

# ADVERBS OF QUANTIFICATION, IT-CLEFTS AND HUNGARIAN FOCUS

Ágnes Bende-Farkas  
Research Institute for Linguistics Hungarian Academy of Sciences  
e-mail: agnesbf@nytud.hu\*

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## 1 Introduction

This paper studies the interactions of Hungarian syntactic Focus and English *it*-clefts with adverbs of quantification. The main observation is that in these cases semantic partition, viz the division of material into Restrictor and Scope, depends crucially on the adverb's placement relative to Focus. (The main cases are presented in (1)–(4) below.) In these constructions syntactic scope is seen to determine not only the semantic scope of the adverb but also the factor that plays a role in semantic partition. As discussed in Part 2, this is to be understood in contrast with non-clefted English sentences, where semantic partition is determined by prosodic and contextual factors. (A first example is given in (5).)

The main contribution of this paper is the observation that the proper analysis for the sentences in (1)–(4) requires a tight connection between syntax and semantics. This is surprising for that segment of the literature that has focused on semantic and pragmatic factors that determine semantic partition: In the cases discussed here syntactic scope determines what material is available for semantic partition, whether it is a Background–Focus structure or or a verb's complex subevent structure. The discussion of the main cases will therefore be accompanied by a syntax–driven fragment for *it*-clefts and Hungarian Focus.

This paper is structured as follows: The remainder of this section presents the main data. Section 2 presents the ‘original’ partition problem, in nonclefted English sentences with *in situ* Focus. Part 3 introduces the necessary tools, and Part 4 contains the analysis. Part 5 offers a summary and some puzzles for further research.

### 1.1 The Data

The main observation to be accounted for in this paper is that sentence pairs like (1)–(2) and (3)–(4) have one reading each, the so-called presuppositional and Focus-driven reading, respectively. These two readings differ not only as regards the scope of the adverbials *mindig/always*, but also as regards the way in which available linguistic material is divided into Restrictor and Scope.

- (1) *János TENISZBEN<sub>F</sub> veri meg mindig Benőt*  
John TENNIS-in<sub>F</sub> beats PRT always Ben-ACC  
‘It is at TENNIS<sub>F</sub> that John always beats Ben’
- (2) *It is at TENNIS<sub>F</sub> that John always beats Ben*

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Sentences (1) and (2) only have the so-called presuppositional reading. (The labels ‘presuppositional’ and ‘Focus-driven’ will be explicated in Part 2.) These sentences both say that there is a unique game or sport such that whenever John and Ben play it John ends up beating Ben; this game is identical to tennis. In short, these sentences quantify over events of Ben and John playing tennis, stating that all such events end in John’s victory over Ben. It is implied that with other sports and games the score is different. The actual score in these other cases does not affect the truth of (1) and (2) (as long as it differs from that of John and Ben’s tennis games). These sentences are both false if there are events of Ben beating John at tennis.

- (3) *János mindig TENISZBEN<sub>F</sub> veri meg Benöt*  
 John always TENNIS-IN<sub>F</sub> beats PRT(part.) Ben-ACC  
 “It is always at TENNIS<sub>F</sub> that John beats Ben”
- (4) *It is always at TENNIS<sub>F</sub> that John beats Ben*

The sentences in (3) and (4) only have the so-called Focus-driven reading. They say that all of John’s victories over Ben have been in tennis, and not in some other game or sport. These sentences are false if there is some other game or sport in which John has beaten Ben. On the other hand the existence of games of tennis won by Ben does not affect the truth-conditions of these sentences.

A scenario that makes (1) true and (3) false is one in which John has beaten Ben a few times at some other game, besides winning every game of tennis against Ben. This is because (1) says that tennis is the unique game such that all events of John and Ben playing end in John’s victory.<sup>1</sup> (3) on the other hand quantifies over John’s victories at *any* game, saying that whatever sport or game John and Ben play, if John beats Ben it is in tennis. In fact (3) is true if John does not win every game of tennis: what matters is that all of his victories be in tennis. (1) is of course false on this second scenario.

Structures like those exemplified in (1)–(4) are relevant for two main reasons:

1. They provide addenda to the literature on adverbs of quantification. The first point of interest is the existence of cases where syntax has an unexpectedly large role to play.

As mentioned earlier, in unclefted simple English sentences semantic partition is typically determined by prosodic and contextual factors. (5) below provides a first example: With this sentence pair both readings are (in principle) available, and Focus placement decides which reading will be preferred.<sup>2</sup> Accordingly, the majority of semantic analyses ignore syntax and questions of scope, whether it is syntactic or semantic scope (but see Reyle, Roßdeutscher and Kamp (to appear)). Although the data discussed here are not unexpected (in light of what is generally known in the field about *it*-clefts or Hungarian Focus), they draw attention to the role that syntax can play with a phenomenon traditionally conceived of as semantic or pragmatic in nature.

- (5) a. *John always beats Ben at TENNIS<sub>F</sub>* — quantification over games  
 b. *John always beats BEN<sub>F</sub> at tennis* — quantification over John’s victories

A second point of interest concerns semantic theory and the question whether semantic partition is driven primarily by presupposition–assertion or by Background–Focus structures (cf. Krifka (2001a) and Beaver and Clark (2003) for an overview of the issue). It is argued in this paper that this is not a genuine dilemma, since the data that inspired presupposition–driven accounts do not in fact uniformly involve presuppositions. Instead, the observation is that in simple sentences semantic partition is driven by any sort of complex semantic structure that the adverb has access to. Background–Focus structures or complex subevent structures are on a par only in this respect, and there is no need to postulate deeper analogies between them.

This conclusion is reinforced by a wider selection of Hungarian data, which will be presented in Section 2.2. (A first example is (7-a) in Section 2.1.) Semantic partition is by and large unspecified in Hungarian sentences that are less complex than the main cases analysed in this paper. Such sentences lack syntactic Focus or a suitable presupposition trigger, and their matrix verb has a simplex subevent structure. Typically, their Nuclear Scope is provided by the matrix and the Restrictor is supplied by contextual material.

2. This work provides new evidence in favour of the hypothesis that Hungarian Focus creates a complex syntactic structure even in sentences that look syntactically simple. An additional layer (the projection *NNP*) between Focus and the rest of the sentence was introduced in Olsvay (2000b), to account for certain negation facts. (*NNP* is projected in the presence of Focus or negation.) As a solution to certain problems involving Focus and the licensing of Hungarian *n*-words it has been proposed in Kenesei (2007) that the complement of the Focus Phrase *FocP* has the categorial status of a complement clause. The intuition behind this proposal is that Focus creates its own syntactic domain.

The present paper shows a novel way in which the syntactic domain created by Focus constrains semantic interpretation: material inside this domain is inaccessible for semantic partition. This is why an adverb that precedes Focus can only have the Focus-driven reading. Conversely, an adverb within the Focus domain cannot take wide scope, and in this case semantic partition relies on structure from within the Focus domain.

An unexpected finding of the work reported here is that ‘weak’ adverbs like *néha* ‘sometimes’ or *néhányszor* ‘a few times’ obey the same scope restrictions as their strong, quantificational counterparts.

- (6) a. *It was sometimes JOHN<sub>F</sub> who beat Ben (at tennis)*  
 b. *It was JOHN<sub>F</sub> who sometimes beat Ben (at tennis)*

According to (6-a) some victories over Ben were by John; it is compatible with a scenario where others beat Ben. (6-a) will therefore accept a continuation such as *Sometimes it was PETER<sub>F</sub>*. (6-b) says that John is the only person such that some of their games end in Ben’s defeat. That is, it is incompatible with a scenario of others winning against Ben. (There are some other examples however, discussed in 4.1, where postverbal *néha* ‘sometimes’ appears to scope over Focus for some Hungarian speakers. Since English *sometimes* does not have the same option the explanation for wide scope *néha* makes use of the syntactic properties of Hungarian adverbs.)

That ‘weak’ frequency adverbs like *sometimes* pattern with adverbs of quantification is surprising for those semanticists who accept or at least do not question the conjunction of the following two assumptions: (i) Adverbs of frequency and quantification are like determiners, in that that a sentence like *Dogs are usually friendly* can be exchanged with *Most dogs are friendly*. (ii) The scope possibilities of indefinites are different from those of quantificational *DPs* containing *every* or *most*. Assumption (i) was widely held in the 1980s and 1990s (Lewis (1975), Kamp (1981), or Berman (1987)). This hypothesis was never in fact extended to issues of scope, but at the time it could have been a working hypothesis that the analogy applied to scope behaviour as well. Assumption (i) has since been questioned, but it can be said to linger in the collective memory of the field. This is why I have chosen to include two somewhat detailed discussions on ‘weak’ ‘existential’ adverbials in Section 4.

## 2 The Background of the Problem

### 2.1 Factors Determining Semantic Partition

The fundamental problem with adverbs of quantification in simple sentences is that a complex, articulated structure (the tripartite structure of the adverb) needs to be combined with a simple sentence. That is, the problem is whether the representation of the sentence must always be partitioned into Restrictor and Scope, and what factors can guide such partitioning. According to the naive (theoretically uncommitted) view, in the absence of overt clues, the entire sentence might be said to occupy the Nuclear Scope, and the Restrictor can be ‘filled in’ with contextually salient conditions that need to hold if the sentence is to be true. Thus Hungarian (7-a) and English (7-b) can both be rendered as (7-c). The context variable *C* (cf. Westerståhl (1985) or von Stechow (1994)) can be resolved to conditions that have to hold for Plácido to sing in the bathtub: he is happy, he is preparing for a first night performance, and so on.

- (7) a. *Placido mindig énekel a fürdőkádban*  
 Placido always sings the bathtub-in  
 b. *Placido always sings in the bathtub*  
 c.  $\forall e.[C(e) \rightarrow \exists e'.[R(e, e') \wedge \textit{sing-in-tub}(e')(p)]]$

*In situ* Focus in English can drive the division into Restrictor and Scope. This mechanism can be seen as another way in which English Focus can restrict the domain of an operator. According to Rooth (1985), Rooth (1995) (and also de Swart (1991), among many others) the Background or Focus-frame is mapped onto the Restrictor and the Focus onto the Nuclear Scope. A typical Background–Focus structure is shown in (8-b) or (8-c), where the variable  $P$  ranges over properties that serve as alternatives to the Focus-marked adjective *Norwegian*. (The exact contribution of the bare plural *sweaters* has been ignored in (8-b) and (8-c).)

- (8) a. *Mary knits NORWEGIAN<sub>F</sub> sweaters*  
 b.  $\langle \textit{knit}(e)(sw)(m) \wedge P(sw) , P = \textit{Nor} \rangle$   
 c.  $\langle \textit{knit}(e)(sw)(m) \wedge P(sw) , \textit{knit}(e)(sw)(m) \wedge \textit{Nor}(sw) \rangle$

If the adverb *always* is added to (8-a) the result can be represented as in (9-b). (9-b) says that all events of Mary knitting sweaters of some kind are events of Mary knitting Norwegian sweaters. Differences in Focus-marking result in different divisions into Restrictor and Scope: The truth-conditions of a sentence like *MARY<sub>F</sub> always knits Norwegian sweaters* will be different from the truth-conditions of (9-a).

- (9) a. *Mary always knits NORWEGIAN<sub>F</sub> sweaters*  
 b.  $\forall e.[\textit{knit}(e)(sw)(m) \wedge P(sw) \rightarrow \textit{knit}(e)(sw)(m) \wedge \textit{Nor}(sw)]$

It has been known for a long time, however, that Focus is not the only decisive factor where semantic partition is concerned. It was noted as early as 1987 that if the subevent structure of the main verb is sufficiently complex then this structure can also drive semantic partition — if certain prosodic conditions are met (cf. Berman (1987), Schubert and Pelletier (1989), Berman (1991), Cohen (1999), Beaver and Clark (2003) or Ahn (2005)). Some representative examples follow in (10), with the relevant event complexes enclosed in angled brackets. In (10) capitals and the subscript  $F$  indicate Focus stress, marking either narrow Focus or merely default stress assignment according to the rules of English prosody (cf. Selkirk (1984)). In this latter case stress on the rightmost major constituent is compatible with Focus projection to  $vP$  or sentence level.

