On the Scopal Properties of Hungarian Quantifiers in Contrastive Topic

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0. Introduction

This paper aims to give a formal account of the distribution of quantified DPs and adverbs of quantification in the Contrastive Topic position of Hungarian sentences. The task appears particularly fascinating in view of the fact that this language allows certain quantifiers, like quantified DPs containing the determiner *minden* 'every', illustrated in (1), to appear in Contrastive Topic without any restriction, while some others, like DPs containing the determiner *kevés* 'few' require some „licensing environment" to legitimate their presence, which seems to be missing in the semantically ill-formed (2), but present in the well-formed (3) below:

(1) [$_{CT}$ Minden fiú] [$_{F}$ nem][1, 2]jött meg.
all boy not came preverb
'It is not the case that all boys came.'

(2) # [$_{CT}$ Kevés fiú] [$_{F}$ nem] jött meg.
few boy not came preverb
'It is not the case that few boys came.'

* I am indebted to László Kálmán, Barbara Partee and Chris Piñón for discussion and comments on earlier versions of the paper.

[1] The abbreviations CT, T and F refer to Contrastive Topic, Topic and Focus, respectively.

[2] When the negation word *nem* 'no' appears in focus position, we will speak of a case of *falsum focus* (László Kálmán, p.c.)

UMOP23: Issues in Semantics, Kiyomi Kusumoto and Elisabeth Villalta (eds.), 43-58.

(3) [$_{CT}$ Kevés fiú] [$_{F}$ kedden] jött meg.
few boy Tuesday-superessive came preverb
'It was on Tuesday that few boys came.'

In the rest of the paper we will present a theory, based on Büring (1997), which can account for the licensing of a quantified expression in Hungarian Contrastive Topic on the basis of certain semantic properties of the constituent appearing in the Focus position of the same sentence.

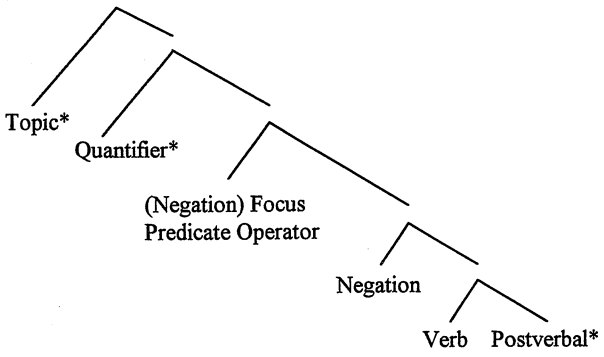
The structure of the paper is the following. In Section 1 we will present the most current views concerning the surface structure of the Hungarian sentence, with special regard to the scopal properties of quantified expressions, and review the most important semantic properties of Contrastive Topics in general. In Section 2 the most important claims of Büring (1997) will be summarized, and some modifications will be suggested to his theory to account for the idiosyncrasies of the Hungarian data. Section 3 presents some case studies to illustrate how the theory can account for the presence or absence of various subtypes of Hungarian quantifiers in Contrastive Topic.

1. Some Facts about Quantifier Scope and Contrastive Topics in Hungarian

1.1. Surface structure and operator scope

Szabolcsi (1997), building on earlier work by É. Kiss, Kenesei and Hunyadi, claims that the surface structure of the Hungarian sentence is the one shown in (4) below (the sign * indicating that more than one constituent can appear in the particular position):

(4)



As (4) shows, the preverbal field of the Hungarian sentence, containing some well-defined operator positions, is considered highly configurational, while the postverbal field has a flat, non-configurational structure. Szabolcsi (1997) claims that quantified expressions can freely appear either before or after the verb in the above structure, but each of the preverbal positions is only available for a subset of quantifiers sharing certain semantic properties. For example, Topic must be specific, universals cannot occur in

Topic or Focus, DPs occurring in the Quantifier position are distributive, etc. There are, however, certain semantic properties (e.g. the possibility of a distributive or collective reading) which are more characteristic of the positions themselves than of the quantified DPs or adverbials occupying them, since the semantic features of quantifiers which are able to occur in more than one position can vary according to the position itself. In the surface structure of the Hungarian sentence illustrated in (4), the preverbal operators c-command their scope, therefore their left-to-right order determines their scopal order as well.

There is one exception to the above general rule concerning scope assignment, namely the constituents occupying the Contrastive Topic position, which is situated among positions for ordinary Topics in (4). Contrastive Topics scope under any other preverbal operator, as illustrated in (1)–(3). The next section reviews some of their syntactic and semantic properties.

1.2. Some Syntactic and Semantic Properties of Contrastive Topics

Contrastive Topics, while situated among ordinary Topics, can be distinguished from them from their specific intonation pattern, since, as opposed to the even or falling intonation of ordinary Topics, their intonation contour ends in a rise (É. Kiss 1994).

