RHEMATIZERS REVISITED

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Abstract

The specific function of certain particles from the point of view of the bipartition of the sentence was noted first by Jan Firbas (1957), who later called them 'rhematizers'. The same class of words was studied in detail in the context of formal semantics by Math Rooth (1985) in relation to the prosodic prominence of the words that followed them; he called this class 'focalizers'. Both terms refer to the apparent function of these particles, namely as being 'associated' with the focus of the sentence. Since then, Rooth's approach has been followed by several specialists in formal semantics. However, the assumption of such an exclusive function of these particles has been found to be too simplistic, an analogy with a semantic analysis of negation was claimed to be a more adequate approach (Hajičová, 1995) and a distinction has been made between 'the (global) focus' of the sentence and 'the focus' of the focalizer by Hajičová, Partee and Sgall (1998).

Based on the observations of Kateřina Veselá, who has devoted considerable attention to the issue of the scope of focalizers as reflected in the richly annotated corpus of Czech (Prague Dependency Treebank) and a similarly based annotation of English in the so-called Prague English Dependency Treebank, in our contribution we single out some complicated (and intricate) cases concerning first of all the occurrence of focalizers with a restricted freedom of position, with a distant placement of focalizers and their possible postposition, and the semantic scope of focalizers.

1. Introduction and some historical references

The main aim of the present paper is to put under scrutiny a special class of particles known under different names such as "rhematizer" or "focalizer" or "focusing particle". The terms used indicate that these particles have something to do with rhyme/focus of the sentence, and the question raised by our discussion is "What exactly?"

In Czech linguistics, the first observation of a specific rhematizing function of the adverb even was mentioned by Firbas (1957); in his later paper (Firbas, 1959, p. 53) he calls such particles "intensifying elements" and says that "(they) are,... as it were, superimposed on the sentence structure, considerably changing its FSP by rhematizing (frequently even turning into rhyme proper) the element to which they are made to refer". The name 'rhematizer' was first used by Firbas (1974, p. 20). Specific attention was paid to some of them in Czech by Daneš (see e.g. Daneš 1985, Sect. 6.1, 6.2.1 and 6.2.2), who distinguishes direct restrictors (jen 'only'),
indirect restrictors (vyjma 'except for') and contextualizers (také 'also', a přece 'and still'). Following Firbas, the function of certain particles from the point of view of the bipartition of the sentence into theme and rheme is also discussed by Dušková (1988, pp. 527, 532). It should also be mentioned at this point that a semantic impact of the position of several kinds of adverbials and quantifiers was substantiated already by Sgall (1967), who exemplifies the semantic relevance of topic/focus articulation on the English quantifier mostly. Sgall's argumentation was followed by Koktová (1999, but also in her previous papers), who distinguishes a specific class of adverbials called attitudinal.

The same class of words was studied later in the context of formal semantics by Math Rooth (1985) in relation to the prosodic prominence of the words that followed them, who called this class 'focalizers'. Both terms refer to the apparent function of these particles, namely as being 'associated' with the focus of the sentence; the position of the focalizer (and the accompanying placement of the intonation center) indicates which reading of the sentence is being chosen from the set of alternatives. Since then, Rooth's approach has been followed by several specialists in formal semantics. Rooth himself refers to Jackendoff (1972) and his analysis of examples such as *I only introduced BILL to Sue* in contrast to *I only introduced Bill to SUE* (the capitals denoting the position of the intonation center) and also to D. Lewis's (1975) recognition of a class of "adverbs of quantification" (always, usually, frequently etc.) exemplified by the semantic difference between *MARY always takes John to the movies* and *Mary always takes JOHN to the movies* (expressed, in the surface shape of the sentence, by the difference in the placement of the intonation center).

