological difference is that the entity referred to by the internal argument of the DE-construction is an actual entity, while the one referred to in the other two constructions is not the object itself but rather its plan.

Parsons (1990: 172-180) argues against the ontological difference saying that even if the imperfective sentence *I am writing the article* does not imply that the article will be finished once, the part of the article already written is an actual object and can be referred to by the expression *the article*. Parsons calls these kinds of objects *unfinished objects*. Parson is undoubtedly right in saying that some kind of an object already exists during the writing process, and he may also be right in claiming that this object can be referred to by the same noun phrase as the intended finished object would be. But this does not necessarily mean that the entity referred to in the imperfective variant or the perfective particle verb construction is indeed this unfinished object.

I suggest that it is usually possible to interpret the theme of the verb as referring to an unfinished object, while it is also possible to interpret it as

referring to something other than an actual entity, namely, an intended entity. The former case represents a change-of-state event, the latter case a creation (or 'becoming available') event. In the discussions below, I will focus on this "creative" interpretation of verbs. Therefore, I will assume that the referential expressions of natural languages may refer to abstract counterparts of the actual objects of the real world: the plan, the intention or the possibility of their existence. I will use the notion of *intentional entities* as opposed to actual entities without going into details here concerning their philosophical relevance.

4.4.1 Kálmán and Varasdi (2005): specificity based on intentionality

Kálmán and Varasdi (2005) revive Brentano's (1995) concept of intentional entities in connection with the particle verb and the imperfective forms of Hungarian DE-verbs. They say, following the Kripkean (1959) formulation, that "a process is associated with an intentional object iff all its culminations fall into the partition of possible worlds in which the entity in question actually exists". The primary goal of their work is to modify the notion of specificity in such a way as to cover all the contexts in which a particle plus DE-verb can be used. As mentioned above, the specificity requirement of particle verbs (É. Kiss 1995, Kálmán 1995), as opposed to the post-specificity requirement of DE-constructions, is widely held, although there are examples like (28) where the object of the particle verb lacks an antecedent set which it could be a member of, furthermore it is not clear what is the entity the object refers to:

(28) *Kirúgtak,   mert   nem írtam   meg egy szerződést.*
      fired-they-me because not wrote-I PRT a   contract-ACC
      'They fired me because I didn't write a contract'
      *'They fired me because I wrote no contract'
                                    (Kálmán and Varasdi's example (4))

Therefore, Kálmán and Varasdi suggest the following definition for specificity: "a reference to an entity is specific iff it presupposes […] the existence of an intentional entity the actualization of which could be the entity in question".

The advantage of their approach, in my view, is that it ties together two observations: (post-)specificity effects and the effect of intentionality. A serious disadvantage, however, lies in the fact that, in contrast to the verb *megír* 'PRT-write', its negated counterpart *nem ír meg* 'not write PRT' turns out to behave as an intensional verb, with its internal argument referring to an entity outside the actual world, namely, to an instantiation of the intentional entity in a

possible world where the event *megír* 'PRT-write' would culminate. A situation in which the verb and its negated version have different intensional properties is not what we want to obtain.

My solution to this problem is to define intentional entities independently of possible worlds. I postulate the set of intentional entities as a subset of the universe of the extensional model. This subset and the subset of actual entities are disjoint and their union constitutes the universe. In this respect, I follow Piñón (2005, 2008), who extends the universe of the traditional semantic analysis of verbs of creation with templates. I do not adopt the details of his analysis, however, which exploits the notion of "incremental" and "created" thematic relations (in the spirit of Krifka 1992).

Summing up, the present proposal builds intentional entities into the semantic representation in the following way. Verbs may have either an actual or an intentional theme. In the first case, they describe a change of state, and the internal argument refers to the actual object either finished or unfinished, depending on the aspect of the sentence. This is the case of affected objects. In the second case, which contains effected objects, we speak about creation in a narrower sense: a process aiming at the instantiation of an intentional entity takes place (and maybe culminates) in the actual world. The internal argument refers to this intentional entity in the imperfective and the particle verb constructions. DE-constructions are established when (i) the theme is an intentional entity but (ii) the internal argument refers to the actual entity which is its instantiation. Before going into this issue in detail, a brief clarification of the difference between intensional and intentional contexts is in order here.

4.4.2. Intensionality versus intentionality

At first glance, intensional verbs seem to be DE-verbs, cf. (29a). However, an important difference is that in the usual DE-constructions the existence of the referent of the object follows, while in intensional cases it does not.

Following Larson (2001), I tentatively assume that intensional verbs have clausal complements (the bracketed part of sentence (29a)), which refer to propositions. These propositions embed the entity referred to by the object. The fact that the DPs do not introduce persistent discourse referents is a consequence of their embeddedness. In contrast real DE-verbs have an entity argument.[18]

(29) a. *Ígértem [$_{SC}$ egy/*a kiskutyát   Marinak]*.
          promised-I a/   the puppy-ACC Mary-to

'I promised a/the puppy to Mary.'
  b. *Vettem egy/*a kiskutyát   Marinak.*
     bought-I a/   the puppy-ACC Mary-to
     'I bought a/the puppy to Mary.'

4.4.3 Arguments for the actual/intentional distinction

    1. The verb plus object pairs in example (30) demonstrate that one and the same event represented by one and the same verb may be expressed either by reference to the actual object, which is the affected theme of the event – see the first examples, or by reference to the intentional entity – see the second examples.

(30) *veri a tojást / a habot* ' whip the egg / the cream'; *őrli a búzát / a lisztet* 'grind the wheat / the meal'; *fúrja a falat / a lyukat* 'drill the wall / the hole'; *olvasztja a jeget / a vizet* 'melt the ice / the water'; *kavarja a levest / a tésztát* 'stir the soup / dough'

    2. I will use deictic expressions in order to refer to discourse external actual objects (*az a buli* 'that party'), and DPs modified by the adjective *tervezett* 'planned' to refer to plans (*a tervezett buli* 'the planned party'). Whereas the DE construction in (31c) is only felicitous with the actual *az a buli*, the particle verb construction in (31b) and the imperfective in (31a) are felicitous with *a tervezett buli*, denoting the intentional object.

(31) a. *Szervezem *azt   a bulit / a   tervezett bulit.*
      organise-I this-ACC the party / the planned party-ACC
      'I am organising this / the planned party.'
   b. *Megszerveztem ?azt   a   bulit / a   tervezett bulit.*
      PRT-organised-I this-ACC the party / the planned party-ACC
      'I organised this / the planned party.'
   c. *Szerveztem azt   a bulit / *a   tervezett bulit, emlékszel.*
      organised-I that-ACC the party / the planned party-ACC
      'I organised that / the planned party, do you remember.'

    The issue of how the theme argument of the verb can be different from the thematic argument of the DP in DE-constructions, namely, the former one is an intentional, while the latter one is an actual entity, will be addressed in the next section.

4.5 Instantiation and identity

4.5.1 Noun phrases as nominal predicates

Inspired by Bach's idea mentioned in 3.2, I now address the following question: In what sense can the syntactic argument DP correspond to a relative clause? The conjunctivist representation of the *D + NP + case marking* concatenate signifies the following conjunct: $p_u(x_1)$ & $noun(x_1)$ & $\Theta(e, x_2)$. In the course of constructing the meaning of the sentence, the question is how the first two conjuncts characterize the thematic argument x_2 of the verb. I claim that they correspond to the four types of nominal statements. According to Higgins's (1973) fourfold categorization, there exist predicative, identificational, specificational and identity statements. Example (32) shows that there are exactly four ways in which a verb can combine with its theme argument. According to what was said above, the DE-construction in (32d) is available only in the case of creative events (i.e., when the verb combines with an intentional theme), hence the theme argument of the verb is assumed to be intentional in all the four cases. $\hat{x}$ stands for variables representing intentional entities as opposed to actual ones. The formulas only show the conjuncts contributed by the object DP. Example (32a) is the case of incorporation studied by Farkas and de Swart; the unification of the bare arguments ($unif(\hat{x}_1, \hat{x}_2)$) corresponds to the predicational statement (33a) without a discourse referent. Example (32b) is the ordinary case; the theme argument is unified with an argument related to a discourse referent ($unif(\hat{x}_1, \hat{x}_2)$ *and* $p_u(\hat{x}_1)$); this corresponds to the identificational statement (33b). Example (32c) is the case of exhaustive focus, which has been identified as a specificational statement by É. Kiss (2006d), cf. (33c). In this case not only the thematic arguments but also the two discourse referents are unified ($unif(\hat{x}_1, \hat{x}_2)$ *and* $p_u(\hat{x}_1)$ *and* $p_v(\hat{x}_2) \rightarrow u=v$); the presence of *v* is due to the presupposition of specificational statements. And finally, the DE-construction (32d) and the identity statement (33d) remain. It is natural to raise the question whether they are related.

(32) a. *János [házat] épít.*   b. *János építi [a házat].*
          John house-ACC build.   John build the house-ACC
          'John is building a house.'   'John is building the house.'
          ...$house(\hat{x}_1)$ & $\Theta_{TH}(e, \hat{x}_2)$ ...$p_u(\hat{x}_1)$ & $house(\hat{x}_1)$ & $\Theta_{TH}(e, \hat{x}_2)$

c. *János [a házat]$_F$ építi.*   d. *János épít [egy   házat]*
   John   the house-ACC build.   John   build   a   house-ACC
   'It's the house that John is building.' 'John will build a house.' [19]
...$p_u(\hat{x}_1)\&house(\hat{x}_1)\&\Theta_{TH}(e,\hat{x}_2)\&p_v(\hat{x}_2)$ ...$p_u(x_1)\&house(x_1)\&\Theta_{TH}(e,\hat{x}_2)$

(33)   a. predicational   b. identificational
         Amit Tádé épít, az [ház]   *Ez, amit   Tádé épít, [a   ház].*
         which T   build that house   this which T   build the house
         'What Tádé is building is a house.'   'This (object), which Tádé is
                                                     building, is the house.'

       c. specificational   d. identity
         Az [a   ház]$_F$, amit Tádé épít.   *Amit   Tádé épít, az [egy ház].*
         that the house which T build   which T   build that the house
         'That is the house   'What Tádé is building is a house.'
                that Tádé is building.'

4.5.2 The identity relation of natural language corresponds to instantiation

Assuming that the translation of the natural language predicate *identical* into the formal language is a two-argument relation and both arguments are entities, in a sentence like *DP$_1$ is identical to DP$_2$* the co-reference of *DP$_1$* and *DP$_2$* would violate Condition C. Hence, the referents of the DPs have to be different entities. At the same time, this sentence forms a contingent statement instead of being a contradiction asserting the identity of two different entities. My proposal is that pairs consisting of an intentional entity and its instantiation are good candidates for fulfilling the *identical(x,y)* relation of natural language. They are ontologically not identical but near enough to be equated given the imprecision of natural languages. Obviously, the translation of the natural language predicate *identical(x,y)* into a formal language will differ from logical identity; it will be what I have referred to as instantiation.[20] The idea of the previous subsection that the four possible ways of argument realisation in (32) correspond to the four types of nominal predicates is completed by the claim that the post-specific arguments of DE-constructions are realized via identity statements. In the next subsection 4.5.3, I demonstrate the connection between identity and post-specificity.

4.5.3 The connection between identity statements and post-specificity

The difference between (33a) and (33d) or between (34a) and (35a) is considered to be an irrelevant optional variation not discussed in the literature. Nominal predicates with or without the indefinite article are equally treated as predicational. The idea that the indefinite DP is a property denoting expression appears in a number of places in the DE-literature (see McNally 1998, and for Hungarian Bende-Farkas 2002a, Piñón 2006a and Kálmán and Varasdi 2005). Example (35), however, demonstrates the discourse-referent-introducing property of the indefinite DP predicate as opposed to the bare NP predicate in (34). (34b) is an infelicitous continuation of (34a) as the bare NP *őrült* 'mad' does not introduce a discourse referent referring to the husband. In contrast, after the sentence in (35a), the same sentence is acceptable.[21]

(34) a. *A férjem őrült.*
        'My husband is mad.'
     b. *#Ez az őrült megszökött a kórházból.*
        'This mad guy ran away from the hospital.'
(35) a. *A férjem egy őrült.*
        'My husband is a mad guy.'
     b. *Ez az őrült megszökött a kórházból.*

4.6 Summary

The aim of this section was to present the individual components of my proposal (specificity, intentionality, noun phrases as nominal predicates, instantiation as identity) and motivate their use. The conclusion of this section is that the identity relation of natural language corresponds to the instantiation relation of the language of logic. In the proposed discourse model, instantiation equals the unification of an intentional and an actual thematic argument. A DP is post-specific iff the discourse referent it introduces refers to an actual entity that is identified with an intentional one in the sentence. In the examples of this section, the intentional entity was the theme argument of the verb. Let's now turn to DE-constructions with obligatory adjuncts.

5. The Case of Obligatory Adjuncts

5.1 Arguments for the adjunct status of beneficiaries, sources and goals

The classic division between arguments and adjuncts, causing problems in a number of languages, is rather problematic in Hungarian as well. Various alternatives have been suggested in the literature. Kálmán (2006) argues for a continuous scale the two extremes of which are these two notions. Rákosi (2006) does not question the linguistic relevance of discrete categories but, in addition to arguments and adjuncts, he assumes a third category of thematic adjuncts. Gábor and Héja (2006) maintain the argument/adjunct distinction but are radical in claiming that iff the morphological case marking of a constituent determines the thematic role of that constituent for a whole predicate class than the constituent is an adjunct.

In the generative framework, a purely structural distinction is at hand: arguments originate in a complement or specifier position of the layered VP, while adjuncts are adjoined. However, Larson (1988) argues that postverbal adverbials are positioned inside the VP independently of their argument status. Thus the semantic distinction of arguments and adjuncts does not necessarily map to syntax.[22]

What I am going to focus on in this section is the relevance of aspectual information to determining argument status. Tenny (1994), among others, claims that playing an aspectual role is a sufficient condition of being an argument. Rappaport Hovav and Levin (2001) introduce a correspondence between subevents and arguments in syntax, claiming that there must be at least one argument XP per subevent in event structure. In contrast to this view, Reinhart's (2002) theta theory does not refer to aspectual information at all. The next subsection will demonstrate that constituents with an event structural role do not necessarily qualify for argument status in other traditional tests.[23] The tests are based on semantic, morphological and syntactic properties. The general question of the status of aspectual arguments is of course far beyond the scope of this chapter; in what follows I intend to raise the possibility of a more restricted notion of argumenthood as usual, and show that this notion, as well as such obvious argument tests like semantic selection, result in the adjunct status of adverbials licensing DE-constructions. I do not claim any of the tests to represent the right defining property of argumenthood, my purpose is only to demonstrate that in many respects the adverbials under scrutiny here do not seem to form a natural class with the most typical arguments (agents, themes, etc). Finally, I conclude in 5.2 that obligatoriness as a cardinal test of argumenthood is ruled out.

Let us start with looking at the behavior of (a) goal, (b) beneficiary, (c) source and, as a reference point, (d) purpose phrases under some traditional argument tests.

Test 1: Semantic selection. The theme of the verb *eat*, for example, is an argument since there is a requirement that it has to refer to an edible object: *John ate an apple* vs. **John ate a table*. The examined adverbials are not selected; on the contrary, their thematic role can vary. E.g. in (36b) the beneficiary can be replaced a goal (more precisely, orientation of trajectory).

(36) a. *Ütöttem   egy tojást   a   serpenyőbe / Lenke fejére*.
       cracked-I an egg-ACC the pan-into   Lenke head-her-onto
       'I've cracked an egg into the pan / onto Lenke's head.'
   b. *Dobtam egy csontot   a Bodrinak /   a bokor felé*.
      threw-I a   bone-ACC the Bodri-DAT the bush-towards
      'I threw a bone to Bodri / towards the bush.'
   c. *Szakítottam egy virágot a   bokorról / az   asztaldíszről*.
      plucked-I   a   flower the bush-from the centerpiece-from
      'I plucked a flower from the bush / from the centerpiece.'
   d. *Hegyeztem egy ceruzát   a levélíráshoz /   a szurkáláshoz*.
      sharpened-I a   pencil-ACC the letter-writing-for the prickling-for
      'I sharpened a pencil for the letter-writing / for the prickling.'

Test 2: Compositionality. According to Komlósy (1994), a traditional distinction between arguments and adjuncts is the following. In the case of adjuncts, their semantic contribution to the meaning of the sentence can be calculated from their morphological components. In contrast, the thematic role of an argument cannot be determined without the predicate that it is an argument of. E. g.: *Pálban* means 'in Paul'. *Pálban* is an adjunct in *Felszívódik az alkohol Pálban* 'Alcohol is absorbed in Paul' but an argument in *Péter megbízik Pálban* 'Peter relies on Paul'. According to Zaenen and Maling (1984), Svenonius (2002), Woolford (2006) and others, in addition to the division between structural and non-structural Case, Case theory must distinguish two kinds of non-structural Cases: lexical Case and thematic Case.[24]. Adopting this classification, Komlósy's test can be reformulated as refuting the existence of thematically case marked arguments. According to this test, all the four types of adverbials in question prove to be adjuncts as their morphological case marking refers to their thematic roles.

Test 3: Iterability. Adjuncts are iterable. This test is not decisive for beneficiaries – see (37b), while the other three types of adverbials test as

adjuncts. Notice that both test 2 and test 3 show the locative of *live*-type verbs to be adjuncts: *He lives in Budapest in a two bedroom flat near the Danube.* [25]

(37) a. *Ütöttem egy tojást a   serpenyőbe a rántottába*
      cracked-I an egg-ACC the pan-into the scrambled-eggs-into
      'I've cracked an egg into the pan into the scrambled eggs.'
   b. **Dobtam egy csontot   a kutyáknak   a Bodrinak.*
      threw-I a   bone-ACC the dogs-DAT the Bodri-DAT
      'I threw a bone to the dogs to Bodri'
   c. *Szakítottam egy virágot   a bokorról   a levelek alól.*
      plucked-I a   flower   the bush-from the leafs   from-beneath
      'I plucked a flower from the bush from beneath the leafs.'
   d. *Hegyeztem egy ceruzát   a levélíráshoz   délutánra.*
      sharpened-I a   pencil-ACC the letter-writing-for afternoon-for
      'I sharpened a pencil for the letter-writing for the afternoon.'

     Test 4: Syntactic extraction. The argument or adjunct status of a constituent can be ascertained by whether it is an island for extraction. The complements of an argument can be extracted – (38a), in contrast to those of adjuncts – (38b).[26] However, in Hungarian extraposition from a noun phrase bearing a non-structural case is obligatory (cf. É. Kiss 2002:178), so this test is inapplicable.

(38) a. *Kivel $_i$ unod   [a   levelezést t$_i$]?*
      with-who detest-you the correspondence
      'With whom do you detest the correspondence?'
   b. **Kivel $_i$ hegyeztél   egy ceruzát   [a levelezéshez t$_i$]?.*
      who-with sharpened-you a   pencil-ACC the correspondence-for
      'With whom did you sharpen a pencil for the correspondence?'

