

László Hunyadi:

The expression of logical scope in Hungarian. On its
syntax and semantics

0. Introduction

One of the principle requirements of the correctness of a sentence from a semantic point of view is that it should represent the desired scope-relations between quantification, negation, modal and other operations. Since these and other operations can enter into several variations of scope-relations, the task of representing them in a linguistic form is far from being simple. In principle, there may be quite a few linguistic means for this purpose. One is a purely syntactic one: the requirement is that for each different scope-relation there has to be a separate syntactic device /separate position or a separate combination of positions, for example/. Here lexical representation only plays a secondary role. Another means is purely semantic. It means that for each different scope-relation there is a separate lexical element, e.g. one lexeme for a universal quantifier with a wider scope and another one for the same quantifier with a narrower scope etc. Probably because of the large number of separate /syntactic or semantic/ means that would be needed in these two cases at least quite a few languages represent a "mixed" type, i.e. they make use of the advantages of the expression of scope-relations on both levels. Anyway, it seems to be obvious that a language with a more "flexible" syntax may employ its syntax with no additional modifications for a syntactic representation of scope-relations in a wider range than those with a less "flexible" syntax.

In this paper I will argue that Hungarian is one of those languages which can make an extensive use of syntax for the expression of scope-relations this being even the principle linguistic means for that. I will also argue that the syntactic model proposed by É. Kiss for Hungarian is suitable for the representation of these relations. It follows from the nature of the task, however, that certain modifications in the proposed invariant structure /É. Kiss, 1981/ are needed with various semantic considerations also to be made. This paper will describe the linguistic expression of quantification and negation as well as aspects of modal operations.

1. The syntax of scope

It can be observed in many languages that the expression of logical scope has more or less to do with stress and/or intonation. As for Hungarian, it plays a decisive role. Since stress in Hungarian is not merely a phonetic phenomenon but is strongly associated with syntax it offers the chance to formulate scope-rules in terms of 'focus' and 'topic' as well, the lack or presence of stress /main stress, sentence stress/ being the most important criterion for identifying both logical scope and syntactic positions as well. This "phonetic" approach gives the reason to use the following terms: in pre-verbal position, whatever is carrying or following main stress will be considered F /from 'focus'/ and whatever is not carrying or following main stress will be considered T /from 'topic'/.

/Thus, instead of É. Kiss's quantifier-position between T and F
-- cf. É.Kiss 1981 -- I will also use the term 'F'. A semantic

/7/ Valaki a leckét megtanulta. 'As for learning the lesson,
T₁ T₂ F₂ someone /has/ learned it.'

someone the lesson-acc. CONV learn-past

/8/ A leckét valaki megtanulta. 'As for learning the lesson,
T₂ T₁ F₂ someone /has/ learned it.'

the lesson-acc. someone CONV learn-past

The fact that F₂ and F₃ cannot be filled in simultaneously might support the view that it is just one position that cannot be filled in twice /É. Kiss, 1981/ as well as the undefineable linear order of T₁ and T₂ seems to support the existence of one single position T, with multiple filling /É. Kiss, *ibid.*/. These differences will be explained from a semantic background in order to enable the syntax to account for the delicate phenomena of logical scope-relations.

2. The semantics of scope

Since the purpose of filling in different syntactic positions is to bring about semantically non-synonymous sentences, it is necessary to assign to movements into each position their distinct semantic properties. In this spirit, if we have an underlying S⁰ from which we move two arguments, separately, to a pre-verbal position and these two movements have brought about different semantic changes regarding S⁰ and the resulting sentence, we shall assume that these have been two different operations, into two different positions. Thus, if syntactic positions are responsible for semantic differences, let us see these semantic properties of positions outlined in /1/.

If we have a closer look at positions in F, we can see that each of them adds something special to the statement. F₁ is a place for universal quantifiers /mind- 'all', bár- 'any', az egész 'the whole' etc./ and adverbs of degree and frequency /nagyon 'very much', gyakran 'often', sok 'many' etc./, as well as the conjunctive is 'also':

/9/ Mindenki megtanulta a leckét. 'Everyone /has/ learned the lesson.'
F₁ F₂
everyone CONV learn-past the lesson-acc.

