Focussed Number Phrases

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1. Introduction

The type of focus that occupies a designated A-bar position in the left periphery of the sentence, for example, the Hungarian preverbal focus or the English cleft constituent, is understood to express exhaustive identification from among a set of alternatives present in the domain of discourse. The intuitive notion of identification associated, e.g., with the Hungarian structural focus essentially corresponds to that represented by the structured meaning of focus structures in Arnim von Stechow’s theory (see von Stechow 1982, 1991, Creswell & von Stechow 1982, etc.). Consider a Hungarian sentence containing a preverbal focus (presumably sitting in the specifier of a focus projection (FP), with the V preposed into the F head), and the formula describing the meaning of the FP in von Stechow’s framework:

(1) a. Mari [VP ARNIM CIKKÉT: [VP olvasta: [VP tőj el tij]]]
   Mary Arnim’s paper read PREF
   ‘As for Mary, it was Arnim’s paper that she read’
   b. <x [read x], Arnim’s paper>

(1b) expresses that (it is stated about Mary that) the individual that has the property of her having read it is Arnim’s paper.

The exhaustivity that is also part of the semantic content of a structural focus corresponds to the meaning attributed to the only element of focus constructions in von Stechow’s theory. That is, the full meaning of (1a) can be paraphrased by the following formula of von Stechow (1991):

(2) P \{ x [read x](y): y an individual\} & P(Mary) is true
    → P = read Arnim’s paper

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1 For evidence indicating that the English cleft construction is a focus projection with the cleft constituent sitting in Spec,FP, see É. Kiss (1999).
The question, naturally, arises as to what use languages with structural focus make of the operator *only* if a plain focus also expresses exhaustive identification. I have answered this question in É. Kiss (1998), and will also summarize my answer in section 2 below.

The bulk of this paper (section 3) will be devoted to the problem of whether a number phrase preposed into focus position, e.g., that in (3), also expresses exhaustive identification from among a set of alternatives; and if it does, how the alternatives can be established, i.e., whether the type of individual identified is a number or a set.

(3) Arnim cikkét [FP KÉT diák [F olvasta el]]
Arnim’s paper-ACC two students read PREF
‘As for Arnim’s paper, it was TWO students that read it’

2. Plain Exhaustive Identification versus Exhaustive Identification with *Only*

In languages with structural focus, the constituent preposed into Spec,FP is understood to represent the value of an operator performing exhaustive identification. This operator operates on a set of contextually or situationally given elements for which the predicate phrase can potentially hold. It identifies the exhaustive subset of this set for which the predicate phrase actually holds, excluding the complementary subset for which it does not hold. If the role of *only* is also to express exhaustive identification, then we might conclude that *only* is an optional spelling out of this otherwise invisible operator.

However, if *only* were an optional phonological instantiation of the exhaustive identification operator associated with Spec,FP, then *only* could be spelled out in every sentence containing a structural focus, which is contrary to fact. Compare:

(4) a. MARI érkezett elsőnek.
   Mary arrived first
 b. *Csak MARI érkezett elsőnek.
    only Mary arrived first

(5) a. OROSZORSZÁG a világ legnagyobb országa.
   Russia the world’s largest country
   ‘Russia is the world’s largest country’
 b. *Csak OROSZORSZÁG a világ legnagyobb országa.
   ‘Only Russia is the world’s largest country’
(6) a. *Ezt a tojást M ARI TYÚKJA tojta.
   ‘This egg was laid by Mary’s hen’

   b. *Ezt a tojást csak MARI TYÚKJA tojta.
   ‘This egg was laid only by Mary’s hen’

Only in some of its uses is assumed to be a scalar particle, inducing an ordering and evaluation of the alternatives a subset of which the focus identifies (cf. König 1991). In cases like (7a) and (7b) the alternatives present in the domain of discourse are obviously arranged along a scale. Only serves to express that the element identified by the focus represents a non-maximal value of the scale.