     On the basis of the tests above, we can conclude that the four types of adverbials under scrutiny are adjuncts. The odd one out is the beneficiary, its non-iterability makes it similar to arguments, but since iterability is not a necessary but only a sufficient condition of adjuncthood, it is not a real counterexample. I also remind the reader of point 3 of my critique of the 'generalized goal argument' analysis in 2.3.1: the fact that the state represented by the beneficiary is not necessarily implied by the sentence (cf. (18)) is a strong argument against analysing beneficiaries as generalized goals.
     A further basic difference between "traditional" arguments and our adverbials is the following. The argumenthood of a participant of the event can be represented by a two-argument semantic relation: $\Theta(e, x)$, where e refers to

the event variable and x to some entity. The adverbials represent states, thus they are called *state adverbials*[27]. But the relation of the event and these states cannot be exhaustively represented by the above two-argument relation since these states are also related to the theme argument, namely, they describe some state of the theme. Maintaining that morphological case suffixes realise two-argument thematic relations, the following distinction has to be made. If a DP refers to a participant of the event then the case marking on the DP corresponds to a relation between the event and the participant entity, e.g., *Katit* 'Kate-ACC' $\rightarrow \Theta(e, Kati),$ while if a PP or a case-marked DP[28] stands for a state adverbial, then the case marking corresponds to a relation between the theme argument and an entity, e.g. *Katinak* 'Kate-DAT' $\rightarrow BEN(x_{th}, Kati)$.

The conclusion is that arguments and the four types of adverbials in question do not constitute a natural class if either aspectual role, or the traditional criteria of selection and iterability are postulated as the definitive property of argumenthood.

5.2 The obligatoriness of adverbial adjuncts in DE-constructions

The obligatoriness of a constituent is a traditional diagnostic for argumenthood. But in 5.1 we have already seen that the obligatory adverbials licensing DE-constructions have turned out to be adjuncts on the basis of several other diagnostics. Hence the counterexample of adjuncts of DE-constructions rules out obligatoriness from among argument tests.

The presence of these obligatory adjuncts is not prescribed by the verb but is required by the information organisation of the sentence. They provide the implicit intentional entity that is essential for obtaining the post-specific reading. If a verb can be interpreted as having an intentional theme, the very same adverbials that are obligatory with other verbs are optional with it. The postulation of argument status for these adverbials would result in unclear conditions concerning their omittability.

Subsection 5.3 is dedicated to the semantics, and 5.4 to the syntax of these adverbials. 5.5. examines sources and locatives.

5.3 *Semantic analysis*

Previous accounts of DE in Hungarian (subsection 2.2) and the present analysis converge on the claim that the obligatory adverbials of DE-constructions are, semantically, predicated of the theme.

As the universe of our model contains intentional entities, there must also be state adverbials predicating of them. The argument of the state adverbial has to be unified, as usual, with the thematic argument of the noun of the corresponding syntactic argument. If the former entity is an intentional one while the latter is an actual one, then the unification means instantiation, and results in post-specific interpretation, i.e. the sentence is a DE-construction.

If a state adverbial predicating of an intentional entity is present, even verbs the theme argument of which cannot be interpreted as an intentional entity may occur in DE-constructions. That is why *dob egy csontot* 'throw a bone' or *üt egy tojást* 'crack an egg' may appear in a DE-construction, e.g., in (39b), although they could not establish a DE-construction on their own, see (39a). In the presence of the adverbial, the unification of an intentional and an actual entity is possible and establishes the identity relation.

(39) a. **Dobtam   egy csontot.*
           threw-I-(NOM) a   bone-ACC
   $\exists e \exists x \exists y$ *[throw(e) & $p_u(x)$ & $\Theta_{AG}(e,x)$ & $p_v(y)$ & bone(y) & $\Theta_{TH}(e,y)$]*

        → no intentional entity → no presentational reading
      b. *Dobtam   egy csontot   a Bodrinak.*
           threw-I-(NOM) a   bone-ACC the Bodri-DAT
   $\exists e \exists x \exists y$ *[throw(e) & $p_u(x)$ & $\Theta_{AG}(e,x)$ & $p_v(y)$ & bone(y) & $\Theta_{TH}(e,y)$ & …*

        …& $p_w(z)$ & $\Theta_{BEN}(\hat{y},z)$]
        → *unif($\hat{y}$,y)* → presentational reading

5.4 Syntactic analysis

I tentatively assume that all state adverbials originate inside an argument DP as adjuncts[29]. That is, state adverbials, among them the obligatory adverbials discussed in this chapter, are surface adjuncts originating inside the DP of their logical subject.

Another possible analysis of state adverbials is that they are predicates of a small clause. The small clause has to be either a complement of the main verb or an adjunct. In the former case (see den Dikken 2006), the verb has to take a propositional argument, since small clauses represent semantic propositions, e.g., *threw [SC a bone to the dog]*. This line of analysis is also attractive as it reflects the spirit of my account, namely that the argument of the verb is not simply an actual entity but something which is able to encode purposes, plans and intentions underlying the phenomenon of presentation. Assuming an adjunct SC with a

controlled PRO subject is also possible. Choosing between the two analyses is left for further research.

5.5 Adverbial types

5.5.1 Sources

The present analysis claims that state adverbials, and sources as well, originate in the theme DP, that, is below the PredP projection. Surányi, in contrast, argues in Chapter 3 for the hierarchy in (40), i.e., sources are base generated in the sentence structure higher than the so-called 'verb-modifier' (VM) position (i.e., Spec,PredP), on the basis of the fact that no source particles are attested in the VM, e.g., *belőlevesz a tálból* 'from.it(=PRT)-take the bowl-from' in contrast to goal particles, e.g., *beletesz a tálba* 'into.it(=PRT)-put the bowl-into'. However, since full source DPs/NPs may appear in VM, namely, in the so-called stress avoiding constructions (Komlósy 1989), e.g. *valamiből*$_{VM}$ *áll / készül* 'be made of / consist of', *valahonnan*$_{VM}$ *van/származik* 'be from', one is still obliged to accept an analysis where sources are base generated below the VM.

(40)   […Temp/Subj$_{agentive}$/Subj$_{experiencer}$/Source/OOT/Stative$_{external}$…[VM…
…[…Stative$_{internal}$/Route/Goal/Theme/Oblique…]]]

Although the study of dependencies between temporal and information structure does not pertain to the main concerns of this paper, I think that the universally attested source/goal asymmetries have their roots in this dependency. That is, I basically agree with É. Kiss's (2002) account, challenged by Surányi (this volume), that the asymmetry is due to the role of VM elements in determining viewpoint aspect. My explanation in a nutshell is the following. The VM position represents the main assertion of the sentence. In a case when a goal expression is in VM, the persistence of the goal state implies the preceding event leading to that state but the persistence of a preliminary state expressed as a source does not imply the existence of an ensuing event. That is why sources in the VM position are odd. But this also explains why they can still appear in stative sentences (e.g., in the above mentioned stress avoiding constructions) or, in fact, in eventive sentences if it is indeed only the source state that is relevant, e.g. (41).

(41)   *A: Milyen idő van a Balatonnál?*

'What is the weather like at the Balaton?'
B: *Lenke épp onnan*$_{VM}$ *jött, ő t kérdezd!*
Lenke just from.there(=PRT) came
'Lenke has just arrived from there, ask her!'

5.5.2 Locatives

Locative states overlap with the main event hence, in accordance with the temporal reasoning above, they imply the persistence of the parallel event. It follows that locatives and locative particles may appear in VM, which is predicted by Surányi's hierarchy as well (cf. the lower stative internal locative position). Locatives have been excluded from my analysis so far since their adjunct status is usually not a matter of debate. However, Maleczki's example in (17) was mentioned on a par with the other adverbials which license DE-constructions. The present analysis can be extended to locatives without any difficulty. That is, a locative adverbial may also have an intentional argument, and this can be instantiated by an actual argument DP.

Locative DE-constructions are different from the others as the new discourse referent can be introduced by the external argument of an atelic event as well – see (17).

6. Conclusion

In this chapter, the status of adverbials appearing obligatorily in DE-constructions was explored. DE-constructions were defined in general as those in which the internal argument is post-specific. (Post-specificity means non-specificity (unavailability in the discourse past) and the introduction of a new discourse referent (availability in the ensuing discourse).) This broader definition has two advantages. (i) The marked cases of definites appearing in DE-constructions and (ii) the constructions in which it is clearly the adverbial that licenses the post-specific interpretation can also be covered by the analysis. The former becomes possible by establishing the category of non-specific definites on the basis of the slightly modified notions of specificity and definiteness. The latter becomes possible in an antilexicalist approach where the DE phenomenon is not the result of lexical properties or selectional criteria of certain lexical entries (e.g. the main verbs).

The semantic claim is that the referent of the post-specific DP is the instantiation of an intentional entity. The logical relation of instantiation

corresponds to the (overt or covert) identity relation of natural languages, i.e., the basis of DE-constructions is an identity relation.

The adverbials are obligatory iff the intentional entity is introduced by them. Syntactically, they are surface adjuncts originating inside the internal argument.

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[1] I would like to thank Katalin É. Kiss, Ágnes Bende-Farkas and Márta Maleczki and Barbara Ürögdi for discussions and comments on this paper. And special thanks are due to Barbara Ürögdi for helping me to improve the English of this chapter.

[2] The judgments vary from speaker to speaker, examples (1-4) reflect my own idiolect, but all speakers will find similar constructions which require the adverbial for the non-specific reading of the DP.

[3] List contexts (Rando and Napoli 1978), reminder contexts (Lakoff 1987; Lumsden 1988; Ward and Birner 1995), and presentative superlatives (Holmback 1984) are the typical examples. List readings are exemplified by B's answer in (i), reminder readings are used in cases where A reminds B of an already acknowledged reason for not doing X, one that A seems to have momentarily forgotten, and A responds, "*Well, yes, there's always that*", and an example of presentative superlatives is shown in (ii).

(i)   A: *How do I get to UCLA from here?*

       B: *Well there's always the bus, but it doesn't run very often*.

(ii)   *Wow! There's the biggest dog I've ever seen in the yard!*

[4] The use of the notion of information structure will not be restricted in this chapter to the functions of topic and focus, and will not be understood either as a structural or as a pragmatic notion but extends to all syntactic, semantic and pragmatic phenomena that contribute to information organization in general. For example, the matter of introducing persistent discourse referent into the discourse (i.e., presentation) is also involved and, as I will argue, this has a semantic basis.

[5] A clause is neutral if it contains no focus-moved constituent and no negation – see Chapter 2 of this volume.

[6] In contrast, pure non-specifics appearing in intensional contexts, e.g. (i), or in experiential aspect, e.g. (ii), cannot serve as antecedents of ensuing anaphora, which is exemplified by the (b) examples.

(i)   a. *Ígértem   egy biciklit$_k$ Marinak*.   b. #*Ma azzal$_k$ ment iskolába*.
          promised-I a   bicycle-ACC Mary-DAT   today that-with went school-to
          'I promised a bicycle$_k$ to Mary'   Today she rode it$_k$ to school.

(ii)   a. *Néztem már meg két filmet$_k$ egy nap*.   b. #*Nagyon   tetszettek Ø$_k$*.
          watched-I already PRT two film-ACC a day   very.much pleased   they
          'I have already watched two films a day.'   'I liked them very much.'

[7] I will refer to DE-constructions containing definite DPs as the deictic type, following Lambrecht's (1994) terminology, although strictly speaking the DP does not have to be deictic but may refer to uniquely identifiable entities as well.

[8] According to Keenan (2003), a determiner is strong iff non-intersective. A determiner *D* is intersective iff for all *A, A', B* and *B'* subsets of the domain *E*: if $A \cap B = A' \cap B'$ then *D(A,B)=D(A',B')*.

[9] For example, Szabolcsi (1992) gives the following context for the use of the tautological sentence *Van a ló* 'There is the horse':

(i)   *Most, hogy az autót ellopták, nem tudom, hogyan szállítsuk a gyümölcsöt. – Hát, van a ló*.
        'Now that our car has been stolen, I don't know how to carry the fruit. – Well, there is the horse.'

[10] An example for this type is the following:

(i)   *Telefonált János*.
        phoned   John
        'John has phoned.'

I have to mention that the connection of presentation and theticity, which is maintained by Lambrecht (1994) and others, only holds in the above case but not in the case of DP presentation, which is examined in this chapter.

[11] It follows from what has been said so far that DE-constructions are the only means of presenting a DP. At the same time, one can construe contexts where non-DE-constructions seem to introduce a discourse referent. In spite of the generally observed specificity effect (É Kiss 1995, Kálmán 1995), i.e. that the particle verb counterparts of DE-verbs (like *meg-érkezik* 'PRT-arrive' in (i)) normally require a specific internal argument, the DP seems to be presented in (i). It is worth noting, however, that two types of presentation – a semantically based one and a pragmatically based one – can be distinguished. The former is the subject of this chapter, while the latter covers cases of accommodation, e.g. (i). The sentence containing a particle verb triggers anaphoric presupposition (Bende-Farkas 2002b) which can be accommodated even if the discourse referent, in reality, is new. In contrast, a case of semantically based presentation does not presuppose the existence of the presented referent.

(i)   *Meg-érkezett egy vonat*.
        PRT-arrived a   train
        'A train arrived.'

[12] It is interesting that Enç does not fail to note (Enç 1991: fn. 18) that her functional analysis of existential sentences is offered not as a substitute for a grammatical explanation but rather as a possible explanation for why grammars have evolved so as to restrict existential sentences in this way.

[13] In syntax, I will refer to this position as spec,PredP following É. Kiss (2002).

[14] It is worth noting that conjunctivism is similar to the Minimalist approach in syntax in that both attempt to uncover the true structure of language by characterizing it within remarkably weak formal systems.

[15] This remark calls our attention to pragmatic accommodation effects.

[16] These uses of deictic expressions in presentational sentences in Hungarian are different from the so-called 'indefinite *this*' in English (Lambrecht 1994:83):

(i)   *I met this guy from Heidelberg on the train*.

In English, the speaker signals his intention to add further information about the person in question by using *this*, while the referent is a not-yet-identifiable person. In contrast, the referents of Hungarian non-specific definites have to be identifiable also by the addressee, although discourse externally.

[17] Necessarily quantificational DPs are unacceptable in DE-constructions unless they quantify over properties (McNally 1998), cf. (i) and (ii).

(i)   **There was every doctor at the convention*.

(ii)   *There was every kind of doctor at the convention*.

These expressions carry existential presupposition, hence cannot be non-specific, and cannot occur in DE-constructions, in contrast to some definites. The acceptability of (ii) is due to the fact that onlys the existence of the kinds but not the existence of individuals of that kind is presupposed.

[18] A small clause analysis is also possible in the case of (29b), I will turn back to it in subsection 5.4 in passing. However, the contrast in the availability of discourse referents yields an argument against the parallel analyses of (29a) and (29b).

[19] In English there is no difference between (32a) and (32d), or between (33a) and (33d), as bare NPs cannot be predicational.

[20] The famous example of an identity statement '*The Morning Star is (identical to) the Evening Star*' suggests that not only an intentional entity and its instance but also two intentional entities may be identical. However, this case has no importance in the description of presentational constructions.

[21] Russell (1919) has this to say about the difference between bare NPs and indefinites. "The proposition *Socrates is a man* is no doubt 'equivalent' to *Socrates is human*, but it is not the very same proposition. The *is* of *Socrates is human* expresses the relation of subject and predicate; the *is* of *Socrates is a man* expresses identity." (Russell 1919: 172, cited by Kádár 2006) In my view, it is not the verb *be* but the presence or absence of discourse referents and their informational status (given or new) that is burdened with these meanings.

[22] More precisely, it is circumstantial adverbials that are under discussion here. The mechanism of predicate adverbial and sentential adverbial placement is accounted for, e.g., by É. Kiss (Chapter 1); there, adjunct status is reflected by syntactic adjunction in accordance with Ernst's (2002) semantically motivated theory and in contrast to Cinque's (1999) hierarchy according to which these adverbials would occupy specifier positions.

[23] This fact obviously leads to the question whether complex event structure is indeed encoded by the verb or comes into being first in the sentence. In chapter 10, Kiefer argues for the former view, while this chapter is written in the spirit of the latter one. A thorough discussion of this matter, however, is beyond the scope of this chapter.

[24] Structural case (subject, object, indirect object) is determined by the syntactic position of the argument. Lexical case is prescribed in the lexical entry of the predicate, and, as a consequence, the corresponding case morpheme is just a form designating a constituent for a certain thematic role without contributing to the meaning on its own. Thematic case is associated with particular thematic roles.

[25] The locative accompanying *live*-type verbs, and thematic arguments in general, are problematic for tests 2 and 3, i.e., they behave as adjuncts. Their argumenthood, which is widely held, is based on semantic selection and obligatoriness. It is argued in this chapter that in the case of adverbials licensing DE, obligatoriness does not test argumenthood. As the matter of locative arguments is clearly beyond the scope of this chapter, I only refer to the possibility of analysing the locatives of *live*-type verbs on a par with the adverbials under scrutiny here.

[26] In Hungarian it is hard to find a good candidate for extraction from noun phrases. PP complements, are problematic as they cannot appear inside the NP since they would intervene between the case affix and the hosting noun head. Thus, there is no direct evidence for the complement status of such PPs, but the contrast shown in example (38) provides indirect evidence by showing that the PP does not behave like a high adverbial but like an extraposed one.

The dative case marked possessor is typically used for testing but it is also problematic. Ürögdi (2003), on the basis of extracted possessors, concludes that the associates of verbal particles, e.g. goals, are arguments, see (ia), while other goals are adjuncts and form an island for movement, see (ib). If one uses a complement PP in the test, it turns out that all goals, even the associates of verbal particles, are adjuncts, (iia-b) vs. (iic).

(i)   a. *Kinek$_x$ írtad   rá   a   verset   a t$_x$ sírkővére?*
          who-DAT wrote-2SG onto-3SG the poem-ACC the gravestone-onto
          'On whose gravestone did you write the poem?'
       b. **Kinek$_x$ írtad   meg a   verset   a t$_x$ sírkővére?*
           who-DAT wrote-2SG perf the poem-ACC the gravestone-onto
          'For whose gravestone did you write the poem?'

(ii)   a. **Melyik országról$_x$ írtad   rá   a   nevedet*
          which country-about wrote-2SG onto-3SG the name-your-ACC
          [a   könyvre t$_x$]?
          the book-onto
        'About which country did you write your name on the book?'
       b. **Melyik országról$_x$ írtad   meg a   bevezetőt*
          which country-about wrote-2SG perf the introduction-ACC
          [a   könyvbe t$_x$]?
          the book-into
        'About which country did you write the introduction to the book?'
       c. *Melyik országról$_x$ írtad   meg a   könyve?*
          which country-about wrote-2SG perf the book-ACC
        'About which country did you write the book?'

[27] State adverbials constitute a broader class than depictives. Depictives are state adverbials where the described state and the main event of the sentence overlap in time.

[28] On a discussion of Hungarian case suffixes and Ps, see Kádár (Chapter 7 this volume).

