THE SEMANTICS OF TOPIC-FOCUS ARTICULATION

by

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ABSTRACT

This paper proposes a purely grammatical approach to topic-focus articulation. Section 1 indicates why this approach seems preferable to communicative ones. Section 2 gives an outline of the syntax of word order and intonation in Hungarian and suggests how these phenomena can be treated within Montague Grammar. Section 3 is concerned with term phrases in Focus position. Section 4 examines scope phenomena related to Focus. Section 5 adds a few informal comments about the behavior of the fictive such.

1. METHODOLOGICAL SUGGESTIONS

It is commonly agreed that for communication to be effective, one’s intended message needs to be adapted to the situation in which it is to be conveyed. There are two large areas of linguistic research particularly involved in the implementation of this idea; namely, the theories of speech acts and the theories of communicative articulation, the latter being concerned with the more specific claim that our sentences fulfill both an ‘anchoring’ and a ‘furthering’ function in the flow of communication.

I am using the ad hoc cover terms ‘anchoring function’ and ‘furthering function’ for the following reason: there exist a vast number of notions (topic-comment, theme-shape, background-focus etc.), which seem to stem from some common intuitive basis but whose actual contents tend to vary a great deal from author to author although each appears to be useful in explicating some interesting facts of syntax, or semantics, or pragmatics. This proliferation of notions is both promising and frightening. It is promising because it seems to indicate the heuristic value of recognizing some articulation of messages beyond that of, say, subject and predicate; it is frightening because one might expect that if the essence of the phenomena were captured,
we would not need this essay of them.

Without wishing to give a critical review of the field, let me briefly point out why it is so difficult to compare rival claims about this kind of sentential articulation. We seem to have the following (nonexclusive) possibilities for divergence:

(a) some authors set up their definitions of the two functions and from those definitions they try to deduce which segments of sentences will fulfill them;
(b) some others pick out some grammatical phenomenon and identify its properties, so as to say by definition, with the properties of one of those functions;
(c) since those functions (or, associated notions) tend to come in pairs, the one as an author gives conceptual prominence will also create a complement with some rather uninspiring definition;
(d) authors vary as to whether they attribute only a pragmatic or also a semantic significance to their notions.

These treatments seem to rest on the (sometimes tacit) postulation of a rather direct correlation between the alleged communicative principles and certain grammatical processes. Given however that the existence of such a direct correlation is dubious and the notions in current use are fairly vague (so vague in fact that even authors giving radically different analyses for the same sentence might well agree in them), a conceivable way out from this diversity would be to forget about the adaptation idea for a while and look for some independent grammatical evidence.

It may sound absurd to seek independent grammatical evidence for something I refuse to clearly identify in advance but it is actually not that absurd. There is the indisputable fact that the 'same' sentence may have various word order and/or intonation variants, with possibly different use conditions. Now, by virtue of these mere existence, any grammar can be expected to generate these variants and given that not all permutations are grammatic-
al, by first restricting our attention to this side of the matter we can arrive at a set of distinctions (rules, categories etc.) with self-contained formal motivation. The next step is to interpret sentences in observance of those distinctions — that is, to proceed in the very same fashion as we do in the case of any other grammatical phenomenon. It may turn out that certain 'word order rules' affect the truth conditions of the sentences (i.e. that some of the differences in use conditions are simply due to differences in meanings proper) while the operation of other becomes relevant only at a
text, or discourse, level indeed.

Apart from being justified on its own, this grammar-minded approach seems useful for the following reason as well. Our intuitive concept and mutual understanding of the meaning making furthers division I propose
ably based on the mentioned distinctions, whose unbiased and thorough examination has been hindered, however, by giving a too ready rational to their existence. The examination I propose is very likely to verify many of the usual claims about this kind of sentential articulation but will hopefully also give more substance to them and will save us from premature generalizations.

2. SYNTACTIC MOTIVATION AND OUTSET

2.1. In this paper I will attempt to account for the semantic significance of some incipient word order rules. Beside being my mother tongue, Hungarian has the following advantages: it is a 'free word order' language (but, as opposed to Russian and Czech, for instance, the definite–indefinite distinction is marked with articles and not with linear position) and a syntactic treatment of its word order has been provided by Kocsis. Since this work provides the fundamentals of those self-contained formal distinctions that I required in the previous section, I begin with a semi-formal summary of it.

E. Kiss proposes the following base rules:

- a. S' — s\textsuperscript{m} S
- b. S — x\textsuperscript{a} y\textsuperscript{b}
- c. S' — v x\textsuperscript{a}

The set of maximal major categories s\textsuperscript{m} immediately dominated by S' and the simple maximal major category x\textsuperscript{a} immediately dominated by S' are called T and S respectively. These wuxncresentic names are reminiscent of 'topic' and 'focus' but the introduction of the corresponding positions is motivated on purely formal grounds. Their nodes are generated empty and can be filled by the optional transformation move a from S', leaving a trace behind.

Now, empirically speaking, what is the motivation for the introduction of the T and P positions?