/10/ Sokszor a leckét tanulta. 'It was many times the case that he was learning the lesson.'
F₁ F₂
many times the lesson-acc. learn-past

The quantified expression made in this way is brought into the focus of attention with no other additional semantic value. From the point of view of scope-relations, F₁ represents the widest scope among F's.

F₂ is a place for arguments that modify the verbal action, especially the aspect of the verbal action. If a CONV is put in this position it will express perfective meaning as we saw in /9/. /Without entering into a detailed discussion of this delicate topic, however, we should note that moving CONV into F₂ is not the only means of expressing perfectivity and that if CONV is not moved into F₂ there may also be a perfective interpretation depending largely on the prefix itself; in more detail, cf. Wacha 1978, Szabolcsi 1983 /.

F₃ is similar to F₁ in that it also represents quantification /and in this respect it differs from F₂/ but their main difference is F₁'s property of exhaustive listing, described

by Szabolcsi /Szabolcsi, 1981/. This is the position that is often given the label 'contrastive focus'. The semantic property of exhaustive listing is most evident in cases when F_3 is occupied by proper nouns or nouns with determinatives. If the noun is not a proper noun or is undetermined it is not always clear if the given noun is in F_3 or F_2 . Thus, there are certain nouns which may be prefixed to the verb without article and they will have the function of CONV's, but at the same time they also retain their being nouns thus they can also be understood in F_3 . Let us have an example:

/11/ [/]Kezet mostam.

hand-acc wash-I-past

It is an ambiguous sentence: if kezet is understood /from the context/ as being the expression of exhaustive listing, then it is in F_3 . In this case the verb has no CONV and so no perfectivity is expressed. On the other hand, if /again on the basis of the context/ we cannot give any interpretation of exhaustive listing, then kezet is in F_2 . In this case it has the function of CONV and the sentence is perfective.

Some adverbs may also have this double function, e.g. szépen 'in a nice way' or 'well', gyakran 'often' /probably the English often, too, since there are no two equivalents to gyakran/, etc.:

/12/ Szépen leirtad a leckét. 'You wrote the lesson well.'
F F₂

well CONV write-you-past the lesson-acc.

/13/ Szépen irtad le a leckét. 'You wrote the lesson nicely.'
F₃

nicely write-you-past CONV the lesson-acc.

In these two examples it was the CONV that /with its position/ participated in the interpretation of the position of szépen. This adverb may, however, appear even if no CONV is in the sentence. Now, it will only be stress and intonation that will determine syntactic positions and along with this, the semantic interpretation of the sentence:

/14/ Szépen irtad a leckét. 'You wrote the lesson nicely' or
F₃ 'You were writing the lesson nicely.'
nicely write-you-past the lesson-acc.

/15/ 'Szépen'irtad a'leckét. 'You were writing the lesson well.'

The syntactic difference between the two sentences is that whereas /14/ is focussed /with szépen under main stress/, /15/ is a neutral sentence. On the basis of these observations we can say that if there is no CONV in the sentence with an adverb in pre-verbal position, then, if the sentence is focussed and it falls on the adverb then this adverb is in F₃. On the other hand, if there is no CONV in the sentence and the sentence is neutral, an adverb in pre-verbal position has the same semantic function as in F₂ in a focussed sentence.

To illustrate logical scope-relations between various positions in F, let us see /16/ and /17/:

/16/ Mindenki a leckét irta. 'For everyone, all that they
F₁ F₂ were doing was write the lesson.'
everyone the lesson-acc. write-past

/17/ Mindenki megírta a leckét. 'For everyone, they finished
F₁ F₂ writing the lesson.'

everyone CONV write-past the lesson-acc.