[29] The adverbials studied in this chapter do not seem to be complements of the NP as they are not selected by the N. But at the same time, keeping in mind the idea that the adverbial is the restrictor of the domain of the NP, suggested in 2.3.2 for the case of the coda of English *there*-constructions, the contribution of the meaning of the adverbial to the meaning of the NP is still essential.

Comitative adjuncts: appositives and non-appositives[1]
Dékány Éva

1. Introduction

Expressions involving a comitative adverbial and a plural pronoun as its host DP are ambiguous in Hungarian. In the exclusive reading the comitative is added to the reference of the pronoun, thus in total at least three persons are referred to.[2] In the inclusive reading, on the other hand, the referent of the comitative is not added to the referent of the pronoun, but included in it. Under this reading *we with John,* for instance*,* refers to two persons: John and me.[3]

(1) *(Mi)   Jánossal   kisétáltunk   a   tóhoz.*
     we.NOM John-COM PREV-walk-PAST-1PL the lake-ALLAT
     'We walked to the lake with John.' (exclusive reading)
     'I walked to the lake with John.' (inclusive reading)

In the inclusive reading the most prominent member of the group denoted by the pronoun, whose person feature is the same as that of the pronoun, is termed focal referent. The focal referent in (1) is *I*. The group denoted by the plural pronoun comprises the focal referent and the referent of the comitative phrase (and nobody else), therefore the comitative is also known as completer phrase (Vassilieva 2005).

The aim of this paper is to investigate whether the exclusive and inclusive readings in Hungarian display a strutural difference (cf. Skrabalova 2003 for Czech and Vassilieva 2005 for Russian) or whether non-structural phenomena contribute to their different interpretations (cf. Ionin and Matushansky 2003 on Russian). The chapter proceeds as follows. In section 2 I point out certain syntactic differences between the two readings. Section 3 demonstrates that the Hungarian data pose a serious challenge to some previous claims regarding the inclusive interpretation. In section 4.1 I present my analysis of the exclusive and inclusive readings and argue that the comitative adverbial is an adjunct in both cases. The difference between the two constructions is that in the

inclusive reading the comitative is an appositive, referentially nondistinct from the noun phrase to which it is adjoined. In 4.2 I show how the observed syntactic differences fall out from the proposed analysis. Section 5 concludes the paper.

2. Distributional differences between the two readings

I have identified six cases in which the exclusive and inclusive readings display different behaviour in Hungarian. The first three tests have been adapted from Dyła and Feldman (2003).

Firstly, wh-extraction of the plural pronoun is infelicitous under the inclusive reading.

(2) *Kik   írták   Jánossal a   cikket?*
    who-PL.NOM wirte-PASt-3PL John-COM the article-ACC
    'Which persons wrote the article with John?'
    *'Which person wrote the article with John?'

Wh-extraction of the comitative, on the other hand, is compatible with both the exclusive and the inclusive interpretation.

(3) *Kivel   írjátok   a   cikket*?
    who-COM   write-2PL the article-ACC?
    'Who is the person that you(SG/PL) write the article with?'

If (3) is uttered out of the blue, speakers definitely prefer a reading in which at least three people are involved in the writing event. Given the context given below, however, the sentence can receive an inclusive reading without a doubt.

(4) - Are you working on that article you've mentioned?
    - No, not yet. The director told me that I should find a colleague to
      work with and we should write the article together
    - And who is the person that you(plural) write the article with?(=3)

Secondly, the pronoun and the completer phrase can be focussed together only under the inclusive interpretation. (Focussing either of them on its own is well-formed under both readings.)

(5) [FOC *CSAK MI   JÁNOSSAL*] *mentünk   el   Norvégiába.*
     only we.NOM John-COM go-PAST-1PL preV Norway-ILL
     'It is only I/*us with John that went to Norway.'

(6) [FOC *CSAK JÁNOSSAL*] *néztük   meg a   filmet.*
     only John-COM watch-PAST-1PL perf the film-ACC
     'It is only John with whom I/we watched the film.'

(7) [FOC *CSAK MI*]   *néztük   meg a filmet Jánossal.*
     only we.NOM watch-PAST-1PL perf the film-ACC John-COM
     'It is only me/us that watched the film with John.'

   Thirdly, if a non–identifying relative clause intervenes between the plural pronoun and the comitative then the sentence cannot receive an inclusive reading, only an exclusive interpretation is acceptable.

(8) *Mi,   akik   még sohasem voltunk   külföldön, Jánossal*
     we.NOM who-PL yet never   be-PASt-1PL abroad   John-COM
     holnap   Norvégiába utazunk.
     tomorrow Norway-ILL travel-1PL
     'We have never been abroad, and we are traveling to Norway with John tomorrow.'
     *'John and I have never been abroad, and we are traveling to Norway tomorrow.'

   Fourthly, if the comitative is a non-referential element, as in (9), then the sentence has only an exclusive reading.

(9) *Ti   bármelyik kollegával   jó   csapatot alkottok.*
     you(PL).NOM any   colleague-COM good team   comprise-2PL
     'You(PL) make a good team with any of the colleagues.'
     *'You(SG) make a good team with any of the colleagues.'

   Fifthly, the exclusive reading can be paraphrased in more ways than its inclusive counterpart. Paraphrasing *with X* as *together with X* is OK in both interpretations. With the paraphrases *in the company of X* and *with the help of X,* however, only the exclusive reading is accessible.

(10) a *Jánossal sütöttünk   egy kenyeret.*

John-COM bake-past-1PL a   bread-ACC
'I baked a loaf of bread with John.'
'We baked a loaf of bread with John.'

   b *Jánossal együtt sütöttünk egy kenyeret.*
     John-COM together bake-PAST-1PL a   bread-ACC
     'I baked a loaf of bread (together) with John.'
     'We baked a loaf of bread (together) with John.'

   c *János társaságában sütöttünk egy kenyeret.*
     John.NOM company-POSS.3SG-INESS bake-PAST-1PL a   bread-ACC
     *'I baked a loaf of bread in the company of John.'
     'We baked a loaf of bread in the company of John.'

   d *János segítségével sütöttünk egy kenyeret.*
     John.NOM help-POSS.3SG-COM bake-PASt-1PL a   bread-ACC
     *'I baked a loaf of bread with (the help of) John.
     'We baked a loaf of bread with (the help of) John.

Finally, companions in Hungarian can bear either the Comitative-instrumental (*−val/vel*) or the Sociative case (*−stul/stül*). The Comitative-instrumental case is compatible with both readings (cf. example 1). The referent of a companion bearing the Sociative case, on the other hand, is always interpreted as being added to the referent of the pronoun.[4]

(11) *Ti* [FOC *GYERKESTÜL*] *érkeztetek.*
    you(PL).NOM   child-SOC   arrive-PAST.2PL
    'You(PL/*SG) arrived with your(PL/*SG) child.'

I summarize the observed differences between the two readings below.

Table 1. Syntactic properties of the exclusive and the inclusive reading

	exclusive	inclusive

the host DP can undergo wh-extraction	✓	✗
the host DP and the comitative can be focused together	✗	✓
a non–identifying relative clause can intervene	✓	✗
the comitative can be non-referential	✓	✗
paraphrase *with X* as *together with X*	✓	✓
in the company of X	✓	✗
with the help of X	✓	✗
the companion can bear the Sociative case	✓	✗

3. Hungarian data contra previous proposals

Hungarian data specifically argue against two analyses that have been proposed in the literature.

3.1 The inclusive reading does not involve coordination

Dyła (1988) and Dyła and Feldman (2003) analyse the inclusive reading in Polish as conjunctionless coordination, with *z* being a clitic or a preposition.

(12) *My z Mirkiem* (Dyła and Feldman 2003, p. 1)
    we with Mirek-INSTR
    'we with Mirek/Mirek and I'

Such an analysis does not work for Hungarian, though. Regardless of whether *–val/vel* is treated as the conjunction head itself or a case suffix on the second conjunct, it is unclear why such a coordination is ungrammatical when the first conjunct is a singular pronoun.

(13) a *Ti Jánossal elutaztok.*
    you(PL).NOM John-COM PREV-travel-2PL
    'You(PL/SG) set off on a journey with John.'

b *Te   Jánossal   elutaztok.
   you(SG).NOM John-COM PREV-travel-2PL
   'You(SG) set off on a journey with John.'

The grammatical version of (13 b) has the second person singular verb form *elutazol*. This, in fact, is exactly the opposite of the agreement pattern found in real conjunctions:

(14) a *Te   és János   elutaztok.*
      you(SG).NOM and John.NOM PREV-travel-2PL
      'You(SG) set off on a journey with John.'

    b **Te*   és János   elutazol.*
      you(SG).NOM and John.NOM PREV-travel-2SG
      'You(SG) set off on a journey with John.'

3.2 Focussing and information structure

It has been observed in several languages, including Chilean Spanish, Czech, Polish and Russian, that wh-extraction of the comitative out of plural pronoun + comitative units triggers an exclusive reading. Ionin and Matushansky (2003) account for this general tendency in terms of information-structure. The landing site of wh-movement in Russian is FocP. I&M assume that pronouns are "old information", and since the comitative is interpreted as part of the pronoun, wh-extraction of the completer phrase would result in a 'conflict of information structure' (p. 8.).

   Nevertheless, as pointed out by Vassilieva (2005), wh-extraction of the comitative in the inclusive reading is allowed in Russian and Toqabaqita[5] if the referent of the comitative has already been introduced into the universe of discourse (it is "contextually salient", p. 100).[6] Vassilieva proposes that in such sentences the comitative does not have a focus feature; movement targets the CP projection to check the wh-feature.

   Suppose that I&M's account of extraction facts is on the right track, and it is conflict in information structure that makes wh-extraction of the comitative impossible. The theory then makes the following prediction. If besides wh-movement a language has some other movement types, too,

6

which target [spec, FocP], then those movements should not be able to extract the completer phrase alone. Contrastive focussing in Hungarian involves precisely such a movement. The prediction, then, is that the comitative cannot be focussed without focussing the pronoun, too. (In this case Vassilieva's suggestion is inapplicable, since the comitative unquestionably bears a [+focus] feature, and there is no wh-feature to check anyway.) This prediction is contrary to fact, as in Hungarian the pronoun and the comitative can undergo movement to structural focus position either together or individually. I repeat the relevant example from §2 for the reader's convenience.

(6) [FOC *CSAK JÁNOSSAL*] *néztük*　　　*meg a　filmet.*
　　　only John-COM watch-PAST-1PL perf the film-ACC
　　　'It is only John with whom I/we watched the film.'

The fact that (6) can receive an inclusive reading suggests that 'conflict in information structure' must be avoided in some languages but not in others, or, more plausibly, that some other explanation must be found to account for the ungrammaticality of the Russian (Chilean Spanish, Czech, Polish, etc.) counterpart of (6).

4. The syntax of the exclusive and the inclusive readings

4.1 Structure for the two readings in Hungarian

4.1.1 The exclusive reading

Given that in the exclusive reading the comitative is optional and does not influence number agreement on the verb, there is a general consensus among researchers that it is merged as an adjunct. The adjunction site, however, is a controversial issue. Ionin and Matushansky (2003) argue that the comitative forms a constituent with the associate DP, Skrabalova (2003) and Vassilieva and Larson (2005) favour a VP-adjunct analysis. The two structures are shown in (15), with the subject as the host DP.

(15) a) vP-adjunction　　　　　　　　　　　b) DP-adjunction

vP
comitative   vP
　　　subject   v'

vP
DP   v'
subject   comitative

Note that both theories predict the grammaticality of sentences in which the comitative forms a constituent with the vP, as in the English examples below.

(16) a *John went to the cinema with Mary, and Peter did, too.*
　　　b *John wanted to go to the cinema with Mary, and go to the cinema with Mary, he did.*

The DP-adjunction approach would assign a derivation to (16) in which the host DP is extracted to the canonical subject position but the comitative is stranded. In this case the vP contains the comitative, the verb, the direct and indirect objects (if there are any) and the low adverbs (if there are any). If next the vP undergoes some syntactic operation such as preposing or deletion, then the comitative is affected together with the verbal projection.

The point where the two analyses give different predictions, and therefore the crucial factor is whether the comitative and the DP can also be shown to form a constituent. Applying the binding test to the exclusive reading, we find that the comitative co-binds anaphors.

(17) a *Mi$_i$ Jánossal$_k$ összetörtük   magunkat* $_{*i/i+k}$.
　　　　we.NOM John-COM PREV-break-PAST-1PL self-1PL-ACC
　　　　'We had an accident (together with) with John.'
　　　　(Also: 'I had an accident together with John.')

　　　b **Mi$_i$ Jánossal$_k$ összetörtük   magát$_k$* .
　　　　we.NOM John-COM PREV-break-PAST-1PL self-3SG-ACC
　　　　'We had an accident (together with) with John.

I take these data to point to the conclusion that the pronoun and the comitative form a constituent, and thus to corroborate the DP-adjunction analysis.

4.1.2 The inclusive reading

As for the inclusive reading, everybody agrees that the pronoun and the completer phrase do form a constituent. It is, however, subject to much discussion if the comitative is merged as an adjunct (Schwartz 1988, Aissen 1989, Skrabalova 2003, Ionin and Matushansky 2003), as a complement (Feldmann 2002, Vassilieva and Larson 2005) or as a conjunct (Vassilieva 2005).

In my proposal I wish to build on the suggestion of Vassilieva and Larson (2005) that plural pronouns include an element whose content is unspecified in the lexicon (a variable). V&L make the following claim about plural pronouns:

> In explaining the relation between *I* and *we*, and between *you* (singular) and *you* (plural), it is commonplace to put things like this: "*We* refers to the speaker plus some other individuals" or "*You* can refer to the addressee plus someone else." In other words, we describe the reference of the plural pronoun as if it were derived from the reference of the corresponding singular pronoun by the addition of individuals Δ … By extension, we might describe the third person plural, at least in certain instances, in terms of the reference of the third singular plus others (p. 115).

The reference of plural pronouns according to V&L is shown below.

(18)   a   *we* = *I* + Δ

     b   *you*(pl) = *you*(sg) + Δ

     c   *they* = *he/she/it* + Δ

In contrast to V&L's analysis, however, I want to claim that pronouns do have an internal structure. My assumption is that the completer phrase is semantically part of the pronoun because it is in some sense part of the pronoun syntactically, too. The crucial difference between the exclusive and the inclusive reading, then, is that in the inclusive reading the comitative binds the variable Δ internal to the pronoun.

The proposed structure for 1st person plural pronouns is shown in (19). What spells out as *we* is not a single terminal.[8] It is a constituent, a conjunction of *pro* and Δ. Δ is unspecified for person and number. *We* is plural because the person features of *pro* and Δ add up just like in the case of ordinary conjunction, and it is 1st person due to a rule that makes reference to the person hierarchy 1st person > 2nd person > 3rd person and requires that in the unmarked case the higher-ranked feature determine the feature of the complex expression.

(19)   • → **we**

$[1, \text{SG}]$

         & Δ
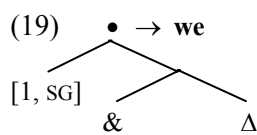
This is *we* in general, but what happens the inclusive reading? Δ is inside *we*, as in (19). The comitative gives additional information on *we*: it specifies who else is included in the group besides the focal referent. For that reason, I submit that it is an appositive modifier[9] of *we* and is coindexed with Δ. The completer phrase and Δ thus have the same referent. Pending a detailed theory of apposition, I will tentatively assume that the appositive modifier is an adjunct that is referentially non−distinct from the category to which it is adjoined.

(20)

     mi   **Jánossal**$_i$

$[1, \text{Sg}]$

        & Δ_i
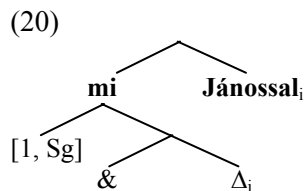
Mi (we) cannot mean I$_1$ + I$_2$, it is always I + others. Second and third person plural pronouns, however, are different. The preferred meaning of *ti* (you.PL) is you + others, but you$_1$ + you$_2$ is also possible; and *ők* (they) is typically he$_1$+ he$_2$, though he + others is not unthinkable either (Bartos 1999). This means that plural pronouns in all persons can be derived from the corresponding singular pronoun by adding Δ. This intepretation is a must for first person, possible for second person and still possible but less likely for third person plural pronouns.

In light of this, it is interesting to note that some languages allow the inclusive reading only in first or first and second persons. Moravcsik

(2003) gives the following cross-linguistic generalisation as to the availability of the focal referent: for every given language, if a person on the scale 1st person > 2nd person >3rd person can function as the focal referent of the inclusive interpretation, then so can any other person to its left on the scale. I suggest that the greatest salience of Δ in 1st person plural pronouns and the preference for the inclusive reading with 1st person pronouns is not a mere coincidence: the more salient the variable is, the more sensible it is to specify its reference.

4.2 The facts explained

The analysis outlined above can account for the differences between the exclusive and the Plural inclusive reading in the following way.

    I have argued that in the inclusive reading the relationship between the pronoun and the comitative is that of appositive modification. In appositive structures wh-extraction of the host DP leads to ungrammaticality (21).

(21) *Ki   írta   a barátom   a cikket*?
      who.NOM write-PAST-3SG the friend-POSS.1SG the article-ACC
      'Who is the person that is my friend and wrote the article?'

It is this restriction that disallows the inclusive interpretation of (2), which in turn can only be interpreted as referring to at least 3 persons. That is, crucially for us, the restriction on the inclusive reading can be independently motivated. We might also speculate on what it can be derived from. The problem seems to be semantic: *ki* ('who') is a referentially open subject, whereas *a barátom* (my friend) is a referentially fixed subject, which is clearly a contradiction. (Notice that the sentence is also ungrammatical if both *ki* and its appositive modifier are preposed: **Ki a barátom írta a cikket?)*

    In addition, pragmatic considerations may also contribute to the illformedness of (2). In (2) the person feature on the verb tells us that one of the persons involved in the event is 'you' (SG). It would be perfectly reasonable to ask who the other person is. In an inclusive reading of (2), however, then there would be no referent to identify: the completer phrase is already given and the focal referent ('you' SG) can be read off from the inflection on the verb.

The focussing facts also fall out from the analysis without further assumptions. Consider the following generalisations. Among postnominal modifiers, only appositives can be focussed together with the noun they modify, non-appositives cannot. In the latter case a paraphrase involving a prenominal modifier is necessary.

(22) [*CSAK JÁNOS,   A   BARÁTOM*]   *utazott   el.*
       only John.NOM the friend-POSS.1SG travel-PAST.3SG PREV
       'It is only my friend John that set out on a journey.'

(23) a *[*CSAK A   KÖNYV   A   POLCON*] *lett   poros.*
       only the book.NOM the shelf-SUP become-PAST.3SG dusty
       'It is only the book on the shelf that is covered in dust.'

     b [*CSAK A   POLCON   LEVŐ KÖNYV*]   *lett   poros.*
        only the shelf-SUP being book.NOM become-PAST.3SG dusty
        'It is only the book on the shelf that is covered in dust.'

