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Quantifiers and qualifiers: a unified approach

0 The goal of the paper

Hungarian is often claimed to be a remarkably 'logical' language, perhaps to the point of 'wearing its LF on its sleeve' (cf. É. Kiss 1991). Even its topic and focus positions are said to be associated with logical rather than discourse functions by É. Kiss (2007), and the quantifier category is certainly one which by its very name seems to render abundant reference to logic inevitable. Once the linguist agrees to work with the notion of quantifiers, he/she will be hard pressed to refuse their logico-semantic interpretation as 'variable binding operators', with an inherent bias to syntactic models operating with such processes and objects as overt or covert movements, traces, and so on.

In the present paper, I will attempt to show that virtually no formal logic is required for understanding the fundamental syntactic properties of Hungarian quantifiers. This I will do by exploiting a well-known but often neglected parallel in the distribution of quantifiers and 'qualifiers' (adverbs of manner). Since the latter group could hardly be treated on a par with quantifiers from a purely logical perspective (e.g. it is not clear what an adverb like *ügyesen* 'cleverly' would "quantify over", or how it could be regarded as "distributive" in the same sense as the relevant Hungarian quantifiers), the similarities cast considerable doubt on the appropriacy of formal logic in explaining the behaviour of the former. The possibility of a unified analysis is in fact explicitly raised in the mainstream literature (see e.g. É. Kiss 1998a: 55) but ultimately rejected for what seem to be theory-internal reasons. My strategy will therefore include questioning, and providing reasonable alternatives to, some of the crucial theoretical assumptions underlying mainstream analysis.[1]

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[1] É. Kiss (2008a, 2008b) has made significant changes in her handling of Hungarian quantifiers, rejecting what had been established for many years as the standard treatment. Her new analysis marks a return to the idea that Q-Raising is adjunction rather than substitution (cf. É. Kiss 1987: 94) but unlike earlier models, it eliminates the directionality constraint from the scope principle (i.e. quantifiers must c-command, but need not precede, their scope). This has two welcome consequences: first, postverbal wide-scope quantifiers are easier to handle (via right-adjunction); second, the analyses of quantifiers and 'qualifiers' can proceed analogously. In sections 1 and 2, I will treat É. Kiss (1998a, 2002) as the standard analysis, partly because it is still the most influential (reaching the most readers), and partly because my own account has emerged as a reaction to this tradition. Section 3 is devoted to É. Kiss (2008a, 2008b).

1 The standard analysis of Hungarian quantifiers

1.1 From observations to explanation: QP and DistP in the phrase structure of Hungarian

The basic observation behind the standard analysis of Hungarian quantifiers is that elements like *mindenki* 'everybody' in (1a) or *többször is* 'several times' in (1b) occupy a special preverbal position which **cannot be either topic or focus**.

(1)   a. Mindenki   el   jött.
            everybody   VM   came
            'Everybody came / has come'
        b. Többször is   el   jöttek.
            several times   VM   came-3PL
            'They came / have come several times'

   In (1a) above, *mindenki* cannot be a topic as it bears strong stress and serves to present new information. However, it cannot be in focus either for at least two reasons. First, a key diagnostic property of Hungarian (structural) foci is that they immediately precede the finite verb, 'causing' the verbal modifier to appear in a postverbal position (compare *JÁNOS jött el* 'It is John who came'[2]). The distribution of *mindenki* is clearly different as it is followed by a verbal modifier + verb sequence (which is arguably the unmarked pattern of these elements). Second, assuming for our present purposes that the kind of focus interpretation advocated by É. Kiss (1998b) and others is basically correct (i.e. that Hungarian foci serve to exhaustively identify a (proper) subset of a contextually defined set for which the proposition expressed by the sentence is true), *mindenki* is excluded on semantic grounds as well since it is unable to perform any (proper) subset identification.
   A second crucial fact about the elements in question is that more than one can occur preverbally at the same time, as illustrated by the examples in (2). Especially significant here is the fact that the relative order of *mindenki* and *többször is* induces a difference in truth conditions, as the English translations suggest. It is at this point that logic comes into the picture: one elegant way of explaining the attested variation in meaning is to say that the word order of these Hungarian elements reflects their **relative scope**. Formally speaking, *mindenki* and *többször is* can be regarded as quantifiers in the logical sense of being 'variable binding operators', with their word order (captured in terms of