- (II) (i) The MAIN STRESS of the sentence falls on the first major category in P or on the finite verb in case F is left empty.
- (II) The s\textsuperscript{m} within T and the x\textsuperscript{a}s behind the verb (i.e. state: nodes)
an interchangable preserving grammatically. E.g. taking a sentence with a finite verb v and any two "middle constituents" a and b with no specific restrictions:

\[
\begin{align*}
V & \rightarrow a V b \\
V & \rightarrow V a V b \\
V & \rightarrow v a V b \\
V & \rightarrow V V V a b \\
V & \rightarrow v v a b \\
V & \rightarrow v V V a b \\
V & \rightarrow v v V a b \\
V & \rightarrow v v v a b \\
V & \rightarrow v v v v a b \\
\end{align*}
\]

\(1\) In certain cases F must be filled in a specific way:

- an \(a^0\) modified by a negative (interrogative, optative etc.) operator must occupy the F position:

\(2\) a.\(\) \[\{N\} \text{ Ben PETER adiež Mária\}]

not Peter walks Mary-with

b.\(\) \[\{N\} \text{ Ben Peter,\} \text{ Mária\} adiež\}]

Mária stands near Peter

- in the presence of so-called reduced complement (e.g. the convert) the F position may only be \(\{+\}\) empty if the verb is modified by an operator of the above mentioned kind:

\(2\) a.\(\) \[\{N\} \text{ PETER,\} \{+\} are\]

Peter in ran

b.\(\) \[\{N\} \text{ PETER,\} \{+\} are\]

c.\(\) \[\{N\} \text{ Peter,\} \{+\} are\]

Peter not ran in

\(2\) a.\(\) \[\{N\} \text{ PETER,\} \{+\} are\]

\(2\) a.\(\) \[\{N\} \text{ PETER,\} \{+\} are\]

If the \(a^0\) in F position consists of a head plus an embedded sentence, the embedded sentence must be moved to the end or the beginning of the matrix sentence (the same is possible, but not obligatory, in other positions):

\(3\) a.\(\) \[\{N\} \text{ are\} \{+\} PETER spotitivi\} halitatem\]

{\text{ known that} } Peter won-he heard-I

b.\(\) \[\{N\} \text{ spotitivi\} \{+\} PETER halitatem\} \{\text{ are\} PETER\}

\(3\) a.\(\) \[\{N\} \text{ are\} \{+\} PETER halitatem\] halitatem\]

Through certain bridge verbs the F of the that-clause may be raised

\(3\) a.\(\) \[\{N\} \text{ are\} \{+\} PETER halitatem\] halitatem\]

in the F position of the matrix sentence (and similarly for Ta):

\(4\) a.\(\) \[\{N\} \text{ are\} \{+\} PETER halitatem\] halitatem\]

In this sentence, the positions \(T\) and \(F\) must be distinguished in any grammar of the language for purely formal reasons. Moreover, I believe that Hungarian speakers' intuition about "comitativa articulation" must be based on these very distinctions and therefore any interpretative notion must be definable in these terms or must be possible to give a similarly strong formal motivation. Note that the way that E. Kiss's findings do not support the assumption that Hungarian sentences are best characterized by an inherently bipartite structure as neither \(T\) for \(F\) has a syntactically significant "complement".

2.2. I have already noted that E. Kiss's rules are set up without keeping an eye on interpretation (which I do regard as a virtue in general but in this particular case it has its advantages). Nevertheless, the version of Extended Standard Theory he uses does not even have a sophisticated interpretative component in yet. For this reason I will take her claims as empirical facts and try to formulate my results in terms of Montague Grammar. Note first that if we want to produce all these variants we can no longer expect function and argument expressions to combine in a uniform surface order. A first approximation may be to assume that the relevant rules of functional application have three versions: one for inserting the 'nominal expression' in front of the finite verb ('F' position), a second for inserting it 'somewhere' to the left of the verb but not to the right of it ('F' position), and a third for inserting it 'somewhere' to the right of the verb ('neutral' position).

Provided that the truth-value conditions of the sentence are indeed dependent on which versions of the rules are applied to its derivation, we can expect for the following three main cases:

\(\{a\}\) It may turn out that whatever fills the F (or T, or neutral) position, the sentence will gain the same kind of interpretational surplus compared to what is projected in \(\{a\}\).

\(\{b\}\) It may turn out that the effects of the same kind of rule version vary with the nature of the input.
If (a) or (b) obtains we will have to provide each rule version with a specific translation. In addition to what it carries over from FPI.

(c) It may turn out that no interpretational surplus arises in fact and only the distribution of PPQ-predicted readings is constrained by the way we filled those positions.

I will argue that at least as far as Hungarian is concerned - it is a combination of (b) and (c) that obtains. That is, 'word order rules' may add to the literal meaning of the sentence, although not in a uniform fashion and, further, interpretation options are sometimes also constrained (e.g. in connection with quantifier scope). The situation is not very surprising that (a) does not obtain; among others, this may be a reason why only attempts to treat this kind of sentential articulation on the assumption of a direct correlation between communication and grammar turn out to be inconsistent or impossible to check against new examples.

I am far from claiming that I can give an exhaustive treatment of the issue. Here my attention will be restricted primarily to the behaviour of term phrases in F position and related problems, supplemented with a few remarks on the verb and the copular. Nevertheless, I hope that even within these limitations I can motivate the claims I made in the paragraph above and that my considerations will illustrate the advantages of a syntax-based approach.

Note that my approach also implies that the results may be more or less 'guage specific, i.e., the significant syntactic distinctions and their respective interpretations may vary from language to language. Apart from the theoretical consequences of this fact, let me warn the reader of the practical consequence that the English 'equivalents' I can give for my examples may happen to be only near-equivalents.

In connection with interpretation, I will refer to a constituent in F position as Focus and to a constituent in F position as Topic.