If the comitative of the exclusive reading is a postnominal adjunct and the completer phrase of the inclusive reading is an appositive modifier indeed, then their behaviour with respect to focussing is exactly as expected: a focalised pronoun + comitative unit always triggers an inclusive reading.

It is an interesting question – beyond the scope of the present paper – why an appositive adjunct is exempt from the requirement of extraposition in focus position. My tentative generalization is that referential nondistinctness is at play here; an adjunct that is referentially nondistinct from its host is invisible as an intervener.

As for the (im)possibility for non-identifying relative clauses to appear between the pronoun and the comitative, I assume that unless some independent principle prevents it, such intervention is possible. The generalisation that rules out the inclusive interpretation of (8) is the following: if two appositives modify the same head, then the one introduced by a relative pronoun has to follow the other.

(24) a *János,   a   barátom,   aki   még sose volt*
        John.NOM the friend-POSS.1SG who.NOM yet never be-PAST.3SG
        külföldön, nyert   egy görögországi nyaralást.

abroad-SUP win-PAST.3SG a   greek   holiday-ACC
'John, my friend, who has never been abroad, won a holiday to
Greece.'

b *_János,   aki   még sose volt   külföldön, a_
   John.NOM who.NOM yet   never be-PAST.3SG abroad-SUP the
   barátom,   nyert   egy görögországi nyaralást.
   friend-POSS.1SG win-PAST.3SG a   Greek   holiday
   'John, my friend, who has never been abroad, won a holiday to
   Greece.'

This rule directly follows from the Law of Growing Constituents proposed by Behagel (1932): sub-components of a constituent following the head line up according to phonological weight; shorter components come closer to the head than longer ones. (For the effect of Behagel's law on vP linearisation, see É. Kiss, chapter 2, this volume.)

That the completer phrase of the inclusive reading cannot be a non-referential element is also predicted by my analysis, for the binding of Δ is an operation based on reference, and so cannot be performed by non-referential expressions.

My account of the restriction concerning the limited paraphrasing possibilities of the inclusive reading proceeds from the fact that the denotation of the completer phrase is interpreted as part of the denotation of the pronoun. In an inclusive reading of (10 c and d) _John's company_ and _John's help_ should be part of the denotation of _we_, which contradicts the presupposition that a pronoun denotes a set all members of which are [+human], or at least [+animate]. The unavailability of the inclusive reading in these sentences thus can be attributed to pragmatic considerations. In (10 b), on the other hand, no such problem arises. _Together with John_ means roughly the same as _with John_, thus the sentence can happily receive the inclusive reading.

Last but not least, the incompatibility of the inclusive interpretation and the Sociative case derives from a morphological property of -_stul/stül_, namely that it combines only with bare nouns (25). Bare nouns are non-referential, and as such they cannot serve as the completer phrase in the inclusive reading (cf. §2).

(25) (*_A/egy) gyerekestül ment   nyaralni._
      the/a   child-SOC   go-PAST.3SG have.holiday-INF
      'He went on holiday with his child.'

5. Summary

In this paper I have argued that the exclusive and the inclusive readings of a comitative with a plural pronoun host display no structural difference. That in certain cases such an expression is unambiguous is the effect of independently existing syntactic principles as well as the interaction between the syntactic and the interface components of the grammar.

The inclusive interpretation of companions bearing the Sociative case is ruled out syntactically, via the subcategorisational frame of the suffix. The interpretation possibilities of stacked appositives are determined at the PF interface. When the pronoun is targeted by wh-extraction, when the comitative is a bare noun or when it is paraphrased as *with the help of X* or *in the company of X*, the inclusive reading is ruled out at the CI interface. It has to be acknowledged that the difference in the focussing possibilities of appositive and non-appositive adjuncts is not properly understood yet, but I suspect that referential (non)distinctness is the key factor here, and so semantics disambiguates in this case, too.

These results implicate that the division of labour between syntax and the interfaces plays a far more important role in the interpretation of comitative adjuncts than it has been assumed so far.

Notes

1. I wish to thank Katalin É. Kiss for our discussions and her useful advice on the issues dealt with here.
   I also wish to thank Gillian Ramchand, Huba Bartos and Masha Vassilieva for their valuable comments on an earlier version of this paper. The article has also benefitted from the help of my colleagues at UIT/CASTL, who shared with me their knowledge about comitatives in their native languages. I take responsibility for all wrong ideas and remaining errors.
   The glosses contain the following abbreviations: ALLAT – Allative case, COM – Comitative-Instrumental case, ILL – illative case, INF – Infinitive, INSTR – Instrumental case, SOC – Sociative case, SUBL – Sublative case
   The Comitative-instrumental case suffix is *–val/vel*. The choice of the vowel is determined by vowel harmony; *v* assimilates to the preceding consonant.
2. (Feldman 2002) terms this reading non-inclusive plural pronoun construction.
3. Other labels of the inclusive reading include Plural Pronoun Construction (Schwartz 1988), inclusory coordination (Haspelmath 2000), inclusive plural

pronoun construction (Feldman 2002), inclusory pronominal (Lichtenberk 2002) and inclusory construction (Moravcsik 2003).

4. Rákosi (2006) uses the paraphrase-test and the *-stul/stül* test to distinguish between comitative arguments (*John fell out* with Mary) and comitative adjuncts (*John went to the beach* with Mary). He convincingly shows that in contrast to comitative adjuncts, comitative arguments resist paraphrasing and do not take the Sociative case. He does not apply the test, however, to the exclusive/inclusive readings under consideration here.

5. Toqabaqita is an Austronesian language spoken on the Solomon Islands.

6. Recall from (3) that wh-extraction of the comitative is possible in Hungarian, too, but likewise needs a context in which the referent of the comitative is contextually salient.

7. In Hungarian a focussed pronoun must be spelt out; it can be represented by a silent pro only postverbally or in topic position. Hence the structure of (6) is, in fact, either i) or ii)

   i) pro [FOC *CSAK JÁNOSSAL*] *néztük   meg a   filmet.*
                    only John-COM watch-PAST-1PL PERF the film-ACC
                    'It is only John with whom I/we watched the film.'

   ii) [FOC *CSAK JÁNOSSAL*] *néztük   meg* pro *a   filmet.*
               only John-COM watch-PAST-1PL PERF   the film-ACC
               'It is only John with whom I/we watched the film.'

8. Although the assignment of vocabulary items to non-terminal nodes is not part of the mainstream Minimalist toolbox, it is one of the core ideas of Starke (2006) and Ramchand (2007), for instance.

9. An appositive treatment of the completer phrase has been independently developed in Ladusaw (1989).

Types of temporal adverbials and the fine structure of events
Ferenc Kiefer

1. Introduction

Temporal adverbials have been widely used to identify the event type of predicates since at least Vendler (1967). However, in most work only *for-* and *in-*adverbials were used, *for-*adverbials to identify accomplishments and *in-*adverbials to identify achievements. Moreover, these adverbials were used exclusively to define predicate classes, the internal structure of events was left out of consideration. In the present paper we are going to pursue three goals. First, by using time point adverbials (*at five o'clock*), temporal adverbials which denote the length of the consequent state *(occupy sg for two hours)* and temporal adverbials which delimit temporally an event but do not specify its duration (*until five o'clock*) in addition to the two traditionally employed adverbials, we will attempt to identify the maximal number of verb classes which are identifiable by means of these temporal adverbials. Second, we will also make use of the compatibility with temporal adverbials to define the event structure of these verbs types in terms of subevents and the temporal relations which hold between them. To be sure, not all aspects of event structure are directly deducible by means of the adverbial test. In some cases a subevent may be presupposed or implied. Third, it will be shown that aspect is derivable from event structure. Though we will restrict ourselves to the lexical representation of event structure, it will become clear that this cannot be done without taking into account the interplay between syntax and semantics. The compatibility with temporal adverbials can only be tested on the sentence level, and the compositionality of event structure, whereever it arises, is also a matter of syntax. The discussion will concentrate on Hungarian but it is hoped that much of what will be said carries over to other languages as well.[1]

2. Types of adverbials and verb classes

First, we will examine the compatibility of various verbs with five different types of temporal adverbials:

(a) time span adverbials (e.g. *két órán át* 'for two hours'), which denote the length of an ongoing event;

(b) durative-delimitative adverbials (e.g. *két óra alatt* 'in two hours'), which denote a process or activity with culmination (termination);

(c) time point adverbials (e.g. *két órakor* 'at two o'clock'), which identify the time of a punctual event;

(d) adverbials denoting the length of a resulting state (e.g. *két órára* 'for two hours')[2],

(e) adverbials denoting an endpoint of a process or activity (e.g. *két óráig* 'until two o'clock').

The importance of this fifth type of adverbial will become clear immediately. For the sake of brevity, in what follows we will refer to the various types of adverbials by using the letters (a)-(e). Furthermore, each verb class will be represented by a verb, which will be used as the name of the respective verb class.[3]

2.1. Statives: the verb *pihen* 'rest'

Statives are compatible with (a), (c) and (e) but not with (b), (d).[4]

(1)a. *Két órán át /két órakor /két óráig pihentem.*
    two hour for/two o'clock-at/two o'clock-until rested
    'I had a rest for two hours/at two o'clock/until two o'clock'
  b.**Két óra alatt/két órára pihentem.*
    two hour in /two hour-for rested
    'I had a rest in two hours/for two hours'

The interpretation of the time point adverbial in (1) calls for some comments. To have a rest at two o'clock can only mean that this time point is part of the time interval of resting. It cannot mean that the resting event occurred at two o'clock. *Rest* is a durative verb hence if John rests (has a rest) for two hours it must be true that John rests at any time point of this interval. In other words, the time point adverbial cannot identify any distinct subevent in the case of states. As for the other two temporal adverbials note that some states may terminate, if one rests for two hours, the state of resting ends after two hours and the endpoint of resting may be denoted by a temporal adverbial. Since all statives are atelic, the termination of a state does not lead to a change of state.

2.2. Processes, activities: the verb *fut* 'run'

Processes and activities are like statives: they are compatible with (a), (c) and (e), but not with (b) and (d).

(2)a. *Két órán át /két órakor   /két óráig   futottam.*
     two hour for/two o'clock-at/two o'clock-until was.running
     'I was running for two hours/at two o'clock/until two o'clock
  b.**Két óra   alatt/két órára   futott.*
     two hour in   /two hour-for was.running
     'He was running in two hours/for two hours'

Since there are no further candidates which could do the job, statives and processes/activities cannot be kept apart by means of temporal adverbials, which, of course, does not mean that they have the same temporal properties.[5]
       As for the interpretation of the time point adverbial, it is similar to what we had in the case of statives. John's running cannot be a punctual event since *run,* too, is a durative verb. And if John is running for two hours then he is running at most time points during this time interval. Consequently, the time point adverbial does not identify any distinct subevent.

2.3. Accomplishments: the verb *megír* 'write down'
Accomplishment verbs are compatible with (b), (c) and (e), but not with (a) and (d).

(3)a. *Két óra alatt/két órakor   /két óráig   megírta   a*
     two hour in   /two o'clock-at/two o'clock-until PRT-wrote the
     levelet.[6]
     letter-ACC
     'He wrote the letter in two hours/at two o'clock/until two o'clock'
  b.**Két órán át /két órára   megírta   a levelet.*
     two hour-for/two hour-for PRT-wrote the letter-ACC
     'He wrote the letter for two hours'[7]

2.4. Achievements: the verb *elér* 'reach'
Achievement verbs are compatible with (b), (c) and (e), but not with (a) and (d).

(4)a. *Két óra alatt/két órakor   /két óráig   elérték   a*
     two hour in   /two o'clock-at/two o'clock-until PRT-reached the

hegycsúcsot.
top-ACC
'They reached the top in two hours/at two o'clock/until two o'clock'
b.*_Két órán át /két órára elérték a hegycsúcsot._
two hour for/two hour-for PRT-reached the top-ACC
'They reached the top for two hours'

Since both verbs _megír_ 'write down' and _elér_ 'reach' are telic[8] the _until_ adverbial denotes the final time point at which the event is successfully terminated, i.e. the relevant change of state is brought about.

At first glance it would seem that accomplishment and achievement verbs are indistinguishable by means of temporal adverbials. On a closer look, however, it turns out that this is not the case. Note that the time point adverbial means two different things in the case of the two verb classes. The relevant examples are repeated in (5) and (6).

(5) _Két órakor megírta a levelet_.
'He wrote the letter at two o'clock'

(6) _Két órakor elérték a hegycsúcsot_.
'The reached the top at two o'clock'

In (5) the adverbial 'at two o'clock' cannot mean that the event of writing down the letter occurred in a moment. It can only mean that the writing of the letter started at two o'clock. This interpretation can be made explicit by paraphrases containing a verbal form with the meaning 'begin', as in (7).

(7) _Két órakor hozzáfogott a levél megírásához_.
two o'clock-at started the letter writing-ALL[9]
'He has started writing the letter at two o'clock'

The situation is similar in the case of (8a), which can be paraphrased as in (8b).

(8)a. _Nyolc órakor megnézte a filmet._
eight o'clock-at PRT-saw the film-ACC
'He saw the film at eight o'clock'
b. _Megnézte a nyolc órakor kezdődő filmet._
saw the eight o'clock-at starting film-ACC
'He saw the film that started at eight o'clock'

This means that we can in no way say that the event of writing the letter occurred at two o'clock and that the event of seeing the film occurred at eight, the time point adverbial does not identify any subevent. In other words, neither sentence (5) nor sentence (8a) can be interpreted literally, they are sloppy ways of conveying (7) and (8b), respectively. This means that accomplishment verbs are incompatible with time point adverbials.

The situation is different with (6), where the time point 'two o'clock' defines the occurrence of an event: the subevent of reaching the top.

As shown by their compatibility with durative-delimitative adverbials, accomplishments and achievements consist of a durative process or activity and of a culmination, which, however, can only be identified as a subevent in the case of achievements.

The fact that both accomplishments and achievements are compatible with durative-delimitative adverbials shows that both must involve a process or activity. At the same time they also show that they have not only a culmination point but also a resulting state. This will follow from the meaning of the durative-delimitative adverbials, as shown further below. All accomplishment and achievement verbs are change of state verbs.[10]

2.5. *Megáll* 'stop' type verbs
The verb *megáll* is compatible with (b), (c) and (d), but not with (a) and (e).

(9)a. *A   vonat két perc   alatt/két percre   /két órakor   megállt.*
       the train two minute in   /two minute-for/two o'clock-at PRT-stopped
       'The train stopped in two minutes/for two minutes/at two o'clock'
    b.*A   vonat két percen át /két   óráig   megállt.*
       the train two minute for/two o'clock-until PRT-stopped
       'The train stopped for two minutes/until two o'clock'

The adverbial 'at two o'clock' identifies a punctual stopping event. Due to the fact that (9a) contains a durative-delimitative adverbial, the event described by the sentence must have a process or activity phase as well. What makes *megáll* 'stop' dissimilar from achievement verbs is its compatibility with (d), which denotes the length of the consequent state.

2.6. *Elborozgat* 'spend the time by drinking wine' type verbs

The verb *elborozgat* is compatible with (e), but not with (a)-(d). Though there are other verb types which are compatible with (e), (e) is the only adverbial type admitted by *elborozgat*. This is the reason why it was important to add (e) to the list of temporal adverbials.

The verb *elborozgat* is derived from the noun *bor* 'wine', from which the verb *boroz(ik)* 'drink wine' is derived; *-gat* is a suffix with a deminutive meaning, which yields *borozgat* 'take a glass or two of wine'. This form can be prefixed by the particle *el*, which has a delimitative-perfective meaning: the activity is temporally delimited. The verb has thus the following morphological structure: $[el_{PRT} [[bor_N] oz_V] gat_V]]$; the pattern is highly productive.[11]

(10)a. *Késő estig   elborozgattak.*
        late   evening-until PRT-drank.wine
        'They drank wine until late at night'
    b.*Két órán át /két óra alatt/két órára   /két órakor   elborozgattak.*
        two hour for/two hour in/two hour-for/two o'clock-at PRT-drank.wine
        'They drank wine for two hours/in two hours/for two hours/at two
        o'clock'

That there is an activity going on during a certain time, which eventually leads to an endpoint, can be shown by examples such as (11).

(11) *Kettől   háromig   elborozgattak.*
      two-from three-until PRT-drank.wine
      'They drank wine from two to three'

2.7. *Tüsszent* 'sneeze' type verbs
The verb *tüsszent* 'sneeze' is compatible with (a), (c) and (e), but not with (b), (d).

Tüsszent 'sneeze' is a punctual verb, the occurrence of the sneezing event can be identified by means of a time point adverbial.[12] At the same time, this verb is compatible with time span and endpoint adverbials as well.

(12)a. *Két órakor   tüsszentett.*
        two o'clock-at sneezed
        'He sneezed at two o'clock'

    b. *Két órán át tüsszentett.*[13]

two hour for sneezed
'He was sneezing for two hours'
c. *Két óráig   tüsszentett.*
   two o'clock-until sneezed
   'He was sneezing until two o'clock'

While sentence (12a) denotes one single punctual sneezing event, (12b) and (12c) express a series of punctual sneezing events.[14] The iterative reading is imposed on the predicate by the temporal adverbial.

For obvious reasons, the verb *tüsszent* is incompatible with (b) and (d).

2.8. *Feljajdul* 'cry out in pain' type verbs
The verb *feljajdul* 'cry out in pain' is compatible with (c) only.

The verb *feljajdul* is a punctual verb, the crying out event can be identified by a time point adverbial. In contrast to 'sneeze', however, it does not admit time span adverbials, consequently it can never get an iterative meaning.

(13)a. *Két órakor   feljajdult.*
        two o'clock-at out-cried
        'He cried out in pain at two o'clock'
    b.**Két órán át feljajdult.*
        two hour for out-cried
        'He cried out in pain for two hours'

Once again, for obvious reasons the verb *feljajdul* is incompatible with (d) and (e).

Both punctual verbs, *sneeze* and *cry out,* denote events which do not presuppose any preceding process and do not lead to a resulting state. This is shown by the incompatibility of these verbs with (b), see below.

2.9. *Eltörik* 'break' type verbs
The verb *eltörik* 'break' is compatible with (c), but not with (a), (b), (d) and (e).

The verb *eltörik* is once again a punctual verb, but it is also a change of state verb. This means that we must assume that there is a consequent state though this state cannot be identified by any temporal adverbial. All change of state verbs must be characterized lexically for this property.

(14) *Két órakor   a váza eltörött.*
    two o'clock-at the vase PRT-broke
    'The vase broke at two o'clock'

2.10. *Portalanít* 'dust' type verbs

The verb *portalanít* is compatible with (a), (b) and (c), but not with (d) and (e). Two groups of verbs belong here, both can be defined by morphological criteria. The verb *portalanít* is derived from the noun *por* 'dust', to which the negative suffix *-talan* is attached, which yields the adjective *portalan* 'dustless'. From that adjective the verb *portalanít* lit. 'to make dustless' is derived by means of the suffix *-ít.* This a productive derivational pattern. The second group contains verbs of foreign origin containing the derivational suffix *-izál* or *-ál*: e.g. *modern#izál* 'modernize', *telefon#ál* 'phone, call'. The compatibility behavior of the verbs of these two groups can be predicted on the basis of their morphological structure.