- (10) a. *Cats always land on their FEET<sub>F</sub>*  
 $\langle x \textit{ falls}, x \textit{ lands} \rangle$   
 b. *Mary always manages to pass her EXAMS<sub>F</sub>*  
 $\langle x \textit{ has difficulty with } P, x \textit{ succeeds with } P \rangle$   
 c. *John always beats Ben at TENNIS<sub>F</sub>*  
 $\langle x \textit{ and } y \textit{ play}, x \textit{ beats } y \rangle$   
 d. *Robin Hood never misses the TARGET<sub>F</sub>*  
 $\langle x \textit{ shoots at the target}, x \textit{ misses the target} \rangle$

In principle, all the sentences in (10) have at least two readings. One of these readings is where the Restrictor is yielded by the Focus-frame — this is the Focus-driven reading mentioned in Part 1. The other reading is where the Restrictor is provided by a formula containing the description of the first event from the event complexes sketched in (10). This is the presuppositional or presupposition-driven reading. In this paper ‘presuppositional’ is merely a convenient label with some history: with each pair of event descriptions the second member has been commonly thought to presuppose the first.

To highlight the difference between the two readings consider sentence (10-b). The Focus-driven reading involves events of Mary passing something. The sentence conveys that all such events are events of Mary passing her exams (and not events of, say, passing her driving test). The presupposition-driven reading quantifies over eventualities or occasions of Mary having difficulties

in passing her exams; according to this reading all events of Mary struggling with her exams end in Mary passing those exams.<sup>3</sup>

To repeat, all the sentences in (10) have, in principle, both readings. It is remarkable, however, that the presupposition-driven reading is the prominent and preferred reading. The Focus-driven reading can be elicited in the right kind of context (if the Focus-marked expression is queried or contrasted). These sentences all show default Focus placement on the rightmost major constituent, so their Focus feature can be assumed to have projected to *vP* or *IP* level. This may be one reason why the Focus-driven reading is less prominent in these cases (but it remains a mystery why the presuppositional reading ‘takes over’, and why the presuppositional reading does not seem to be available with non-default, narrow Focus). Focus projection may also be the reason why an intonationally ‘standard’ English sentence like (7-b) is mapped in its entirety onto the Nuclear Scope of the adverb: it can be taken as an all-Focus sentence, with un(der)specified contextual alternatives.

## 2.2 Adverbs of Quantification and Frequency in Hungarian Sentences

This part presents a sample of Hungarian data involving adverbs of quantification and frequency, in sentences with or without Focus. It offers background information and contributes data from a non-Indo-European language to the debate on semantic partition.<sup>4</sup>

Hungarian syntactic Focus is optional. In this regard sentences of this language fall into two natural classes: Focus-less, neutral sentences, and sentences where the immediately preverbal Focus position has been filled.<sup>5</sup> It will be seen presently that the optionality of Focus marking is directly relevant to the issue of semantic partition.

Where adverbs of quantification are concerned the expectation is that in the simplest case, i.e. if a sentence contains no Focus marking, and the main verb does not contribute a complex subevent structure, the division into Restrictor and Scope is unspecified. This is indeed the case, as shown in (7-a), repeated here as (11).

- (11) *Placido mindig énekel a fürdőkádban*  
 Placido always sings the bathtub-in  
 ‘Placido always sings in the bathtub’

Sentences like (11) correspond to all-Focus sentences in English. In their case too it can be assumed that the whole sentence is mapped onto the Nuclear Scope; the Restrictor can be said to contain a context variable *C*.

If the sentence contains overt Focus and the verb does not contribute a complex event structure semantic partition is determined by the Hungarian version of the Focus frame–Focus division (discussed in more detail 3.2). Sentence (12) can be paraphrased as *All events of Placido singing something in the bathtub are events of singing cantatas*.

- (12) *Placido mindig KANTÁTÁKAT<sub>F</sub> énekel a fürdőkádban*  
 Placido always CANTATAS-ACC<sub>F</sub> sings the bathtub-in  
 ‘It is always CANTATAS<sub>F</sub> that Placido sings in the bathtub’

If the event structure of the main verb is of the complex kind and the sentence contains no Focus the division into Restrictor and Scope is determined by the subevent structure of the verb. For instance, (13) below means the same as its English counterpart (10-d). The Hungarian variant offers only a negative prosodic clue, as it were: all major constituents receive an equal amount of stress.

- (13) *Robin Hood sosem téveszti el (a célt)*  
 Robin Hood never misses PRT (the target-ACC)  
 ‘Robin Hood never misses (the target)’  
 (Whenever Robin Hood shoots (at some target) he never misses (it))
- (14) *János mindig megveri Benőt teniszben*  
 John always PRT-beats Ben-ACC tennis-in

‘John always beats Ben at tennis’  
 (Whenever John and Ben play tennis John always beats Ben)

Complications arise when the main verb has a complex subevent structure, and sentence contains Focus as well. These are the cases discussed in this paper. In these cases semantic partition is determined by the placement of the adverb relative to Focus. In sentence (15-a), where the adverb precedes Focus, the division into Restrictor and Scope corresponds to the Focus frame–Focus division. In sentence (15-b), where the (unstressed) adverb follows Focus, the division into Restrictor and Scope corresponds to the subevent structure of the complex verb *meg-ver* ‘beat’.

- (15) a. *János mindig BENŐT<sub>F</sub> veri meg teniszen*  
 John always BEN-ACC<sub>F</sub> beats PRT tennis-in  
 ‘It is always BEN<sub>F</sub> whom John beats at tennis’  
 b. *János BENŐT<sub>F</sub> veri meg mindig teniszen*  
 John BEN-ACC<sub>F</sub> beats PRT always tennis-in  
 ‘It is BEN<sub>F</sub> whom John always beats at tennis’

Sentence (15-b) stays true if there are events of John beating someone other than Ben at tennis (if John does not win all tennis games against this person). In this scenario (15-a) is false; sentence (15-a) is true if all of John’s victories in tennis are victories over Ben.

It has to be noted that (15) does not exhaust all options as regards adverb placement and scope relative to Focus, or relative to preverbal quantifiers in general. Postverbal adverbs have narrow scope relative to preverbal elements just in case they lack stress. If they are stressed they can outscope preverbal material; this is shown in (16) (where " marks prominence). In this respect adverbs of quantification are like other quantificational elements in Hungarian. The descriptive generalisation is that stressed postverbal quantifiers can outscope preverbal material. (Cf. É.Kiss (2002):119–122, Hunyadi (1999) Szabolcsi and Brody (2003).) An example with nominal quantifiers is shown in (17) below.

- (16) *János BENŐT<sub>F</sub> veri meg "mindig teniszen.*  
 John BEN-ACC<sub>F</sub> beats PRT "always tennis-in  
 ‘It is BEN whom John ALWAYS beats in tennis’  
 — Can express quantification over John’s victories in tennis —
- (17) a. *SOK<sub>F</sub> könyvet olvasott el minden diák*  
 MANY<sub>F</sub> book-ACC read PRT every student  
 ‘MANY<sub>F</sub> books have been read by every student’  
 Only:  $MANY > \forall$   
 b. *SOK<sub>F</sub> könyvet olvasott el "minden diák.*  
 MANY<sub>F</sub> book-ACC read PRT "every student  
 ‘MANY<sub>F</sub> books have been read by every student’,  $MANY > \forall$   
 Or: ‘Every student has read MANY<sub>F</sub> books’,  $\forall > MANY$

Where postverbal adverbs are concerned this paper will concentrate on unstressed adverbs and their inability to scope over Focus. Stressed postverbal adverbs are assumed to be essentially on a par with preverbal adverbs. Following the analyses in É.Kiss (t.a.b) and É.Kiss (t.a.c)) stressed postverbal adverbs are taken to be generated in a position that is the mirror image of the configuration with preverbal adverbs — that is, in both cases the adverb c-commands Focus and the projections below it. (The reader is referred to É.Kiss (t.a.d) for details; some discussion is offered in Part 3.3.1 of this paper as well.)

To end this presentation of Hungarian adverbs of quantification one last fact about adverbs and Focus needs to be mentioned. The point is that certain adverbs can, other adverbs must, appear in Focus position themselves, while a third class is prohibited from occupying the Focus position. Distribution (by and large) obeys the distribution of *DPs* in Focus (cf. Szabolcsi (1997a)) and also Csirmaz (t.a.)). Of particular interest are monotone decreasing adverbs, whose default position is the Focus position itself. (On the rules governing the placement of such adverbials see É.Kiss

(t.a.b.)

- (18) a. \**János ritkán megverte Benőt*  
John seldom PRT-beat Ben-ACC  
Intended: ‘John seldom beat Ben’  
b. *János RITKÁN<sub>F</sub> verte meg Benőt*  
John SELDOM<sub>F</sub> beat PRT Ben-ACC  
‘It was (but) seldom that John beat Ben’

Adverbs of this kind include *kevészer* ‘few times’ or *legfeljebb háromszor* ‘at most three times’. A proper semantic analysis of (18-b) is outside of the scope of this paper, but here is an informal sketch: (18-b) presupposes that there is some frequency  $\nu$  that characterises John’s victories against Ben, and it is asserted that  $\nu$  is smaller than a contextually determined threshold  $\chi$ . The presupposition–assertion structure of (18-b) can be expressed in a straightforward manner with the tools introduced in the next section. The difficult part is the calculation of  $\chi$ : (18-b) can be true if in fact John has always beaten Ben, but the number their games is smaller than some other number, e.g. the number of Peter’s victories against Ben, or the sum total of games where Ben gets beaten. (On related problems presented by *many* and *often* see e.g. Partee (1988), Fernando and Kamp (1996) or Cohen (2001)).

### 3 Building Blocks of the Analysis

The analysis offered in this paper involves several components, reflecting the complexity of the main examples. One component is the analysis assumed for adverbs of quantification, outlined in 3.3; another is a simple analysis of the subevent structure of verbs in 3.1. The framework assumed includes presuppositions (introduced also in 3.1); presuppositions will be used in 3.2, in the fragment for English *it*-clefts and Hungarian Focus.

The representations used in this paper implicitly rely on some version of dynamic semantics that employs both  $\lambda$ -abstraction and DRT’s method of anaphora resolution such as Dynamic Montague Grammar (Groenendijk and Stokhof (1990)),  $\lambda$ -DRT (Kohlhase and Kuschert (1997)) or a recent version of DRT (Genabith, Kamp and Reyle (2007)). The reader will see several cases where things will work only when some sort of dynamic mechanism is assumed. Such cases involve existential quantifiers scoping beyond their traditional scope boundaries, or context variables that become ‘contentful’ when equated with a suitable antecedent. In fact semantic partition itself is assumed to be a process of anaphora resolution: the context variable  $C$  is assumed to be equated with contextual material or subformulae from the representation of the sentence.