/F₁ in both cases represents wider scope over F₂ or F₃./

As for T, although in the domain of word order there is no surface evidence for more than one distinct position in T /as it was shown in /7/ and /8/ with different order of elements in T but both grammatical and synonymous/, we shall see in the following examples that T₁ and T₂ must, at least, differ semantically:

/18/ Valakit nem láttam. 'I did not see someone.'
T₁

someone-acc. not see-I-past

/19/ Mindenkit nem láttam. 'I did not see everyone.'
T₂

everyone-acc. not see-I-past

/18/ has an existential quantifier valaki that falls out of the scope of negation. /19/ has a universal quantifier in it /mindenki/ that is included in the scope of negation. The intricacy of the examples is that valakit and mindenkit cannot be distinguished either by their stress or their syntactic surrounding /what we saw in the syntactic-semantic analysis of szépen/ so that there is seemingly no linguistic means of indicating the opposite scopes of negation in respect to the quantifiers. If that is really the case then we should assume that both valaki and mindenki are representations of the existential quantifier. Apart from the inner structure of mindenki that we shall analyse in the next point there is one more

counter-evidence to this assumption:

/20/ Mindenkit /csak/ a tanár látott. 'It was /only/ the teacher
T₂ F₃ who saw everybody.'

everybody-acc. /only/ the teacher see-past

In /20/ there is no way to logically interpret mindenkit as an existential quantifier: mindenkit is included in the scope of the special universal quantifier of F₃, but it is still a universal quantifier. This example also shows the correctness of the interpretation of /19/ with mindenkit, a universal quantifier included in the scope of negation /expressed in the same way as the wider scope of F₃ in respect to mindenkit was expressed in /20/. This gives us the semantic basis for distinguishing T₁ and T₂ in T itself. In order to justify them syntactically as well, let us first consider how scope-relations between quantification and negation are expressed in general in simple Hungarian sentences.

From a logical point of view, /19/, /21/ and /22/ are equivalent, expressing the same scope-relations:

/19/ Mindenkit nem láttam. 'I did not see everyone.'
T₂ F

/21/ Nem mindenkit láttam.
F F

/22/ Nem láttam mindenkit.
F

As for /21/, nem 'not' is on top of all possible F's /in fact it is in F₁ like the quantifier, too, but with main stress on it that indicates the widest possible scope in F/. As for /22/, nem is the only operator in F thus it has the widest scope too. Here the position of mindenkit to the right of the verb has the same effect as if it were just to the right of nem. it is

moved from its privileged position F_1 where it had the widest scope as in /23/:

/23/ $\overset{F_1}{\text{Mindenkit látta. 'I saw everyone.'}}$

everyone-acc. see-I-past

The rule of expressing the scope of negation can be formulated as follows:

/24/ Scope-rule of negation:

- i. Any scope-bearing element \underline{x} will be included in the scope of negation if the negative element occupies the F-position reserved for \underline{x} to express wide scope and takes over its main stress.
- ii. Along with this, \underline{x} will either
 - a/ remain in its original F-position but behind the negative element or
 - b/ be moved to a position outside F.
- iii. The conditions for the movement of \underline{x} out of F are:
 - a/ \underline{x} should not be positionally bound
 - b/ \underline{x} should not include any other scope-bearing element in its scope.
- iv. The negation of an element with no scope is carried out by the negative element in F with no movement of the negated element permitted.

In sentences /19/ and /22/ we have the case when \underline{x} is moved out of F. It conforms with the conditions in iii.: the quantifier does not include another scope-bearing element in its scope and, comparing /23/ and /25/ we find that mindenki is

not bound to one single position to express wide scope over the verb:

/23/ Mindenkit láttam. 'I saw everyone.'
F₁

everyone-acc. see-I-past

/25/ 'Láttam mindenkit. 'I saw everyone.'
saw-I-past everyone-acc.

The scope-rule also explains why in /18/ Valakit nem láttam
T₁ F

the quantifier is not included in the scope of negation: since valaki cannot appear in F, cf. /26/:

/26/ * Valakit láttam.
F

it cannot be removed from it either. The synonymy of /18/ and /27/ -- as far as the scope-relations are concerned -- is based on the same rule:

/18/ Valakit nem láttam. 'I did not see someone.'
T₁ F

someone-acc. not see-I-past

/27/ Nem láttam valakit. 'I did not see someone.'
F

no see-I-past someone-acc.