(15)a. *Két órakor   portalanított.*
        two o'clock-at dusted
        'He was dusting at two o'clock'
    b. *Két órán át portalanított.*
       two hour-for dusted
       'He was dusting for two hours'
    c. *Két óráig   portalanított.*
       two o'clock-until dusted
       'He was dusting until two o'clock'
    d. *Két óra alatt portalanította a lakást.*
        two hour-in dusted   the apartment
        'He dusted the apartment in two hours'

Portalanít is a process verb, hence the compatibility with (a) and (e) is what we would expect. (15c), however, has an accomplishment reading, as shown by adverbial (b). Lexically the verb is certainly not ambiguous. Consequently, the accomplishment reading must be derived compositionally and the verbs in question have to be marked lexically to this effect.[15]

2.11. *Végigül* 'sit through' type verbs

The verb *végigül* does not admit any of the adverbials (a)-(e). The verb class is defined by the complete lack of compatibility with temporal

adverbials. The reason for this particular behavior is evident: the verbs in question require an object argument denoting an event, which, too, has a temporal structure, hence it functions as a temporal modifier.

(16) *Végigülte az előadást.*
    end-to-sat the performance-ACC
    'He sat through the performance'

The performance has a certain duration and this duration defines the duration of the sitting-event. Since a sentence admits only one temporal modifier expressing duration, the sitting event cannot be temporally specified by means of a temporal adverbial.[16]

2.12. *Conclusion*

On the basis of various temporal adverbials we have identified eleven verb classes. Our results are summarized in Table 1. We will refer to each verb class by means of the verb representing it. Furthermore, we will leave out of consideration the compatibility with time point adverbials in the case of statives, processes and accomplishments, as well as in the case of the verb *portalanít* 'dust' since, as was shown above, it cannot identify a distinct subevent in these cases.

The compatibility of verbs with temporal adverbials

verb class/temporal adverbial	(a)	(b)	(c)	(d)	(e)
(1) *pihen* 'rest'	yes	no	no	no	yes
(2) *fut* 'run'	yes	no	no	no	yes
(3) *megír* 'write down'	no	yes	no	no	yes
(4) *elér* 'reach'	no	yes	yes	no	yes

(5) *megáll* 'stop'	no	yes	yes	yes	no
(6) *elborozgat* 'drink wine for a while'	no	no	no	no	yes
(7) *tüsszent* 'sneeze'	yes	no	yes	no	yes
(8) *feljajdul* 'cry out'	no	no	yes	no	no
(9) *eltörik* 'break'	no	no	yes	no	no
(10) *portalanít* 'dust'	yes	yes	no	no	yes
(11) *végigül* 'sit through'	no	no	no	no	no

Table 1.

As can be seen, the following verb types can uniquely be determined by means of the compatibility test: (3), (4), (5), (6), (7), (10), (11). On the other hand, (1)-(2) and (8)-(9) cannot be kept apart in this way. Concerning the distinction between states and activites, in Hungarian the adverbial *javában* '[to be] in the middle [of sg]' can be used to keep these two types apart.[17] For the difference between (8) and (9) we have to rely on the semantics of these verbs. To use the terminology proposed by Moens and Steedman (1988), (8)-type verbs have neither a 'preparatory phase' nor a 'consequent state', while (9)-type verbs do have a 'consequent state'. In sum, then, we have identified eleven verb classes in Hungarian, which include all verb classes identifiable by means of temporal adverbials.[18]

3. Event structure

3.1. Preliminaries

We will assume – following Pustejovsky (1991, 1995) – that events may be composed of subevents and that the notion of event structure implies such a composition. It has also been proposed that subevents may be determined by various tests, which we will not repeat here.[19] Though these tests are certainly useful to show that events may be composed of subevents, they cannot be used to systematically identify these subevents. In the present paper it will be claimed that this can be done to a large extent by means of

temporal adverbials. Consequently, our task will be to find out what the compatibility with temporal adverbials can tell us about event structure.

Following Engelberg (2000), we will assume that there are three event types which cannot be traced back to anything else hence must be taken for being atomic: states, activities and punctual events, to be denoted by S, A and P, respectively. A state holds during a time interval without interruption, an activity (or process) is going on during a time interval allowing gaps, a punctual event occurs at a given time point and there is no other time point at which it occurs. The notion of 'change of state' will be used in the narrower sense: an activity does not involve a change of state but it may lead to a change of state (as in the case of accomplishments and achievements). The symbol e will be used to refer to events; subevents will be denoted by subscripts: e_i. S(x, e) will mean that the entity x is in the state S, A(x, e) that the entity x participates in the activity A, and P(x, e) that x is the participant of a punctual event P. The transitive variants are correspondingly S(x, y, e), A(x, y, e) and P(x, y, e). Examples for the basic event types are given in (17)-(19).

(17) *János beteg* 'John is ill'
    S(John, ill): 'John is in the state of being ill'

(18) *János dolgozik* 'John is working'
    A(John, working) 'John participates in the event of working'

(19) *János elbotlott* 'John stumbled'
    P(John, stumble) 'John was the participant of a stumbling event'

It has also been suggested that representations such as (17)-(19) should be complemented by the thematic protoroles of the participants. Thematic roles, too, can be represented as predicates over participants and events.[20] Consequently, a more complete representation of the event structures (17)-(19) may look like (20)-(22).

(20) S(John, ill) & Patient(John, ill): 'John is in the state of being ill and he is the Patient participant of this state'

(21) A(John, working) & Agent(John, working): 'John participates in the event of working and he is the Agent participant of that event'

(22) P(John, stumble) & Patient(John, stumble): 'John was the Patient participant of a stumbling event'

Since we are interested in identifying the event types and the subevents of events, we will leave thematic roles out of consideration in the present paper.

There may be various temporal relations between subevents: temporal precedence, immediate precedence, and temporal overlap, among other things.[21] In what follows we will be concerned with temporal precedence and temporal overlap only, to be denoted by '<' and '<>', respectively.

Before embarking on the discussion of event structure, let us have a closer look at the meaning of the various temporal adverbials in order to see what kind of conclusions we can draw from their semantics with respect to event structure.

3.2. The meaning of temporal adverbials

We have been using five temporal adverbials for finding out how many different verb classes can temporally be defined. In what follows we will see how temporal adverbials can be used to identify (sub)events.

3.2.1 Át *'for time* t*, during time* t*' adverbials (type (a))*

These adverbials can be used to identify states, activities and processes. However, they provide only a sufficient, and not a sufficient and necessary, condition for processhood. If a predicate is compatible with (a) only, it must denote either a state or a process. The process involved in the case of accomplishment and achievement predicates cannot be identified by means of (a). Neither can it be done in the case of *portalanít* 'dust', *megáll* 'stop', *elborozgat* 'drink wine', and *végigül* 'sit through' type verbs. In other words, the temporal adverbial (a) cannot be used to identify process-subevents. However, if it is the only adverbial applicable, the verb must either be a stative or an activity/process verb.

3.2.2. Alatt *'in time* t*' adverbials (type (b))*

The predicates with which these adverbials are compatible must denote a process which leads to a new state. The change-of-state meaning leading to a new state is a typical feature of these predicates. The resulting state cannot be identified directly by means of temporal adverbials, they appear rather as implications. For example, *János megírta a levelet* 'John has

written the letter' implies that the letter has been finished. The change of state can be described by saying that at the initial state there was no letter and at the final state there was a letter. Consequently, (b) may be used to identify two subevents: a process and a state. The compatibility with (b) thus tells us that accomplishment and achievement type verbs as well as *megáll* 'stop' and *portalanít* 'dust' type verbs must contain at least two subevents: a process-event and a state-event. In the case of *megáll,* the process event can also be considered to be presupposed: both *Az autó megállt* 'The car stopped', and *Az autó nem állt meg* 'The car did not stop' presuppose that the car was moving. Note that though they denote a change of state, *eltörik* 'break' type verbs are not compatible with (b). This means that compatibility with (b) works only in one direction.

3.2.3. *Time point adverbials 'at time point* t*' (type (c))*
The time point adverbial (in the strict sense) denotes the fact that an event occurred precisely at the time point denoted by the adverbial. If (c) is the only adverbial with which the predicate is compatible, then it must denote a punctual event. This is the case with *feljajdul* 'cry out in pain' and *eltörik* 'break' type verbs. If the predicate is compatible with other types of adverbials as well, it must contain a punctual subevent in its event structure. This is the case with achiements and the *megáll* 'stop' type of verbs.

What about the *sneeze* 'tüsszent' type? They, too, are compatible with (c) type adverbials, at the same time, however, they also admit (a) and (e) type adverbials. This seems to be a contradiction since processes and punctual events are incompatible with each other. The apparent contradiction disappears if we realize that *tüsszent* 'sneeze' is a punctual event from which another 'situation type' can be derived.[22]

No doubt, we have to do here with a rather special type of verbs, which have to be marked to this effect in the lexicon, since – in contrast to English – other types of punctual verbs do not make the derivation of a process reading possible.

(23)*Órákon át feljajdult.*
'He was crying out in pain for hours'[23]

(24)*A váza órákon át eltörött.*
'The vase broke for hours'

In Hungarian it is possible to derive a verb with a repetitive meaning by means of the reduplication of the particle.[24] Such verbal constructions always yield a process reading though the base denotes a punctual event.[25]

(25) *Órákon át fel-feljajdult*.
    'He was crying out in pain for hours'.

The fact that *eltörik* 'break' type verbs do not admit a derived reading can easily be explained: the event of breaking leads to an irreversible resulting state.

3.2.4. *t* időre *'for time* t*' adverbials, denoting the length of a state following an event (type (d))*
The English examples below show what is at stake here.[26]

(26)a. *Mary ran into the house for twenty minutes*.
    b. *John left for a week*.

Hungarian does not behave differently in this respect. However, as is well-known, not all change-of-state verbs admit adverbial (d). It is certainly true that the resulting state must be reversible for (d) to be applicable: (27a) is grammatical, (27b) is definitely odd.

(27)a. *Fél órára   elszundított*.
       half hour-for PRT-fell.asleep
       'He fell asleep for half an hour'
    b.*Fél órára   kivasalta   az ingét*.
       half hour-for PRT-ironed the shirt-his-ACC
       'He ironed his shirt for half an hour'

On the other hand, examples (28a,b) show that reversibility is not a sufficient condition for compatibility with (d).[27]

(28)a.*Ellopták öt napra a pénztárcámat*.
       'They stole my briefcase for five days'
    b.*Öt napra betegre verték*.
       'They beat him hollow for five days'

It follows that adverbial (d) cannot be used to identify the resulting state. It remains true, however, that if a predicate is compatible with (d), the event structure of the predicate must contain a subevent which expresses such a state.

3.2.5. *t* időig *'until time point* t*' adverbials, expressing the endpoint of a process or activity (type (e))*
An adverbial (e) may denote the end of a state (*He loved her until the end of last year*), the end of a process or activity (*He was working until six o'clock'*), the endpoint of the completion of a task (*He wrote the letter until six o'clock, They reached the top until six o'clock*), the end point of an iterative event (*He was sneezing until noon*). However, there seems to be a clear difference between two interpretations of (e) in the above sentences. In the case of states and processes it clearly indicates the end of a state or a process: we cannot say that he was ill until yesterday when he, in fact, was already OK the day before yesterday. Similarly, we cannot say that he was working until six o'clock when he, in fact, finished working at four. On the other hand, in the case of accomplishments and achievements (e) is a kind of deadline: the letter may have been ready or they may have reached the top much before six o'clock. In this case the meaning of (e) is 'not later than'. In both cases, however, the compatibility with (e) proves the existence of a process. This process can also be considered to be a presupposition: *A fiúk éjfélig elborozgattak* 'The boys were drinking wine until midnight' – *A fiúk nem borozgattak el éjfélig* 'The boys did not drink wine until midnight'. The latter clearly means that the boys were drinking wine but not until midnight.

Adverbial (e) has a distinctive role in the case of *elborozgat* 'drink wine' type verbs since it is the only temporal adverbial with which these verbs are compatible. In fact, these verbs require a delimiting time adverbial.

(29)a. *Mit   csináltatok az irodában?*
         what did-you   the office-in
         'What did you do in the office?'
     b.??*Elborozgattunk.*
          'We were spending our time by drinking wine'

(30)a. *Mit csináltatok tegnap   este   az irodában?*
         what did-you   yesterday evening the office-in
         'What did you do in the office last night?'

b. *Elborozgattunk egy kicsit.*
   'We were drinking wine for a while'

Time adverbial (e), however, does not only identify the activity subevent of the event of drinking wine for a while but it also refers to the endpoint of that activity. The verbs in question all contain the preverb *el-*, which renders them telic.

3.3. The event structure of verb classes (a)-(e)

In this section we are going to sum up what we learnt about event structure in the previous section.

3.3.1. States and processes/activities have no subevents. States can be represented by $S(x, e)$ and processes/activities by $A(x, e)$.

3.3.2. Accomplishments contain two subevents, a process or activity subevent and a resulting state. It goes without saying that the process/activity subevent must precede the stative subevent, hence we get:[28]

(31) $A(x, e_1) < S(x, e_2)$

3.3.3. Achievement verbs contain three subevents: a process or activity, a punctual event and a resulting state, in that order.

(32) $A(x, e_1) < P(x, e_2) < S(x, e_3)$

3.3.4. *Megáll* 'stop' type verbs have the same event structure as achievement verbs, the difference between them is that in the case of *megáll* the length of the resulting state is controllable by an Agent. This property can be added as an additional feature of the representation, as in (33).

(33) $A(x, e_1) < P(x, e_2) < [S(x, e_3) \, \& \, \exists y \, CONTROL(y, e_3)]$

Note, however, that, as to event structure proper, there is no difference between (32) and (33).

3.3.5. *Elborozgat* 'drink wine' type verbs must contain a process/activity subevent, shown by their compatibility with (e). It is equally clear that the event structure of these verbs must have at least one further subevent. If this were not the case, the predicate would be compatible with (a) type adverbials, too. The second subevent, however, cannot be identified by means of temporal adverbials. We cannot tell either what the temporal relation between the two subevents is. This leaves us with (34).

(34) $A(x, e_1)$?

3.3.6. The verb *tüsszent* 'sneeze' is a punctual verb: $P(x, \text{tüsszent})$. The process reading must be derived compositionally, which shows that lexical event structure may change on the sentence level. Event structure is compositional just like aspect.

3.3.7. The verb *feljajdul* 'cry out in pain' differs from the *tüsszent* 'sneeze' type with respect to its compositional properties: it cannot be turned into a process by means of a time span adverbial; this can only be done by means of particle reduplication. With respect to event structure, however, the two verb classes are identical.

3.3.8. The verb *eltörik* 'break', too, denotes a punctual event. Normally, this event has no preparatory phase. If we assume, however, that someone was manipulating a vase for some time and then the vase broke, we can say *A váza öt perc alatt eltörött* 'The vase broke in five minutes'. In that case the event consists of three subevents. Normally, however, the resulting state cannot be identified by means of temporal adverbials. Such a state follows from the fact that we have to do with a change-of-state verb. The compatibility test suggests that what we get is (35):

(35) $P(x, e_1) < ?$

3.3.9. The verb *portalanít* 'dust' is basically a process verb consisting of one single event $A(x, e)$; by means of a (b) type adverbial, however, it can be turned into an accomplishment. This has nothing to do with 'derived situation types', it is simply a matter of compositional semantics. To be sure, the verbs that admit this change in interpretation must be marked in the lexicon.

3.3.10. For semantic reasons discussed further above *végigül* 'sit through' type verbs do have an event structure, but none of the subevents are identifiable by means of temporal adverbials.

In view of the above observations we must conclude that the semantic verb classes established on the basis of compatibility with temporal adverbials are not identical with the types of event structure which can be identified by the same tests.

4. Event structure and aspect

Let us now summarize the types of event structure we get by means of temporal adverbials (Table 2.). The verb types which have identical event structure will not be listed separately.

Event structures identifiable by means of temporal adverbials

Verb type	Event structure
1. *pihen* 'rest'	$S(x, e)$
2. *fut* 'run', *portalanít* 'dust'	$A(x, e)$
3. *megír* 'write down'	$A(x, e_1) < S(x, e_2)$
4. *elér* 'reach', *megáll* 'stop'	$A(x, e_1) < P(x, e_2) < S(x, e_3)$
5. *elborozgat* 'drink wine for awhile'	$A(x, e)$?
6. *tüsszent* 'sneeze', *feljajdul* 'cry out in pain'	$P(x, e)$
7. *eltörik* 'break'	$P(x, e_1) < ?$
8. *végigül* 'sit through'	??

Table 2.

Before embarking on the discussion of the relationship between event structure and aspect, we will first eliminate the question marks in Table 2.

This can be done in a straightforward way in the case of *eltörik* 'break', which is a change-of-state verb, consequently its event structure must contain a subevent denoting the resulting state ('x is broken'), hence the event structure of **7.** *eltörik* 'break' looks like (36):

(36) $P(x, e_1) < S(x, e_2)$

Elborozgat 'drink wine' type verbs express the delimitative *aktionsart,* which we may denote by DELIM(e), meaning 'e is a temporally delimited (bounded) atelic event'. We have to add DELIM(e) to the process-subevent:[29]

(37) $A(x, e)$ & DELIM(e)

The situation is more complex in the case of *végigül* 'sit through'. The sitting event and the performance event denoted by the deverbal noun, which binds the second argument of the verb, must have identical temporal extensions. The sitting event is of type $S(x, e)$ (the verb *sit* is stative), and the performance event is of type $A(x, e)$, and the activity not only has an endpoint but it leads to a new state. We can compare this case with the events described by *János elolvasta a könyvet* 'John has read the book (from beginning to end)' or *Mária eljátszotta a szonátát* 'Mary has played the sonata (from beginning to end), which bring about a new state. If we use the symbol '<>' for overlapping events, we may represent the event structure of *végigül* 'sit through' in the following way.

(38) $[S(x, y, e_1) <> A(x, y, e_2)] < S(x, y, e_3)$

By having eliminated the question marks in Table 2. we get the following event structures:

Verb types and their event structure

Verb type	Event structure
1. *pihen* 'rest'	$S(x, e)$
2. *fut* 'run', *portalanít* 'dust'	$A(x, e)$
3. *megír* 'write down'	$A(x, e_1) < S(x, e_2)$

4. *elér* 'reach', *megáll* 'stop' $A(x, e_1) < P(x, e_2) < S(x, e_3)$

5. *elborozgat* 'drink wine for awhile' $A(x, e) < DELIM(e)$

6. *tüsszent* 'sneeze', *feljajdul* 'cry out in pain' $P(x, e)$

7. *eltörik* 'break' $P(x, e_1) < S(x, e_2)$

8. *végigül* 'sit through' $[S(x, y, e_1) \Leftrightarrow A(x, y, e_2)] < S(x, y, e_3)$

Table 3.