### 2. Focalizers and the scope of negation

2.1. It was already recognized by Vachek (1947) that in Czech there is a certain relation between the semantic scope of negation, quantifiers and topic/focus articulation. Similar observations hold about negative particles in some other languages: Dutch *niet* (Kraak 1966), German *nicht* (Zemb, 1968), and even in languages outside the Indo-European family such as Navajo (Eloise Jelinek). We have studied these relationships more systematically in Hajičová (1972; 1975) and have arrived at the conclusion that an adequate explanation is that based on the relation of aboutness: the speaker communicates something (the focus of the sentence) about something (the topic of the sentence), i.e. F(T), the focus holds about the topic. In the case of negative sentences, the focus does not hold about the topic: ~F(T). In a secondary case, the focus holds about a negative topic: F(~T).
A supportive argument for the relationships between the semantic scope of negation and TFA can be traced in the discussions on the kinds of entailments starting with the fundamental contributions of Strawson. Strawson (1952, esp. p. 173ff.) distinguishes a formal logical relation of entailment and a formal logical relation of presupposition; this distinction – with certain simplifications – can be illustrated by (1) and (2):

(1) All John's children are asleep.
(2) John has children.

If John's children were not asleep, sentence (1) would be false; however, if John did not have children, the sentence as well as its negation would not be false but meaningless. Thus (2) is a presupposition of (1) and as such it is not touched by the negation of (1).

Returning to the relation of aboutness, we can say that (1) is about John's children, and for (1) to be meaningful, there must be an entity John's children the speaker can refer to.

The close connection between the notion of presupposition and TFA can be documented by a more detailed inspection of the notion of presupposition, exemplified here by sentences (3) and (4).

(3) The King of France is (not) bald.
(4) The exhibition was (not) visited by the King of France.

It follows from the above mentioned discussions of presuppositions that Strawson’s (1964) ex. (3) is about the King of France and the King’s existence (referential availability) is presupposed, it is entailed also by its negative counterpart; otherwise (3) would have no truth value, it would be meaningless. On the other hand, there is no such presupposition for (4): the affirmative sentence is true if the King of France was among the visitors of the exhibition, while its negative counterpart is true if the King of France was not among the visitors. The truth/falsity of (4) does not depend on the referential availability of the entity "King of France". This specific kind of entailment was introduced in Hajičová (1972) and was called allegation: an allegation is an assertion $A$ entailed by an assertion carried by a sentence $S$, with which the negative counterpart of $S$ entails neither $A$ nor its negation (see also Hajičová, 1984; 1993, and the discussion by Partee, 1996). Concerning the use of a definite noun group in English one can say that it often triggers a presupposition if it occurs in Topic (see sentence (3)), but only an allegation if it belongs to Focus (see sentence (4)).
Following these considerations, the scope of negation can be specified, in the prototypical case, as constituted by the focus, so that the meaning of a negative declarative sentence can be interpreted as its Focus (F) not holding of it, i.e. ~F(T). In this way it is possible to understand the semantic difference present in (3) and (4).

In a secondary case, the assertion holds about a negative topic: F(~T), see (5) on the reading when answering the question "Why didn't he come?".

(5) He did not come because he was afraid.

Here again, the scope of negation is dependent on TFA: it is restricted to the Topic part of the sentence. The assertion entailed (on this reading) by the because-clause in Focus is not touched by negation.

2.2. Going back to the studies quoted in Sect. 1 that introduced the notion of 'focusing particles', their motivation was clearly guided by considerations similar to those about the prototypical cases of the semantic scope of negation: the focalizer (by its word-order position and also with regard to the placement of the intonation center) indicates which element(s) of the sentence is (are) its focus. In other words, if the topic/focus of the sentence is understood (as it should be) as a part of the underlying structure of the sentence (its meaning), the position of the focalizer and the prosody of the sentence are the outer form (expression) of this function of focalizers (Hajičová, 1995; 2009).

Examples (6)(a) through (6)(d) illustrate this prototypical situation with the following interpretations: for (a), the only person John introduced Bill to, was Sue, for (b) the only person who was introduced by John to Sue was Bill, for (c) the only action John did, as regards Bill and Sue, was introducing, and (d) the only person who introduced Bill to Sue was John.

(6) (a) John introduced Bill only to SUE.
    (b) John introduced only BILL to Sue.
    (c) John only INTRODUCED Bill to Sue.
    (d) Only JOHN introduced Bill to Sue.