#### 3.1 Presuppositions, Event Structure

##### 3.1.1 Presuppositions

*It*-clefts and Hungarian Focus are commonly analysed as presupposition triggers (cf. among others Delin (1992) on *it*-clefts, or (Szabolcsi (1994)) on Hungarian). In this paper they are taken to introduce an existence and maximality presupposition, similarly to definite descriptions. The analysis will therefore rely on a representation language that explicitly marks presuppositions. It is assumed here, following standard practice, that statements can be divided clearly into an assertion and a presupposition part. (Cf. Heim (1983), van der Sandt (1992), Beaver (1995); Cresti (1995b) or Genabith et al. (2007).) Formulae with the status of a presupposition will be in the ‘scope’ of the presupposition operator  $\partial$  (following the notation introduced in Beaver (1992) or Beaver (1995)). Presuppositions will be involved in semantic composition (as in Cresti (1995b) or Kamp (2001)): Subsentential triggers are translated as  $\lambda$ -terms that contain expressions in the scope of  $\partial$ , as in the translation of the definite *the king of France* in (19-c). When such terms combine with the translation of their sisters presupposed information is passed on.<sup>6</sup>

- (19) a. *A (jelenlegi) francia király kopasz.*  
 The (current) French king bald  
 ‘The (current) king of France is bald’  
 b.  $\partial(\exists!x.[king-of-france(x)] \wedge bald(x))$   
 c. *The king of France*  $\mapsto \lambda P. [\partial(\exists!x.[king-of-france(x)] \wedge P(x))]$

One relevant property of  $\partial$  is that quantifiers from presuppositions can bind variables in the assertion part of a representation, as in (19-b) cf. Beaver (1995) or Genabith et al. (2007). Apart from the possibility of binding from presuppositions no additional assumptions are made concerning formulae of the form  $\partial(\varphi)$ , so nothing hinges on the reader’s choice of presupposition theory.

### 3.1.2 Verbs, Event Structure, Presuppositions

In the semantic and pragmatic literature on adverbs of quantification presupposition–driven readings are generally assumed to be tied to presuppositions in the main verb’s subevent structure. (See the references cited in connection with example (10), especially Beaver and Clark (2003) for an overview.) Data include well-attested presupposition triggers like *manage* and *know*, represented with the help of the presupposition operator  $\partial$  in (20).

- (20) a. *know*:  $\partial(\varphi) \wedge know(s)(x, \wedge\varphi)$   
 b. *manage to VP*:  $\partial(have\ difficulty\ with\ VP) \wedge\ succeed\ in\ doing\ or\ achieving\ VP$

The examples from the relevant segment of the literature also include less clear cases, like *beat* (*at some game*), *land*, or *miss* (*the target*). What I mean by these cases being less clear is that the presuppositional status of the relevant subevent(s) has not been subjected to reliable empirical tests.

For instance, *land* has been said to presuppose *fall*. In my opinion an event of falling or being airborne is, first of all, a sufficient condition for an event of type *land*. In addition landing describes one of the possible culminations of falling. What we can therefore say with certainty is that if there is an event of *x* landing there needs to have been an earlier event of *x* falling or being airborne (depending on what *x* is and what kind of motion it is capable of). These two events stand in the relation *Cul* introduced in Parsons (1990): landing is one of the ways in which an event of flying or falling can culminate. Note, however, that the *falling* or *flying* component of the meaning of *land* does not always survive negation:

- (21) *The plane did not land at Orly at 10 a.m. It is still at Heathrow.*

In addition, *land* does not behave like a presupposition trigger with questions:

- (22) a. **Q:** *Has the plane landed yet?*  
 b. **A:** *No, it hasn’t even taken off.*

If *land* triggered a presupposition the answer in (22) would either be uninterpretable, or marked rather heavily as presupposition denial. Instead it is a completely felicitous answer to the question, without any markedness to it.

The verbs in the *land* group vary with respect to presuppositional status.<sup>7</sup> *Land* does not seem to be a trigger. *Miss* on the other hand seems to be a so-called ‘soft’ trigger of the kind that has been analysed in Abusch (2002), whereas *play* is somewhere on the scale between a non-trigger and a soft trigger.<sup>8</sup>

In this paper these verbs are not analysed as presupposition triggers. They will be represented as all-assertional  $\lambda$ -terms. Their full entry (such as (23-b) below) will be spelled out only when necessary. (23-a) is the ‘packaged’ version, without decomposition, hence the subscript *P*. It will be used when there is no need for accessing subevents.

- (23) a.  $\lambda z.\lambda y.\lambda x.\exists e.[beat_P(e)(z)(y)(x)]$   
 b.  $\lambda z.\lambda y.\lambda x.\exists e.[play(e)(z)(y)(x)] \wedge \exists e'. [Cul(e, e') \wedge beat(e')(z)(y)(x)]$

The event variables in (23-a) and (23-b) are existentially bound already at the level of lexical entries. This is not a correct move, as generally the verb’s event argument is assumed to be bound higher, by Tense or by adverbials. The existential quantifiers in (23) are little more than notational devices, and are to be taken as shorthand for the introduction of eventuality discourse referents in a DRT-like framework. These discourse referents can then be bound by Tense or by an adverb like *always*. (Cf. Reyle et al. (to appear) for a DRT-based procedure of binding by Tense and adverbials.)

Two more remarks concerning (23) are in order. First, the relation *Cul* implies a certain kind of temporal relation between eventualities. For this reason formulae with *Cul* will contain no additional information about temporal relations. Second, note that the second conjunct in (23-b) is dependent on the first, since it contains the variable *e* introduced in the first conjunct. (23-b) could have been rendered with a different bracketing, with the second existential quantifier in the scope of the first. This is not desirable, however. The two formulae can end up in different slots of an adverb of quantification, and for this reason it is better to keep them separate. As it stands, (23-b) underscores the need for a dynamic interpretation, where existential quantifiers can bind variables beyond their traditional scope boundaries.

### 3.2 Hungarian Focus and English *It*-Clefts

This part presents a syntax-based fragment for English *it*-clefts and Hungarian Focus. Its main purpose is to provide a formally explicit framework and some tools for the analysis of the interactions that are the main concern of this paper. Although the background assumptions behind this framework are uncontroversial and the choices that have been made are not arbitrary this fragment has not been meant to provide an all-encompassing analysis that also settles methodological or architectural issues.

The assumptions behind these two fragments are the following:

1. There is a syntactic parallel between English topic-clause *it*-clefts (Prince (1978), Delin and Oberlander (1995), Delin and Oberlander (2005)), and Hungarian sentences with Focus, in that both are said to project a Focus Phrase *FocP* (cf. É.Kiss (t.a.b)). The specifier of this phrase is filled by the clefted constituent in English and by the Focus-marked expression in Hungarian. This is consonant with intonation facts and with matters of question–answer congruence (cf. Culicover and Rochemont (1983) or Roberts (1998)).

The proposal put forth in Kenesei (2007), presented later in this section, can be seen as a way of extending syntactic correspondences beyond the clefted constituent and the Hungarian Focus position.

2. English topic-clause *it*-clefts and Hungarian sentences with Focus have the same meaning, at least in the cases discussed here. Both correspond to specificational sentences and/or exhaustive answers. Their semantic representation should therefore be the same.

These constructions (obviously) differ in the way the same semantic representation is derived. English *it*-clefts are more transparent as regards the mapping from syntax to semantics, in that identification is expressed by the copula, and the existence and maximality presupposition is expressed by the relative clause (plus expletive). Also, in *it*-clefts the relative clause plays two roles that can (and need to) be kept separate: It is presuppositional in virtue of its syntactic structure, and acts as Background or Focus-frame, on account of Focus-marking on the cleft constituent.

Hungarian has no surface clues that are as clear as with English *it*-clefts (except for syntactic positioning and intonation). It has been commonly assumed that a covert exhaustivity operator contributes the necessary presuppositions and expresses identification. (Szabolcsi (1981) introduced an exhaustivity operator in the semantics; Horvath (2002), Horvath (2006) introduced such an operator in the syntax). There is empirical evidence that Hungarian Focus constructions resemble (sentences with) definite descriptions and not universally quantified statements. Consequently, an operator-based analysis of Hungarian Focus should convey exhaustivity with the help of a sum operator (typically used for definite plurals or relatives), and not on with a universal quantifier or *only* (for arguments and tests cf. Kenesei (2007) É.Kiss (2006); Szabolcsi (1994), or Bende-Farkas (2002)).

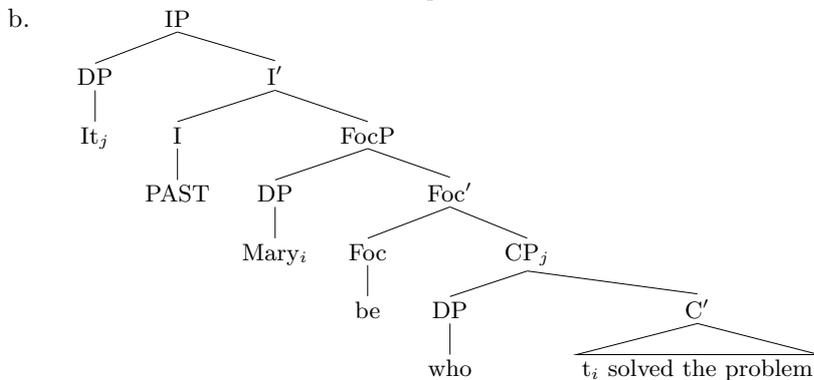
Hungarian post-Focus material has two roles, similarly to the relative clause of clefts: it is presupposed and it functions as Background. In this case however these two roles have the same source, the Hungarian Focus construction itself.

### 3.2.1 Syntactic Analysis

The syntactic analysis adopted for English *it*-clefts follows the proposal from É.Kiss (1998), in that the clefted constituent is taken to project a Focus Phrase.

Following Percus (1997) the expletive is taken to resemble an E-type kataphor, expecting its descriptive content from the relative clause. Before its contribution is completed with that of the relative clause it resembles a definite article expecting the descriptive content of the *DP*.

(24) a. *It was MARY<sub>F</sub> who solved the problem*



(Based on É.Kiss (1998))

In the syntactic analysis of Hungarian sentences with Focus I rely on what is commonly agreed upon the syntax of preverbal positions in this language (for recent references cf. É.Kiss (2006), É.Kiss (t.a.c) or Szabolcsi and Brody (2003)). Sentence-initial Topics occupy the specifier position of Topic Phrases. They are followed by quantificational elements, and (disregarding negation) one preverbal Focus. Preverbal Focus is said to project a Focus Phrase (*FocP*), with the Focus-marked expression moving to the specifier position of this phrase. Following Katalin É.Kiss' analysis in É.Kiss (t.a.d) and É.Kiss (t.a.c), and departing from a movement analysis in the vein of Szabolcsi and Brody (2003), quantificational *D*P's and adverbs of quantification are assumed to be adjoined to *FocP* or lower (adjunction sites will be discussed later, in 3.3.1). Particles and secondary predicates are said to occupy the specifier position of a Predicate Phrase (*PredP*), below Focus. It is by now standard practice to assume that the finite verb moves to the head of *PredP* (cf. Koopman and Szabolcsi (2000)); when the sentence contains Focus the verb is taken to move on to a higher head position.<sup>9</sup>

In the first Focus Phrase analyses of Hungarian Focus (cf. Brody (1990)) the verb was said to have moved to the head of *FocP*. There is, however, evidence from ellipsis that material following Focus has to be analysed as a maximal projection that includes the verb (cf. Horvath (2005)):

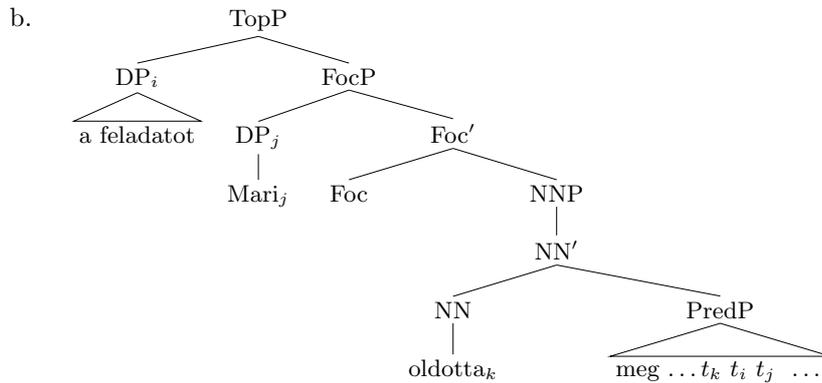
- (25) a. *Kit hívott meg Mari?*  
Who-ACC called PRT Mari?  
'Whom did Mary invite?'
- b. *Azt mondta, hogy PÉTERT<sub>F</sub> (hívta meg)*  
That-ACC said, that PETER-ACC<sub>F</sub> (called PRT)  
'She said it was Peter (she had invited)'

The solution to the problems of ellipsis facts and Verb < Particle order was to to introduce a so-called Non-Neutral Phrase (*NNP*) between *FocP* and *PredP*. (*NNP* was proposed in Olsvay (2000b), for discussion see also É.Kiss (t.a.c).) Following Olsvay (2000b) and É.Kiss (t.a.c) I will

assume that in sentences with Focus the finite verb moves to the head position of *NNP*, with the proviso that in affirmative sentences nothing intervenes between the Focus-marked expression and the verb.