(7) a. János csak SEGÉDMUNKÁS.
   ‘John is only a labourer’

   b. János csak 1500 MÁRKÁT keres.
   ‘John earns only 1500 DM’

In É. Kiss (1998) I argued for the necessity of extending the scalar approach also to cases like (8) – a possibility also raised in Lerner & Zimmermann (1981), Foolen (1983) and van der Auwera (1984).

(8) Csak P ÉTER tudta a választ.
   ‘It was only Peter who knew the answer’

I claimed that in case only is associated with a proper name or some other definite description, the alternatives to be considered are the various subsets (the power set) of the set of relevant individuals present in the domain of discourse. The subsets can be arranged into a scale depending on how many members they have. For example, if the relevant set is a class of three students, consisting of Peter, Tom, and Sam, then their power set will consist of three one-member subsets, three two-member subsets, and a three-member subset, which can be arranged into the following scale:

(9) Degree 3  {Peter, Tom, Sam}
    Degree 2  {Peter, Tom} {Tom, Sam} {Peter, Sam}
    Degree 1  {Peter} {Tom} {Sam}

The only element associated with the focus in (8) expresses that the set identified by the exhaustive identification operator, containing a single individual, Peter, represents a non-maximal degree of the scale spelled out in (9).
The examples in (4b), (5b), and (6b) are ungrammatical because they involve a predicate which can only hold for a singleton. If the scale of alternatives that a given predicate can be predicated of has a single value, then its value cannot be a non-maximal value of the scale, as the use of only suggests.

The proposed analysis of foci associated with only will also provide a clue to the interpretation of focussed noun phrases involving a numeral.

3. Exhaustive Identification in the Case of Number Phrases

Focussed number phrases appear to represent a problem for the interpretation of focus as the value of an exhaustive identification operator. Consider the following example:

(10) A diákoknak [FP KÉT cikket [VP elolvasniuk a vizsgára]]

the students two papers had to read the exam. for

‘As for the students, it was TWO papers that they had to read for the exam’

The problem is that the sentence in (10), with KÉT cikket ‘TWO articles’ in focus position, does not exclude the possibility that the students also had to read things other than articles for the exam. For example, the sentence can also be true if the students also had to read one book and two dissertations, in addition to the two articles. Therefore, Szabolcsi (1997) would not analyze the KÉT cikket phrase of (10) as a focus; she would place it in Spec,PredP, a position normally taken by verbal prefixes and secondary predicates. (This Spec,PredP position is preverbal in neutral sentences; in focus constructions, however, the V crosses it when raising to F.)

It appears at first sight that we could maintain the exhaustive identification interpretation of focus if we assumed that in (10) only the stressed numeral is focussed. In that case, however, the structured meaning associated with (10) would be markedly different from the syntactic articulation of the sentence – given that the constituent extracted from the VP into Spec,FP in syntax is not the bare numeral but the whole noun phrase extended by the numeral into a numeral phrase. The same problem would hold in English, where clefting, which intuitively serves to express focussing/exhaustive identifi-

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2 A test devised by Szabolcsi also indicates that a number phrase with a destressed nominal is in Spec,FP, rather than in Spec,PredP. Namely, a focus, occupying Spec,FP, remains in situ in the case of negation, whereas a predicative element, filling Spec,PredP, shows up post-verbally (owing to V-to-Neg raising across Spec,PredP). According to my intuition, numeral phrases of the type KÉT cikket behave like foci: they remain in preverbal position under negation. (KÉT may cliticize to the negative particle, and hence lose its stress.)