As has been observed by several grammarians of English (this observation can be traced back at least to Jespersen, 1949), it is possible in English to preserve the preverbal position of such particles as only and still have several possibilities of the interpretation of the sentence according to the scope of this particle (see more on the scoping properties in Sect. 4 below), as indicated by the possible continuations of (7)(a) in (7)(b) through (d).

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(7) (a) John only introduced Bill to SUE.
   (b) … and not to MARY.
   (c) … and not Nick to MARY.
   (d) … and did not say hello to the HOSTESS.

It is, of course, also possible to keep the focalizer in the preverbal position and to mark the 'scope' of this particle only by the position of the intonation center; sentences (8)(a) through (8)(d) correspond, in (one of) their interpretations, to (6)(a) through (d), respectively.

(8) (a) John only introduced Bill to SUE.
   (b) John only introduced BILL to Sue.
   (c) John only INTRODUCED Bill to Sue.
   (d) JOHN only introduced Bill to Sue.

3. Secondary positions of focalizers

Comparing the analysis of the semantic scope of negation and the analysis of the function of focalizers, it is necessary to consider also the possibility of having a secondary interpretation of the position of the focalizers, namely a situation similar to that with negation of a verb in the topic of the sentence. This issue was analyzed by Hajičová, Partee and Sgall (1998, Sect. 6.3) and it has been demonstrated on examples such as (9)(a) and (10)(a) that in secondary cases a focalizer need not be an indicator of focus.

(9) (a) JOHN criticized even Mother Teresa as a tool of the capitalists
   (b) Who criticized even MOTHER TERESA as a tool of the capitalists?
(10) (a) Only Jim liked AMADEUS
   (b) Is there a film only JIM liked?

Sentence (9)(a) may occur in a context illustrated by question (9)(b): the predicate *criticized even Mother Teresa as a tool of the capitalists* of (9)(a) is repeated from the question and the only part of this sentence that stands in the focus is *John* (with a paraphrase 'the person who criticized even Mother Teresa as a tool of capitalists was John'.) In a similar vein, (10)(a) can be interpreted as 'the film only Jim liked is Amadeus', with *Amadeus* being the only element of the focus of the sentence and the focalizer *only* included in its topic. The authors suggest that the position of the focalizer in the topic part of the sentence indicates which element of the topic stands in contrast and introduce the notion of a distinction between global focus (of the whole sentence) and the local focus (of a focalizer).
They distinguish between a global focus (JOHN and AMADEUS, respectively, for examples (9)(a) and (10)(a)) and a focus of a focalizer (even Mother Teresa and only Jim, respectively). The focus of a focalizer can then be specified as the part of the sentence that follows the focalizer. Such an understanding would compare well with the sometimes indicated recursivity of topic/focus articulation.

A supportive argument for such a treatment is the use of strong (long) pronouns in Czech in such a position (cf. Koktová, 1999); the question-answer pair in (10) is a quite cohesive part of conversation corresponding to the English example (9)(b) followed by (9)(a), just replacing the proper name Honza with a pronoun jemu (Dative, singular, 'long' form; the alternative short form is 'mu', which is not possible in this position) preceded by the focalizer jenom ('only').

(11) (Znáš nějaký film, který by se líbil jenom Honzovi?) Jenom jemu se líbil AMADEUS.

Hajičová, Partee and Sgall (1998, Sect. 6.3) also present complex examples with two focalizers in the topic of the sentence reproduced here as (12)(b) in the context of (12)(a).

(12) (a) We all knew that John eats only vegetables.
(12) (b) If even Paul knew that John eats only vegetables, we should have gone to another restaurant.

In (12)(b), the contrastive character of the element introduced by a focalizer in the topic part of the sentence is rather evident: Paul is one of all of us (i.e. he is referred to in the topic part of the sentence), but at the same time, he is contrastively singled out. The global focus of (12)(b) is we should have gone to another restaurant; in terms of the relation of 'aboutness', this is what the sentence presents as irretrievable, "new" information. Both Paul and vegetables are parts of the topic, the former being a local focus of the focalizer even and the latter being the local focus of the focalizer only.3

As the Czech example (13) (translated into English as (13'), with 'just a' corresponding to the Czech focalizer 'jenom' = 'only') indicates, the two focalizers need not be in separate clauses (V. Petkevič, personal communication). It should be noted that similarly to (10) above, also here the long form of the pronoun is used ('jemu' = 'him').