É. Kiss (1992) argues that the constituents we were referring to as Contrastive Topics in (1)–(3) are instances of Left Dislocation, generated external to the proposition but coindexed with a postverbal (V'-internal) gap. Example (5) below, however, where the Contrastive Topic is preceded by an ordinary Topic, which is definitely inside the proposition, seems to contradict the above claim:

(5) [$_{T}$ János] [$_{CT}$ a levest] megette (‚de a húst nem).
János the soup-acc prev-ate but the meat-acc not
'As for the soup, János ate it (, but he didn't eat the meat).'

As a result, it seems more likely that Contrastive Topics occupy the positions of ordinary Topic constituents in the Hungarian sentence structure, and their specific semantic and scopal properties are signalled to the listener via their specific intonation pattern.

It is claimed in Szabolcsi (1980) and (1981) that the use of Contrastive Topics expresses a kind of „modal reservation" on the part of the speaker. It suggests that besides the entity named in Contrastive Topic there are others in the universe of discourse about whom the same question (i.e., the one answered by the sentence) could be raised, and it is possible (or suggested) that the answer to those questions will have the opposite truth value as the proposition expressed by the original sentence.

The name Contrastive Topic would suggest that we are dealing with a subtype of topics. This claim, however, is not entirely true, since the constituents which can felicituously occur in Contrastive Topic may also lack certain properties traditionally associated with topichood (also discussed by É. Kiss 1998a). First of all, they do not need

to be referential or generic (which are considered to be the essential properties of Topics according to É. Kiss 1987). For example, the non-referential DP *mindenki* 'everybody' can appear in this position, as in example (6) below, just like verbs, as in (7), or adjectives with a dative suffix, as in (8):

(6) [$_{CT}$ Mindenki] [$_{F}$ nem] jött meg.
everybody not came preverb
'It is not the case that everybody arrived.'

(7) Péter [$_{CT}$ enni] evett. (Szabolcsi 1980)
Péter eat-inf ate
'As for eating, Péter did eat.'

(8) A munkád [$_{CT}$ jónak] jó. (Szabolcsi 1980)
the work-2sgposs good-dat good
'As for goodness, your work is good.'

According to É. Kiss (1998a), the constituents appearing in Contrastive Topic get individuated through the implicit contrast which is implied to hold between their interpretations and other members of the sets of states, properties, directions, etc., under consideration. As a result, they become quasi-referential, and are regarded as constituents about which a statement can be made.

Second, while Topics in general are required to be thematic, Contrastive Topics need not be, as illustrated in (9), where the proper name *Pista* introduces a referent new to the discourse:

(9) — Kik voltak a hangversenyen?
who-pl were the concert-superessive
'Who were at the concert?'

— [$_{CT}$ Pista] [$_{F}$ nem] volt ott.
Pista not was there
'As for Pista, he wasn't there.'

A third interesting fact about contrastive topics, briefly referred to above, concerns their scopal properties. While the scopal order of quantifiers situated in the preverbal field of the Hungarian sentence generally corresponds to their surface order (as discussed in Section 1.1), quantified DPs appearing in Contrastive Topic have to scope under any other preverbal quantifier, as shown in (10) below, where the quantified DP *minden diák* 'every student' scopes under the DP in Focus position, *két könyvet* 'two books-acc', making an interpretation available where the latter DP refers to two specific books.

(10) [CT Minden diák] [F két könyvet] olvasott el, a *Háború és békét,* és a *Pál utcai fiúkat.*
every student two book-acc read prev the war and peace-acc and the Paul street boys-acc
'Two books were read by all students, *War and Peace* and *The Paul Street Boys.*'

Having introduced the relevant data and some basic assumptions about Hungarian, in the next section we will develop the formal machinery which accounts for the data in (1)–(3) above concerning the licensing of quantified expressions in Contrastive Topic. Our approach, to be presented in Section 2.2 and illustrated in Section 3, will be based on Büring's (1997) theory, the most important claims of which are going to be summarized in Section 2.1.

2. Towards a Theory of Hungarian Contrastive Topics

2.1. Büring's (1997) Theory

According to Büring (1997), a sentence containing a Focus and a Topic is associated with three kinds of semantic/pragmatic values, namely, its ordinary semantic value, its Focus value and its Topic value. The ordinary semantic value of sentence *S*, denoted by $||S||^o$, is the ordinary meaning of the sentence, a proposition. The concept of the Focus value, denoted by $||S||^f$, is based on Rooth (1985), and defined as a set of propositions which includes the original proposition together with all those propositions where the focussed constituent is exchanged for its type-identical alternatives. The Topic value of *S*, denoted by $||S||^t$, is a set of sets of propositions, where each type-identical alternative to the constituent in Topic is combined with all the members of the Focus value, illustrated below.