In order to lend valakit wide scope it need not be moved out of S⁰; at the same time by moving it to T₁ /not via F!/ we did not change its scope-relation to negation either:

in both positions valakit has wider scope than negation, based on the fact that its wider scope is not expressed in F /cf. /26/ */ so that negation whose wider scope, as a rule,

is expressed in F, cannot include valakit in its scope. On the other hand, the existential quantifier can be moved out of S⁰ without changing its scope-relations since a change in scope relations in respect to negation could only take place in F.

That is why we characterized the semantic properties of T₁ and T₂ in this way: T₁ has a wide scope in respect to any other operation in the sentence whereas T₂ represents an operation whose scope is included in the scope of some other operation in F.

From our scope-rule it is clear that we get a sentence like /19/ Mindenkit nem láttam 'I did not see everyone' by

applying a quantifier-movement from F₁ to T whereas to get /18/ Valakit nem láttam 'I did not see someone' we did not

need to /in fact we could not/ have the same movement of the quantifier from F. This gives, in fact, the syntactic reason for the differentiation of T₁ and T₂: even if there is no surface evidence for more than one distinct position in T, T₁ and T₂ are filled in from S⁰ in two different ways: T₁ immediately from S⁰, whereas T₂ via F. And the difference in the two processes accounts for the semantic difference of the resulting sentences meeting the requirement that the filling in of syntactic positions by different processes should bring about semantically non-synonymous sentences: T₁ has wide scope over other operations and does not express any 'topic-contrast' whereas T₂ inherits from F its narrower scope as well as expresses 'topic-contrast'.

As for the conditions on the movement of x out of F, x should not be positionally bound because otherwise in case of such a movement the semantic relations would suffer a change, too, as between /28/ and /29/:

/28/ Nem Pétert láttam. 'I did not see Peter.'
F₃ F₃

not Peter-acc. see-I-past

/29/ Pétert nem láttam. 'As for Peter, I did not see him.'
T₂ F

Peter-acc. not see-I-past

That x should not include any other scope-bearing element in its scope is exemplified by the non-synonymy of /30/ and /31/:

/30/ Nem mindig Pétert láttam. 'I did not always see Peter.'
F₁ F₁ F₃

not always Peter-acc. see-I-past

/31/ Mindig nem Pétert láttam. 'It was not Peter whom I always saw.'
T₂ F₃ F₃

always not Peter-acc. see-I-past

Again, together with the change in the syntactic structure the logical relations have also changed: whereas in /30/ mindig, in /31/ Pétert is included in the scope of negation.

An element with no scope cannot move when negated since, otherwise, it would either mean that it is given scope /cf. /33// or that it will be ungrammatical /cf. /34//:

/32/ Nem tanultam a leckét. 'I did not learn the lesson.'
F

not learn-I-past the lesson-acc.

/33/ $\begin{matrix} / \\ F_3 & F_3 \end{matrix}$ Nem a leckét tanultam. 'I did not learn the lesson.'

not the lesson-acc. learn-I-past

/34/ $\begin{matrix} / \\ T & F_3 & F_3 \end{matrix}$ Tanultam nem a leckét.

learn-I-past not the lesson-acc.

The final remark to be made is this: although no scope-rules intervene, in sentences like /35/ with a negated universal quantifier and a CONV, the CONV should not be in F:

/35/ $\begin{matrix} / \\ F_1 & F_1 & F_2 \end{matrix}$ Nem mindig megtanulom a leckét.

not always CONV learn-I the lesson-acc.

/36/ $\begin{matrix} / \\ F_1 & F_1 \end{matrix}$ Nem mindig tanulom meg a leckét. 'I do not always learn the lesson.'

not always learn-I CONV the lesson-acc.