1. TERMS IN FOCUS

3.0. In either informal terms we can say that the common feature distinguishing T and F from neutral constituents is that only the former may be contrastive. This statement of course needs to be made more precise in various respects. First, although both are put under the same label, Topic-contrast and Focus-contrast are two different matters, in force as well as in content. The characteristic difference is that by using a sentence with a contrastive Topic, one suggests (or, implicates) that the claim he is making need not be true of something else, whereas by using a contrastive Focus one asserts that the claim he is making is in fact not true of anything else. An additional difference is that whether the Topic of a sentence is contrastive or not usually depends on whether it receives an extra information contour while most Foci (i.e. most expressions in F position) are necessarily contrastive in the above sense. On the other hand, the assumption that this kind of (pre-)cal interpretational surplus may only be attributed to T and F is corroborated by the fact that maximally elliptical (see (a)) sentences must follow either T-particles or F-particles and can only be conjoined with non-elliptical sentences if those have the same kind of T/F in their respective positions.

3.1. Exhaustive listing

It will have become clear that I regard exhaustive listing as the predominant semantic characteristic of Focus, as opposed, for example, to those who argue that a sentence like (6)

(6) [pMaria] [tita Peter] "Mary saw Peter"

Mary saw Peter.

presupposes (in one of the many senses of this term) that the set of those who saw Peter is not empty and asserts that Mary is contained in that set. Needless to say, the postulation of such a presupposition is in itself not incompatible with exhaustive listing and therefore I will return to it in (2). As for the other parts of the two claims, the choice between them may seem like a matter of simple intuition as long as we only consider individual denoting expressions in F. Note however that while the proposal I am arguing against predicts that from (7) we can infer (6), this is not the case: from (7) we are only entitled to infer (9):

(7) [tita Peter Maria] [tita Peter] "Mary AND Eve saw Peter"

(8) [pMaria] [tita Peter Maria] "Mary saw Peter"

This suggests that co-ordinate NPs in F position may not be derived via conjunction reduction (whether it be a syntactic or a logical application of the ideal). For illustrative purposes we might say that Focus has something like an invariably collective reading but, of course, in view of (8) being a logical consequence of (7), this may only be metaphorical. The same situation obtains with plural quantifiers: (10) is not a logical consequence
It might be argued that the reason why this letter reference is unjustified is that natural numbers are to be interpreted as numerically definite quantifiers. Apart from missing a generalisation, this would not be a good argument, however, since on the one hand, these quantifiers get a probably numerically definite interpretation in F position only and, on the other hand, in other positions we cannot even get on without the 'at least' meaning. E.g., on one reading (11) undoubtedly means that at most two girls may have seen Peter, which would be impossible if three meant exactly three.

(11) "Áron lány" nevett Lásia Pétert
'Three girls, didn't see Peter' And finally, for those who may not trust the jugpling with differences in such communicatively delicate cases: without exhaustive listing we cannot explain why the biconditional is normally expressed in Hungarian by mere focusing (for the syntax of (12), see (11.4v) above):

(12) "Ákos" nagy vasút haladott a vasút mellett then go=1 you-with if Sophie-take-you
'I'll go with you only if you put on a coat.'
These observations seem to motivate the taking of exhaustive listing to be a property of the F-position that must be directly reflected in truth conditions.

3.2. A first extension of PFO

Although exhaustive listing appears to be a logically very unsophisticated notion, the appropriate formulation of the translation rule corresponding to F-filling turns out to be rather complicated, due to the fact that logic lacks the comfortable and none/nothing also idiom that can be suffixed to just everything. To make discussion simpler, I begin by sketching a few tentative extensions of the PFO grammar for Hungarian.

I will retain English lexical items for derivations to be easier to decipher. Also, I will state syntactic rules almost as loosely as I did in 3.2. to develop the marking technique would be a routine job but its explication would make the rules overcomplicated here. I will ignore problems of pronounisation throughout the rules.

\[ R = \{ \text{Mary, Peter}, \ldots, h_1, h_2, \ldots \} \]
where \( h_{2k} \) translates as \( |P|_{2k} \),
\( h_{2k+1} \) translates as \( |P|_{2k+1} \)
\[ R_{2k} = \{ h_{2k} \}, \quad R_{2k+1} = \{ h_{2k+1} \} \]
\[ B_{2k} = \{ h_{2k} \}, \quad B_{2k+1} = \{ h_{2k+1} \} \]

544. (Focus) If \( x \in F \) and has the form \( h_{2k} \) and \( y \in F \) and its main verb is prefixed with \( \text{..., then } F_{2k+1}(x) \in F_y \) and is obtained by replacing \( x \) in \( y \) with \( y \).

546. (Topic) If \( x \in F \) and does not have the form \( h_{2k} \) and \( y \in F \) then \( F_{2k+1}(x) \in F_y \) and is obtained by inserting \( y \) somewhere to the left of \( x \) in \( y \).

548. (Noun1) If \( x \in F \) and does not have the form \( h_{2k} \) and \( y \in F \) then \( F_{2k+1}(x) \in F_y \) and is obtained by inserting \( y \) somewhere to the right of the main verb in \( y \).

549. If \( x \in F \) and \( y \in F \) and \( z \in F \) and \( a \) translate as \( a, a' \), respectively, then \( F_{2k+1}(x) \in F_y \) and \( F_{2k+1}(y) \in F_z \) translate as \( a'' \).

And similarly for 550.

544'. The same as the PFO quantification rule, with the difference that only \( h_{2k} \) pronouns may be replaced and if \( x = h_{2k+1} \) it may only replace a focused pronoun.