Although Büring (1997) does not use the expression Contrastive Topic, it seems evident from his account that the constituent he refers to by the name Topic does not belong to the class of ordinary Topics, but has the same intonational and similar scopal features as the Contrastive Topics in the Hungarian examples discussed above. Therefore, in order to avoid confusion between ordinary Topics and the type of constituents he investigates, I will use the term Contrastive Topic to refer to the latter as well.

Büring (1997) claims that a sentence containing a Contrastive Topic conventionally implicates that there are other propositions closely related to the one expressed by the original sentence whose truth-value cannot be determined from the utterance of the latter. The related propositions are included in the Contrastive Topic value associated with the sentence, and the utterance of a sentence with a Contrastive Topic will only be felicitous if a disputable Residual Topic (a set of propositions, subset of the Contrastive Topic value) remains after its utterance. For a Residual Topic to be disputable it should contain propositions with opposite truth values, both of which can informatively and coherently be added to the shared knowledge of speaker and listener (Common Ground). It is illustrated in (12) below how the above mentioned three types of semantic/pragmatic values are generated for the sentence in (11) below by Büring (1997):

(11) [$_{CT}$ All] the men did [$_{F}$ not] go.

(12) a. Ordinary meaning of (11): $||$[$_{CT}$ All] the men did [$_{F}$ not] go.$||^{o}$ = the proposition 'all men didn't go'

b. Focus value of (11): $||$[$_{CT}$ All] the men did [$_{F}$ not] go.$||^{f}$ = {all men went, all men didn't go}
(The set of propositions of the form 'all men did N go', where N is some type identical alternative to *not*, presumably *not* and the identity function.)

c. Topic value of (11): $||$[$_{CT}$ All] the men did [$_{F}$ not] go.$||^{t}$ = {{all men went, all men didn't go}, {most men went, most men didn't go}, {some men went, some men didn't go}, {one man went, one man didn't go},...}
(The set of Focus values F such that there is an alternative Q to *all* and F is a set of propositions of the form 'Q men did N go' where N is an alternative to *not*.)

The way Büring's (1997) account is able to filter out unacceptable sentences or unacceptable readings of sentences with Contrastive Topics is as follows. He considers German sentences containing Contrastive Topics, like (13a) below, as potentially ambiguous between two readings where the scopes of quantifiers are reversed with respect to each other, illustrated in (13b, c). Both potential readings get associated with a Contrastive Topic value, one of which might give rise to a non-disputable Residual Topic, and so become unavailable.

(13) a. [$_{CT}$ Alle] Politiker sind [$_{F}$ nicht] korrupt.
all politicians are not corrupt
b. 'No politician is corrupt.'
c. 'It is not the case that all politicians are corrupt.'

The Residual Topics associated with the two potential readings of (13a), illustrated in (13b, c), are shown in (14) and (15) below. (14a) and (15a) contain the abstract characterization of the Contrastive Topic value set, whose members are listed in (14b) and (15b). Since the truth value of each proposition in (14b) logically follows from that of (13b), this reading does not give rise to a disputable Residual Topic, therefore it is unavailable for (13a):

(10) [CT Minden diák] [F két könyvet] olvasott el, a *Háború és békét,* és a *Pál utcai fiúkat.*
every student two book-acc read prev the war and peace-acc and the Paul street boys-acc
'Two books were read by all students, *War and Peace* and *The Paul Street Boys.*'

Having introduced the relevant data and some basic assumptions about Hungarian, in the next section we will develop the formal machinery which accounts for the data in (1)–(3) above concerning the licensing of quantified expressions in Contrastive Topic. Our approach, to be presented in Section 2.2 and illustrated in Section 3, will be based on Büring's (1997) theory, the most important claims of which are going to be summarized in Section 2.1.

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Although Büring (1997) does not use the expression Contrastive Topic, it seems evident from his account that the constituent he refers to by the name Topic does not belong to the class of ordinary Topics, but has the same intonational and similar scopal features as the Contrastive Topics in the Hungarian examples discussed above. Therefore, in order to avoid confusion between ordinary Topics and the type of constituents he investigates, I will use the term Contrastive Topic to refer to the latter as well.

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(The set of propositions of the form 'all men did N go', where N is some type identical alternative to *not*, presumably *not* and the identity function.)

c. Topic value of (11): $||$[$_{CT}$ All] the men did [$_{F}$ not] go.$||^{t}$ = {{all men went, all men didn't go}, {most men went, most men didn't go}, {some men went, some men didn't go}, {one man went, one man didn't go},...}
(The set of Focus values F such that there is an alternative Q to *all* and F is a set of propositions of the form 'Q men did N go' where N is an alternative to *not*.)