The reason for the ungrammaticality of /35/ is semantic rather than syntactic. The fact is that CONV in F expresses /besides expressing perfectivity/ a kind of positive polarity as seen from short affirmative answers to yes/no questions:

/37/ $\begin{matrix} / \\ F_2 & F_2 \end{matrix}$ /Megértetted?/ -- Meg./ 'Did you understand it?/ -- Yes, I did

CONV understand-you-it/obj./-past -- CONV

This positive polarity, in its turn, contradicts to the negative sense of a negated quantification of the kind in /35/ and this contradiction is the source of the ungrammaticality of /35/. /This phenomenon is discussed in more detail in Hunyadi 1983/

3. On some quantifiers

We saw in the previous section the scope-relations between negation and quantification using the existential quantifier vala- 'some-' and the universal quantifier mind- 'every-'. Here we shall study the somewhat controversial scope-behaviour of the quantifier bár- 'any-' as contrasted to that of mind-.

The controversial nature of bár- seems to be the following: although it represents the universal quantifier like mind- /at least it has similar syntactic properties to it and opposite to vala-; for a detailed discussion of this problem cf. Hunyadi 1981/, it expresses scope-relations opposite to those of mind- or what is predicted by our scope-rules, cf. /38/ and /39/:

/38/'Nem hiszem, hogy ő'tud'mindenről. 'I do not think that he knows
not think-I that he knows every- about everything.'
thing-about

/39/'Nem hiszem, hogy ő'tud 'bármiről. 'I do not think that he knows
not think-I that he knows any- about anything.'
thing about

/In the above examples the quantifiers are in the embedded sentence of a complex sentence instead of a simple one in order to avoid complications with modal operators that would obligatorily appear in a simple sentence with bár- inside. Here, according to the rules described in Hunyadi 1981, the negation in the upper S will include in its scope the focus of the embedded sentence or the sentence as a whole if it is neutral, the case in our examples above./

As we see, although the two sentences have the same syntactic structure with negation and universal quantifier in the same positions, in /38/ minden seems to be included in the scope of negation,

whereas in /39/ the quantifier bármi seems to be out of the scope of negation. Thus, in order to resolve this controversy and keep at the same time in line with the scope-rules we have to assume that a/ both mind- and bár- represent the universal quantifier and b/ they must differ in their inner semantic structure. Thus, to derive /38/ and /39/ by the same syntactic process and produce, nevertheless, logically/semantically non-synonymous sentences we have to describe the difference in their inner structure. That will be done in this section.

I will assume that the fundamental difference between mind- and bár- is that mind- represents a kind of conjunction whereas bár- represents a kind of disjunction. This assumption is supported by various facts from Hungarian.

Mind- in mindenki 'everyone', mindenhol 'everywhere' etc. has the function of conjunction as mind does in /40/:

/40/ Mind Kati, mind Péter elment. 'Both Kate and Peter left.'
conj. Kate conj. Peter left

/40/ is synonymous with /41/ where the conjunction is indicated by és 'and' and the double nature of marking conjunction (in /40/ by doubling mind) can also be observed in /41/, with is 'also' figuring along with és:

/41/ Kati is elment és Péter is. 'Kate also left and Peter too.'
Kate also left and Peter also

The negation of these sentences will be carried out in a similar fashion to that of any other conjunction:

/42/ Nem ment el Kati vagy Péter elment. 'Kate did not leave or
not left Kate or Peter left Peter left.'

This is exactly the meaning of /38/, of course with a modal operator in the upper sentence as well as the negative moved to the upper sentence by negative raising /about the conditions of synonymy in negative raising for Hungarian cf. Hunyadi to appear/:

/38/ = 'I think that there is at least something he does not know about.'

The other form of the universal quantifier in question is bár- with a kind of disjunction in its inner semantic structure. This assumption is supported by the fact that akár- which is synonymous with bár- /cf. bárki = akárki 'etc.' the main difference being just a matter of style/ is used for the expression of disjunction in sentences like /43/:

/43/ Akár ezt, akár azt a könyvet megveheted. 'You can buy this book
disj. this-acc. disj. that-acc. or that one too.'
the book-acc. CONV buy-may-you-it /obj./

/43/ is synonymous with /44/ where the disjunction is indicated by vagy 'or' and the double nature of marking disjunction (in /43/ by doubling akár) can also be observed in /44/ with is 'also' figuring along with vagy:

/44/ Ezt a könyvet is megveheted vagy azt a könyvet is megveheted.
this-acc. the book-acc. also CONV buy-may-you-it/obj./ or
that-acc. the book-acc. also CONV buy-may-you-it/obj./
'You can buy this book or you can buy that book too.'