(i) Arnim cikkét nem KÉT diák olvasta el.
Arnim’s paper-ACC not TWO students read PREF

‘It was not TWO students who read Arnim’s paper’
cation, would yield a syntactic structure not corresponding to the structured meaning of the sentence. We might want to solve this contradiction by claiming that the target of focusing is the bare numeral in syntax, as well; the unstressed nominal is moved into Spec,FP merely by pied piping, so as to prevent a Subjacency violation. That is, the exhaustive identification operator serves to identify a number of a set of alternative numbers: the number for which it exclusively holds that the students had to read articles of that number for the exam. However, this solution would contradict both native speakers’ intuitions, and the condition of exhaustive identification argued for by Szabolcsi (1983), according to whom exhaustive identification can only be performed on an unordered set of individuals (or individuated properties). In view of this, the alternatives involved in (10) cannot be numbers; they must be sets of papers of different cardinalities. The correctness of this claim is confirmed by the felicity of the following dialogue, in which KÉT cikket is contrasted with an alternative noun phrase which refers to an alternative set of papers without involving a numeral:

(11) a. A diákoknak [FP KÉT cikket [F kellett elolvasniuk a vizsgára]]
   the students two papers-ACC had to.read the exam.for
   ‘Was it TWO papers that the students had to read for the exam?’

   b. Nem, [FP egy EGÉSZ TANULMÁNYKÖTETET]
      no a whole volume.of.studies-ACC
      ‘No, it was a WHOLE VOLUME OF STUDIES’

If the focus of (10) extends over the whole extended noun phrase in Spec,FP, then it is identical with the focus of (12), despite the fact that in (12) both elements of the same number phrase are stressed. (This, naturally, also holds for the English paraphrases of (10) and (12); their foci, preposed into scope position by clefting, are also identical.)

(12) A diákoknak [FP KÉT CIKKET [F kellett elolvasniuk a vizsgára]]
    the students two articles had to.read the exam.for
    ‘As for the students, it was TWO PAPERS that they had to read for the exam’

What is more, the extension of the focus phrase in (10) and (12) is also identical with that in (13), in my view – despite the fact that the stress pattern is different again: the numeral is unstressed, and the lexical noun is stressed.

(13) A diákoknak [FP két CIKKET [F kellett elolvasniuk a vizsgára]]
    ‘As for the students, it was two PAPERS that they had to read for the exam’

The claim that the value of exhaustive identification is represented by the whole noun phrase moved to Spec,FP also in (13) despite the fact that only the bare nominal is stressed, can, again, be proved by a dialogue. According to the evidence of the dialogue in (14), the alternatives to be chosen from are not properties but sets of individuals also in this case.
(14) a. [FP Két LÁNYNAK [F a<dit ad ki a lakást]]?
two girls-DAT rented.you PART the apartment
‘Was it two GIRLS to whom you rented the apartment?’
b. Nem, [FP egy HÁZASPÁRNAK]
no a married.couple-DAT
‘No, it was a MARRIED COUPLE’

If (10), (12), and (13) share the same focus, i.e., if the operator of exhaustive identification has the same value (a set of two papers) in all the three cases, then the question is what the meaning difference among the three sentences actually consists in. Intuitively, these sentences differ in that they pick one and the same focus value from different sets of alternatives. The alternatives to be chosen from are assumed to be present in the domain of discourse. Destressing serves to express the presupposed nature of an element, hence the destressing of a subconstituent of the focus phrase suggests that the given subconstituent denotes a property that is presupposed to characterize the alternatives present in the domain of discourse. In (12) no element of the focussed phrase két cikket ‘two articles’ is destressed, which suggests that the alternative sets do not necessarily share either the cardinality property or the “article” property of this set. In other words, the sentence offers no clue as to what the alternative sets may be like (although the situation certainly does give some clue). Thus the alternative sets could include “one book”, “three dissertations”, etc. In any case, the sentence implies that it is true of no other alternative but the set of two articles that the students had to read it for the exam.

If the lexical head of the focussed number phrase is destressed, as in (10), then the property denoted by the head noun is understood to be a property shared by all the alternative sets, i.e., all the alternative sets are assumed to be sets of articles (of various cardinalities). This sentence is used in situations in which there is a set of articles present in the domain of discourse, and the alternatives which the operator of exhaustive identification operates on are the various subsets of the total set. That is, the alternatives are derived by generating the power set of the set of relevant articles – as also happens in the case of an only associated with an individual-denoting expression. For example, let us suppose that the set of relevant articles is a set of four articles (a, b, c, d). Then the alternatives that the students can have read include 4 subsets consisting of a single article ({a}, {b}, {c}, {d}), 6 subsets consisting of two articles ({ab}, {ac}, {bc}, etc.), 4 subsets consisting of three articles ({abc}, {bcd}, {acd}, etc.), and a single subset consisting of 4 articles ({abcd}).