The way Büring's (1997) account is able to filter out unacceptable sentences or unacceptable readings of sentences with Contrastive Topics is as follows. He considers German sentences containing Contrastive Topics, like (13a) below, as potentially ambiguous between two readings where the scopes of quantifiers are reversed with respect to each other, illustrated in (13b, c). Both potential readings get associated with a Contrastive Topic value, one of which might give rise to a non-disputable Residual Topic, and so become unavailable.

(13) a. [$_{CT}$ Alle] Politiker sind [$_{F}$ nicht] korrupt.
all politicians are not corrupt
b. 'No politician is corrupt.'
c. 'It is not the case that all politicians are corrupt.'

The Residual Topics associated with the two potential readings of (13a), illustrated in (13b, c), are shown in (14) and (15) below. (14a) and (15a) contain the abstract characterization of the Contrastive Topic value set, whose members are listed in (14b) and (15b). Since the truth value of each proposition in (14b) logically follows from that of (13b), this reading does not give rise to a disputable Residual Topic, therefore it is unavailable for (13a):

(14) a. $\lambda P.\exists Q_{<et,<et,t>>}[Q \in \text{ALT}(\textbf{all}) \,\&\, P = \lambda p.\exists \pi_{<tt>}\,[\pi \in \text{ALT}(\textbf{not}) \,\&\, p = Q(\text{politicians})(\lambda x.\pi(\text{corrupt}(x)))]]$

b. {{all(politicians)(λx.corrupt(x)), all(politicians)(λx.¬corrupt(x))},
{most(politicians)(λx.corrupt(x)), most(politicians)(λx. ¬corrupt(x))},
{some(politicians)(λx.corrupt(x)),{some(politicians)(λx.¬corrupt(x))},
{one(politicians)(λx.corrupt(x)),{one(politicians)(λx.¬corrupt(x))},
{no(politicians)(λx. corrupt(x)), {no(politicians)(λx. ¬corrupt(x))}}

The Topic value associated with the other potential reading of (13a), illustrated in (13c), however, does give rise to a disputable Residual Topic, as shown in (15). (In (15b) the non-disputable Residual Topics are crossed out).

(15) a. $\lambda P.\exists Q_{<et,<et,t>>}[Q \in \text{ALT}(\textbf{all}) \,\&\, P = \lambda p.\exists \pi_{<tt>}\,[\pi \in \text{ALT}(\textbf{not}) \,\&\, p = \pi\, Q(\text{politicians})(\text{corrupt})]]$

b. {{~~all(politicians)(corrupt), ¬all(politicians)(corrupt)~~},
{most(politicians)(corrupt), ¬most(politicians)(corrupt)},
{some(politicians)(corrupt), ¬some(politicians)(corrupt)},
{one(politicians)(corrupt), ¬one(politicians)(corrupt)},
{no(politicians)(corrupt), ¬no(politicians)(corrupt)}}

Sentences containing quantifiers in Contrastive Topic other than the universal one, however, can give rise to two well-formed readings with the scope of the quantifiers reversed in German, like (16) below, for example, since both readings can generate disputable Residual Topics.

(16) Zwei /DRITTEL der Politiker sind NICHT\ korrupt[3].
Two thirds the politicians are not corrupt.
'Two thirds of the politicians are not currupt.'

It seems to me that Büring's central claim, namely that the constituent in Contrastive Topic indicates the presence of alternatives to the proposition expressed by the sentence is essentially right. The method of generating two potential Contrastive Topic values for each sentence, corresponding to its two potential readings, however, reflects a property of German, namely that sentences with Contrastive Topics are potentially ambiguous, which is not necessarily shared by other languages, for example, Hungarian. In the next section some problems with the Büring-style generation of Contrastive Topic values for Hungarian are going to be pointed out, and in the light of these some modifications will be suggested to make the method applicable to Hungarian as well.

[3] The notation here follows that of Büring (1997), with the sign / denoting the constituent in (Contrastive) Topic and \ the one in Focus.

2.2. Generating the Contrastive Topic Values for Hungarian

In what follows, we will try to account for the distribution of quantified expressions in the Contrastive Topic position of Hungarian sentences by examining the Contrastive Topic values they give rise to, as suggested by Büring (1997).

As opposed to Büring's German examples, like (13a) or (16) above, or sentence (17) below from Krifka (1998), Hungarian sentences with Contrastive Topics, like (1)–(3) above, never show any potential or actual scope ambiguity.

(17) /Jeder Student hat mindestens\ Einen Roman gelesen.
each student has at-least one novel read
'Each student has read at least one novel.'
'There is at least one novel which was read by each student.'

As we have argued above, quantified expressions in the Hungarian Contrastive Topic position always scope under any other quantifiers in the preverbal field. Consequently, the (one and only one) Contrastive Topic value associated with a particular sentence will never contain propositions in which the scopal order of quantifiers is the same as their surface order. As a result, the Contrastive Topic values do not need to be generated for Hungarian to find out whether a sentence with a Contrastive Topic is ambiguous or not, but to find out whether the only possible scopal reading is available, and therefore the sentence is semantically well-formed or not. (19)–(21) below illustrate the assignment of the three semantic/pragmatic values to sentence (1) above, repeated as (18) below:

(18) [$_{CT}$ Minden fiú] [$_{F}$ nem] jött meg.
all boy not came preverb
'It is not the case that all boys came.'