The event types of verbs determine the event types of sentences in which they occur. This is, of course, not always the case. As we saw above, *tüsszent* 'sneeze' type verbs, which are lexically punctual verbs, can be turned compositionally into process verbs, and *portalanít* 'dust' type verbs, which are lexically process verbs, can be turned compositionally into accomplishment verbs of type **3.** We are not going to discuss the compositionality of event structure in more detail in the present paper. For simplicity's sake we are going to assume that the event structure of sentences is determined by the event structure of their verbs.

We are now in a position to have a closer look at the relationship between event structure and aspect. We will restrict ourselves to the two major aspectual categories 'perfective' and 'imperfective'. We define these notions by means of their subinterval properties. Let I be the time interval during which a situation holds:[30]

(39)a. A situation G is perfective if there is no subinterval of I during
     which G holds.
   b. A situation G is imperfective if G holds at most subintervals of I.

Or, to put it differently, perfective situations are characterized by an indivisible time interval whereas the time interval of imperfective situations is divisible. (39a,b) implies that a perfective event can only be true of the whole time interval I whereas an imperfective event may be true of any subinterval of I.

The time interval of a punctual event is certainly not divisible, hence predicates whose event structure consists of a single punctual event

must be perfective. If an event structure contains two or more subevents, then each subevent must be assigned a different subinterval, i.e., the time interval of the event is split up into two or more subintervals. This means that the verb types mentioned in Table 3. under **4., 7.,** and **8.** are perfective since the situations they describe cannot be true for most subintervals. This leaves us with verbs expressing the delimitative *aktionsart* which are neither punctual, nor do they contain two or more subevents. But the events in question are always delimited by a temporal adverbial. The situations they describe hold until their endpoint is reached, consequently the delimited event must be perfective.

Note that there is independent evidence for the perfectivity of these predicates. One way of showing this is to use a test first proposed by Kamp (1979), which was based on the observation that in a narrative text a 'perfective' event may move forward the sequence of events even if there is no temporal adverbial in the sentence, whereas in the case of an 'imperfective' event this is not possible.[31] Consider, for example, (40a,b).

(40)a. *Megírta a levelet és hazament*.
    'He wrote the letter and went home'
  b. *Megállt és körülnézett*.
    'He stopped and looked around'

In both cases the event described by the first conjunct must precede the event described by the second one.

We are now left with **1., 2.**, and **5**. Divisible temporal intervals are a characteristic feature of states and activities, hence they are imperfective. As for **5.,** the predicate DELIM(e) seems to have the same effect on a process as a punctual subevent. The 'temporal sequence' test shows that *elborozgat*-type verbs must be perfective, too.

(41) *Elborozgattak egy darabig és hazamentek*.
    [32]'They drank wine for a while and went home'

In sum, then, all verb types except for **1.** and **2.** are perfective. Aspect can be read off from event structure.

5. Conclusion

In the present paper we have been using temporal adverbials in order to identify verb classes and we have found that (at least) nine such classes can

be determined. This number significantly exceeds the number discussed earlier in the literature.[33] The next question was to find out how compatibility with temporal adverbials relates to event structure. It turned out that five different event structures can be fully determined, two only partially and in one case nothing at all could be said about event structure on the basis of compatibility with temporal adverbials.[34] In these cases we had to rely on the semantics of the verbs in question. In this way we ended up with eight different event structures.[35] Finally, we were looking at the relationship between event structure and aspect. It was found that in most cases (if event structure consists of a single punctual event or if it contains two or more subevents) aspect automatically follows from event structure. It was also pointed out that if boundedness is properly defined, the perfectivity of delimitative verbs, too, can be read off from event structure.

Notes

[1] The present paper is based on Chapter 4. in Kiefer (2006).

[2] Note that – in contrast to *for*-adverbials in English, which are ambiguous – Hungarian uses two different forms to express the two meanings: the postposition *át* is used in the case of time span adverbials and the case suffix *-ra* with adverbials denoting the length of a resulting state.

[3] Most verbs which we have taken as representatives of a verb class were discussed in various works on aspect and/or event structure.

[4] We will not provide complete morphological information in the glosses.

[5] The criteria proposed in the literature (e.g. Dowty 1979) for separating statives and activities do not work properly in Hungarian, however, we may use the adverb *javában* '[to be] in the middle of [doing something]; [to be] busy [doing something]' for this purpose, which works perfectly: **Péter javában látta a csillagot* 'Peter was in the middle of seeing the star' – *Péter javában olvasott* 'Peter was busy reading'. The adverb *javában* stresses the fact that something is going on and it is incompatible with temporal adverbials of type (a) and (e), however, it may cooccur with a time point adverbial, as in *Péter két órakor javában olvasott* 'Peter was in the middle of reading at two o'clock'.

[6] 'PRT' denotes the verbal particle, which, among other things, turns an activity verb into an accomplishment verb. Particle verbs are normally aspectually perfective.

[7] In both senses of the adverbial.

[8] Both verbs are morphologically complex; they contain a verbal particle: *meg+ír, el+ér*.

[9] 'ALL' denotes the allative case suffix.

[10] Cf. Pustejovsky (1991: 57-58).

[11] The verb *elborozgat* represents one of the *aktionsarten* in Hungarian. As in Slavic, in Hungarian, too, all *aktionsarten* are derived by morphological means (prefixation, suffixation). Aspect and *aktionsart* are two different notions.

[12] Smith (1991) calls 'sneeze' and similar punctual verbs 'semelfactive'. Note that this term is used to denote a special type of *aktionsart* in Slavic linguistics. Punctual verbs are not all semelfactive in Smith's sense, as we shall see presently.

[13] The Hungarian verb has no progressive form: the verb forms in (12a) and (12b) are identical, the different interpretation is due to the different time adverbials.

[14] Hungarian is not different from English in this respect.

[15] In this respect *portalanít*-type verbs are similar to 'verbs of creation'.

[16] Of course, deictic temporal adverbs are not a problem: *Yesterday he sat through the performance.* For a detailed discussion of verbs with the particle *végig* 'to the end' cf. Piñon (2000).

[17] Cf. fn. 5.

[18] We disregard individual cases such as the one represented by the verb *túlél vkit* 'outlive sb', which is compatible with an adverbial of type *két évvel* 'by two years' only: *Két évvel túlélte a férjét* 'She outlived her husband by two years'. This verb, however, does not respresent a verb class since it is the only verb of this type.

[19] Cf. Pustejovsky (1991), and for a more detailed discussion Engelberg (2000: 48-54).

[20] Cf., for example, Engelberg (2000) and (2004).

[21] Engelberg (2004) distinguishes five temporal relations. In addition to the ones just mentioned, he postulates two more relations: something like 'the event starts earlier' and 'precedence with overlap'. The linguistic evidence for their postulation is not very convincing, however.

[22] Smith considers the derived readings to be a consequence of the incompatibility of the meaning of the predicate and the temporal adverbial. The punctual event reading of *Mary coughed* and the durative reading of *for an hour* are incompatible, therefore the temporal adverbial gives rise to an iterative reading of the predicate. Repetitive events are always process-like. Cf. Smith (1991).

[23] The English translation of the Hungarian sentence is, of course, grammatical.

[24] Cf. Kiefer (1995-1996) on particle reduplication in Hungarian.

[25] This is, of course, not the same thing as Smith's derivation.

[26] Cited from Pustejovsky (1991).

[27] Cf. Gyuris (2003) for some discussion of this problem.

[28] In the representations we will restrict ourselves to the intransitive cases.

[29] DELIM(P) can properly be defined as follows:

$$\forall P[DELIM(P) \leftrightarrow \forall x \forall y(P(x) \ \& \ (y \subset x \rightarrow P(y)) \ \& \ x \subset z \rightarrow \neg P(z))]$$

[30] A similar definition has already been proposed by Dowty 1979.

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[31] We know, of course, that this is a sufficient but not a necessary condition of perfectivity, however, the details of the problem need not concern us in the present paper.
[32]

[33] Cf. Table 1. Note that the verbs in (1) and (2) and (8) and (9) cannot be kept apart by means of the adverbial test.
[34] Cf. Table 2.
[35] Cf. Table 3.

Aspect and adverb interpretation – the case of *quickly*[1]
Boldizsár Eszes

1. Introduction

The aim of this paper is to discuss the possible meanings of *quickly* (and the equivalent Hungarian adverb *gyorsan*), its relation to sentence aspect, and to provide a semantic analysis for these different meanings. I deal with the so-called clausal and manner readings of the adverb, and conclude that we need to distinguish between its aspectual, rate and manner interpretations.
 Section 2 introduces Ernst's characterisation of the English adverb *quickly*. In section 3, I discuss Schäfer's critical remarks on Ernst's theory and some observations on the interpretation of *quickly* as well as the syntactic position of the adverb. Section 3 also presents the Hungarian data and gives an informal explanation for some of the distributional phenomena. The concluding section provides a semantic analysis for the emerging three different senses of *quickly*.

2. Ernst's theory of adverb interpretation
 Thomas Ernst's theory of adverbial modification accounts for the interpretation of the adverb *quickly* (in its manner reading, more on this see below) by assigning it to the category of Quality (Predicational) Adverbs, which share the following properties (Ernst (1984):

(A) They are represented semantically by a gradable adjectival predicate (like LOUD, PROBABLE, CLEAR etc.)

(B) They are non-quantificational.

(C) They take entities like events, facts and propositions as arguments.

(D) They are almost always composed of an adjective plus the suffix *-ly* in English.

Within the category of Predicational Adverbs, we can distinguish the so-called Pure Manner Adverbs (PMA), which share the following semantic characteristics:

(a) PMAs usually involve perceptual qualities: light, sound, taste, physical action and so on.

(b) PMAs modify the perceptible dimensions of an event directly, while the manner readings of other Quality Adverbs only indirectly.

Consider a typical PMA like *loudly* and compare it to a so-called mental attitude adverb like *sadly* (Schäfer 2001):

(1)a. *John walked loudly off the stage.*
   b. *John walked sadly off the stage.*

Whereas *loudly* denotes a perceptual quality, *sadly* does not modify the event but instead expresses a property of the agent's mental attitude. Thus (1)a. characterizes the walking event, while (1)b. contains a psychological adjective, which is simply a quality adverb.
  We can also distinguish between the so-called clausal and manner readings of quality adverbs.

(2)a. *Alice has cleverly answered the questions.*
   b. *Alice cleverly has answered the questions.*
   c. *Alice has answered the questions cleverly.*

(2)a. is ambiguous between the readings (2)b. and (2)c. (2)b. is the subject-oriented clausal reading ('It was clever of Alice to have answered the questions'), which is compatible with her having given stupid answers, while (2)c. displays the manner reading, which is consistent with the possibility that answering the questions at all was stupid of her.

Ernst mentions two important differences between the manner and the clausal readings. One is that the manner reading requires the manifestation of the quality expressed by the adverb, while the clausal reading is typically either a speaker-oriented or a subject-(agent-) oriented one. Besides agentivity, the clausal reading involves the agent exercising control over the eventuality by choosing or avoiding some action, so in a situation where (2)b. is true, the act of answering warrants positing more cleverness in the agent (as opposed to cleverness exhibited in the content of the answer) than the average norm for answering events.

This leads to the second difference, which concerns the ground of comparison in the two cases and can be accounted for on the supposition that the comparison classes used to interpret the two are different. These comparison classes are sets of actual and possible events that provide the basis for comparing the quality of a particular event with other events of the same type, or alternatively with other unspecified possible events. This means that the comparison class for manner readings consists of so-called Specified Events that receive the same description as the one forming the basis of comparison. In examples (2)a-c., the manner reading requires that Alice's answer should be compared to other possible answers with respect to the manifested property, whereas the clausal reading requires that her answer should be compared to other possible events, especially to not answering the questions at all.

As I will argue in the paper, the clausal and the manner readings of *quickly* can be analyzed with the help of scale structures, which accords with the basic assumptions of Ernst's theory of adverbial modification. However, as there is a third possible temporal interpretation of *quickly*, which cannot be categorized in terms of the clausal vs. manner dichotomy, we need to make some further distinctions to see how this adverbial interacts with verbs of different aspectual types.

3. The interpretations of the adverb *quickly*
3.1. Categorization issues

Ernst (2002) only slightly modifies the details of his previous framework and makes a distinction between the pure manner and the aspectual meanings of *quickly*. However, Schäfer (2001) raises an important critical point about Ernst's categorization, arguing that *quickly* cannot be a prototypical (core) pure manner adverb. He gives grounds to his claim pointing out that, although *quickly* satisfies the semantic criteria for Pure Manner Adverbs on its manner reading, it may receive another, metaphorically extended temporal (aspectual) interpretation as well.

  On Ernst's categorization, this aspectual meaning of *quickly* is distinct from the pure manner reading. Schäfer does not accept this claim because, as he notes, if we adhered to Ernst's original criteria, *quickly* would neither count as a manner adverb under this latter reading (because it has nothing to do with the perceptible qualities of the event), nor a quality (predicational) adverb. Rather, it should be considered a functional adverb of time. However, aspectual *quickly* would not resemble other quantity adverbs like *immediately* or *soon*, because these do not have a pure manner reading as well. This aspectual interpretation of *quickly* cannot be a clausal reading in the strict sense of the term either, because *quickly* cannot be paraphrased by predicating the related adjective QUICK of the state of affairs described in the rest of the sentence, as (3)a-c. show:

(3)a. *John quickly lifted his arm.*
   b. 'John was quick in lifting his arm.'
≠ c. 'John lifted his arm and that (fact) was quick.'

Schäfer argues that the temporal interpretation of *quickly* is a metaphorical construction. Contrary to Ernst, who excludes *quickly* from the class of PMAs on the basis of this temporal meaning, Schäfer concludes that we must distinguish between core PMAs like *loudly* or *tightly* and other PMAs like *quickly*, *slowly* or *quietly* whose meanings can be metaphorically extended to obtain another reading.

  On the supposition that the temporal meaning of *quickly* is metaphoric, we may expect that synonyms and antonyms of *quickly*

do not have the same interpretational possibilities. This prediction is borne out in English: as Schäfer observes, the adverb *fast*, a word which is a close in meaning to *quickly* lacks the temporal (aspectual) reading and cannot occur pre-verbally.

(4) **John fast lifted his arm.*

Based on these observations, Schäfer proposes an underspecified semantic form for the base meaning of *quickly,* so that he can derive the manner and the clausal (aspectual) readings by introducing certain operators into the compositional process.

  Although I do not relate these different meaning, my analysis in section 4 uses Schäfer's representation of the aspectual reading of *quickly* as a starting point for developing a semantic analysis.

3.2. Three senses of *quickly*

Following Travis (1988), Tenny (2000) observes that like some other adverbs, *quickly* is ambiguous between the aspectual and another – rate or manner – reading, depending on its syntactic position.

(5a) *Quickly, John will be arrested by the police.*
(5b) *John quickly will be arrested by the police.*
(5c) *John will quickly be arrested by the police.*
(5d) *John will be arrested by the police quickly.*

In (5a) and (5b) *quickly* modifies the time of the preparation preceding the arrest, so these sentences mean that the arrest is going to happen very soon. In (5c) and (5d), it is the process of arrest that *quickly* modifies, so they mean that the rate or manner of the arrest will be hurried.

  Tenny proposes a theory of semantic zones to account for the distribution and the corresponding readings of adverbs. She argues that *quickly* is in fact three-way ambiguous depending on the semantic zone where it modifies events:

Type of modification	Semantic zone
1. pure manner modification:	core event (cf. celerative II in Cinque (1999))
2. true rate modification	core event
3. aspectual modification:	middle aspect (cf. celerative I in Cinque (1999))

According to Tenny, (6) has two readings, given in (6)a. and (6)b.:

(6) *Mary moved quickly to the windo*w.
    a. Mary moved her body in quick motions while progressing to the window, although her traversal of the path to the window may not have been a fast one. (pure manner modification)
    b. Mary's traversal of the path to the window was fast. (true rate modification)

Compare also (6) with (7) which can only be interpreted as describing the manner Mary moved to the window.

(7) *Mary moved to the window quickly.*

Schäfer's 'temporal reading' corresponds to Tenny's 'aspectual modification reading', which is illustrated in (8):

(8) *Mary quickly moved to the window.*

However, as Thompson (2006) points out, when *quickly* is preposed, it may have a rate reading, too in addition to the aspectual reading. So (5a) (and also (5b)) may mean that the process of the arrest was quick. The only interpretation preposed *quickly* cannot have is the manner reading.

This raises the possibility that *quickly* in its rate reading modifies in the higher, middle aspect zone, like aspectual *quickly*. Thompson (referring to the rate reading for perfective sentences as the "whole event" reading) argues that *quickly* on the rate reading is adjoined to AspP, while on the manner reading it is adjoined to VP (or vP). She further claims that the lower attached *quickly* with a manner reading modifies only atelic events, while *quickly* on its rate reading can modify only telic events.

Thompson's syntactic analysis is supported by linear order facts as well. When an unambiguous manner adverb like *carefully* precedes *quickly*, it may have both the manner and the rate readings, depending on the context.

(9) *John built the house carefully quickly.*

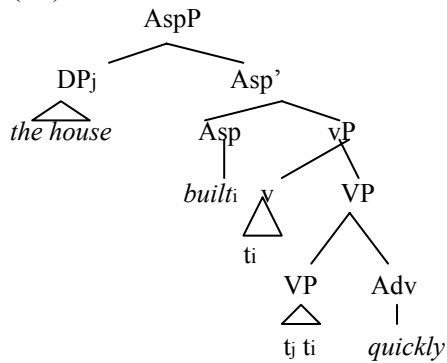However, when *carefully* follows *quickly*, the only reading available is the manner reading:

(10) *John built the house quickly carefully.*

Following Thompson (2006), we may schematically draw up the following tree structures for the two types of modification.

(11)

(12)

```
                    AspP
                 ┌────┴─────┐
              DPⱼ          Asp'
             ┌─┴─┐       ┌──┴───┐
          the house    Asp     vP
                      builtᵢ  ┌──┴───┐
                             v      VP
                           ┌─┴┐   ┌──┴──┐
                           ti    VP    Adv
                                ┌─┴┐    │
                               tⱼ tᵢ  quickly
```
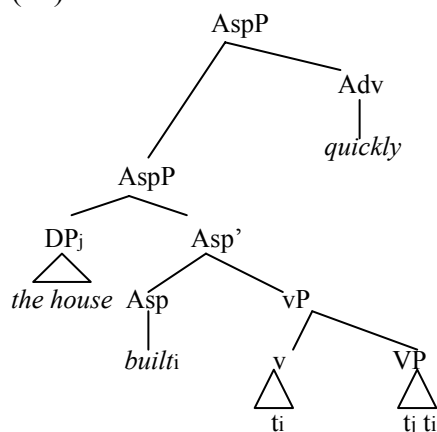
As É. Kiss (this volume) shows, the word order with respect to the corresponding Hungarian adverb *gyorsan* is different, insofar as the occurrence of *gyorsan* is restricted when ordered with a real degree adverb like *félig* (*half*): according to a supposedly universal hierarchy, manner adverbs precede degree adverbs, whereas frequency adverbs precede manner adverbs:

(13)a. *János gyorsan félig megcsinálta a   házi feladatot.*
     John   quickly half PRT-did   the homework.
     'John quickly did half of the homework.'

    b. ??*János félig gyorsan megcsinálta a   házi feladatot.*
      John half quickly PRT-did   the homework
      'John quickly did half of the homework.'