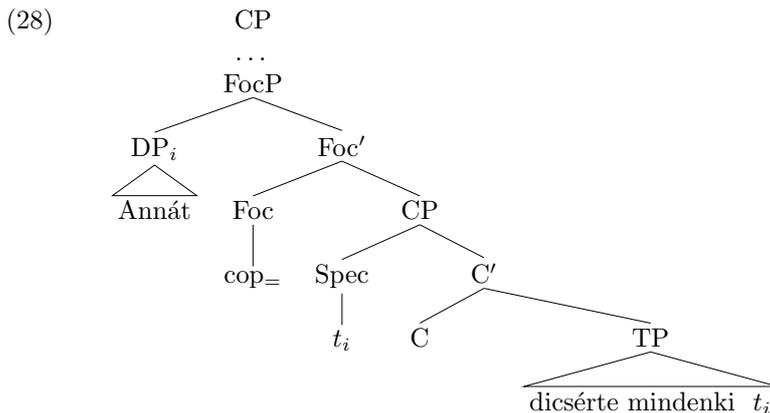
A sample structure is shown in (26-b): the Topic, the direct object, is followed by the subject in *Spec* of *FocP*.

- (26) a. *A feladatot<sub>Top</sub> MARI<sub>F</sub> oldotta meg*  
 The problem-ACC<sub>Top</sub> MARY<sub>F</sub> solved PRT  
 ‘It was Mary who solved the problem’



An alternative analysis of syntactic Focusing is offered in Kenesei (2007). According to this analysis the head of the Focus Phrase is occupied by a covert copula of identification. Surface material following Focus forms a subordinate *CP*. This is shown in (28).

- (27) *ANNÁ<sub>T<sub>F</sub></sub> dicsérte mindenki*  
 Anna-ACC<sub>F</sub> praised everyone  
 ‘It was Anna whom everyone praised’



The intuition behind this proposal is that Hungarian Focus expresses identification, in such a way that (i) identification is felt to be the main meaning contribution of the sentence, and (ii) the ‘main’ verb of the sentence is made part of a complex description, very much like the verb in the relative clause of English *it*-clefts. A piece of indirect evidence is provided by Malagasy, where, as argued in Paul (2001), the Focus particle triggers a form of covert clefting, turning material following Focus into a relative clause.

More direct empirical motivation for this proposal comes from scope interactions in Hungarian itself: unstressed quantifiers that follow Focus cannot take wide scope (cf. the discussion and references in Section 2.2) and from licensing facts involving Hungarian *n*-words like *senki* ‘no-one’.<sup>10</sup> For further details the reader is referred to Kenesei (2007).

The hypothesis that post-Focus material introduces a subordinate clause can be implemented in more than one way. The complement of Focus could be a *CP*, as proposed in Kenesei (2007), but it could also be a complex *DP*, viz a covert pronominal heading a relative clause. What matters is that this material appears to form a derivational phase in the sense of Chomsky (1999/2001) or Chomsky (2006), in that its interior is invisible to syntactic operations.

Comparing the structures in (26-b) and (28) is beyond the scope of this paper. One of their shared properties is that the finite verb is *not* in  $F^0$ . It could be uniformly assumed for both models that a covert copula occupies this position. The phasal properties of material following Focus could follow either from assigning *CP* status to *NNP* (following Kenesei), or from phase extension along the projection line  $vP \rightarrow NNP$  (cf. (den Dikken (2007), É.Kiss (t.a.a)).

### 3.2.2 Interpreting Hungarian Focus and English It-clefts

Hungarian sentences containing Focus are taken to have the same meaning and, consequently, the same representation as English *it*-clefts.<sup>11</sup> Accordingly, sentences like Hungarian (29-a) and English (29-b) are taken to convey the same meaning and are assigned the same representation,

- (29) a. *MARI<sub>F</sub> oldotta meg a feladatot*  
 MARY<sub>F</sub> solved PRT the problem-ACC  
 — same as sentence *b* —  
 b. *It was MARY<sub>F</sub> who solved the problem*  
 c.  $\partial(\exists\alpha, C.[C(\alpha) \wedge \text{solved-pb}(\alpha) \wedge \alpha = \Sigma\alpha'.[C(\alpha') \wedge \text{solved-pb}(\alpha')]]) \wedge \alpha = m$   
 d.  $\partial(\exists!\alpha.[C(\alpha) \wedge \text{solved-pb}(\alpha)]) \wedge \alpha = m$

The representation of (29-a) and (29-b) is shown in (29-c). Hungarian Focus and English *it*-clefts are both said to involve an existence and maximality presupposition. The formula marked with the presupposition operator  $\partial$  says that there is a set  $C$  of individuals, there is an  $\alpha$  in  $C$  with the property of having solved the problem, and that  $\alpha$  is the ‘largest’ individual from  $C$  with this property. The assertion part of (29-c) identifies  $\alpha$  with Mary, the referent introduced by the Focus-marked expression.

In (29-c) maximality or exhaustivity is encoded with the abstraction operator  $\Sigma$  of Discourse Representation Theory (Kamp and Reyle (1993)). A formula of the form  $\alpha = \Sigma\alpha'.P(\alpha)$  states that  $\alpha$  is the sum of all entities  $\alpha'$  with property  $P$ . In the remainder of the paper full representations like (29-c) will abbreviated as in (29-d). In (29-d) the alternative set  $C$  is not introduced separately, and the existence and maximality presupposition are rolled into one by means of  $\exists!\alpha$ .

### 3.2.3 Semantic Composition

The remainder of this section contains simple derivations of the representation (29-d) from syntactic analyses of English *it*-clefts and Hungarian Focus. For English (29-d) is derived from the syntactic analysis illustrated in (24). (30) contains the translations of the relevant constituents.

- (30) a. *It<sub>j</sub> ... who<sub>j</sub> ...*  $\mapsto \lambda P.[\partial(\exists!\alpha.[s-t-p(\alpha)]) \wedge P(\alpha)]$   
 b. *MARY<sub>F</sub>*  $\mapsto \lambda P.[P(m) \wedge C(m)]$   
 c. *be*  $\mapsto \mathbf{BE} \equiv \lambda\mathbf{Q}\lambda x.[\mathbf{Q}(\lambda y.[y = x])]$   
 d. *be MARY<sub>F</sub>*  $\mapsto \lambda x.[x = m \wedge C(m)]$   
 e. *It was MARY<sub>F</sub> who ...*  $\mapsto \partial(\exists!\alpha.[s-t-p(\alpha)]) \wedge \alpha = m$

The translation of the expletive–relative clause complex is given in (30-a). Following Percus (1997), the expletive is taken to be an E-type kataphor with a covert definite article that expects its descriptive content from the relative clause.<sup>12</sup> According to (30-a) *it ... who solved the problem* is like a definite *DP*: It presupposes a unique greatest entity with the property contributed by the relative clause (i.e. having solved the problem), and the assertion part is provided by the rest of the sentence. The source of the presupposition is the expletive *it*, whose contribution is comparable to the definite article *the*.

In (30-b) the Focus-marked expression contributes its ordinary translation and an alternative set  $C$ . In (30-c) the copula has been translated as Montague’s **BE** (Montague (1978), Partee (1986)), taking a generalised quantifier as input and yielding the singleton set of the quantifier’s generator set as output. In this case the output of applying **BE** is the predicate  $\lambda x.[x = m \wedge C(m)]$  from (30-d). Applying the translation of *be*  $[MARY]_F$  to that of the expletive–relative clause complex yields the complete translation of the sentence. As seen in (30-e) the result is synonymous to the specificational sentence *The one who solved the problem was*  $[MARY]_F$ . This will have to do for the purposes of this paper.<sup>13</sup>

Semantic composition in the Hungarian case looks relatively simpler from a technical point of view, chiefly because the syntax looks simpler: Hungarian sentences with Focus contain no expletive, no (overt) copula; in short, they look like ordinary sentences with one constituent in a special position. What complicates matters is that semantic composition can proceed in several ways, precisely because of the paucity of surface clues. The Appendix presents several alternatives to the analysis offered in this section. These alternatives all yield the same end result; from a technical point of view they differ in the translations assigned to individual constituents. These variations represent distinct methodological options regarding the syntax–semantics mapping, or regarding the semantic contribution of the Focus-marked expression.

The ‘theoretically correct’ option for the analysis of Hungarian Focus is to keep its interactions with ordinary meanings at a minimum. One way of implementing this is to work in the most restrictive framework for the analysis of *in situ* Focus, viz Alternative Semantics, and define a covert sentence operator **EI-OP**, a late descendant of the exhaustivity operator from Szabolcsi (1981), and the syntactic counterpart of the operator with the same name that was proposed in Horvath (2002). A sketch and a brief discussion can be found in the Appendix.

In this paper I will opt for a theoretically less correct method, which nevertheless may have its empirical and logical advantages. This is to assign a special Focus translation to one component of the Background–Focus structure, and combine it with the ordinary translation of its sister. This choice is motivated by the need to keep track of the details of bottom-up semantic composition, including interactions of Focus with adverbs of quantification.

Unlike Alternative Semantics, this method involves a one-tiered system: The special representation of one constituent is combined with the ordinary representation of its sister, yielding in turn an ordinary representation.<sup>14</sup>

The first representative of a one-tiered analysis for Hungarian Focus is Szabolcsi (1981). In that paper the choice was to assign the Background a special translation. To paraphrase Anna Szabolcsi, it would have been counterintuitive to have a simple proper name like *Mary* mean something entirely different when in Focus — hence the choice to make a string like *solved the problem* to have a new meaning when preceded by Focus. Under the one-tiered strategy it is indeed unavoidable that either the Background or the Focus will end up meaning something quite different from what it ordinarily does. Here I have chosen the Focus-marked expression to convey the presuppositional information associated with the Hungarian Focus construction.

As shown in (31) the Focus-marked expression is translated as a special generalised quantifier that presupposes its scope. (31) is like a special definite description, or like the skeleton of an identificational sentence, paraphraseable as *(It is) Mary (who) is identical to the unique greatest individual with property P*. It needs to be noted that quantifying *XPs* are generally barred from the Focus position (cf. Szabolcsi (1997a)) so we need to restrict the range of expressions that can receive a Focus translation like that in (31).<sup>15</sup> (31) needs to be taken as the output of a Focus type-lifting operation such as in (32) below that maps expressions of type  $a$  to their Focus-marked variants of type  $\langle\langle a, t \rangle, t \rangle$ .

$$(31) \quad MARI_F \mapsto \lambda P.[\partial(\exists!\alpha.[C(\alpha) \wedge P(\alpha)]) \wedge \alpha = m]$$

$$(32) \quad \mathcal{F}(\beta_a) =_{df} \lambda P.[\partial(\exists!\alpha_a.[C(\alpha) \wedge P(\alpha)]) \wedge \alpha = \beta]$$

The type of the expression in (31) is  $\langle\langle e, t \rangle, t \rangle$ . Whether we regard it as a quantifier or a higher order property is a matter of perspective. If we adopt the latter view (31) can also be seen as the semantic counterpart of the proposal made in É.Kiss (2006), viz Hungarian Focus serves as the

predicate of a specificational structure of the type *The one who solved the problem is MARY<sub>F</sub>*. A more detailed and precise implementation of the Focus-as-predicate programme has to be left for further research.