Naturally, sentence (10) only excludes the possibility that the students had to read a subset of the relevant articles other than a subset of two articles; however, it does not exclude that they also had to read several dissertations, for example. That is, it expresses exhaustive identification only among the various subsets of the relevant articles.

The destressing of the numeral of the focussed number phrase in (13) suggests that the alternatives are two-member sets consisting of individuals other than articles. Thus (13) could be uttered in the context of a question like (15):
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(15) A diákoknak [\(\varepsilon\) KÉT KÖNYVET vagy KÉT CIKKET \([\varepsilon\] kellett elolvasniuk a vizsgára]?  
   to.read the exam.for 
   'Was it two books or two papers that the students had to read for the exam?'

I argued in É. Kiss (1998) that structural focus, which expresses exhaustive identification from among a set of alternatives, and in situ focus, which conveys new, non-presupposed information, must not be confounded, because they have different properties both syntactically and semantically. The structured meaning approach to focus constructions by von Stechow (1982, 1991, etc.) expresses the type of identification that is associated with structural focus (even if the component of exhaustivity, always present in structural focus, is not an intrinsic part of a structured meaning). The identificational focus of a sentence does not necessarily coincide with its information focus – given that identificational focus is always a major constituent denoting an individual, whereas information focus, i.e., the non-presupposed part of a sentence, can be any subconstituent that can be associated with an independent semantic content. If in a sentence expressing identification the presupposed (destressed) part also extends over part of the structural focus, it imposes a restriction on the set of alternatives on which identification is performed, namely:

(16) The presupposed subconstituent(s) of an identificational focus express properties shared by all the focus alternatives among which exhaustive identification is performed. The non-presupposed constituents of an identificational focus express properties displayed only by the alternative identified by the focus operator.

4. Conclusion

A sentence with structural focus, e.g., a Hungarian focus construction or an English cleft sentence, expresses exhaustive identification, which can be expressed by the type of structured proposition proposed by von Stechow (1982, 1991, etc.). Exhaustive

As is clear from the above discussion, the destressing of the nominal element of a focussed number phrase (i.e., the stress pattern illustrated in (10)) induces a proportional, or partitive, reading of the number phrase. This is not true of the stress patterns illustrated in (12) and (13). Marginally, also the stress pattern in (10) allows an absolute, or non-partitive, reading. Namely, if a number phrase involving no destressing and requiring an absolute reading is contrasted with another number phrase of an absolute reading sharing the same nominal element, the second occurrence of the nominal will be destressed, as in (ii):

(i) A vizsgára KÉT CIKKET kellett elolvasni.  
   'For the exam, TWO PAPERS had to be read'

(ii) Nem, rosszul tudod: HÁROM cikket.  
    'No, you are wrong: THREE papers'

(iii) A diákoknak [\(\varepsilon\) KÉT KÖNYVET vagy KÉT CIKKET \([\varepsilon\] kellett elolvasniuk a vizsgára]?  
    to.read the exam.for 
    'Was it two books or two papers that the students had to read for the exam?'
identification is an operation performed on individuals, hence a constituent set off in a structured proposition must be an expression denoting an individual (or an individuated property). When the focussed constituent is a noun phrase extended by a numeral, exhaustive identification is performed on a set of alternative sets.

A structural focus, which represents the value of exhaustive identification, does not necessarily represent fully non-presupposed information. If it has presupposed, de-stressed constituents, they express properties shared by all the focus alternatives. When the nominal head of a focussed number phrase is destressed, then the alternatives among which exhaustive identification is performed are all sets sharing the property denoted by the bare nominal; they only differ in their cardinality. Such a set of alternative sets can be generated by generating the possible subsets of the set of relevant entities present in the domain of discourse.

References