547. The same as in PFO, with the difference that its operations also have three versions and, in particular, in \( F_{2k+1}(x) \), not replaces \( x \) in \( x \).

548. If \( x \in F \) and \( y \) contains an occurrence of \( h_{2k+1} \) or \( h_{2k+2} \) then \( F_{2k+1}(y) \in F_{2k+1}(x) \) and the pronoun in \( x \) is 'capitalised' (= marked to receive sentence status).

549. If \( x \in F \) and \( y \) translates as \( a' \), then \( F_{2k+1}(x) \) translates as \( F_{2k+1}(a) \).

550. If \( x \in F \) and \( y \in F \) and \( z \in F \) and \( a \) translate as \( a, a' \), respectively, then \( F_{2k+1}(x) \in F_y \) and \( F_{2k+1}(y) \in F_z \).

For instance:

(5) "Májáték a Péter családában" [Mary, Leo Peter, 22]
\[ |\text{Mary}|, |\text{Leo Peter}+2|, |\text{Péter}+2| \]
\[ |\text{he}|, |\text{shePeter}+4|, |\text{he}+1| \]
\[ |\text{Peter}|, |\text{Leo Peter}+3|, |\text{he}| \]
of so-called constituent negation and wh-questions.

It goes without saying that by claiming that a sentence like (11)

\[ \text{preregass that Peter} \]

presupposes that Peter is beating someone,

\[ \begin{align*}
(11) & \quad \text{Mary} & \text{verb} & \text{Peter} \\
& & \text{Peter is beating MARY!}
\end{align*}
\]

Marysean, beats Peter

we are committed to the view that there is something wrong with the negation of (13) if Peter is not beating anyone. (14) and (15) are synonymous in

\[ \begin{align*}
(14) & \quad \text{Peter is not beating MARY!} \\
& & \text{not Marysean beats Peter}
\end{align*}
\]

(15) \[ \text{Men legs an, huy \, \text{Mary} \, \text{verb} \text{Peter}} \]

"It is not the case that Peter is beating MARY!"

Nevertheless – and in this respect Hungarian may be different from English –

it seems that neither semantic nor pragmatic connections are violated if

(14) is continued in either of the following ways:

\[ \begin{align*}
(14a) & \quad \text{... kamas \, \text{Peter}} \\
& & \text{but everyone} \\
(14b) & \quad \text{... kamas \, \text{a gyerekkal jétszik}} \\
& & \text{the kid-with plays} \\
\end{align*}
\]

... kamas \, \text{as a job} \text{to the door} \text{banged}

but

On the contrary, such conjunctions would perfectly natural and are not in

frequent to occur. In view of these facts it would seem unwaranted to as

sume that (13) and (14) presuppose that Peter is beating someone. (The

correspondence between such sentences and wh-questions (see 3.5) will sup

port this conclusion, too.)

Shall we say, however, that (14) is ambiguous with respect to the scope

of negation? That is, (14) might be said to assert either (a) that Peter is

beating someone but not Mary, or (b) that Peter is involved in some activity

but not in beating Mary, or (c) that something happened but not that Peter

is beating Mary.

We first the difficulties arising in connection with such a proposal.

On the one hand, the variation of the scope of negation in the above fashion

would not be too easy to build into our grammar, in particular if we consid

er that subjects, too, may fill the F position. On the other hand, notice

that in the paragraph above I neglected exhaustive listing on the whole.

3.3. Existential presupposition

Let us now turn to the problem whether there is an existential pre

supposition associated with focus. This will also bring us to the treatment
Taking that into account as well, we ought to vary, not only the scope of negation but also the 'scope of Focus'. Nevertheless, aside from formal difficulties again, that would be equivalent to the abandoning of all the significant syntactic generalizations the whole approach is based on. I suggest that (14) is in fact unambiguous and being the negation of (13). It simply asserts that it is not the case that Peter is beating someone if and only if that person is Mary. From a logical (semantic) point of view this is just a very unspecific claim and thus it is compatible with all the continuations required. From a communicative point of view, this unspecificity may be regarded as expressiveness (cf. KREBS 1953). In view of the Greimasian principles of conversation, we can predict that in case the speaker of (14) is relevant and does not add anything to this vague negation, he probably means that Peter is beating someone else than Mary. This is, however, only a special case of the working of those principles and is to be accounted for by a unified theory of language and its use, quite independently of the fact that it arises in connection with "and or not rules".

In virtue of these considerations I propose to ask the following question to those in 3.2.

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

(22)\text{neg}\: \text{if} \: a \text{ or } b \text{ and } a \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ then } F_{27} \text{ or } e \text{ or } f_{27} \text{ and } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} \text{ is obtained by replacing } \text{IF}_{28} \text{ or } \text{IM}_{28} \text{ in 8 by not } a \text{ or } b \text{ or } c \text{ or } d \text{ or } e \text{ or } f_{27} .

3.4. Qualitative contrast in $F$

Before turning to subquestions, let us consider another interesting aspect of Focus-negation. I will use English examples since they seem to work as well as the corresponding Hungarian ones.

Compare the following sentences:

(a) My friend, I invited, the minister, I didn't.

(b) I invited my FRIEND and not the MINISTER.

(c) I invited my friend, I didn't invite the minister.

It is clear that 'for (16a) and (16b) to be true, my friend and the minister must be two different persons. This is not so with (16c); however, it has a meaning on which the two descriptions may well apply to the same person and therefore the F position provides for qualitative contrast. To make it more explicit: the sentence 'I didn't invite the MINISTER does not necessarily license the inference that I did not invite the person who happens to be the minister; rather, it says that the person invited must be intentionally different from the minister.'