(19) $||$ [$_{CT}$ Minden fiú] [$_{F}$ nem] jött meg. $||^{o}$ = the proposition 'Not all boys came'

(20) $||$ [$_{CT}$ Minden fiú] [$_{F}$ nem] jött meg. $||^{f}$ = {¬(all boys came), all boys came}

(21) $||$ [$_{CT}$ Minden fiú] [$_{F}$ nem] jött meg. $||^{t}$ =
~~{¬ (all boys came), all boys came}~~,
{¬(many boys came), many boys came},
{¬ (most boys came), most boys came},
{¬ (some boys came), some boys came},
{¬ (at least one boy came), at least one boy came}}

Since the Contrastive Topic value associated with (18) above contains a set of disputable propositions (those propositions which are not crossed out in (21)), the original sentence is felicitous, as expected.

In the next section the theoretical machinery developed so far is going to be put to use to account for the licensing conditions of certain subclasses of quantified expressions

including monotone increasing, non-monotone, monotone decreasing quantifiers and adverbs of quantification.

3. Some Case Studies

3.1. Monotone increasing and non-monotone quantifiers in Contrastive Topic

Let us first consider some sentences where monotone increasing and non-monotone quantifiers occupy the Contrastive Topic position. Sentence (22) below contains the monotone increasing quantifier *sok diák* 'many students' in Contrastive Topic, in addition to a falsum focus. The well-formedness of this sentence is predicted by our theory, since, as (22') shows, it gives rise to a disputable Residual Topic, consisting of several pairs of propositions with opposite truth values:

(22) [$_{CT}$ Sok diák] [$_{F}$ nem] telefonált.
many student not phoned
'It is not the case that many students phoned.'

(22') $||$[$_{CT}$ Sok diák] [$_{F}$ nem] telefonált. $||^{t}$ =
{{¬(all boys phoned), all boys phoned},
~~{¬ (many boys phoned), many boys phoned}~~,
{¬(most boys phoned), most boys phoned},
{¬ (some boys phoned), some boys phoned},
{¬ (at least one boy phoned), at least one boy phoned}}

Sentences (23) and (24) below also contain monotone increasing quantifiers, but they are not equally acceptable for native speakers. Let us consider why.

(23) #[$_{CT}$ Legalább egy gyerek] [$_{F}$ tegnap] érkezett.
at-least one child yesterday came
'It was yesterday that at least one child came.'

(24) [$_{CT}$ Legalább két gyerek] [$_{F}$ tegnap] érkezett.
at_least two child yesterday came
'It was yesterday that at least two children came.'

(23') $||$[$_{CT}$ Legalább egy gyerek] [$_{F}$ tegnap] érkezett. $||^{t}$ =
~~{it was yesterday that no child came, it was yesterday that at least one child came}~~, ~~{it was today that no child came, it was today that at least one child came}~~, ~~{it was the day before yesterday that no child came, it was the day before yesterday that at least one child came}~~, ~~{it will be tomorrow that no child comes, tomorrow at least one child will come}~~, ~~{the day after tomorrow no child will come,the day after tomorrow at least one child will come}~~, ...}

As (23') shows sentence (23) above does not give rise to a disputable Residual Topic, since the truth value of the proposition expressed by the sentence, namely 'it was yesterday that at least one child came'[4], determines the truth values of the remaining sets of propositions in the Contrastive Topic value, too. The reason why this happens is that the constituent in Contrastive Topic, *legalább egy gyerek* 'at least one child' can only have one possible non-identical alternative, namely, *no child*, therefore the truth of the original proposition logically implies the falsity of the proposition 'it was yesterday that no child came'.

The ill-formedness of (23) then easily follows. Since the option that at least one child came is assigned to yesterday, there is no point in asking about the number of children who came on the other days, since it will all be none. No sets of propositions in the Contrastive Topic value of the original sentence are therefore disputable (signalled in (23') by being crossed out), therefore the sentence is not felicitous.