(13) (Kdo poslal i Honzovi jenom pohlednici?) I jemu poslala jen pohlednici MARIE.
(13') (Who has sent a single postcard even to John?) MARY has sent just a postcard even to him.
4. Some remarks on the scope of focalizers

In our discussions of the semantics of negation, we have argued that it is the articulation of the sentence into its topic and focus that determines the scope of negation rather than the position of the negative particle (or negative verb) in the surface shape of the sentence. In a similar vein, we believe that it is a misleading claim to say that the scope of a focalizer is indicated by its position in the surface shape of the sentence. To substantiate the claim let us look at (14).

(14) They were advised to learn only SPANISH.

Taglicht (1984), Rooth (1985) and Koenig (1991) (as well as several other authors discussing these and similar sentences) understand this sentence as ambiguous; Roth (1985, p. 90, ex. (5)(a) and (7)(c) and (d)) provides the readings "they were advised not to learn any other language" and "they were not advised to learn any other language", and he claims, following Taglicht (1984), that the scope ambiguity can be avoided by shifting only to a preverbal position, as in (15) and (16).

(15) They were advised to only learn SPANISH.
(16) They were only advised to learn SPANISH.

Two remarks are in place: first, sentence (16) itself is not unambiguous; in addition to the interpretation "no other language were they advised to learn" it may be paraphrased as "no other advice was given to them" (as in (17)) or "they were told nothing else than …" (as in (18)).

(17) They were advised only to learn SPANISH.
(18) They only were advised to learn SPANISH.

Second, the ambiguity of (14) points to the fact that the position of the focalizer in the surface shape of the sentence is not relevant for the determination of the semantic scope of the focalizer; instead, what is important is its position in the underlying sentence structure taking into account the topic-focus articulation. On the interpretation which (14) shares with (15), the verb advise is in the topic of the sentence and thus outside the scope of only, while on the interpretation (14) shares with (16), the verb advise together with its complementation expressed by the infinitival construction are both in the focus of the sentence and the scope of only extends over the focus.

And third, the situation is made clearer if the focalizer only is replaced by negation, as in (19)

(19) They were not advised to learn SPANISH.
Schematically, the underlying structure respecting the possibilities of the topic-focus articulation of this sentence in relation to the position of the negative element is indicated in (20)(a) through (b), where the negative element is placed on the boundary between topic and focus. In the brackets after each scheme we suggest a possible continuation (see Chomsky, 1968 on natural responses as a test for his "range of permissible focus"). As a matter of course, we consider sentence (19) with the placement of the intonation center on the last word, i.e. SPANISH; if the placement of the intonation center is changed, the interpretations of the sentence(s) (and their topic-focus articulation) would be different.

(20) (a) they / NEG were advised to learn Spanish (… but they taught them to drive a car)

(b) they were advised / NEG to learn Spanish (… but to dress modestly)

(c) they were advised to learn / NEG Spanish (… but English)

There is a fourth possibility illustrated here by (21), namely that the negative particle and the verb is in the topic of the sentence, and the scope of the negative particle does not reach beyond the boundary between topic and focus. Sentence (19) is then understood as being about the fact that they were not advised (to do something).

(21) they were NEG advised / to learn Spanish

Another misleading claim found in the literature is the statement that if the focalizer is placed before the subject of the sentence, only the subject is in the focus. This is how Koenig (1991, p. 21, ex. (38) (a) and (b) quoted here as (22) and (23), respectively) explains the impossibility of (22), with the focalizers before the subject and the intonation center on the last element of the sentence, i.e. on an element other than the subject.

(22) Even/only FRED gave a present to Mary.

(23) *Even/only Fred gave a present to MARY.

First of all, our examples (10)(a) and (12)(b) above have indicated that a focalizer before a subject that is not a bearer of the intonation center can occur in the topic of the sentence. Second, evident counterexamples to Taglicht’s claim are sentences in passives such as (24) in the interpretation 'only a single question (out of many) was answered by both Joan and Susan' (e.g. used in the context "… while two questions were answered by … and all questions by the rest of the class").