The negation of these sentences will be carried out in a similar fashion to that of any other disjunction:

/45/ Ezt a könyvet sem veheted meg és azt a könyvet sem veheted meg.
this-acc. the book-acc. also not buy-may-you-it/obj./ and
that-acc. the book-acc. also not buy-may-you-it/obj./
'You cannot buy this book and cannot buy that book either.'

This is exactly the logical meaning of /39/ as well, again with a modal operator and negative raising in the upper sentence:

/39/ = 'I think that there is nothing he knows about.'

/Just to make the picture complete: the double marking of operations seems to be a convenient linguistic means to disambiguate certain expression. As for vagy 'or', if it is used only once, the sentence may be ambiguous; if it is used with is it unambiguously means permissive disjunction as in /44/, if used with one more vagy it means alternation: Vagy Péter, vagy Kati ment el 'It was either Peter or Kate who left'. In the case of conjunctions, the single use of és 'and' is again ambiguous. That the same predicate applies to two different arguments separately is expressed by és ... is as in /41/ or mind ... mind as in /40/ but that a predicate applies to more than one argument collectively is expressed by other linguistic means./

Now let us turn our attention to the occurrences of mind- and bár- in simple sentences. We shall find that bár- /in contrast to mind-/ can only appear in the scope of some modal operator:

/46/ Nem tud mindenről. 'He does not know about everything.'
not know-he everything-about

/47/ * Nem tud bármiről.
not know-he anything-about

/47a/ Nem tudhat bármiről. 'He may not know about just anything.'
not know-may-he anything-about

The necessary appearance of a modal operator in /47a/ is also understandable from the interpretation of the inner structure of bár-, /48/ being equally unacceptable:

/48/ * Tegnap láttam Katit is vagy Pétert is. 'Yesterday I saw both
yesterday saw-I Kate-acc. conj. or Kate or Peter.'
Peter-acc. conj.

This sentence, too, can be made grammatical by adding a modal like
in /48a/:

/48a/ Tegnap láthattam Katit is vagy Pétert is. 'Yesterday I could
yesterday saw-may-I Kate-acc. conj. or see both Kate or
Peter.'
Peter-acc. conj.

Interesting enough, the difference in scope between mind-
and bár- manifested in complex negraised sentences seems to dis-
appear in simple ones:

/46a/ Nem tudhat mindenről. 'He may not know about everything.'
not know-may-he everything-about

/47a/ Nem tudhat bármiről. 'He may not know about just anything.'

/The two above sentences are, at least, similar in the sense that
both mean a negative existential statement./

In order to account for this phenomenon in the spirit followed
so far I assume the following: bár- and akár- /the first components
of bárki, akárki etc./ represent an operator with the semantic
property 'arbitrariness' /akár from akar 'to want' / meaning
'for an arbitrary x'. In a neutral sentence /as in the non-negated
pairs of /46a/ and /47a/: tudhat 'mindenről 'he may know about
everything' and 'tudhat 'bármiről 'he may know about anything',
respectively/ the operation indicated by the operator bár- /akár-/
is carried out /the is ... vagy conjunction has taken place/,
whereas in a non-neutral sentence this operation is only indica-
ted but not yet carried out. As for our examples, neither /46a/,
nor /47a/ can be considered a neutral sentence the quantifier

with its main stress "lost" /taken over by the negative/ indicating that it is the quantifier that is included in the scope of negation /anyway, negation can only take place in F, i.e. in non-neutral sentences/. The operation of 'arbitrariness' being thus not carried out is not converted into the operation is ... vag and so it remains the target of negation:

/47a/ = 'it is not permitted that he know about an arbitrary x'

If this assumption holds then we can also predict that we have a similar scope-interpretation in neg-raised complex sentences with just the quantifier bár- in F:

/49/ Nem hiszem, hogy [/]bármiről tudhat. 'I do not think that he may know about just anything.'
F
not think-I that anything-about know-may-he

As a contrast, if the embedded sentence is neutral /i.e. there is no stress-difference between the verb and major categories/, the negation is carried out on the accomplished operation, the is ... va conjunction:

/49a/ Nem hiszem, hogy 'bármiről 'tudhat. 'I do not think that he may know about anything.'