In order to avoid the temptation to attribute this peculiarity of (16c) to the highly sophisticated social nature of inviting, let us consider the following examples as well:

(17) I married a NICE GIRL, not a RICH GIRL.

(18) I am living in AN ANCIENT MANSION and not in A RAMSHACKLE COTTAGE.

(19) This game was not won by PETER, it was lost by MARY

In (17), the girl may be rich, too, and in (18) the sentence that I did not marry her for her fortune, (18c) can be a fine expression ofmiddling. The intention would (19) may be explicated by pointing out that, say, the winner was necessarily identical to whoever played against Mary.!

(19) This game was not won by PETER.

(19) This game was not won by PETER.

Where should we get from, however, the rules for producing these seams? Notice that T22 has a serious limitation: due to the quantification on the right hand side, it cannot be sensibly applied when $\text{IM}_{28}$ is an intentional object. Instead, as it is, it seems that a separate rule is needed for such cases. Let us assume that $\text{IF}_{28}$ marks its second argument with, say, 'if it is not of the form $\text{IM}_{28}$ and the verb is intentional. Then:

(2) If $a \in R_{P}$ and $a \neq \text{IM}_{28}$ and $d \in F_{27}$ and contains an occurrence of
If \( \alpha \rightarrow \beta \) and \( \beta \rightarrow \gamma \) are rules, then applying \( \alpha \rightarrow \beta \) and then \( \beta \rightarrow \gamma \) is the same as applying \( \alpha \rightarrow \gamma \) directly. This is known as the transitive property of rules.

**Proof:** Let \( \alpha \rightarrow \beta \) and \( \beta \rightarrow \gamma \) be rules. Then applying \( \alpha \rightarrow \beta \) and then \( \beta \rightarrow \gamma \) is the same as applying \( \alpha \rightarrow \gamma \) directly. This can be seen by considering the derivation tree for \( \alpha \rightarrow \gamma \), which is obtained by applying \( \alpha \rightarrow \beta \) and then \( \beta \rightarrow \gamma \) to \( \alpha \rightarrow \gamma \).

**Exercises:**

1. Prove that if \( \alpha \rightarrow \beta \) and \( \beta \rightarrow \gamma \) are rules, then \( \alpha \rightarrow \gamma \) is also a rule.
2. Prove that if \( \alpha \rightarrow \beta \) is a rule, then \( \beta \rightarrow \alpha \) is not necessarily a rule.
3. Prove that if \( \alpha \rightarrow \beta \) and \( \beta \rightarrow \gamma \) are rules, then \( \alpha \rightarrow \gamma \) is also a rule.

**Applications:**

1. In natural language processing, the transitive property of rules is used to analyze the syntax of sentences.
2. In computer science, the transitive property of rules is used to optimize compilers and interpreters.
3. In mathematics, the transitive property of rules is used to prove theorems and construct proofs.

**Conclusion:**

The transitive property of rules is a fundamental concept in the study of formal languages and is used in various fields such as natural language processing, computer science, and mathematics.
difference that a co-occurring 3 might be used and the syntactic rules would be somewhat more complicated - which is again a reason for attributing the property of exhaustive listing to the answer (i.e. the elliptic consensus consisting of ar F) rather than to the interrogative.

4. SCOPE PARADOX

Given that scope phenomena are often claimed to be dependent on linear order and/or dominance relations, it is natural to ask if the operation of 'word order rules' has any particular constraining effect on interpretation options in Hungarian. It seems it has indeed, as I will point out below. Nevertheless, heretic as it may sound, I will try not to draw final conclusions and will restrict my attention to a few quantifiers only. Apart from my work being far from a final stage, I have the following reason for making this reservation. Although one is often tempted to be sure that word order of orientation disambiguates sentences in a particular way, there has hardly ever been any everyday speaker to conform to one's expectations consistently. Whether deviations should simply refute the claim or are due to dialectal variations or performance factors is very difficult to decide. On the other hand, if the plain ungrammaticality of certain sentences can be traced back to the joint effects of independently stipulated restrictions, this may indicate that those restrictions are justified on their own. I will therefore try to avoid making claims about cases in which I do not (as yet) have this kind of justification.

I will argue that the most conspicuous scope restrictions are associated with F and are of two kinds:

(i) restrictions on the quantifier in F position.

(ii) restrictions on the scope of non-F quantifiers with respect to Focus (i.e. the binding of H'x). By (i) and (ii) I also mean to suggest that there seem to be no specific restrictions on non-F quantifiers on their relative scopes unless they follow from (i) or from the inherent restrictions of those quantifiers with respect to, say, negation. (The restrictions I will point out might be formalized in a fashion similar to HAUSSER (1976).)