(24) Only one question was answered by both JOAN and SUSAN.
5. Some remarks on empirical investigations: Czech and English

5.1. The richly annotated corpus of Czech (Prague Dependency Treebank, about 50000 sentences from continuous pieces of texts annotated – in addition to the morphemic and analytic surface layer – with respect to their underlying, tectogrammatical structure including topic-focus articulation) and a similarly based annotation of English in the so-called Prague English Dependency Treebank (henceforth PEDT, much smaller at the time of writing of this paper) has allowed for a more detailed contrastive analysis of sentence structures in which particles of the above-mentioned class occur. Based on the observations of Kateřina Veselá, who has devoted considerable attention to the issue of the scope of focalizers as reflected in the two above mentioned treebanks, some general though tentative conclusions can be attested.

5.2. While in Czech a typical position of a focalizer in the surface shape of the sentence is immediately before the sentence element the focalizer is "associated with", in English this need not be the case, as illustrated above by example (7)(a) and its interpretations repeated here for the sake of convenience as (25) with possible continuations in (25').

\[(25)\] John only introduced Bill to SUE.
\[(25')\] (a) … and not to MARY.
   (b) … and not Nick to MARY.
   (c) … and did not say hello to the HOSTESS/and he LEFT.

In Czech, we have to distinguish the readings of (25) by placing the focalizer immediately before the focused element (or group of elements, i.e. before the focus of the sentence) even in the surface shape; this is illustrated by the Czech equivalents of (25) in its three possible interpretations (where (26)(a) through (c) corresponds to (25')(a) through (c), respectively)

\[(26)\] (a) Honza představil Billa jenom ZUZANĚ (… a ne MARI).  
   (b) Honza představil jenom Billa ZUZANĚ (… a ne Nicka MARI).  
   (c) Honza jenom představil Billa ZUZANĚ (… a nepozdravil HOSTITELKU/ODEŠEL).

It is interesting to notice that contrary to the general characteristics of Czech as a language with a relatively 'free' word order (i.e. without grammatical word-order restrictions), in the placement of the focalizer only English is more flexible than Czech is: this particle can be placed either immediately before the element it is 'associated with' or between the subject and the verb.
5.3. Another difference between English and Czech concerns the fact that a focalizer may have a "backward" scope more frequently in English than in Czech. For example, the intonation center in sentence (27) from the PEDT, if pronounced, would be placed on the word inflation (as indicated here by capitals); the postposited focalizer only having its scope to the left. In the Czech translation of (27), given here as (28), the focalizer jenom has to be placed in front of the focused element.

(27) Scenario 1, known as the "Constant Dollar Freeze", reimburses the Pentagon for INFLATION only.
(28) Scénář 1, známý jako "konstantní zmrazení dolaru", nahrazuje Pentagonu výdaje jen kvůli INFLACI.

Typical examples of a "backward" scope in English are sentences with a postponed focalizer too, and similarly with also, see sentences (29) and (30) from the PEDT; the preceding contexts, in which these sentences occur in the treebank, are quoted in brackets.

(29) (European community employers fear that the EC Commission's plans for a "charter of fundamental social rights" is a danger to industrial competitiveness.) The British government also strongly opposes the charter in its current form.
(30) (Norman Young, a "mud-logger" at the Sniper well, has worked all but about nine days of this year.) Butch McCarty, who sells oil-field equipment for Davis Tool Co., is also busy.

As the context in (29) indicates, the focus of the focalizer also (which in this case equals the global focus of the sentence) is the British government; the part of the sentence after the focalizer belongs to the topic (the sentence is 'about' strong oppositions to the current form of the charter). Similarly, for (30), the focus of the focalizer (again, equal to the global focus) is the subject of the sentence, its topic being is busy (the sentence is 'about' hard intensive work).

In Czech, backward scope of focalizers is not so frequent as in English, but it is also possible. Example (31) is quoted from Daneš (1957, pp. 84ff.)

(31) Psal TAKÉ česky
Lit. (He) wrote ALSO in Czech.