The Contrastive Topic value associated with (24), however, does contain some sets of disputable propositions, as shown in (24'):

(24') $||[_{CT}$ Legalább két gyerek] $[_F$ tegnap] érkezett. $||^t$ =
{~~{yesterday no child came, yesterday one child came, yesterday at least two children came}~~, {today no child came, today one child came, ~~today at least two children came~~}, {the day before yesterday no child came, the day before yesterday one child came, ~~the day before yesterday at least two children came~~}, {tomorrow no child will come, tomorrow one child will come, ~~tomorrow at least two children will come~~}, {the day after tomorrow no child will come, the day after tomorrow one child will come, ~~the day after tomorrow at least two children will come~~}, ...}

The difference between the treatment of (23) versus (24) lies in the fact that the quantifier *legalább két gyerek* 'at least two children' can have two alternatives, namely, *no child* and *one child*. Although the option that at least two children came is reserved for yesterday, it does not follow from the sentence which possible day the other options are assigned to. Therefore, the sets of propositions which remain after crossing out the first one (which is non-disputable, since it always has the opposite truth value as the original proposition) are all disputable, since they each contain two propositions whose truth values are not known. As a result, sentence (24) is felicitous.

The last example to be discussed here, (25), contains the non-monotone adverbial quantifier *kétszer* 'twice' and helps to illustrate that adverbial quantifiers can be treated completely on a par with determiner quantifiers:

(25) $[_{CT}$ Kétszer] $[_F$ szombaton] voltam moziban.
twice Saturday-superessive was-1sg cinema-inessive
'It was on Saturday that I was in the cinema twice.'

[4] Hungarian Focus is usually assumed to have an exclusive interpretation.

(25') $||$ Kétszer szombaton voltam moziban. $||^f$ = {{~~it was on Saturday that I was not in the cinema, it was on Saturday that I was in the cinema once, it was on Saturday that I was in the cinema twice, it was on Saturday that I was in the cinema three times, ...~~}, {it was on Sunday that I was not in the cinema, it was on Sunday that I was in the cinema once, ~~it was on Sunday that I was in the cinema twice~~, it was on Sunday that I was in the cinema three times, ...}, ..., {it was on Monday that I was not in the cinema, it was on Monday that I was in the cinema once, ~~it was on Monday that I was in the cinema twice~~, it was on Monday that I was in the cinema three times}}

The determiner *kétszer* 'twice' can have an infinite number of alternatives, therefore the Contrastive Topic value of (25) contains several sets of such propositions whose truth value does not follow from the truth of the sentence, which leads to a disputable Residual Topic. As a result, sentence (25) is felicitous, as expected.

After having outlined some facts related to the behaviour of monotone increasing and non-monotone quantifiers in Contrastive Topic position, in the next section we turn our attention to sentences containing monotone decreasing quantifiers, whose somewhat more surprising distributional properties (illustrated by the contrast between (2)–(3) above) will be argued to fall out from the approach presented here.

3.2. Monotone decreasing quantifiers in Contrastive Topic

Let us illustrate the workings of our theory for sentences containing the prima facie example of a monotone decreasing quantifier, namely *kevés* 'few'. Sentence (2) above, repeated here as (26) illustrates that a quantified DP containing this determiner cannot appear in the Contrastive Topic position of sentences containing falsum focus:

(26) # [$_{CT}$ Kevés fiú] [$_F$ nem] jött meg.
few boy not came preverb
'It is not the case that few boys came.'

If it could be proved that in Contrastive Topic position monotone decreasing quantifiers, as opposed to monotone increasing and non-monotonic ones, introduce only one non-identical alternative, namely their negation, the semantic ill-formedness of (26) could be accounted for.

An independent support for the strategy suggested above comes from É. Kiss (1998a), who argues that the reason why the members of the set of constituents expressing „exclusion", like *kevés* 'few', *rosszul* 'badly' and *ritkán* 'rarely' (which seem to be a superset of the set of monotone increasing quantifiers) occur in the Focus position of Hungarian sentences is that they are taken to express an inherent opposition with their positive counterparts, and, therefore, interpreted as *nem sok* 'not many', *nem jól* 'not well' and *nem gyakran* 'not often', respectively. If the only non-ientical alternative the DP *kevés fiú* 'few boys' can introduce in Contrastive Topic position is its opposite, namely, *sok fiú* 'many boys', then (26) does not give rise to a disputable set of propositions, since the

truth values of the propositions in the Contrastive Topic value in (26') all follow from that of the original proposition.

(26') $||$ [$_{CT}$ Kevés fiú] [$_{F}$ nem] jött el. $||^{f}$ =
{{¬(not many boys came), not many boys came},
{¬(many boys came), many boys came}} =
{{many boys came, ¬(many boys came)},
{¬(many boys came), many boys came}}[5]

Let us now consider how our proposed framework accounts for the well-formedness of (3) above, repeated here as (27), which contains the same quantifier *kevés fiú* 'few boys' in Contrastive Topic position and a Focus position filled by lexical material:

(27) [$_{CT}$ Kevés fiú] [$_{F}$ kedden] jött meg.
few boy Tuesday-superessive came preverb
'It was on Tuesday that few boys came.'