4.1. First, it appears that the quantifier in F position must have wider scope than preverbal (i.e. F1) negation. For instance, it may not be a logical consequence of (25) that there are not any two boys who are running. However, in view of exhaustive listing, we also add that there are not at least four boys in the universe to be considered. Derivations like (25b) are therefore to be excluded:

(25) [F 3lif (is) non fut] 'Two boys aren't running'

two boy not run

(25a) 

F = 'PEG(y, [WG(y) e y (y), x PEG(y, x (y)) \[PEG(y, x (y)]; PEG(y, x (y)); PEG(y, x (y))]

\[PEG(y, x (y)]; PEG(y, x (y)); PEG(y, x (y))]

(25b)

F = 'PEG(y, [WG(y) e y (y), x PEG(y, x (y)) \[PEG(y, x (y)]; PEG(y, x (y)); PEG(y, x (y))]

\[PEG(y, x (y)]; PEG(y, x (y)); PEG(y, x (y))]

Fortunately enough, the validity of this claim can be tested, not only against a set of random examples but also against a rather crucial one. Namely, HAUSSER (1976) observes that presupposing quantifiers bare scope restrictions with respect to negation and, in particular, every a is bound to have a more narrow scope than negation. In Haußer's notation:

every = translates as /3\Uxw (('Q(x)) '3x)'

Given that its Hungarian equivalent minden a is subject to the same restriction, its behavior, that is, whether or not it may occur in F position, may quite straightforwardly qualify my claim.

Now, in case we had to rely on vague intuition or loose syntactic observations in determining the 'communicative articulation' of Hungarian sentences, we would probably expect that minden will refuse the claim. After all, it may occur in front of finite verbs, it may receive a fairly high pitch and why should it be excluded from the role of, say, being the most important piece of new information? The reliance on rigorous syntactic criteria will turn out to be useful here, however. Remember that Hungarian verbs may have converses which are middle but form a single lexical item
Together with the verb, e.g., be-rog ‘get drunk’ [lit. ‘in kick’] and É. Kiss’s rules imply that in case F is filled, the corollary may not be prefixed to the finite verb (cf. (12b) above). In view of these facts the ungrammaticality of (24a) as opposed to (24b) indicates that minden may not fill the F position.

(24a) minden eszlel reget be ‘antry BYR got drunk’
(24b) éh reget be ‘TWO BOYS got drunk’

which also turns evidences that ‘e is inherently related to having wider scope than preverbal negation and that is why a quantifier with the opposite restriction may not fill it, even in affirmative sentences. (The restriction might be formalized by assigning a rv feature to minden.)

4.2. Let us now turn to the interaction of Focus and other quantifiers. Given that Focus may express exhaustive listing, it is easy to see that it makes a big difference whether a non-F quantifier is introduced before or after the binding of hanyú. For instance, if my intuition about English is correct, (28) says that for everybody individually, he loves Mary and only Mary, whereas (29) makes the weaker claim that Mary is the only person unambiguously loved.

(28) Everybody loves Mary
(28a) Ве в (human, a) (love, vi) (Mary, n) -- v = m
(28b) Ве в (human, a) (love, vi) (Mary, Mary, n) -- v = m

(29) Mary is loved by everybody
(29a) Ве в (human, a) (love, vi) (Mary, n) -- v = m
(29b) Ве в (human, a) (love, vi) (Mary, Mary, n) -- v = m

In any case, the distribution of these readings in Hungarian is as follows:

(30a) mindenki [e-Máriás] szereti everybody MÁRAHÁC loves, 4f
(30b) mindenki [e-Máriás] szereti everybody MÁRAHÁC loves, 2f
(31a) Máriás [e-Máriás] szereti everybody MÁRAHÁC loves, 2f
(31b) Máriás [e-Máriás] szereti everybody MÁRAHÁC loves, 4f
(32a) Máriás [e-Máriás] szereti mindenki MÁRAHÁC loves -- everybody, 2f
(32b) Máriás [e-Máriás] szereti mindenki MÁRAHÁC loves -- everybody, 4f

That is, if mindenki precedes the Focus but does not receive a contrastive rvic intonation (as in (30a)), it is bound to have wider scope than Focus.
to the same restrictions with respect to Focus as mindenv, the differences between their behaviour being accountable for by their opposite scope restrictions with respect to negation (and by (ii) for senki above). The 'grammatical version' of (33b) is (35):

Nonne, not MĀRĪC not loves, 1S
none
Mary

On the other hand, both (36) and (37) are ungrammatical since senki cannot at the same time have more narrow scope than Focus and wider scope than negation:

(36) [a. Senki] *enh [a. Mārit] sazeret
Nonne, not MĀRĪC not loves, 1S
none
Mary

(37) *enh [a. Mārit] senki

Cases with preverbal negation also conform to predictions:

(38) [a. Senki] *enh [a. Mārit] sazeret
Nonne, not MĀRĪC not loves, 1S
none
Mary

(39) [a. Senki] enh [a. Mārit] senki
Nonne, not MĀRĪC not loves, 1S
none
Mary

Given that the relative positions of mindenv and ey filmet are the same in (44) and (45) - regardless of whether it be stated in linear or dominance terms - this can only be explained by the absence of an exhaustive Focus from (44). That is, there is nothing in (44) to 'order' the non-F quantifiers while in (45) Fau does the job.

4.4. To conclude this section, let me discuss two scope problems arising in connection with the translation rule I gave for F-filling:

T22. If e ≡ P2 and P0 ≡ P2 then P2 (e; a) translates as s' = s(3, P2[e/P2(e); P2[a/P2(a)](e)) = s(a) → 'Ps(a)'

In 3.3 it has already been shown that the right-hand side of the equation is not in fact necessarily overcomplicated. Nevertheless, there are still two distinctive looking properties of this formula:

(1) It is easy to see that - as it is stated in T22. - we may not allow a to have the form he2, imagine, for instance, the following derivation:

(46) [a. kat fi(m) kinh [a. Mārit] sazeret]

These differences between the roles of 7 or To in the case of natural numbers and universal quantifiers may be due to the marked properties of the latter (cf. fn.7).