### 3.3 Adverbs of Quantification

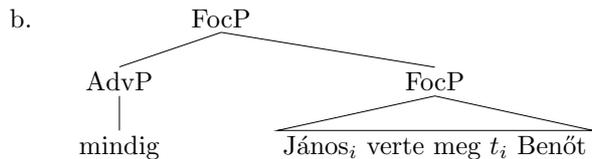
#### 3.3.1 Syntax

Adverbs in English *it*-clefts are assumed to be adjoined to *FocP* in the matrix and to *IP/TP* within the relative clause. An adverb adjoined to *FocP* is construed as outscoping the entire sentence. That is, (33-a) can be interchanged with (33-b).

- (33) a. *It was always JOHN<sub>F</sub> who ...*  
 b. *Always it was JOHN<sub>F</sub> who ...*

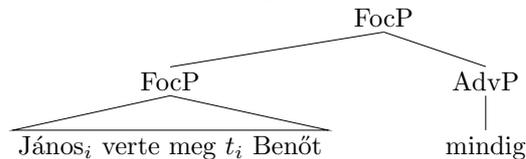
Hungarian adverbs of quantification are taken to be adjoined to *FocP* or to *PredP*. Adjunction to *FocP* entails scope over Focus; adjunction to *PredP* entails narrow scope with respect to Focus. As in É.Kiss (t.a.d), both left-adjunction and right-adjunction are allowed. Right-adjunction to *FocP* corresponds to postverbal and post-Focus adverbs that outscope Focus and can outscope preverbal quantifiers. (These cases were introduced in 2.2.) They are the stressed quantificational *XP*s that have received considerable attention (recent references include Szabolcsi and Brody (2003) or É.Kiss (t.a.c)) as they disobey the strict correlation between surface order and scope order in Hungarian (cf. the Scope Principle in É.Kiss (1994)). Assuming right-adjunction to *FocP*, as in É.Kiss (t.a.d), explains their wide scope properties and the fact that they do not become destressed (they are outside the domain of a stress-deletion rule). (34-b) and (35-b) below show that preverbal and postverbal, stressed quantifiers have the same c-command domain and hence the same scope.

- (34) a. *Mindig JÁNOS<sub>F</sub> verte meg Benőt*  
 Always JOHN<sub>F</sub> beat PRT Ben-ACC  
 ‘It was always JOHN<sub>F</sub> who beat Ben’



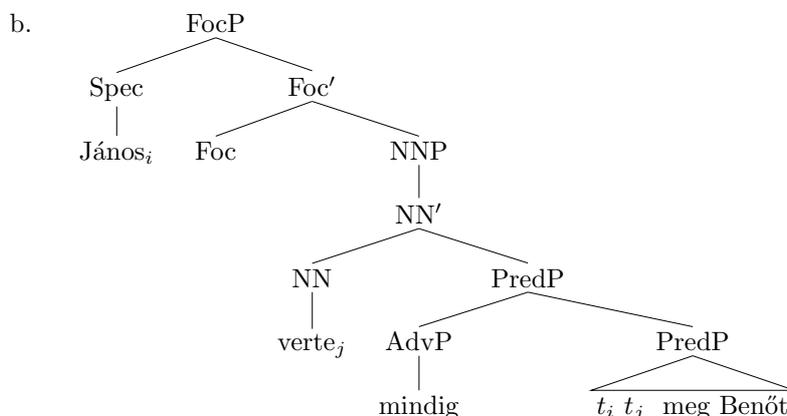
- (35) a. *JÁNOS<sub>F</sub> verte meg "mindig Benőt*  
 JOHN<sub>F</sub> beat PRT "always Ben-ACC  
 ‘It was JOHN<sub>F</sub> who "always beat Ben’

- b. Structure before the application of linearisation rule:



Postverbal, destressed adverbs are adjoined to *PredP*; from this position they cannot outscope Focus or material adjoined to Focus. (They become destressed on account of their being in the domain of a stress deletion rule.) An example is shown in (36):

- (36) a. *JÁNOS<sub>F</sub> verte meg mindig Benőt*  
 JOHN<sub>F</sub> beat PRT always Ben-ACC  
 ‘It was JOHN<sub>F</sub> who always beat Ben’



### 3.3.2 Semantics

*Always/mindig* will be taken to quantify over eventualities (see also Beaver and Clark (2002)).

$$(37) \quad \textit{always/mindig} \mapsto \lambda\psi.\forall e.[C(e) \rightarrow \exists e'.[R(e, e') \wedge \psi(e')]]$$

(37) expresses universal quantification over eventualities supplied by contextual material or a subordinate clause. It says that for every eventuality with property  $C$  there is an eventuality  $e'$  such that  $e, e'$  stand in some unspecified relation  $R$ .  $e'$  is taken to have the property expressed by (part of) the matrix. The value of the relation variable  $R$  can be determined by syntactic or contextual factors. If the Restrictor is provided by a Focus-frame  $R$  can be set to identity. In the case of presupposition-driven readings  $R$  is identified with the relation *Cul* of Parsons (1990). If the matrix contains a temporal clause  $R$  serves to capture temporal relations between the two clauses.

### 3.3.3 What Do Adverbs of Quantification Associate with?

Semantic partition can be determined by Focus or by the subevent structure of certain verbs. Since these verbs were commonly taken to be presupposition triggers, discussion in the 1980s and early 1990s mainly centred around two theoretical options: Adverbs of quantification associate with Focus, or they associate with presuppositions.

$$(38) \quad \begin{array}{l} \text{a. } \llbracket Q(\varphi) \rrbracket^o \cong \mathbf{Q}(\cup \llbracket \varphi \rrbracket^f)(\llbracket \varphi \rrbracket^o) \\ \text{b. } \llbracket Q(\varphi) \rrbracket^o \cong \mathbf{Q}(\textit{Pres}(\llbracket \varphi \rrbracket^f))(\llbracket \varphi \rrbracket^o) \end{array}$$

These two options are schematised in (38-a)–(38-b). (38-a) (cf. Rooth (1995)) states that an adverb of quantification expresses a relation between the union of Focus semantic values and the ordinary semantic value of a formula  $\varphi$ . (38-b) states that adverbs express relations between the presuppositions of  $\varphi$  and  $\varphi$  itself (cf. Berman (1987)). As noted more recently in Krifka (2001b) or Geurts and Sandt (2004) reducing one of these options to the other is attractive for reasons of generality and over-all economy. Krifka goes on to point out that reducing presupposition-sensitivity to Focus-sensitivity does not make much sense; the other direction may look more promising. Indeed there have been attempts to reduce association with Focus to association with presupposition (Geurts and Sandt (2004) is a representative — and programmatic — publication). The most straightforward version of this reduction is the claim that the Focus-frame or Background has the status of a presupposition. As noted by several authors, however, it cannot be proved with certainty that the Background is presuppositional (cf. Rooth (1999) or the comment articles on Geurts and Sandt (2004) in the 2004/1 issue of *Theoretical Linguistics*). This questions the feasibility of the simplest reduction of association with Focus to association with presupposition.<sup>16</sup>

To this I would like to add that there is another reason why a simple reduction will not work. In my opinion (confirmed by the negation test and the question test) several of the verbs that trigger ‘association with presupposition’ are not presupposition triggers at all (cf. the discussion of examples like (21)). So it cannot be claimed with any certainty that association with the presuppositions of the

sentence is ‘basic’, relative to association with Focus. The same point can be made with Hungarian sentences like (11), which lack Focus, and whose verb has a simple subevent structure. In such sentences neither Focus nor the subevent structure of the verb can provide a clue for semantic partition.

The descriptive generalisation that emerges is that semantic partition is sensitive to whatever complex structure the adverb has access to. This is consonant with the theoretical desiderata of Alternative Semantics outlined (for instance) in Rooth (1992).

The non-presuppositional status of the verbs inducing a ‘presupposition-driven’ reading reinforces arguments against simple reductions or forced analogies. The case of the simplest Hungarian sentences such as (11) points toward the same conclusion.

## 4 The Analysis

This section offers a syntactic and semantic analysis of the two main cases involving the interaction of Focus, an adverb of quantification and event structure. Part 4.1 is dedicated to the configuration where Focus precedes the adverb. Part 4.2 is about the converse configuration.

A note on terminology is in order: It has been noted in Part 3.2 that for the data discussed here the Background coincides with the presupposition triggered by *it*-clefts and Hungarian Focus. (In Hungarian this is material following Focus and with *it*-clefts it is the relative clause.) The discussion will therefore use the terms ‘Background’ and ‘presupposition’ interchangeably. For Hungarian this is a correct move, as in Hungarian Focus-marking Backgrounding and presuppositionality are two sides of the same coin. Although using ‘presupposition’ as a synonym for ‘Background’ is not entirely correct for the English case, hopefully, it will not cause undue confusion.

### 4.1 Case 1: Focus Precedes the Adverb

If Focus precedes the adverb, and the adverb is unstressed, as in (39), the only available reading is the presupposition-driven reading. Note that this reading arises ‘naturally’ in this syntactic configuration, since the adverb in its subordinate position (subordinate relative to Focus) can access the subevent structure contributed by the verb.

- (39) a. *It is JOHN<sub>F</sub> who always beats Ben (at tennis)*  
 b. *JÁNOS<sub>F</sub> veri meg mindig Benót (teniszben)*  
 JOHN<sub>F</sub> beats PRT always Ben-ACC (tennis-in)  
 ‘It is JOHN<sub>F</sub> who always beats Ben (at tennis)’

The sentences in (39) say that there is a unique individual who always beats Ben whenever they play, and that this individual is identical to John. These sentences quantify over events of Ben playing tennis with that individual; they are true just in case every one of these events ends in Ben’s defeat. The sentences in (39) lack the Focus-driven reading, i.e. the reading that expresses quantification over victories against Ben. A necessary condition for this reading is that the adverb have access to the Background–Focus structure induced by Focus, in order to express that all events of someone beating Ben are events of John beating Ben. So, if this reading is missing, this means that the adverb could not access the structure it needed. Given the subordinate position of the adverb relative to Focus the natural explanation is that the Focus-driven reading is missing because the adverb cannot outscope the Focus-marked expression and the Focus–Background structure induced by it.

To start discussion in an orderly fashion the representation of the presupposition-driven reading is given in (40). On this reading the sentence is divided into a presupposition and an assertion part (which respects the Background–Focus division), and the adverb contributes to the presupposition part. (40) presupposes a unique individual  $\alpha$  for whom it holds that all events  $e$  of playing tennis with Ben culminate in  $\alpha$ ’s victory. In the assertion part  $\alpha$  is identified with John.