By contrast, the postverbal placement of the so-called predicational adverbs like *gyorsan* is unrestricted:

(14)a. *János megcsinálta gyorsan félig a   házi feladatot.*
     John   PRT-did   quickly half the homework
     'John did quickly half of the homework'.

    b. *János megcsinálta félig a házi feladatot gyorsan.*
     John PRT-did   half the homework   quickly.

'John has done half of the homework quickly.'

Assuming the framework presented by É. Kiss, we can say that manner, frequency and degree adverbs are all called 'predicate adverbials', because they are located within a special phrasal projection PredP (for details see this É. Kiss, this volume). However, as I will try to argue in the rest of this paper, adverbial modification interacts with focus and aspect, so the question whether it involves the aspectual projection AspP and the focus projection FP in Hungarian also emerges. The differences in the possible interpretations of *gyorsan* with respect to focus and some aspectual types like the progressive are more salient in Hungarian due to the presence of the telicizing verbal particles.

3.3 Interaction with aspect

So far we have distinguished three supposedly different meanings of *quickly*: a manner, a (true) rate and an aspectual one. Actually, the issue is more complex than it would seem at this point. Kearns (2005) argues that certain predicates modified by *quickly* differ in telicity, depending on the position of the adverb. While preverbal *quickly* forces a telic reading if it is available, post-verbal *quickly* allows both a telic and an atelic reading. Kearns calls this latter reading a "manner" interpretation, but in fact this may be either the manner reading or the one which Tenny identified as the true rate meaning of the adverb, depending on the meaning of the verb.
Kearns observes that the postverbal position of *quickly* is compatible with either a bounded or an unbounded event, so the verb *eat* in example (15) below may be interpreted either way, and it would seem that *quickly* may be interpreted either as a manner or as a rate adverbial. Thompson, however, as noted, claims that the only available reading for *quickly* in atelic sentences is the manner reading. In fact, in my view this is just a terminological issue: if we replace the 'whole event' reading which cannot apply to atelic (imperfective) events by definition in favor of the 'rate reading'

which may be applied to atelic events, too, then the rate reading may also be available with atelic sentences.

A question that needs to be answered in this connection concerns the aspectual status of telic verbs of movement with an endpoint. Caudal and Nicolas (2005) argue that these verbs (like X drove to X, for example) cannot be gradual – they should be represented as atomic change-of-state events, because they cannot be modified by *completely* or *finish*. Thus we have conflicting evidence that pull us in different directions: on the one hand, we should be able to account for the possibility of modification with *quickly*, where the rate meaning of the adverb clearly requires a development portion of the event, but we have to do justice to the data of modification with *completely* and the like. I cannot resolve this tension in this paper, so I will continue with the assumption that these verbs are non-atomic.

To round off the discussion of aspectual differences, let us consider the two possible interpretations of (15), an example borrowed from Kearns (2005). (15a), the temporal interpretation of the verb *eat* is unbounded, as the completion of the event can be denied without contradiction. By contrast, once *quickly* is attached in a preverbal position as in (15b), the denial of completion of the event would be contradictory.

(15) *John ate the apple quickly*.

(15)a. *John ate the apple quickly, but Mary snatched it away before he finished it*. – Unbounded (imperfective), manner or rate reading

   b. ??*John quickly ate the apple, but Mary snatched it away before he finished it*. – Bounded (perfective), aspectual reading

Used with *quickly*, the change-of-state verb *dry* also alternates between process and accomplishment senses depending on the position of the adverb (see Kearns 2005 for details):

(16)a. *The clothes dried quickly, but were still quite damp when I checked them*.

b. ??*The clothes quickly dried, but were still quite damp when I checked them*.

 The following table gives an overview of the different interpretations of the adverb *quickly* depending on its possible positions.

Preverbal (incl. Preposed) AspP-adjoined	Postverbal, VP (PredP)-adjoined
Aspectual reading Rate reading Manner reading	Manner reading Rate reading

 The next section surveys the Hungarian data bearing on the various interpretations of *gyorsan* and the different interpretations of the adverb, showing how they depend on its co-occurrence with verbs belonging to different aspectual classes and focus.

3.4 The Hungarian data

This section will introduce the relevant data concerning the interaction of the adverb with the different aspectual verb classes, and compare the distribution of *gyorsan* in sentences containing activities, accomplishments, achievements and so-called punctuals. Of course, a number of other factors besides verbal meaning may also affect the resulting aspectual interpretation, but here I will largely ignore these to keep things simple.
  The adverb *gyorsan* is incompatible with states, so I will not consider this aspectual class, neither will I discuss certain (mainly post-verbal) placements of the adverb which are generally regarded as marginally acceptable. I will use the labels M, R and A as short for manner, rate and aspectual readings respectively.
  First, consider how *gyorsan* is interpreted when it modifies an intransitive verb of motion:

(17) *János* [FocP *gyorsan* [PredP *futott   (három órán át)*]]. M, R
     John   quickly   ran   three   hours for
     'John ran quickly (for three hours).'

Gyorsan in (17) is in focus position, where it can be interpreted as
specifying the manner or the rate of John's motion. We may explain
the absence of the aspectual reading on the supposition that the
preceding or preparatory time needed for the aspectual interpretation
is absent in activities. This view about imperfective atelic sentences
is supported by the substitution of the aspectual adverbs *rögtön* ('at
once') or *azonnal* ('immediately') for *gyorsan.* These expressions
can only modify the preparatory time.

(18)a. **János rögtön futott három órán át.*
         John   at.once ran   three   hours for
         'John at once ran for three hours'.

(18)b. **János azonnal   futott három órán   át.*
         John   immediately ran   three   hours for.
         'John immediately ran for three hours.'

At this point we may also discern an interesting parallel between the
aspectual reading of *gyorsan* and these aspectual adverbs. Kiefer
(1994) observes that *rögtön* or *azonnal* can disambiguate certain
sentences that are ambiguous between an imperfective and a
perfective interpretation.

 (19) *Amikor csengettek, János (éppen) telefonált.*
        when   bell-rang   John   (just) phoned
        'When the bell rang, János was speaking on the phone.'

(20) *Amikor csengettek, János rögtön /azonnal   telefonált.*
       when   bell-rang   John   at.once/immediately phoned
       'When the bell rang, János made a call immediately.'

The main clause in (19) has progressive aspect, as attested by the modifier *éppen* ('just'), and the event time of the activity described in the main clause includes that of the subordinated time clause. By contrast, the aspect of the main clause in (20) is perfective and the events described in the main clause and the subordinated time clause are understood as consecutive. It seems that the function of *rögtön* ('immediately') in (20) is to relate the event time of a perfective clause it is contained in to a certain time immediately preceding it, which may be explicitly expressed or implicitly inferred from the context. When interpreted aspectually, the function of *gyorsan* looks very similar:

(21) *Amikor csengettek, János gyorsan telefonált a rendőrségre.* A
     when   bell-rang   John quickly phoned   the police-to
     'When the bell rang, John quickly called the police.'

Let us now return to atelic verbs. Consider the transitive change-of-state verb like *szárít* ('dry') in (22):

(22) *A szél* [FocP *gyorsan* [PredP *szárította (a kiterített ruhákat)*]]. R
     the wind   quickly   dried   the hung-up clothes.
     'The wind quickly dried the clothes on the line.'

It would be impossible to interpret this sentence on the manner reading of *gyorsan*, because the wind is a non-human natural force instead of an agent, so the manner of drying events by the wind cannot be modified. In fact, it cannot possibly have the aspectual reading either for reasons explained above. Of course, the so-called change-of state verbs that denote non-agentive intransitive processes like *érik* ('ripe') or *szárad* ('dry') also lack the manner meaning:

(23)a. *A paradicsom gyorsan érett.* R
     the tomato   quickly ripened
     'The tomato ripened quickly.'

   b. *A ruha gyorsan száradt.* R

the clothes quickly dried
'The clothes dried quickly.'

By contrast, *gyorsan* modifying an accomplishment with an
incremental theme and an agent may receive the rate and the
aspectual readings.

(24) *János gyorsan felépítette   a   házat.* R, A
     John quickly PRT-built   the house
     'John built the house quickly.'

Atelic sentences containing so-called route verbs with an associated
path of the motion (for details see Tenny (1994)) are ambiguous
between a manner and a rate meaning of *gyorsan*, as (25) illustrates:

(25) *János gyorsan mászott a   létrán.* M, R
     John quickly climbed the ladder-on
     'John climbed the ladder quickly.'

The adverb *gyorsan* has the following interpretations in sentences
containing a particleless verb with a telicising directional NP:

(26)a. *János* [FocP *gyorsan* [PredP *ment   (az ablakhoz)*]]. M, R
       John   quickly   moved   the window-to
       'John quickly moved to the window.'

   b. *János* [AspP *gyorsan* [AspP[PredP *az ablakhoz* [PredP *ment*]]]] M,R,A
      John   quickly   the window-to   moved
       'John quickly moved to the window.'

We may account for the availability of the aspectual reading in
(26)b. by assuming that *gyorsan* sits in Spec, FocP in (26)a.,
whereas in (26) b. it is attached to AspP, and the DP *az ablakban* ('in
the window') is in the specifier position of PredP, a projection below
AspP.

Compare the positions of non-focussed *gyorsan* in sentences containing an accomplishment with a telicising verbal particle and a Goal-denoting NP.

(27)a. *János gyorsan felment   az emeletre*. M, R, A
     John   quickly up-went the first.floor-to
     'John went upstairs quickly.'

  b. *János felment   gyorsan az emeletre*. M, R, A
     John up-went quickly   the first.floor-to
     'John went upstairs quickly.'

By contrast, the aspectual meaning is not available when the adverb is in focus.

(28) *János* [FocP *gyorsan* [PredP *ment fel   az emeletre*]]. M, R
    John   quickly   went   up the first.floor-to
    'John went upstairs 'quickly.'

The following sentences illustrate that *gyorsan* in progressive sentences containing   accomplishments with a directional NP has the manner and the rate readings.

(29) *János (éppen) gyorsan 'ment fel a   lépcsőn   az emeletre...*
    John (just)   quickly   went up the stairs-on the first.floor-to
                                       (prog) M, R

    'John was going upstairs quickly when...'

(29) has progressive aspect, which in Hungarian requires the explicit expression of a reference time in the past with a subordinate clause to count as a complete utterance. Being the object of the verb *megy (go)'* the stairs provide a measure for the climbing event, and the adverb, besides qualifying John's motion as quick (manner), may also mean that the rate of the climbing the stairs was quick compared to other climbing events.

gyorsan with change-of-state accomplishments has the following readings:

(30)a. *Péter gyorsan megfőzte   a   csirkét*. R, A
         Peter quickly PRT-cooked the chicken
         'Peter cooked the chicken quickly.'

   b. *A csirke   gyorsan megfőtt*. R, A
      the chicken   quickly PRT-cooked
      'The chicken cooked quickly.'

   c. *Péter gyorsan főzte   meg a   csirkét*. R
      Peter quickly   cooked PRT the chicken
      'Peter cooked the chicken quickly.

Also consider two sentences with achievements, to be discussed below:

(31)a. *János* [AspP *gyorsan* [AspP [PredP *felért   (az emeletre)*]]]. A
         John   quickly   PRT-reached the first.floor-to
         'John reached upstairs quickly.'

   b. *János* [FocP *gyorsan* [PredP *ért   fel (az emeletre)*]]. A
      John   quickly   reached PRT the first.floor-to
      'John quickly reached upstairs.'

Finally, the case of punctuals (achievement-like verbs without a preparatory phase) reveals an interesting property of *gyorsan*:

(32)a. #*János gyorsan megbotlott*.
         John quickly PRT-stumbled
         'John quickly stumbled.'

   b. #*János gyorsan tüsszentett*.
      John quickly sneezed.

'John quickly sneezed.'

  c. *A bomba gyorsan felrobbant*. A
    the bomb quickly PRT-exploded
    'The bomb exploded quickly.'

(32)a. and (32)b. are unacceptable because when aspectual *gyorsan* is used with agentive verbs, it requires that the agent have control over the event to some extent, a precondition which is not met in (32)a. and (32)b., as these sentences describe typical involuntary actions. Perhaps an appropriate context for interpreting (32)c. would be a situation where a bomb disposal expert has control over detonating the bomb. In this scenario, *gyorsan* can only have the aspectual reading.

  Note also that *gyorsan* can be used with non-agentive intransitive accomplishment verbs, too. Consider (33a-c):

(33)a. *A   paradicsom gyorsan megérett*. R, A
    the tomato   quickly PRT-ripened
    'The tomato ripened quickly'.

  b. *A   ruha   gyorsan megszáradt*. R, A
    the clothes quickly PRT-dried
    'The clothes quickly dried.'

These sentences may express that either the rate or the termination of the accomplishment was quick. *Gyorsan* may also occur with their transitive causative counterparts, with natural forces conceptualized as causers of these events:

(34)a. *A sok   napfény gyorsan megérlelte   a   gyümölcsöt*. R, A
    the much sunshine quickly PRT-ripened the fruit
    'A lot of sunshine quickly ripened the fruit.'

  b. *A szél   gyorsan megszárította a   ruhát*. R, A
    the wind quickly   PRT-dried   the clothes

'The wind quickly dried the clothes.'

3.5 Summary of the distributional facts
Having surveyed the available readings of the adverb *gyorsan*, we may formulate the following generalizations:

(35) Generalizations about *gyorsan*

a) (focussed) *gyorsan* has manner and rate readings in sentences containing activity verbs.

b) *gyorsan* has manner and rate readings in progressive sentences containing an associated path of motion.

c) focussed *gyorsan* has rate and manner readings in perfective sentences containing accomplishment verbs of motion.

d) non-focussed *gyorsan* has rate, manner and aspectual readings in perfective sentences containing accomplishment verbs of motion.

e) a sentence containing an accomplishment which is a change-of-state verb may receive the aspectual and the rate but not the manner readings with non-focussed *gyorsan*.

f) *gyorsan* has only the aspectual reading in perfective sentences containing achievements.

h) *gyorsan* has only the aspectual reading with punctuals expressing controllable events.

Based on these observations, the following table shows summarizes the interpretational possibilities of the adverb *gyorsan*.

	Non-progressive atelic(imper	Non-progressive telic	Progressive atelic/telic	Achievement	Punctual (controllable)

	fective)	(perfective)			
Focussed	M, R	M, R	M, R	A	A
Non-focussed	---	(M+agentive), R, A	M, R		

3.6 Two kinds of aspectual reading?

According to (35d), non-focussed *gyorsan* has both the rate and the aspectual readings in perfective sentences containing accomplishments. The aspectual reading of *gyorsan* in telic sentences often carries the implication that the path of the movement was traversed quickly. At this point, by choosing appropriate contexts it may be shown that the two readings are independent of each other. Suppose that John ate a small apple at a leisurely pace. In this scenario, (36) may be truthfully asserted:

(36) *János lassan ette az almát, mégis gyorsan megette.*
　　 John slowly   ate the apple still   quickly PRT-ate
　　　　　　　　　　　　　　　　Lassan: R, *gyorsan*: A
　　 'John ate the apple slowly, still he ate it up quickly.'

Here the slow rate of the eating event, expressed by the adverb *lassan* ('slowly') is contrasted with the quick finishing of eating up the apple indicated by *gyorsan*, which shows that *gyorsan* here has the aspectual sense.

　This might suggest that we ought to distinguish between the terminative and the inceptive aspectual senses of *gyorsan*. The clear cases for the inceptive aspectual meaning seem to be those where *gyorsan* is used with certain inchoative verbs in Hungarian or with the inchoative construction *elkezd V-ni* 'start to V' (A-I here indicates the inceptive aspectual reading):

(37)a. *János gyorsan elindult haza.* A-I
　　　 John quickly PRT-left home
　　　 'John left for home quickly.'

b. *Péter gyorsan feldühödött*. A-I
　　Peter quickly PRT-got-angry
　　'Peter got angry quickly.'

(38) *Péter gyorsan elkezdett　　futni　　/vacsorázni/olvasni.*　　A-I
　　　Peter quickly PRT-started   run-INF/dine-INF /read-INF
　　　'Peter started to run/eat his dinner/read quickly.'

In (38), *gyorsan* modifies the VP *elkezd V-ni*, but it may also be inserted between the verb *elkezd* and the infinitive, in which case it modifies the rate or the manner of the event expressed by the infinitive.

(39) *Péter elkezdett　　gyorsan futni*. M, R
　　　Peter PRT-started quickly run-INF
　　　'Peter started to run fast.'

Nevertheless, when used with verbs of motion and change of state which function as telic predicates, the inceptive meaning of *gyorsan* cannot be separated from the terminative sense clearly, because telic predicates expressing a bounded change of state or a bounded change of location involve complex events consisting of a (durative or momentary) process and a resultant state/resultant location. The process is denoted by a verbal predicate in Hungarian, while the resultant state or location is signaled by the presence of resultative or terminative verbal particles (É. Kiss 2006a). In these cases, *gyorsan* modifies the whole telic predicate, and the sentence locates the whole complex event with its result state relative to a reference time. Besides sentences containing achievement verbs, the terminative reading of *gyorsan* is also salient in the construction *befejez* + NP 'finish + NP', where the NP is a nominalized form of a verb denoting an activity, or a quantized object. The latter is a metonymical construction where the missing verb may be inferred from the context:

(40) *János gyorsan befejezte   az olvasást*. A-T
    John quickly   PRT-finished the reading
     'John quickly finished reading.'

(41) *János gyorsan befejezte   a könyvet*. A-T
    John quickly PRT-finished the book
    'John quickly finished the book.'

   Notwithstanding some phenomena that seem to support the distinctness of these two aspectual meanings, I will consider the aspectual use of *gyorsan* uniform, because in most cases it involves a relation between a preceding reference time and a culmination point or alternatively, the start of the event. As for those sentences where it does not seem to function this way, like in examples (40)-(41), it can be understood as qualifying the length of an interval spanning a period extending from a certain reference time to the end of a preparatory period of the event.

3.7 The possible readings of gyorsan
I will assume that *gyorsan* (or *quickly*) in sentences containing achievements behaves only as an aspectual modifier. Consider (42):

(42) *Mari gyorsan felért   a csúcsra*.   A
     Mary quickly PRT-reached the top
     'Mary quickly reached the top.'

It is obvious that in (42) *quickly* (or *gyorsan*) cannot modify the manner of reaching the top, because taken in itself, a momentary act of reaching cannot be said to be slow or quick. I suppose it cannot modify the rate of Mary's climbing prior to her reaching the top either, because this activity is not strictly part of the meaning of the verb. Instead, here *gyorsan* refers to a presupposed preparatory phase of the event of Mary's reaching the top. The sentence asserts that the time that elapsed between Mary's having started climbing the hill, or between the start of the final phase of her climbing and the result

state of her being at the top is short – that is, the preparatory phase of Mary's reaching the top was quick. In addition, it may pragmatically imply that the rate at which Mary performed the preparatory phase (consisting in her climbing the hill) was quick as compared to other possible climbing events.