At the beginning of this section I also suggested that apparently there are no specific restrictions for non-F quantifiers unless they follow from the restrictions on interaction with Focus or negation). Although the following claims would be difficult to prove in the fashion I adhered to so far, I suggest that while (44) is ambiguous with respect to the relative scopes of V and 2, (45) is not:

(44) [a. Mārit] [a. Senki] lañtöw ey filmet Māritau
everybody saw a film again Mary-with

(45) [a. Mārit] lañtöw every filmet
everybody saw a film again

Given that the relative positions of mindenv and ey filmet are the same in (44) and (45) - regardless of whether it be stated in linear or dominance terms - this can only be explained by the absence of an exhaustive Focus from (44). That is, there is nothing in (44) to 'order' the non-F quantifiers while in (45) Fau does the job.
(44'i) No(boy) = boy(α) = boy(α) = I(boy)[\{\{\text{run}\}\} = \text{PM} \text{run}(\alpha) = \text{run}(\alpha) = \text{PM} \text{run}(\alpha) = \text{run}(\alpha)]

That is, (44'i) would say that there are two distinct boys such that only the one of them runs and only the other of them runs.

(ii) It is also easy to see that, regardless of how $S$ is derived, one will get the widest scope in $S$ for, for instance:

let $a$ be the $\text{boy}(\text{boy}) = \text{boy}(\alpha)$ and let $b$ be $\text{var}(\text{girls}(\text{love} \text{F}(\alpha))).$

Then T22 will yield

(47'i) $\text{I(boy)} \text{[var(\{\{\text{love}\}\{\{\text{F}(\alpha)\}\}\}] = \text{PM}\text{boy}(\alpha) \text{[var(\{\{\text{love}\}\{\{\text{F}(\alpha)\}\}\} = \text{boy}(\alpha) = \text{F}(\alpha)\)}

and similarly if $a$ is the value of $F(a)$.

While not wishing to pretend that T22 is intended to have these properties, let us point out that their consequences are in fact not so disastrous as one might imagine.

The negation problem is the easiest to explain away: in 4-1 I argued that the quantifier in $F$ must have wider scope than previa-2l negation and therefore $F'$ will never be the value of $F(a).$ Thus, together with the restriction in 422, ensures that this translation will never lead to contradictions and it is actually possible to show that T22 in is keeping with the algebraic basics of Universal Grammar.

There remains the question of what are the interpretation options that are unfortunately excluded in view of (i) and (ii). For instance, we might want both (48) and (49) to be two ways ambiguous:

(48) 3 Minder lyma [\{\text{say fish}\} = \text{secret} every girl [\text{boy} = \text{every girl}]

a. For every girl, she loves only one person, namely, a boy, but the boys may vary with the girls. Permitted reading.

b. There is a boy (say, Peter) such that for every girl, she loves him and only him. Excluded in view of (i).

(49) 3 Minder lyma [\{\text{say fish}\} = \text{secret]}

a. There is a boy (say, Peter) such that he is the only person unanimously loved by the girls. Permitted reading.

b. Same as a, but with possibly different boys. Excluded in view of (iii) (cf. 47'i).

It is clear that (48b) is a very nice semantic, nevertheless, it being a special case of (48a), it is tolerable if it cannot be expressed directly. As for (49), it seems that its strong preferred reading is the permitted one. (48b) is actually terribly vague and although I can imagine situations in which one would use (48) with this meaning, some circumlocution version is a lot more plausible to occur. It is possible that there are cases in which the shortcomings of T22 lead to more counterintuitive consequences than in virtue of these I have discovered so far, however, it seems it can be accepted at least as a preliminary formulation.

5. VERSE, CONVERS, AND CONCLUSION

Although my attention in this paper is centered around tense in $F$ position, the background of my investigations seems to require some indication of what other problems should be taken account of in this framework. Therefore I add a few informal notes about the verb and the converb.

Intuitively, these two constituents may be interesting for the following reasons: (i) It will have become clear from 2.1 that $E.$ Kins's syntax does not allow the simple verb to occupy either of the distinguished positions. One may ask, however, whether it may really not be associated with those kinds of intentional surplus that Tople and Focus may carry.

(ii) The converb is a so-called reduced complement of the verb. Its function is somewhat similar to that of verbal prefixes in Russian in that it may make the verb perfective and/or may change its lexical meaning. Nevertheless, the converb is a mobile constituent and, moreover, it 'tends to occupy the $F$ position' (iii). Now, what does it mean for a sentence to have a converb in its $F$ or $P$ position?

It seems expedient to begin with (iii). Consider (50) and (51):

(50) ['Peter'] [\{\text{be}\] \text{roplott 'Peter got drunk'}

Peter in kicked

(51) ['Peter'] [\{\text{be}\] \text{not roplott be \text{Peter not in kicked}

Peter not in kicked

The obvious step is to find the verb in (52) and (53):

(52) ['Peter'] [\{\text{be}\] \text{roplott 'Peter in not kicked}

Peter in not kicked

(53) ['Peter'] [\{\text{be}\] \text{roplott 'Peter not in kicked}

Peter not in kicked

However, (54) does not seem to be a suitable candidate:
(50) can be an entirely neural sounding sentence. The feeling that its F
being filled with the conv verb may not have such semantic significance is
straightforwardly verified by the fact that its plain negation in (51), in
which the conv verb switches to neutral position. This is not so with the
other examples, however. (52) is emphatic in the sense 'Peter did not get
drunk by any means'. This kind of emphasis does not seem to affect truth
conditions. (53) is different:

(53)a. [Peter] nee [z be] rüppit bannes [f le] midde
Peter not in kicked but down lay
b. [Peter] nee [z be] rüppit bannes [f meg] stickat
Peter not in kicked but perf. got intoxicated

That is, we encounter a phenomenon similar to the case of focus-negation
with terms. (53)a, tells what Peter did instead of getting drunk and (53)b, can
be true even if, extensionally speaking, getting drunk and getting in-
toxicated are no different but intensively, they are. And finally:

(54) [Peter be z e] nee rüppit de [z donkali] [z el donkali]
Peter in not kicked but to sing sang
'Got drunk he didn't but sing, he did'.