- (40)  $\partial(\exists!\alpha.[C(\alpha) \wedge \forall e.[play(e)(b)(\alpha) \rightarrow \exists e'.[Cul(e, e') \wedge beat(e')(b)(\alpha)]]] \wedge \alpha = j$

As stated earlier, the Focus-driven reading requires that the adverb outscope the Focus-marked expression. Suppose that we wanted to ignore the subevent structure of the verb without assigning wide scope to the adverb. One possible representation for this ‘hybrid’ reading is in (41).

$$(41) \quad \partial(\exists!\alpha.[C(\alpha) \wedge \forall e.[beat_P(e)(b)(\alpha) \rightarrow \exists e'.[e = e' \wedge beat_P(e')(b)(\alpha) \wedge \alpha = j]]) \wedge \alpha = j$$

(41) preserves wide scope for what looks like a Background–Focus structure. It presupposes that there is a unique  $\alpha$  such that all events of  $\alpha$  beating Ben are events of John beating Ben. It asserts that  $\alpha$  is identical to John. (41) can be discarded because it does not preserve Background–Focus articulation:  $\alpha$ ’s identity with John is declared already in the presupposition.<sup>1718</sup>

The other possible representation of the missing Focus-driven reading is (42). Unlike (41) this representation is well-formed. In it the adverb outscoops the Focus-marked constituent, such that the Background constitutes the Restrictor and the Focus the Scope. In other words, (42) represents the correct Focus-driven reading, with quantification over events of Ben being beaten.

$$(42) \quad \forall e.[\exists\alpha.[C(\alpha) \wedge beat_P(e)(b)(\alpha)] \rightarrow \exists e'.[e = e' \wedge beat_P(e')(b)(\alpha) \wedge \alpha = j]]$$

(42) cannot be derived from the syntactic representation of (39). In the English case the reason is straightforward: the adverb occurs in a syntactic island which it cannot outscope. In the Hungarian case too the conjecture is that the adverb cannot undergo covert movement at LF.

In general unstressed postverbal quantifying *XP*s in Hungarian do not have the option to take scope over preverbal material. In the two syntactic proposals presented in this paper this can come about in the following ways. According to the analysis adopted from É.Kiss (t.a.d) postverbal unstressed quantifiers are adjoined to *PredP*; it can also be assumed, following É.Kiss (t.a.a), that in Hungarian the phase status of *vP* is inherited by *PredP* and *NNP*. Now post-Focus, unstressed quantifiers are obviously within *NNP*. Their inability to scope out of this phase by covert LF movement would be explained by assuming that (at least in the Hungarian case) the interpretation module receives material phase by phase (contra Cecchetto (2004)). According to the proposal in Kenesei (2007) material following the head of *FocP* has the category *CP*. The over-all ban on Quantifier Raising from finite clauses applies here, accounting for the impossibility of quantified *XP*s to take scope over this domain through covert movement.<sup>19</sup>

Having seen that there are no licit syntactic operations (covert *LF* movement) that allow adverbs in subordinate position to outscope Focus a semanticist can ask the question whether there may be *semantic* methods that fail to operate with sentences like (39). What I have in mind is a method that would keep the adverb *in situ* in the syntax, but would assign it a meaning that would result in a wide scope interpretation.

The only method to accomplish this (that I know of) is the functional analysis of indefinites (cf. Reinhart (1997), Winter (1997), Winter (2001), Kratzer (1998), among others). Quantifying *DPS* are not amenable to such an analysis, but unmodified indefinite *DPS* are. Consequently, one can ask the question whether adverbs like *néhányszor* ‘a few times’ or *néha* ‘sometimes’ can be given a functional analysis, using the same technique that has been successfully employed for indefinite *DPS*. If this is possible the choice function analysis will predict that these adverbs can have the Focus-driven reading even when they occur in the post-Focus domain.

(43) below shows an indefinite *DP* in the post-Focus domain, analysed with a wide scope choice function that allows it to be interpreted outside the Background–Focus structure. In a parallel fashion, the sentence (44-a) contains an existential adverb in the same domain. (44-b), (44-c) are translations where the adverb is rendered with the help of a wide scope choice function. (These formulae ignore cardinality information and have been altered a little for the sake or readability. The terms that are the values of choice functions are abbreviated as  $\varepsilon$  and  $\varepsilon'$ .)

- (43) a. *It is JOHN<sub>F</sub> who is in love with an actress*  
‘There is a (certain) actress for whom it holds that she is loved  
by a unique greatest  $\alpha$ , and that  $\alpha$  is John’  
b. *JÁNOS<sub>F</sub> szerelmes egy színésznő-be*  
JOHN<sub>F</sub> in-love one actress-into

— same as sentence *a* —

- c.  $\exists f.[CH(f) \wedge \partial(\exists! \alpha.[C(\alpha) \wedge in\text{-}love(f(acting))(\alpha)]) \wedge \alpha = j]$
- (44) a. *JÁNOS<sub>F</sub> verte meg néha Benőt*  
 JOHN<sub>F</sub> beat PRT sometimes Ben-ACC  
 ‘It was John who sometimes beat Ben’
- b.  $\exists f.[CH(f) \wedge \partial(\exists! \alpha.[C(\alpha) \wedge play(\varepsilon)(b)(\alpha) \wedge \exists e'.[Cul(\varepsilon, e') \wedge beat(e')(b)(\alpha)])] \wedge \alpha = j]$   
 where  $\varepsilon = f(\lambda e.[play(e)(b)(\alpha)])$
- c.  $\exists f.[CH(f) \wedge \partial(\exists! \alpha.[C(\alpha) \wedge beat_P(\varepsilon')(b)(\alpha)]) \wedge \alpha = j]$   
 where  $\varepsilon' = f(\lambda e.[beat_P(e)(b)(\alpha)])$

*Excursus* A closer scrutiny of the formulae (44-b) and (44-c) reveals that a choice function analysis of weak adverbs is not viable. First, both terms contain the bound variable  $\alpha$ , which means that the adverb does not in fact scope over Focus. Second, (44-b) is in fact not what we want because the choice function picks out the *play* subevent. It is odd that the function should pick a subevent when Focus-driven readings involve the entire event complex. There is however no strict translation rule for adverbs as function terms, one that would place restrictions on the choice of domain.

The root of both problems concerns precisely the lack of a precise syntax–semantics correspondence to determine the domain of the choice function. With indefinite *DP*s there is a one–one correspondence between the syntactic structure of the *DP* and the ingredients of functional interpretation (cf. Winter (2005)): the indefinite determiner provides the function variable and the descriptive content of the *DP* provides the domain of the function. With adverbs on the other hand it is not clear what constituent should provide the domain of the function, since the syntactic relationship between adverb and *vP* is in no way comparable to that of *D* and *NP*.

In (44-b) and (44-c) I have opted for the *vP*-like structure  $\lambda e.[V(e)(b)(\alpha)]$ . An unfortunate consequence of this choice is circularity: the same expression (modulo abstraction over the event variable  $e$ ) serves as the argument of the function  $f$  and as the function that takes  $f(\dots)$  as argument. Another unwanted consequence is the presence of the bound variable  $\alpha$ . But  $\alpha$  (and the constant  $b$ ) is necessary for syntactic reasons if we assume that frequency adverbs operate at least at *vP*-level. Opting for  $f(\lambda e.[V(e)(u)(v)])$ , where  $u, v$  are arbitrary variables, would have remedied the binding problems with (44-b)–(44-c), but such a move would have involved composing the adverb with the verb’s entry first. To conclude this excursus, this is a no-win situation: the syntactically correct choice is wrong for semantic reasons and vice versa.

The unavailability of a choice function analysis seems at first sight to square with the data. Informants have unanimously rejected the Focus-driven reading for English sentences. Some of my informants have also rejected this reading for the Hungarian example. Other informants on the other hand considered (44-a) true in a scenario where it expressed quantification over winning events. In addition a few other sentences with postverbal adverbs have been judged (by the same speakers) to have the Focus-driven reading as well. For example to some speakers (45) below can mean that some of John’s victories over Ben occurred in two sets. Similarly, (46) can mean that sometimes John gives lessons to two students.

- (45) *KÉT JÁTSZMÁBAN<sub>F</sub> verte meg néha János Benőt*  
 TWO SET-IN<sub>F</sub> beat PRT sometimes John Ben-ACC  
 ‘Sometimes it was by two sets that John beat Ben’ or  
 ‘It was by two sets that John sometimes beat Ben’
- (46) *KÉT DIÁKNAK<sub>F</sub> tart János néha órát*  
 TWO STUDENT-DAT<sub>F</sub> keeps John sometimes lesson-ACC  
 ‘Sometimes it is to two students that John gives a lesson’ or  
 ‘It is to two students that John sometimes gives a lesson’

If the choice function analysis is not available for adverbs one can look for another explanation in the semantics, or one can resort to syntax. One semantic method that comes to mind is exploiting

the difference in internal structure between adverbs like *néha* ‘sometimes’ and *mindig* ‘always’: *néha* is ‘simplex’, in that its Restrictor and Scope are linked with conjunction:

$$(47) \quad \textit{sometimes/néha} \mapsto \lambda\varphi.\exists E.[C(E) \wedge |E| \geq 2 \wedge \varphi(E)]$$

In DRT parlance, *néha* does not involve box splitting. One consequence of this is that the adverb has access to the entire subevent structure of the verb. This, and some manipulation with the resolution of the context set  $C$ , would be sufficient to yield the Focus-driven reading.

Unfortunately this option needs to be discarded. As pointed out to me by Katalin É.Kiss (p.c.) if the Focus-driven reading of (44-a) follows from the internal structure of *néha* then the same scope options should be available for English *sometimes* as well. But Focus-driven readings for the English counterpart of (44-a) have been quite robustly rejected by informants. It appears then that the Focus-driven reading of (44-a) is confined to Hungarian, and its explanation should rely on the characteristics of this language.

Given this state of affairs the only remaining option involves syntax. The proposal (following a suggestion by Katalin É.Kiss) is that a sentence like (44-a) is *syntactically* ambiguous. Narrow scope *néha* is adjoined to *PredP*. *Néha* can also be right-adjoined to *FocP* (like stressed adverbs of quantification), thus scoping over the Focus Phrase. These two options are not distinguished by prosody, owing to the existential character of *néha*.

Returning to the main point of this subsection, the impossibility of Focus-driven readings with quantificational adverbs that follow Focus, the main conclusion is that the absence of this reading follows from the adverb’s inability to outscope the presupposed/backgrounded material it is part of. Hungarian existential adverbs like *néha* are not genuine counterexamples: the possibility for them to have a Focus-driven reading follows from the two distinct (prosodically unmarked) adjunction possibilities for this adverb .

## 4.2 Case 2: The Adverb Precedes Focus

This part discusses the case where the adverb precedes the Focus-marked expression, as in (48). This part is to a large extent a mirror image of the preceding subsection. First it is established which reading is available for this kind of configuration, and which reading is missing. This is followed by a discussion of the reasons why this is so. Here too the fundamental reason for the absence of the relevant reading is the impossibility of a given syntactic configuration. In this case it is the inability of the adverb to take narrow scope with respect to Background–Focus structure. As in the preceding part, existential adverbs will be considered for a semantic procedure that could assign them scope required for the missing reading. This procedure (Semantic Reconstruction, cf. Cresti (1995a), Lechner (1998), Lechner (2007) or Cecchetto (2002)) will be shown to be inapplicable, reinforcing the conclusion that quantificational and ‘existential’ adverbs do indeed have the same options as regards scope and semantic partition. The subsection concludes with the discussion of a potential counterexample, where the adverb *mindig* ‘always’ precedes Focus, and semantic partition nevertheless seems to be presupposition-driven.

The main examples of this section are the following:

- (48) a. *It is always JOHN<sub>F</sub> who beats Ben (at tennis)*  
 b. *Mindig JÁNOS<sub>F</sub> veri meg Benőt )teniszben)*  
 Always JOHN<sub>F</sub> beats PRT Ben-ACC (tennis-in)  
 — same as sentence a —

These sentences only have the Focus-driven reading: they say that all events of Ben being beaten by someone are events of Ben being beaten by John. They are false if there is an event of someone else beating Ben. Their truth-conditions are not affected by the existence of events of Ben beating John.