Daneš considers (31) as ambiguous between "besides writing in other languages, he wrote also in Czech" (in our terms, with a (typical) 'forward scope', in which reading the sentence is synonymous with (32)), and as an answer to the question "Did he write also in CZECH? ", with the scope over the whole predicate in the topic.
It should be noted that in their spoken form, Czech sentences with *také* are not necessarily ambiguous, see (33) and (34), where the surface placement of the focalizer is the same but the sentences differ in their topic-focus articulation, which is indicated by the difference in the placement of the intonation center.

(33) (Karel má kočku.) Karel má taky PSA.
    Lit. (Charles has a cat). Charles has also a DOG.
(34) (Já mám psa.) Karel má TAKY psa.
    Lit. (I have a dog.) Charles has ALSO a dog.

In (33), it is asserted that besides having a cat, Charles has (also) a dog, while in (34) it is asserted that besides me, a dog is owned (also) by Charles.

5.4. The manual annotation of large corpora has also confirmed that the class of focalizers is larger than originally (and usually) assumed; properties similar to those of 'prototypical' focalizers *only, even, also* are evident also with *alone, as well, at least, especially, either, exactly, in addition, in particular, just, merely, let alone, likewise, so much as, solely, still/much less, purely,* and several others. Even more importantly, our Czech material provides evidence that according to the contexts in which they are used, these elements may acquire functions other than that of a focalizer (as in (35)): they may have a function of a discourse connective as in (36) meaning "among other things, mentioned previously, …", or a typically adverbial function as in (37) or an attitudinal function as in (38).

(35) Nezapomeň hlavně NA MNE.
    Lit. Don't forget especially ME.
(36) Hlavně na mne NEZAPOMEŇ.
    Lit. In the main, do not FORGET me.
(37) Tohle je zvlášť VELIKÉ.
    Lit. This is especially LARGE.
(38) Jenom se opovaž lhát!
    Lit. Just try to lie!
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Notes

1 In our understanding of topic-focus articulation (Firbas's FSP) as a matter of the underlying structure of the sentence one should not speak about a change of FSP but rather about a more or less explicit indication of FSP (in prototypical cases, by the position of the focalizer, but see below our discussion of secondary positions).

2 "Purists insist on placing only close to the word it qualifies, but as a matter of fact it is by most people placed between S and V, and stress and tone decide where it belongs." (Jespersen 1949, p. 95). The author refers to H. E. Palmer's Grammar of Spoken English (1924, par. 386) and to the difference between: He did not listen; he only talked and The others listened, he only talked.

3 Some linguists introduce the notion of "second occurrence focus" or "double focus" (for a summarizing discussion, see Féry and Ishibara, in press). Investigations into prosodic realization of sentences with a contrastive topic, however, have demonstrated that the prosodic realizations of focus on the one hand and of contrastive topic on the other significantly differ (see e.g. Bartels; for Czech, this has been demonstrated by Veselá, Peterek and Hajičová, 2003).

4 Hajičová, Partee and Sgall (1998, p. 139f.) discuss the possibility to capture this scope ambiguity within a dependency account of the syntactic structure of the sentence but the issue of grammar formalisms is out of the scope of this contribution and therefore we do not analyze the arguments here.

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In our contribution, we have tried to re-examine the previous findings on the properties of a certain class of particles, and we have come to the following conclusions:

(i) there is a special class of particles that have a specific position in the TFA of the sentence;
(ii) these particles have some common features with negation;
(iii) these particles called in literature rheumatizers, focalizers or focusing particles need not be restricted to a position indicating the focus (rheme) of the sentence; rather, they can occur also in the topic of the sentence;
(iv) there can be more than a single focalizer in a sentence;
(v) it is therefore necessary to distinguish between the focus of the whole sentence and the focus of a focalizer;
(vi) the scope of a focalizer has important consequences for the semantic interpretation of the sentence;
(vii) a consistent annotation of language corpora that takes into account the topic-focus articulation of the sentences as a component part of the underlying sentence structure makes it possible to get a deeper and broader insight into the issue under investigation.

Key words: rheumatizer, focalizer, topic-focus articulation, presupposition, intonation center