There are two interesting points about these examples. On the one hand,
notice that although only the conv verb moves around, it is the context of
the verb-conv verb unit that gets focused or topicalised. This is most evident
with verbs like be whose meaning has nothing to do with kicking and there-
fore a contrast with, say, kicking out would make no sense but it can also
be verified with convects of true directional meaning. This suggests that
even if the position of the verb is fixed, it may send a gespec to the
marked position but when obtain the required interpretational surplus. On
the other hand, the 'obligatoriness' focusing of the conv verb in (50) may be
suspected. Given that E. Kiss had rather technical reasons for not letting
the finite verb fill F, one may wonder whether this solution may not be
revised (also considering that contrasts like (53)b, are possible with bare
finite verbs as well).

There is a third notable point about the word order role of the con-
verb. Although E. Kiss claims that (52c), is ungrammatical, this is not the case:

(52c. [Peter] [z e] zizmalt be
Peter ran in

It is grammatical, only its tense/aspect interpretation is different from
that of (52a, or (50c). Hungarian has nothing like an overtly marked
progressive or perfect. Nevertheless, (52c. should be translated into English
either as 'Peter has run in' or as 'Peter was running in (when...)'. That
this distinction is not mere speculation can be verified by pointing out
that although the string (55) is usually claimed to be plainly ungrammatical
in literature.

(55) Mindont azzalt be
It is only ungrammatical if mindont is pronounced as focus and it is as
good as any sentence if the main stress falls on azzalt and is interpreted as
'present perfect' or 'past progressive'.

The significance of these last scattered remarks about tense and aspect
is as follows. It is a commonplace that word order and intonation may serve
to mark such grammatical distinctions in one language that are marked with
overt morphemes in others. This is the case with the definite/indefinite
distinction in Slavic languages. Nevertheless, since this latter distinction
can also be given a 'complementary interpretation' in terms of given and
ew, one might get the impression that the choice of word order in 'free
word order languages' may always be associated with such communicative
alternatives. Given that the above mentioned tense and aspect phenomena do
do not seem to allow such an interpretation, at least not directly, they may also
serve as a warning to approach this kind of sentential articulation first
on a purely grammatical basis.

FOOTNOTES
1. I am grateful to my colleague Miklós Ádámka for his hard and helpful
criticism throughout the writing of this paper.
2. 'Formally speaking, the characteristics of 'topic-suggestion' are the
same as those of conventional implicatures (cf. KAMP & KNIGHT (1979)).
Nevertheless, although conventional implicatures can be handled in
an exact fashion their theoretical status is entirely puzzling to me
and therefore I will not operate with them in this paper (see also ibid.
p.151).
'Of anything else', of a so-called relevant universe of discourse. This latter notion might be formalized by using restricted quantification: for the sake of simplicity, however, I will ignore it in my formalism.

That focus-contrast, as opposed to Topic-contrast, has the force of assertion, rather than that of conventional implication seems intuitively very clear for Hungarian. This might be demonstrated by showing that it passes the crucial tests, too. It is possible that focus in English, as described in JACKENDOFF (1972), for instance, does not have the same property, which may be due to the fact that it is syntactically much less marked than its Hungarian 'counterpart'.

In the English translations I will always use contrastive stress, rather than clitics-, simply in order to maintain the 'simple sentence atmosphere'. It is possible that in certain cases clitics would be more illustrative; for instance, it seems highly improbable to me that from 'It was Mary and Eve who saw Peter' one may infer 'It was Mary who saw Peter'. Note however that by translating my examples I do not mean to make any claims about English.

See also 3.4 and 4.4 below.

For this reason I will also abandon E. Kiss's bracketing strategy and represent sentences like (14) as: (Mary) veri Peter.

Following E. Kiss I labelled mindenki in (30) and (31) as T although syntactically this is not unproblematic since, as opposed to well-behaved Te, mindenki may not undergo 'accrualing' here:

A bortól mindenki [be] rögtén
the wine-from everybody [be] right away

Mindenki a bortól [be] rögtén
everybody the wine-from right away

(The same restriction applies to a number of other xe, too, e.g. non-f word-words in multiple questions.) Further, mindenki may only receive Topic-contrastive intonation if the sentence has a focus or else if F1 applies in the derivation. These facts may make one wonder if it is to be maintained that everything that precedes F is in or some other solution should be chosen. Certain considerations that would be far too lengthy to elaborate here suggest, however, that it is preferable to retain T here and constrain the in-exchangeability claim for a specified subset of xe. (Note that the notation I used in 3.2 may also be used for marking where more whimsical T must get.)

Sém: a also resembles minden in that it may not fill F either. For proving this the convert-test cannot be used since F1 switches the convert to neutral position; nevertheless, it happens that the relative clause in a need not be extracted or statrung (cf. (III.30)), which substantiates this claim.

REFERENCES


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