We may suppose some kind of pragmatic reasoning like this going on here: the speaker asserted that a short time elapsed between the start of the climbing (or alternatively, the start of some final phase of climbing) and the result of being at the top, so Mary must have been climbing quickly, because she could not have reached the top otherwise in a time shorter than the average for climbing events. Note that thus we have to distinguish two kinds of preparation: a preparatory time which does not form part of the event structure and is not presupposed in general, and a preparatory phase whose existence is presupposed by achievements in general.

3.8 *gyorsan* in progressive sentences

Property (35b) fits several event-based semantic analyses of the progressive, e.g. Landman (1992). Landman gives the truth conditions of progressive sentences within a possible-world framework, claiming that they denote unfinished, partially completed eventualities, so-called stages of possibly complete events. On this interpretation we can see why progressives do not allow the aspectual reading. This reading involves the notion of a preparatory phase or a period preceding the event – as we have seen, according to Schäfer (2001) this is what the adverbial *quickly* modifies in its aspectual use. However, progressives denote a partial, ongoing eventuality with possible outcomes whose preparatory phases (if there are any) are not available for modification. So we may conclude that the aspectual reading of *gyorsan* is acceptable only in clauses describing complete events, i.e. with non-progressive accomplishments, achievements and punctuals.

3.9 *gyorsan* in focus position

According to (35c) and (35e), one difference between the focussed and non-focussed sentences is the absence of the aspectual reading in

the case of focussed *gyorsan*. This means that the preceding time interval is not available for modification when the adverb is focussed in perfective sentences containing telic accomplishments. Although I have no ultimate explanation for the fact that this reading is not allowed in the focus position, I think it may be helpful to compare the behaviour of *gyorsan* with its antonym *lassan* ('slowly'), which must be in focus in Hungarian to receive a manner reading, sharing a common characteristic of other expressions (like *ritkán* ('rarely')*, rosszul* ('wrongly')*, kevesen* ('few') etc.) with a 'negative meaning' component. Unlike most of these negative expressions, it may also occur unaccented pre-verbally, preceding the particle-verb complex (see example (44)), and in this case it has only the aspectual modification meaning[2]:

(43) *János* [FocP *lassan* [PredP *ment (oda (az ablakhoz))*]] R, M
　　　John　　　slowly　　went　PRT the window-to
'John moved to the window slowly.' (with slow motion)

(44) *János lassan odament　　az　ablakhoz*. A
　　　John　slowly PRT-went the window-to
　　　'John slowly moved to the window'. (The event of John's going to the window took a long time to begin.)

In order to distinguish the presupposed part from the asserted content in sentences containing the focussed adverb, let us consider (45):

(45)*Nem igaz, hogy János*[FocP *gyorsan*[PredP *ment (fel (az emeletre))*]]
　　　not　true　that　John　　quickly　　went　up the first.floor-to
　　　'It is not true that John went upstairs quickly.'

The presupposed part, which can be formulated roughly as 'John went upstairs in some manner or at some rate' is preserved under negation. What is asserted in a sentence containing the focussed adverb is that this manner or rate was quick as compared to some

other possible goings upstairs: following Rooth (1996), we may suppose that these possible events form the alternative set of focus.

When focussed, the adverb *lassan*, the antonym of *gyorsan* does not have the aspectual reading either – it can modify the time preceding the beginning of an event only in a non-focussed position. That is, we cannot use *gyorsan* in its aspectual reading contrastively because the appropriate contrast with *lassan* is not available in focus. Of course, the question of why neither of these adverbs can occur in focus still needs to be explained.

The possibility of the aspectual reading with *gyorsan* (both as focussed and as non-focussed) in sentences containing achievements like *felér* needs some elucidation. As I have already explained, we can distinguish two kinds of intervals which precede the event times. The first kind of interval is attached only contingently to the event, which means that it may or may not be involved in the interpretation of certain aspectual verb classes, depending on its relevance. This interval is typically either inferred from the context or from the reference time specified in an appropriate time clause.

The second kind of interval, which is a preparatory phase, is presupposed by achievements in general, as they describe the reaching of a result state or culmination that is preceded by this phase. Used with achievements, *gyorsan* qualifies this preparatory time, rather than simply a contingent interval that precedes the event. Thus when it occurs with achievements, the aspectually interpreted *gyorsan* does have an aspectual antonym *lassan* with which it may be contrasted in focus:

(46)a. *János gyorsan ért   fel a lépcsőn.* A
       John quickly reached PRT the stairs
       'John reached upstairs quickly'.

   b. *János lassan ért   fel a lépcsőn.* A
       John slowly reached PRT the stairs
       'John reached upstairs slowly.'

4. A scalar semantics for *quickly*

I will use the semantic framework of Kennedy and McNally (1999) to give a detailed analysis of the meaning of *quickly*. The general idea behind an analysis of this sort resembles Ernst's theory where adverbs are interpreted as expressions with a semantic representation containing a corresponding adjective and an appropriate comparison class, whether consisting of specified or other, non-specified events. However, as I will argue, the different meanings of *gyorsan* require basically different kinds of comparison classes and ways of comparison with different scale structures, so the adjective QUICK involved in the semantic representation of the sentences containing *quickly* is really a shorthand for a complex relation, to be formulated in terms of scales and these comparison classes. This means that we need to flesh out the relevant scale structures in more detail to give a suitable meaning representation for all three attested meanings of *quickly*.

The basic idea behind the scalar analysis of so-called gradable adjectives (like *dry, tall, warm* etc.) may be summarized as follows. Adjectives of this type map their arguments onto abstract representations of measurement, which can be conceived as degrees. These degrees in turn may be formalized as points or intervals totally ordered along some dimension. (e.g., dryness, height, temperature etc.). Each set of degrees ordered in this way corresponds to a scale. We can then interpret the propositions containing the gradable adjectives like relations between degrees on a scale. If we use a domain with a structure like this, we may interpret these adjectives as relations between individuals and degrees.

The first question to be discussed concerns the type of scale by which the senses of *quickly* are to be interpreted. Although Kennedy and McNally do not discuss the adjective *quick*, they mention its synonym *fast* explicitly while making several interesting

observations about some similar adjectives, which also apply to *quick*.

 The adjective *quick* is a relative gradable adjective like *tall* or *deep*. 'Gradable', understood here in a narrow sense, means that the standards used by *quick* do not involve any minimal and maximal degrees. This feature contrasts it with absolute adjectives like *awake* (minimum standard) or *full* (maximum standard). Thus *quick* incorporates an open scale with no minimal or maximal elements. Although as an adjective, *quick* is an NP modifier appearing in several metonymic constructions, I think it is plausible to claim that its characterizing properties transfer to the related gradable relative adverb *quickly*. As Kennedy and McNally convincingly show, the behavior with the maximizing modifier *absolutely*, along with the fact that *fast* (and also *quick*) allows for PPs that introduce the comparison class provide evidence for the relative nature of *quick*:

(47)a. ??*John is absolutely quick*.
   b. ??*John is absolutely slow*.

(48) *This baby is quick (for a two-year old)*.

Of course, these properties must be taken into account in specifying the scale structures.
The following gives the details of a scalar analysis of *quickly*, complemented with some definitions from the event semantic framework of Krifka (1992), where events and times form complete semi-lattices with the two-place operation $\sqcup$ on the domain U of events.

(49)a. $\sqcup$, the sum operation is a function from U×U to U that is idempotent, commutative and associative.

b. The temporal trace function τ maps events to their run-times.

$\forall e,e'[\tau(e) \sqcup \tau(e') = \tau(e \sqcup e')]$

c. The structure of time intervals has atomic reference, the atoms are the time points (Ta).

Some further definitions specify the part, the proper part relations and the notion of a P-atom. This is the set of atomic events of larger events under a description P. x is a P-atom with respect to predicate P if and only if it has property P but has no proper parts with property P.

(50) $\forall x, y[x \sqsubseteq y \leftrightarrow x \sqcup y = y]$ (part relation (partial order))

(51) $\forall x, y[x \sqsubset y \leftrightarrow x \sqsubseteq y \wedge \neg x = y]$ (proper part (strict partial order))

(52) $\forall x, P[\text{ATOM}(x, P) \leftrightarrow P(x) \wedge \neg \exists y[y \sqsubset x \wedge P(y)]$ (x is a P-atom)

4.1. The manner and the rate readings

I will start with discussing the manner reading of *gyorsan*, which is available with activities and accomplishment verbs of motion. At first we might suppose that an analysis would be adequate which uses a scale structure with degrees ordered along the dimension of speed for the minimal parts (which may be considered as separate bodily motions). However, this would result in an incorrect prediction, considering that the minimal parts make up the whole event, so that their speed values add up and determine the rate of the event, which means that on this supposition the rate reading would depend asymmetrically on the manner reading. Obviously, we have to make sure that this does not happen. One possible solution would be to suppose that the manner-type modification involves the agent of the event, whose bodily motion is at issue, while under the rate reading the adverb relates the whole event to a contextual standard specified by other events of the same type.

To spell out this idea, let us introduce a new notion, the Agent-Atom of an event. Agent-Atoms are atomic parts which stand in a specific relation to the Agents of activities or accomplishments. Thus we may conceive the agent as composed of atomic parts corresponding to the minimal events, and in doing so we can attribute the intensity of the particular bodily motions to these minimal agent-parts. The definition given below assumes an ordering defined over the consecutive temporal parts of the agent, where there is a morphism from sub-events to agent parts:

(53) AG-ATOM(x', e, P) =def [(AG (e, x, P) $\wedge$ x' $\subset$ x $\wedge$ $\exists$!e' [ATOM(e, e', P) $\wedge$ AG(x, e', P)]

So in this analysis the manner reading of *quickly* is represented with reference to the atomic agent of the sub-event and a contextually determined comparison class consisting of atomic agents of other events characterised under the same description like the one at issue. The adverb *quickly* on its manner reading takes an event and a degree argument, yields the minimal (atomic) agents of the event under a description, and compares the degree of these minimal agent parts' intensity of bodily motion to minimal agent parts of other events of motion, so that the sentence asserts that all these minimal agents possess a higher degree of bodily motion than the average for minimal parts in general.

Of course, in a more precise analysis we should allow for a certain degree of vagueness as the exact number of the 'sub-agents' that have to move with a degree above average cannot be exactly specified, but for the sake of simplicity here I will use universal quantification over them.

As I have already noted, when the modification with *quickly* results in a manner reading, the adverb takes a verbal predicate as its argument together with its implicit degree argument characterizing the intensity of bodily movement. This argument is bound by default as having an unspecified value when the sentence does not contain any adverb to modify it. When an adverb is inserted, it does not only relate this argument to a contextually given average value. The

following gives an overview of the semantic composition of the sentence radical 'John run quickly.'

(54) [quicklyM] → λΦλxλd1λd2λe[Φ(x)(d2)(d1)(e) ∧ ∀ x'[AG-ATOM (e, x', F) → d(x') >C(d)])]

(55)a. [[move] V]→ λxλd1λd2λe[move(e)(x) ∧ AG-ATOM(x)(d1) ∧ rate(e)(d2)]

b. [John] → j

c. [run] ([John]VP) → λd1λd2λe[move(j)(e) ∧ AG-ATOM(j)(d1) ∧ rate(e)(d2)]]

d.[quicklyM] ([(move (John)VP]) → λd1λd2λe λe[move(x)(d2)(d1)(e) ∧ AG-ATOM(j)(d1) ∧ rate(e)(d2) ∧ d1> C(d)])]

I will assume that another difference between the manner and the rate readings of *quickly* lies in the types of their corresponding scales. Caudal and Nicolas (2005) argue that verbs may have two different types of scales associated with them, such as a) Intensity (*dry, widen*) or alternatively b) Quantity (*eat*). My analysis differs from theirs insofar as I suppose that verbs of motion incorporate both of these scale types, but they associate them with different arguments, i.e. Intensity goes with the atomic agents of sub-events while Quantity with the event as a whole. Thus the manner reading of *quickly* uses a scale of Intensity, whereas the rate reading uses a scale of Quantity. This also means that we cannot derive either reading from the other.

Below I provide the interpretation for the rate reading. Here we have to provide an appropriate comparison class for the rate reading in order to make sure that the events to be compared are of the proper kind. There are two options: either the meaning of the verb incorporates either an open scale, or a closed scale (quantity). In the first case, there are only sub-events to be compared with respect to

their quantity, so to specify the average run-time of these events we should define an equivalence relation on the set of sub-events that yields the equivalence class containing events with the same length of path as sub-events of the original event. In this case, the degree argument for the rate reading (d2) serves to compare the run-times of the atomic sub-events, so the resulting proposition asserts that the run-times of these sub-events are less than the average value. When *quickly* is used with a verb of motion with an associated path or other types of 'measuring-out' expressions (see Tenny (1994) for details), the corresponding scale is closed and the resulting interpretation should differ accordingly. Of course, in both cases the comparison is made with events of the same type as the original, that is, specified events. (56) gives the interpretation of *quickly* for the rate reading with atelic events of motion. This formulation is intended to replace the "rate" relation shown in the preceding formulas.

(56) [quicklyR] →λΦλxλd1λd2λe [[Φ(x)(d2)(d1)(e) ∧
∀e'[(ATOM, e', Φ) → (d2,e') ϕC(d)]]]

4.2 The aspectual interpretation of *quickly*

Schäfer provides an analysis for the aspectual reading of *quickly*, which serves as my starting point in this section. Consider (57a) and (58a) and their paraphrases (57b) and (58b).

(57)a. John lifted his arm quickly.
   b. 'John lifted his arm in a quick way.'

(58)a. John quickly lifted his arm.
   b. 'John was quick in lifting his arm.'

Whereas *quickly* in (57a) specifies the manner of the lifting action, in (58a) it qualifies the time span after which the activity occurred. This reading involves a contextually given reference time, and locates the event with respect to it. So (57a) may be given a more detailed paraphrase: 'The time that elapsed from a contextually given point in

time to the onset of the action/event which consists in John's lifting his arm was short.'

Schäfer assigns the semantic representation (59) to the temporal reading of *quickly* and (60) to the whole sentence (58a).

(59) $\lambda P\lambda e[P(e) \wedge \exists\tau[\tau = [tr, BEG(e)] \wedge SHORT(\tau)]$

(60) $\exists y[ARM(John, y) \wedge LIFT (John, y, e) \wedge \exists\tau[\tau = [tr, BEG(e)] \wedge SHORT(\tau)]]$

Here tr represents the contextually given reference time (an instant) and τ is a time span, so the second conjunct of (60) says that the time span leading up from the reference time to the beginning of the event is short. The speaker may specify the reference time by using a time clause, like in (61).

(61) When the bell rang, John quickly lifted his arm.

In what follows I would like to develop Schäfer's analysis for the aspectual reading of *quickly* by spelling out the meaning of SHORT (that is, the aspectual equivalent of QUICK) in the above formula. Let us start with an observation of Partee (1973), who pointed out that the interpretation of *immediately* (an aspectual adverb) interacts with tense in a sentence like (62).

(62) If Susan comes in, John will leave immediately.

The immediate future is measured from the time of Susan's coming in. In (62) the present tense is interpreted as a bound variable which is anaphorically connected to the present tense of the *if*-clause. The occurrence of present tense in the *if*-clause is not deictic, it has no specific reference.

Similarly to *immediately*, the reference time for aspectually interpreted *gyorsan* may be contextually specified:

(63) János gyorsan elkezdett olvasni.

'John quickly started reading.'

Or else the reference time may be anchored to an antecedent time given in a time-clause:

(64) Amikor Mari elmosogatott, János gyorsan elkezdett takarítani.
    'When Mary had done the washing up, John quickly started to clean the room.'

As Schäfer notes, using *quickly* in its aspectual reading, the speaker asserts that the time interval between the reference time and the beginning of the event is a short one in comparison with the time intervals of similar events that form the comparison class.
I will build on this intuition in giving a more detailed interpretation for this kind of reading. To achieve this, let me introduce the definitions of right and left boundaries as in (65)a. and b.

(65)a. LB(i,i') iff i∩i' ≠∅ ∧ ¬∃i'': i''< (i∩i') ∧ i''⊆i'
    b. RB(i, i') iff i∩i' ≠∅ ∧ ¬∃i'': i''> (i∩i') ∧ i''⊆i'

Under the aspectual reading of *quickly*, the relevant intervals are compared with respect to the closeness of their right boundary (RB) to a left boundary (LB) of a given event. Instead of a two-place relation, I will use two functions (LB, RB), which map the respective boundaries to an interval as their value. The reference interval may be given by a time-clause or it may become salient in the context.

(66) [quickly] → λΦλxλd1λd2λe [Φ(x)(d2)(d1)(e) ∧ (DIFF(LB(τ(e)), RB(i))) < C))]

The relevant comparison class consists of events of the same type like the one to be compared, and the comparison class for specifying the contextually given average value may be defined like this:

(67) {RBτ(e) – LB(i'): e ∈U}

Here i and i' are free variables. The variable i is either bound by a reference interval which is made available by a time clause or its value is given by the relevant context of the utterance. The variable i' is needed to characterize the earliness of the events in the comparison class and therefore it is different in each case.

Under this analysis, verbs of achievement would require special treatment, because being instantaneous and therefore practically identical with their culmination, the right and left boundaries of their run-time collapse into an instant. In addition, the relevant reference intervals in their case must always be the corresponding preparatory periods preceding their culmination. The analysis given here should therefore be modified accordingly to accommodate this aspectual type.

5 Conclusion

I have shown in outline how the interpretations for the different senses of *quickly* can be given, based on Ernst's theory of adverbial modification supplemented by specific scale structures in a scalar semantic framework. The overall result is an interpretation where two different senses of *quickly* are given distinct scales, while the third, aspectual sense uses a comparison class containing the run-time values of intervals. The nature of the respective scales are different, just like the required types of comparison classes. In this approach, the aspectual interpretation is not derived from a basic meaning representation but represents a distinct sense for *quickly*. The interaction with aspect and focus in Hungarian offers a direction for further research.

Notes

[1] I would like to thank Huba Bartos, Anikó Csirmaz, Katalin É. Kiss, Christopher Piñón, Balázs Surányi, and Anne Tamm for their helpful comments on the earlier version of this paper.
[2] The adverb *lassan* ('slowly') has a pragmatic function in Hungarian, which seems unrelated to its central meanings. Used this way, it can be paraphrased by the *ideje, hogy...* („it is time to V") collocation, or another adverb lassanként ('before long') and implies that the speaker is of the opinion that the action or

process which it modifies is about to take place. In this use, it may also occur in modal constructions with a special word order. Consider (a) and (b):

(a) *Lassan (már)   el   kellene mennem*.
    slowly (already) PRT should go-INF
    'It is time for me to leave'.

(b) *Lassan elmegyek*.
    slowly PRT-go-1SG
    'I am going to leave.'

(a) or (b) cannot be interpreted as specifying the manner or rate of my leaving. This pragmatic function somewhat resembles the aspectual interpretation, but is different from the standard aspectual sense. The speaker may utter (a) or (b) only when (s)he is actually about to take his leave.