/49b/ Nem hiszem, hogy 'tudhat 'bármiről. = /49a/

/This is the type of sentences, by the way, where bár- -- if not considering its opposite occurrences discussed above -- could be taken for the representation of the existential quantifier, /49a/ or /49b/ being synonymous with /50/:

/50/ Nem hiszem hogy 'valamiről /is/ 'tudhat.
not think-I that something-about /also/ know-may-he

Here, however, an existential sentence /valamiről tudhat 'he may know about something' / is in the scope of negation, is just being

a phonetic aid to read valami 'something' as a part of a neutral sentences and thus included in the scope of negation rather than to read it in T and thus outside the scope of negation./

The condition for bár- in F to be read as just the operator for 'arbitrariness' with its operation not yet carried out /and thus not converted into is ... vagy disjunction/ and thus being in the scope of negation is that its predicate be modal, i.e. the whole quantified phrase should be included in the scope of a modal operator. That is what gives the negated universal reading of /49/ Nem hiszem, hogy bármiről tudhat 'I do not think that he may know about just anything' and that is also why /47a/ Nem tudhat bármiről 'He may not know about just anything' similarly to any simple sentence with bár- has this interpretation only /that is the modal operator and bár- in /49/ is in F because it bears main stress and in /47a/ it is also interpreted in F since bár-, a main stress-bearing element has "lost" its stress giving it over to nem 'not' thus indicating the scope of negation similarly to any case when it would occur in a pre-verbal position F, preceded by a negative/.

The above condition of the quantifier to be included in the scope of some modal operation can again be exemplified by a sentence like /50/:

/50/ * Yesterday I bought an arbitrary /i.e. any/ book.

/50/ is starred because it is a certain definite place and time where the action took place and it was a definite rather than an arbitrary /any/ action.

In negraised sentences, however, bár- /and akár-/ can be used without being included in the scope of a modal operator in

the same clause. In such cases bár- represents conjunction carried out. That is the case, among others, in /51/, the non-neutral form of /39/:

/51/ Nem hiszem, hogy ő bármiről tud. 'I do not think that he knows about anything.'

In /51/ bár- cannot be read as the expression of the 'arbitrariness' operation that could be negated so that the result would be a negative universal statement, because the condition for bár- to be interpreted like that is not met: the embedded sentence of /51/ does not contain a modal operator.

It has to be noted that a sentence like /51/ is very rare and sounds a bit unusual, simply because in negraised sentences in general the embedded sentence takes a modal, especially the 'non-lexical', i.e. the contextually unmotivated conditional /cf. Hunyadi to appear/. Thus, with the same content, /52/ is more "natural" than /51/:

/52/ Nem hiszem, hogy ő bármiről tudna. 'I do not think that he knows about anything.'
not think-I that he anything-about
know-cond-he

This leads sometimes to ambiguities in negraised sentences: if the modal of the embedded sentence is understood as contextually motivated, then bár- in F is understood with the 'arbitrariness'-operator in the scope of negation, whereas if the same modal is understood contextually unmotivated, then it is the disjunction in the scope of negation. That is how we can account for the two different scope-readings of /53/:

/53/ Nem hiszem, hogy ő bármiről tudhat.
not think-I that he anything-about know-may-he

a/ 'I think that he is not allowed to know about just
anything.'

b/ 'I think that he /probably/ does not know about
anything.'

These two interpretations are also motivated by the ambiguity of -hat in Hungarian: in reading a/ it is understood as meaning 'to be allowed to', whereas in b/ as 'probably'. Disambiguation may, in some cases, be supported by the semantic incoherence of the verb and the modal operator attached to it as well.