If we construe the Contrastive Topic value for (27), as done in (27') below, it turns out that although the constituent in Contrastive Topic introduces only one non-identical alternative, exacly like in (26), the constituent in Focus introduces six, and therefore, the Residual Topic associated with the sentence will come out as disputable. In (27') below, the propositions whose truth value follows from the sentence are crossed out. The rest constitutes the Residual Topic:

(27') $||$ [$_{CT}$Kevés fiú] [$_{F}$kedden] jött meg. $||^{f}$ = {{~~on Monday few boys came, on Tuesday few boys came, on Wednesday few boys came, On Thursday few boys came, on Friday few boys came, on Saturday few boys came, on Sunday few boys came~~}, {on Monday not few boys came, ~~on Tuesday not few boys came~~, on Wednesday not few boys came, on Thursday not few boys came, on Friday not few boys came, on Saturday not few boys came, on Sunday not few boys came}}

It can be observed that the only property traditionally associated with topichood which *kevés fiú* 'few boys' also retains here is referentiality, since it individuates a class of entities which can appropriately described with the help of the expression *kevés fiú* 'few boys'. The behaviour of other monotone decreasing quantifiers, which are excluded from the Contrastive Topic position of sentences with falsum focus but allowed to appear together with lexically filled focus could be explained along the same lines. The DP *ötnél kevesebb fiú* 'less than five boys' could be taken to imply an implicit contrast with *legalább öt fiú* 'at least five boys', *legfeljebb három fiú* 'at most three boys' with *több, mint három fiú* 'more than three boys' and *legfeljebb négyszer* 'at most four times' with *több, mint négyszer* 'more than four times', for example.

It has been argued throughout the paper that adverbial quantifiers obey the same restrictions in Contrastive Topic position as their determiner counterparts. In the next

[5] Assuming that propositions *¬(many boys came)* and *not many boys came* are logically equivalent.

section it will be shown that adverbial quantifiers also display some fascinating scopal properties stemming from their function to quantify over eventualities or situations, which deserves some further attention.

3.3. Adverbial quantifiers in Contrastive Topic

Adverbs of quantification in the main clauses of complex sentences containing a temporal subordinate clause are usually taken to denote some numerical relation between sets of eventualities or situations satisfying the eventuality descriptions in the subordinate and in the main clauses (in this order). (28) below, for example, can mean that a large (and more or less evenly distributed) number of occassions of Jóska having a day off are such that he calls his mother then.[6]

(28) Jóska gyakran felhívja az anyját, amikor szabadnapos.
Jóska often preverb-calls the mother-1sgposs-acc when has-a-day-off
'When he has a day off Jóska often calls his mother.'

Sentence (29), however, where the subordinate clause is focussed (which is signalled by the placement of the pronoun *akkor* 'then' anaphoric to *amikor* 'when' into the preverbal Focus position of the main clause) and the adverb of quantification is placed into the Contrastive Topic position of the main clause, can only mean that on each day when he has a day off Jóska frequently calls his mother:

(29) Jóska [$_{CT}$ gyakran] [$_{F}$ akkor] hívja fel az anyját,
Jóska often then calls preverb the mother-1sgpos-acc
[$_{F}$ amikor szabadnapos].
when has-a-day-off
'It is when he has a day off that Jóska often calls his mother.'

Similarly, sentence (30), containing the quantifier *kétszer* 'twice', can only mean that each time he has a day off Jóska calls his mother twice:

(30) Jóska [$_{CT}$ kétszer] [$_{F}$ akkor] hívja fel az anyját,
Jóska twice then calls preverb the mother-1sgpos-acc
[$_{F}$ amikor szabadnapos].
when has-a-day-off
'It is when he has a day off that Jóska calls his mother twice.'

In other words, certain adverbial quantifiers in the Contrastive Topic position of Hungarian main clauses do not seem to refer to the frequency or number of the joint occurrence of the two types of eventualities/situations described in the main and subordinate clauses of the complex sentences containing them, but to the frequency of the

[6] A reading, however, according to which on each day he calls his mother several times is not impossible, either.

main clause eventuality in the time interval referred to by the subordinate clause eventuality, since the scope of the adverbial quantifier *gyakran* 'often' in (29) does not include the subordinate clause. The latter phenomenon could be taken as a further illustration for É. Kiss's (1994) claim discussed above, according to which the constituent in Contrastive Topic is coindexed with a gap in postverbal position and interpreted as if it was occupying its place, too. Both (29) and (30) give rise to the implicature associated with Contrastive Topics that during other intervals determined by alternatives to the subordinate clause the frequency or the number of the occurrence of eventualities satisfying the main clause eventuality description might be different.

However, if the main clause Contrastive Topic position is occupied by a strong, or truly quantificational adverbial, like *mindig* 'always' in (31), the interpretation of the sentence will be similar to that of one where the adverb of quantification occupies some other preverbal position, like (32), except for the additional „Contrastive Topic implicature". This in the present case wold mean that in alternative circumstances the number of times or the frequency of Jóska calling his mother might be different:

(31) Jóska [$_{CT}$ mindig] [$_{F}$ akkor] hívja fel az anyját,
Jóska often then calls preverb the mother-1sgpos-acc
[$_{F}$ amikor szabadnapos].
when has-a-day-off
'It is always when he has a day off that Jóska calls his mother.'