The Focus-driven reading of (48) is represented in (49) and (50). (An equivalent representation was

given in (42) on page 17.) These two (equivalent) representations say that all events of some  $\alpha$  beating Ben are events of John beating Ben.

$$(49) \quad \forall e. [\exists \alpha. [C(\alpha) \wedge \text{beat}_P(e)(b)(\alpha)] \rightarrow \text{beat}_P(e)(b)(j)]$$

$$(50) \quad \forall e. [\exists \alpha. [C(\alpha) \wedge \text{beat}_P(e)(b)(\alpha)] \rightarrow \alpha = j]$$

A necessary condition for the presupposition-driven reading is that the adverb have narrow scope with respect to Focus. This reading could be obtained in two ways, depending on the scoping operation chosen: Either the adverb is ‘lowered’ into the presupposition of Focus, or *parts* of this presupposition could outscope the adverb. To see that the two options are not equivalent consider the representations of the constituents involved:

$$(51) \quad \begin{array}{l} \text{a. } \textit{always} \mapsto \lambda \varphi. \forall e. [C(e) \rightarrow \exists e'. [R(e, e') \wedge \varphi(e')]] \\ \text{b. } \textit{it was JOHN}_F \textit{ who beat Ben} \mapsto \partial(\exists! \alpha, e. [C(\alpha) \wedge \textit{play}(e)(b)(\alpha)] \\ \quad \wedge \exists e'. [Cul(e, e') \wedge \textit{beat}(e')(b)(\alpha)]) \wedge \alpha = j \end{array}$$

Suppose that one subformula of the presupposition in (51-b) could be accommodated above the adverb (the introduction of  $\alpha$  and the *play* subevent):

$$(52) \quad \partial(\exists! \alpha. [C(\alpha) \wedge \exists E. [\textit{play}(E)(b)(\alpha)]] \wedge \forall e. [e \in E \rightarrow \exists e'. [Cul(e, e') \wedge \textit{beat}(e')(b)(\alpha)]] \wedge \alpha = j$$

(52) relies on a pragmatic mechanism that is in principle available in this case, viz global accommodation. Accommodating only parts of this presupposition is problematic in several respects, though (apart from being unmotivated). First, note that the *play*-subformula needs to be coerced to describe a *set* of events, to guarantee that the domain of *always* is not a singleton. Even supposing that such coercion is possible the truth-conditions of (52) are not those of the intended presupposition-driven reading. (52) is true only if there is a unique  $\alpha$  who has ever played with Ben. The ordinary presupposition-driven reading is true if there is a unique  $\alpha$  whose every game ends in victory, which is clearly weaker than (52).

The other way to obtain the missing presupposition-driven reading is to allow the adverb to have narrow scope with respect the structure induced by Focus. The intended reading is (well-formed) (53):

$$(53) \quad \partial(\exists! \alpha. [C(\alpha) \wedge \forall e. [\textit{play}(e)(b)(\alpha) \rightarrow \exists e'. [Cul(e, e') \wedge \textit{beat}(e')(b)(\alpha)]]] \wedge \alpha = j$$

The question is why (53) cannot be obtained from the syntactic representation of (48). With adverbs of quantification like *mindig/always* the answer is simple: They are generated in their original scope position, so there is no way for them to undergo Syntactic Reconstruction (they have no lower copies or traces where they could be reconstructed). These adverbs cannot undergo Semantic Reconstruction, because of their quantificational type (cf. the discussion in Lechner (1998), Lechner (2007)), so their only option to scope under Focus would have been Syntactic Reconstruction.

‘Existential’ adverbs like *néha* ‘sometimes’ might have the possibility to undergo Semantic Reconstruction, if we consider their existential character only. This is not an option for this class either, and the reason is fundamentally the same as with Syntactic Reconstruction (although the two reconstruction methods are distinct): There are no traces where the translation of the adverb could be plugged in. This is borne out by native speaker judgements:

$$(54) \quad \begin{array}{l} \text{a. } \textit{It was sometimes JOHN}_F \textit{ who beat Ben at tennis} \\ \quad \text{‘There are some events of someone beating Ben at tennis,} \\ \quad \text{and all of them are events of John beating Ben’} \\ \text{b. } \textit{Néha JÁNOS}_F \textit{ verte meg Benőt teniszben} \\ \quad \text{Sometimes JOHN}_F \textit{ beat PRT Ben-ACC tennis-in} \\ \quad \text{— same as sentence a —} \end{array}$$

To end this subsection a potential counterexample will be discussed in some detail. The point is, (55-b) (‘it is always John who wins’) can be paraphrased as the complex clause (55-c) (‘Whenever

John and Ben play it is John who wins’), which does express quantification over events of playing tennis.

- (55) a. *Benő büszke a tenisztudására, mégis*  
Ben proud the tennis-knowledge-Poss3Sg-onto, yet  
‘Ben is proud of his tennis game, yet’  
b. *mindig JÁNOS<sub>F</sub> győz*  
always JOHN<sub>F</sub> wins  
it is always JOHN<sub>F</sub> who wins’  
c. *valahányszor játszanak, mindig JÁNOS<sub>F</sub> győz*  
whenever play-Pl3, always JOHN<sub>F</sub> wins  
whenever they play it is JOHN<sub>F</sub> who wins’

The problem with (55-b) is that it appears to have the presupposition-driven reading, a reading that it should not have. The intended scenario is that even though Ben is proud of his tennis game whenever he plays with John he is beaten by him. That is, (55-b) expresses quantification over John and Ben’s tennis games, and not over victories against Ben. It seems therefore to be on a par with syntactically complex (55-c). The key to this puzzle is that (55-b) expresses contrast, and the set of alternatives to *John* is therefore restricted to the set  $\{John, Ben\}$ . Because of this the right paraphrase of the sentence is *All events of John and Ben playing and one of them winning are events of them playing and John winning*, which is in fact a special case of the Focus-driven reading.

## 5 Summary and Outlook

The main examples in this paper have shown that the relative position of adverbs of quantification can determine semantic partition. It has been shown that semantic partition depends on the scope options available to the adverb. In the constructions discussed here the syntactic position of the adverb has determined its scope options.

One of the corollaries of the analysis presented here is that the accessibility of material contained in the the presupposition–assertion structure of *it*-clefts and Hungarian Focus can depend on syntactic position. That is, this material can be inaccessible to operators that outscope the Focus-marked expression: For instance the absence of presupposition-driven readings when the adverb preceded Focus was explained by the adverb’s inability in this configuration to access the subevent structure of the verb.<sup>20</sup>

Hungarian data and a careful analysis of verbs like *land*, *miss* or *beat* have revealed that association with presupposition and association with Focus are not the only options for semantic partition. It seems that semantic partition is driven by whatever complex structure the adverb has access to.

A somewhat unexpected finding has been that quantificational and ‘existential’ adverbs are on a par as regards their scope options and the availability of linguistic material for them. This has some consequences for the formal semantic analysis of existential adverbs. I would like to conclude this paper with a summary of these consequences.

‘Indefinite’ adverbs cannot be analysed by means of choice functions or Skolem functions, nor can they undergo Semantic Reconstruction. If existential adverbs differ from indefinite *DP*s the expectation is that event modifiers containing an indefinite *DP* will pattern with indefinites like *a book* or *two students*. This prediction, however, is not borne out.

The point is, (57), which involves ‘*DP*-based’ adverbs, is just like (56), which contains ordinary adverbs.<sup>21</sup>

- (56) a. *János hallotta a hírt, hogy Benő néhányszor nyert*  $\nVdash$   
John heard the news-ACC, that Ben a-few-times won  
‘John heard the news that Ben won a few times’  
b. *János néhányszor hallotta a hírt, hogy Benő nyert*  
John a-few-times heard the news-ACC, that Ben won  
‘A few times John heard the news that Ben won’

- (57) a. *János hallotta a hírt, hogy Benő egy/két/néhány alkalommal nyert* ≠  
 John heard the news-ACC, that Ben one/two/a-few occasion-with won  
 ‘John heard the news that Ben won on one/two/a few occasions’  
 b. *Egy/két/néhány alkalommal János hallotta a hírt, hogy Benő nyert*  
 One/two/a-few occasion-with John heard the news-ACC, that Ben won  
 ‘On one/two/a few occasions John heard the news that Ben won’
- (58) a. *Néhány alkalommal, János (úgy) hallotta, Benő nyert*  
 Few occasion-with, John (so) heard, Ben won  
 On a few occasions, (so) John heard, Ben won

A closer scrutiny of (56) and (57) reveals that these sentence pairs do not differ only as regards the position of the adverb: with each pair the adverb modifies the event description that it is closest to. This is why these sentence pairs are not in fact suited to test scope relations as such. It seems, then, that with adverbials the possibility of taking wider than surface scope is not a matter of internal constituency of logical type. Instead the relevant factor appears to be their (apparently quite local) association with the constituent they modify. (Witness the contrast between (57-b) and (58): In (58) the adverb modifies the verb *nyert* ‘won’, but this sentence is not a complex clause; the string *János hallotta* ‘John heard’ is an appositive — the adverb cannot therefore be said to have scoped out of it.)

## Appendix. Possible Analyses of Hungarian Focus

Semantic composition for the Hungarian Focus construction can proceed in several ways. These alternative methods are not simply technical exercises: they embody certain assumptions as regards the exact contribution of Focus marking and the proper architecture of a semantic theory that can handle such phenomena in a principled manner.

The theoretically and methodologically most parsimonious option in my opinion is to attribute the exhaustivity of Hungarian Focus to a covert exhaustivity operator **EI-OP**, in the vein of Szabolcsi (1981) and Horvath (2002), and to fashion its contribution after that of *only* in Alternative Semantics.<sup>22</sup>

- (59) a.  $only(C)(\varphi) \cong \partial(\varphi) \wedge \forall p.[C(p) \wedge \vee p \rightarrow p = \varphi]$   
 b.  $\mathbf{EI-OP}(C)(\varphi) \cong \partial(\exists!p.[C(p) \wedge \vee p]) \wedge p = \varphi$

In (59-b) the sentential operator **EI-OP** is modelled after standard Alternative Semantics analyses of *only*, in that the contribution of the Focus-marked expression is indirect: it serves to restrict the domain of a Focus-sensitive operator (cf. (Rooth 1996)).

In (59-a) *Only* is taken to presuppose the truth of the prejacent,  $\varphi$  (cf. the discussion in (Roberts t.a.)), and to assert that of all alternatives  $p$  to  $\varphi$ , the unique true proposition is  $\varphi$  itself. ( $C$  is restricted to a subset of the Focus semantic values of  $\varphi$ .) **EI-OP** too is seen to operate on a proposition,  $\varphi$ , and a set  $C$  of contextually salient alternative propositions. A formula of the form **EI-OP**( $C$ )( $\varphi$ ) is true iff its presupposition is satisfied (there is a unique ‘greatest’ (most informative) alternative  $p$  to  $\varphi$ ), and the assertion part is true ( $p$  is identical to  $\varphi$  itself).

The definition of **EI-OP** in (59-b) provides access neither to the Focus-marked expression nor to the Focus-frame. (Cf. (Krifka 1996) for a discussion of semantic analyses of Focus in terms of allowing or disallowing access to the Focus-frame or Focus itself.) To emphasise once more, the contribution of the Focus-marked constituent is indirect, as in Alternative Semantics. The propositional argument of **EI-OP** can be built up compositionally, assuming a (possibly slightly modified) version of Alternative Semantics: The Focus-marked expression is taken to introduce an alternative set that participates in the construction of alternative propositions. This is a theoretically parsimonious solution that has nevertheless been exchanged for a representation that provides access to the Focus-marked expression and the Focus-frame, in order to keep track of the details of semantic composition.