At last, I would like to touch briefly the familiar dilemma of why the universal quantifiers mind- and bár- /akár-/ cannot have wider scope than negation in the same clause. Cf. /54/ and /55/:

/54/ [/]≠ Mindent nem vehetsz meg.
F
everything-acc. not buy-may-you CONV

/55/ [/]≠ Bármit nem vehetsz meg.
F
anything-acc. not buy-may-you CONV

The answer to be proposed is again based on the interpretation of the inner semantic structure of both quantifiers given in this section. The matter is that no negation can take place so that the verb is not /directly or indirectly/ included in the scope of negation, cf. /56/:

/56/ [/]≠ Láttam nem Pétert.
F
saw-I not Peter-acc.

Instead, /57/ and /58/ are grammatical, with the verb directly /cf. /57// or indirectly /through focussing, cf. /58// included in the scope of negation:

/57/ Nem lát¹ttam Pétert. 'I did not see Peter.'

/58/ Nem Pétert lát¹ttam. 'I did not see Peter.'

In /54/ or /55/, on the other hand, the verb is simply un-accessible to negation because the verb has to be included in the scope of the quantifier /because the is 'also' element in the semantic structure of both quantifiers has to conjoin predicates first and that cannot be done without the verb of the sentence/. Thus, the only place for a negative can be such that is destined for a wider scope for negation, such as /59/ and /60/:

/59/ Nem mindenki jöhet el. 'Not everybody can come.'

F
not everybody come-can- CONV

/60/ Nem aká¹rki jöhet el.

not anyone come-can CONV 'It is not allowed for just anyone to come.'

4. Evidence from other languages

In this section I am going to generalize some of the statements of this paper taking examples from some other languages without pretending to give even an outline of the problems in any of these languages.

The first remark concerns the inter-relation of syntax and semantics regarding scope. Languages differ, among others, in that some of them have special syntactic position for 'focus', whereas others do not. The fact, however, that in both types

/at least in many languages/ 'focus' is expressed by main stress gives us the chance to generalize scope-rules in the following fashion: a/ negation takes place in focus, i.e. only that element of a sentence can be negated that can have the phonetic property of 'focus', main stress; b/ when negated, this element will either pass over its main stress to the negative element or, on the contrary, this element will obtain main stress just in order to indicate that it is included in the scope of negation. For the previous case we have seen examples from Hungarian, for the latter let us just take Estonian /a relative of Hungarian, which, by the way, also indicates that languages of the same group do not necessarily have the same pattern of expressing logical scope/:

/61/ Keegi on siin. 'Someone is here.'
 someone is here

/62/ Keegi ei ole siin. 'Someone is not here.' /'Someone is missing.'
 someone not is here

/63/ Keegi ei ole siin. 'Nobody is here.'
 someone /gen./ not is here

As far as the hypothesis regarding the inner semantic structure of universal quantifiers is concerned, similar evidence can be obtained from some other languages as well. The modal operator of 'arbitrariness' of bár- 'any-' appears in the Russian equivalent ljuboj /from ljubit 'to like', 'to want'/, its disjunctive function again in the Russian kto-libo 'whoever' with libo meaning 'or'; the Arabic ayy 'any' can in another syntactic position mean 'which', indicating that it also expresses 'choice'.

5. Conclusions

On the basis of Hungarian and some other languages it appears reasonable to assume that the fundamental logical scope-relations of a sentence are mainly expressed in the syntactic structure of the given sentence. It is, however, clear that other /e.g. morphological, lexical/ aspects of the language also play a role in it. Phonetic-intonational aspects of the language also appear to be significant in assigning scope-relations sometimes to the extent that even certain syntactic phenomena can not be resolved without taking them into consideration. /This may eventually open the way to attempts to include phonetic--intonational aspects of a language in the level of syntax as well./ Studying the inner structure of quantifiers, on the other side, we may also witness that operations deciding scope-relations in a sentence do not only take place on the syntactic level but can be followed up in morphology as well. This may, in turn, offer further opportunities in the logical study of morphology as well.

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