(32) Jóska mindig felhívja az anyját, amikor szabadnapos.
Jóska always preverb-calls the mother-1sgpos-acc when has-a-day-off
'Jóska always calls his mother when he has a day off.'

The reason for the difference between the interpretations of (29) and (30) versus (31) lies in the fact that „truly quantificational adverbials" (Bach et al. 1995) like *mindig* 'always' state a relation between two sets of eventualities, and if the sentence actually contains the description of two sets of eventualities then they must be taken to be the arguments of the quantifier. Weak adverbials, like *kétszer* 'twice' or *gyakran* 'often', however, do not denote a relation between two eventualities, and therefore, in certain positions of the main clause, they can be interpreted as only describing the number or frequency of eventualities satisfying the eventuality description in the main clause.

4 Conclusion

In this paper we gave an account of the distribution of Hungarian determiner and adverbial quantifiers in Contrastive Topic position. We have adopted Büring's (1997) theory, according to which a constituent in (Contrastive) Topic determines a family of sets of propositions, which contain alternatives to the constituent in Contrastive Topic. A sentence with a Contrastive Topic is felicitous only in case this alternative set contains propositions whose truth-value does not follow logically from that of the original proposition, in other words, when it contains a disputable Residual Topic.

It has been argued that those quantified expressions which are excluded from the Contrastive Topic position fail to give rise to disputable Residual Topic because they are not able to introduce enough alternatives to the original proposition expressed by the sentence in question.

It has also been shown above that the semantic behaviour of weak adverbial quantifiers in Contrastive Topic differs from that of other adverbial quanfiers in other preverbal positions, which is due to the fact that they are interpreted as if they occupied a postverbal position in the main clause.

References

Bach, Emmon, Eloise Jelinek, Angelika Kratzer and Barbara Partee (eds.). 1995. *Quantification in Natural Languages.* Dordrecht: Kluwer.

Barwise, Jon and Robin Cooper. 1981. Generalized Quantifiers and Natural Language. *Linguistics and Philosophy 4:* 159-219.

Büring, Daniel. 1997. The Great Scope Inversion Conspiracy. *Linguistics and Philosophy 20:* 175-194.

Hajicová, Eva, Barbara Partee and Petr Sgall. 1998. *Topic-Focus Articulation, Tripartite Structures and Semantic Content.* Dordrecht: Kluwer.

É. Kiss, Katalin. 1987. *Configurationality in Hungarian.* The Hague: Mouton.

É. Kiss, Katalin. 1994. Sentence Structure and Word Order. In: Kiefer, Ferenc and Katalin É. Kiss (eds.). *The Syntactic Structure of Hungarian* [Syntax and Semantics 27]. San Diego, London: Academic Press.

É. Kiss, Katalin. 1998a. Mondattan [Syntax]. In: É. Kiss, Katalin, Ferenc Kiefer and Péter Siptár. *Új magyar nyelvtan* [New Hungarian Grammar]. Budapest: Osiris, pp. 17-184.

É. Kiss, Katalin. 1998b. Identificational focus versus information focus. *Language 74:* 245-273.

É. Kiss, Katalin. 1998c. Scope-inversion under the fall-rise contour or something else? Ms. Hungarian Academy of Sciences, Budapest.

Johnston, Michael. 1994. *The Syntax and Semantics of Adverbial Adjuncts.* Doctoral Dissertation, University of California, Canta Cruz.

Krifka, Manfred. 1998. Scope Inversion under the Rise-Fall Contour in German. *Linguistic Inquiry 29:* 75-112.

Molnár, Valéria. 1998. Topic in Focus. On the syntax, phonology and pragmatics of the so-called contrastive topic in Hungarian and German. *Acta Linguistica Hungarica 45:* 89-166.

Rooth, Mats. 1985. *Association with Focus.* Doctoral Dissertation, University of Massachusetts, Amherst.

Szabolcsi, Anna. 1980. Az aktuális mondattagolás szemantikájához [Towards the semantics of topic-focus articulation]. *Nyelvtudományi Közlemények 82:* 59-83.

Szabolcsi, Anna. 1981. Compositionality in Focus. *Folia Linguistica 15:* 141-61.

Szabolcsi, Anna. 1997. Strategies for Scope Taking. In: Anna Szabolcsi (ed.) *Ways of Scope Taking.* Dordrect: Kluwer.

de Swart, Henriëtte. 1991. *Adverbs of Quantification: A Generalized Quantifier Approach*. Doctoral dissertation, Rijksuniversiteit Groningen.

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