In 3.2.3 the Focus-marked expression was translated as a definite generalised quantifier. This quantifier was defined as the output of the type-shifting operator  $\mathcal{F}$ . (These were (31) and (32), reproduced below.)

$$(60) \quad \text{MARI}_F \mapsto \lambda P. [\partial(\exists! \alpha. [C(\alpha) \wedge P(\alpha)]) \wedge \alpha = m]$$

$$(61) \quad \mathcal{F}(\beta_a) =_{df} \lambda P. [\partial(\exists! \alpha_a. [C(\alpha) \wedge P(\alpha)]) \wedge \alpha = \beta]$$

An alternative to a quantifier type Focus representation would be to handle the Focus-marked expression as the predicate of a specificational sentence, and analyse the Background as the subject of such a sentence (in line with (É.Kiss 2006)). On this view a Hungarian sentence like (62-a) is similar to the English specificational sentence (62-b):

- (62) a. *JÁNOST<sub>F</sub> választották elnöknek*  
           JOHN<sub>F</sub> elected-3Pl president-Dat  
           ‘It was John who was elected president’  
       b. *The person who was elected president is JOHN<sub>F</sub>.*

This alternative provides a closer match with specificational sentences. The type shifter  $\mathcal{F}$  from (61) can be used for this kind of predicative analysis of Focus as well — it is a matter of perspective whether an expression of type  $\langle\langle a, t \rangle, t\rangle$  is regarded as a quantifier (over variables of type  $a$ ) or as a predicate of properties.

A predicative analysis of Focus can, in addition, be expressed with a modified definition of the operator **EI-OP**. A sketch is shown in (63) below, where **EI-OP'** has access both to Focus and to the Focus-frame. This version of **EI-OP'** can be seen as a construction-level device that holds Background and Focus together. This is reflected by the fact that in (63) both arguments of **EI-OP'** undergo type-shifting: Focus is turned into a predicate by means of **BE**, and the Background, originally a predicate, becomes a generalised quantifier by applying a presuppositional variant of the  $\iota$  operator from (Partee 1986).

$$(63) \quad \begin{aligned} \mathbf{EI-OP}'(\langle \lambda x. [s-t-p(x)] , \lambda P. [P(m)] \rangle) &=_{df} \\ \iota(\lambda x. [s-t-p(x)]) (\mathbf{BE}(\lambda P. [P(m)])) &=_{df} (\iota, \mathbf{BE}) \\ \lambda P. [\partial(\exists! \alpha. [C(\alpha) \wedge s-t-p(\alpha)]) \wedge P(\alpha)] &(\lambda x. [x = m]) =_{\beta} \\ \partial(\exists! \alpha. [C(\alpha) \wedge s-t-p(\alpha)]) \wedge \alpha = m & \end{aligned}$$

If the syntactic structure proposed in (Kenesei 2007) is taken as input essentially the same representation can be derived *without* recourse to a covert operator. According to this proposal the head of the Focus Phrase is a covert copula, and overt material following Focus has the categorial status of a subordinate clause (the reader might recall example (28)). This structure bears a close resemblance to the overt syntax of English *it*-clefts, so it offers the possibility of a more transparent syntax–semantics mapping, essentially following the derivation for English *it*-clefts.

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## Notes

<sup>1</sup>Focus semantics in fact commits us to assuming that there are other games John and Ben play, with varying scores.

<sup>2</sup>A more detailed discussion will follow in Section 2.

<sup>3</sup>According to Hans Kamp (p.c.) (10-b) seems to presuppose that Mary (in general) has difficulties with all her exams. This additional piece of information will be set aside, since a proper analysis for it is beyond the scope of this paper.

<sup>4</sup>On adverbs of quantification and frequency see also É.Kiss (t.a.d), Csirmaz (t.a.) and and É.Kiss (t.a.b).

<sup>5</sup>These two classes are also distinguished prosodically: Neutral sentences have a flat intonation contour, and all major constituents receive an equal amount of stress. In sentences with Focus only contrastive Topics and Focus itself are intonationally prominent; in addition to extra stress Focus is also marked with a rise–fall intonation contour. On the prosody of Hungarian sentences with or without Focus cf. Kálmán and Kornai (1989).

<sup>6</sup>Fortunately the examples in this paper do not involve presupposition filtering.

<sup>7</sup>Initially all three verbs were thought to be non-triggers. Their differences have been pointed out to me by Hans Kamp.

<sup>8</sup>The interim status of *play* is indicated by its non-uniform behaviour with the negation and question test.

- (i) (Scenario: John and Ben are scheduled for a tennis match, and  
    *A knows that John practically always beats Ben.*)  
    **A:** *Has John beaten Ben yet?*  
    **B:** *No, he hasn't: the match has been postponed.*
- (ii) *John hasn't beaten Ben. They have never played.*

The question in (i) can be answered with *John hasn't beaten Ben*, and this answer is not marked in any way. *A*'s question does not seem to presuppose an ongoing tennis game between John and Ben. It is a private assumption of *A*, and also an 'issue': it is expected that there is, or will be, a tennis match between John and Ben. On the other hand (ii) is awkward when intended to answer a query about John and Ben's overall score.

<sup>9</sup>This accounts for word order facts involving complex predicates, in sentences with and without Focus: In neutral sentences the surface order is *Particle*  $\prec$  *Verb*, while in sentences with Focus it is  $XP_F \prec$  *Verb*  $\prec$  *Particle*.

<sup>10</sup>On Negative Concord in Hungarian see e.g. Olsvay (2000a), Olsvay (2006), Puskás (2000), Puskás (2002) or Surányi (2006).

<sup>11</sup>Some references on the interpretation of *it*-clefts and Hungarian Focus: Szabolcsi (1981), Kenesei (1986), Szabolcsi (1983), Delin (1989), van Leusen and Kálmán (1993), Szabolcsi (1994), Bende-Farkas (n.d.), Kenesei (2006).

<sup>12</sup>In the generative syntactic framework assumed here the expletive–relative clause complex can be taken as the result of some syntactic copying mechanism. This choice does not affect the main results reported here. One could as well have chosen the Head Wrap operation from Categorical Grammar, or that of a kataphora resolution mechanism at the level of semantic representations.

<sup>13</sup>The attentive reader may have noticed that (30) bears some resemblance to the one-tiered analysis of Hungarian Focus proposed in (31). The point is that the Focus expression and its alternatives occur in the same  $\lambda$ -term. This is a harmless and convenient choice where these cases are concerned.

Some topics for a more careful compositional analysis of *it*-clefts in future work include: The exact role played by Focus in topic-clause *it*-clefts; the distinction between ordinary and Focus semantic values with *it*-clefts; how *only* operates in *it*-clefts, and so on.

<sup>14</sup>This mismatch of levels of representation in the case of Hungarian Focus may need to be remedied in order to facilitate more thorough crosslinguistic comparison. A full discussion architectural problems posed by crosslinguistic Focus semantics is well beyond the scope of this paper.

<sup>15</sup>It can be checked that distributive quantifiers cannot receive a translation like (31) without additional manipulation: in (31) the presupposed entity needs to be identified with another entity. In the case of a universal quantifier like *minden fiú* ‘every boy’ such an entity is not readily available. Nevertheless (31) on its own is not sufficient to exclude such quantifiers from the Focus position since it does not exclude a ‘derived’ Focus translation for the quantifier that equates that presupposed entity with the quantifier’s minimal witness. This trick is shown in (iii) below: the presupposed unique greatest group  $X$  is identified with  $Y$ , the minimal witness of *every boy*.

(iii)  $\mathcal{F}(\textit{every-boy}) := \lambda P. [\partial(\exists!X. [C(X) \wedge P(X)]) \wedge \exists Y. [Y = \mathcal{W}_{min}(\textit{every-boy}) \wedge X = Y]]$

<sup>16</sup>In Krifka (2001b) the link between the two kinds of association is set up in such a way that a special kind givenness presupposition is responsible for the effects usually attributed to Focus-marking. In this framework Focus marking and the presupposition that comes with givenness are but two sides of the same coin.

To put it more simply: according to Krifka adverbs of quantification associate with presuppositions. Instead of taking the Focus-frame to be presuppositional Krifka takes deaccented, ‘given’ material (in particular, deaccented indefinites) to be presuppositional. In cases where semantic partition seems to be determined by association with Focus (as in (iv) below) the adverb does not in fact associate with Focus. It associates with the presupposition triggered by the so-called non-novel indefinite instead. In the example at hand this is the presupposition triggered by *a freshman* (deaccenting is marked with `).

(iv) *A freshman<sub>Given</sub> usually wears a baseball cap<sub>F</sub>*

A full discussion of this analysis is beyond the scope of this paper. Here I would only like to point out that presupposition triggers do not always yield readings that are convergent with a ‘Focus-driven’ reading.

(v) *Justine Serenát is mindig megveri.*

Justine Serena-ACC too always beats

‘Justine always beats Serena too’

Preferred: Justine always beats Serena, whenever they play,

and there is someone else (say, Venus) whom she always beats.

In (v) the presupposition trigger *Serenát is* ‘Serena too’ has wide scope over the adverb. It is not therefore involved in semantic partition. The preferred reading for the sentence is quantification over events of playing with Serena. What we have here is a presupposition that has nothing to do with semantic partition, and a complex verb, which does determine semantic partition, but which is not a presupposition trigger.

In the next example we have association with presupposition that has nothing to do with Focus (apart from the adverb’s being in the scope of the presupposition triggered by Focus). In (vi) semantic partition is driven by *is* ‘too’. Since the adverb is in the scope of the presupposition triggered by Focus there is no ‘convergence’ of readings comparable to Krifka’s cases.

(vi) *JUSTINE<sub>F</sub> veri meg mindig Serenát is*

JUSTINE<sub>F</sub> beats PRT always Serena-ACC too

‘It is Justine who always beats Serena too’

‘There is a unique person (Justine) such that whenever she beats someone (say, Venus) she beats Serena too’

<sup>17</sup>Collapsing presupposition with assertion or Background with Focus is not always a wrong move. For instance, during a later stage of processing, the Background–Focus structure of an *it*-cleft *can* be collapsed into a simpler statement. (41) on the other hand does not correspond to a later stage of processing: it is supposed to be yielded by the translations of the major constituents after some manipulation in the syntax. (Not to mention that it does not in fact reduce an articulated structure to a simpler one: it simply creates an improper mix.)

<sup>18</sup>It has to be noted that the Nuclear Scope in (41) is in need of a subformula, even if it is a formula that should not be there — otherwise the quantifier would be totally redundant, saying that all events of Ben being beaten by  $\alpha$  are events of Ben being beaten by  $\alpha$ .

<sup>19</sup>It is apparent, however, that stressed postverbal quantifiers like those in (35-a) present a problem for this proposal.

<sup>20</sup>This observation is valid for other scope-bearing expressions that rely on subevent structure for their interpretation. If Focus intervenes between *újra* ‘again’ the restitutive reading is blocked: (*vii*-a) can have both the repetitive and the restitutive reading whereas (*vii*-b) has only the repetitive reading.

- (*vii*) a. *JÁNOS<sub>F</sub> zárta be újra az ajtót*  
 JOHN<sub>F</sub> locked PRT again the door-ACC  
 ‘It was JOHN<sub>F</sub> who locked the door again’
- b. *Újra JÁNOS<sub>F</sub> zárta be az ajtót*  
 Again JOHN<sub>F</sub> locked PRT the door-ACC  
 ‘Again it was JOHN<sub>F</sub> who locked the door’

<sup>21</sup>*Néhány-szor* ‘a few times’ is composed of the numeral *néhány* ‘a few’, ‘some’ and the frequency suffix *-szor* ‘times’.

<sup>22</sup>‘Correct from a theoretical and methodological point of view’ means keeping the contribution of (intonational) Focus at a minimum, and avoiding the formulation of interpretation rules that explicitly refer to Focus (cf. (Rooth 1992)).

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