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[2] Following standard practice, I use capital letters to mark structural focus.

phrase structural positions and configurationally defined relations such as c-command) determining the specific scope domains they have. It seems, then, that Hungarian P-markers may include one or more QPs (Quantifer Phrases) in the preverbal field.

(2) a. [QP Többször is [QP mindenki eljött]]
             'Several times, everybody came'
     b. [QP Mindenki [QP többször is eljött]]
             'Everybody (each person) came several times'

A third fact (supporting but also constraining the logic-based analysis) is that these quantifiers have the interesting formal property of **distributivity** (cf. Szabolcsi 1997). For example, the only possible interpretation of (3) below is that each boy took the piano upstairs individually, no matter how unlikely this is in the real world. This has been used as evidence to suggest that QP should be recast as DistP (Distributive Quantifier Phrase). Clearly, though, the choice between QP and DistP is more of a notational issue than a conceptual one.
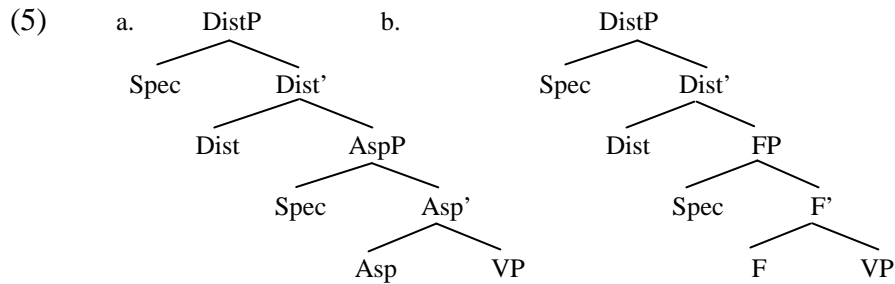
(3) [DistP Minden fiú   fel   vitte   a   zongorát   az emeletre]
            every   boy   VM   took   the   piano-ACC   upstairs
            'Every boy took the piano upstairs (individually)'

With the category label established, what remains is a proper technical definition of where DistP is situated in the Hungarian clause (I simplify here by ignoring the possibility that these quantifiers might land in left peripheral positions through adjunction rather than substitution, as in É. Kiss 1987: 94, 2008a: 134, cf. section 3). Significantly, Hungarian distributive quantifiers may precede not only the verb but also the identificational focus, as (4) below demonstrates.

(4)   Mindenki   JÁNOST   hívta   fel
        everybody   John-ACC   called   VM
        'It is true of everybody that it was John whom they rang'

Given that left peripheral distributive quantifiers always precede the focus when there is one (unless they themselves are focussed, which is impossible for universal quantifiers like *mindenki* 'everybody' but possible for non-universal ones like *sokan* 'in a great number'), it seems safe to posit an invariant pre-focus position for Hungarian quantifiers (as implied by e.g. Bartos 2000: 663). However, matters are probably a little more complex than that. É. Kiss (2002: 110) proposes that "distributive quantifiers occupy the specifier slot of

a DistP projection. DistP dominates FP, or in lack of an FP, AspP." Since in É. Kiss's (2002: 85) view, FP is not an extension of AspP but an **alternative** to it, the above definition arguably implies that the two uses of quantifiers (preverbally and before the identificational focus) belong to two sharply different constructions, as in (5a–b) below.

(5)   a.   DistP   b.   DistP

[Tree diagram a: DistP branches into Spec and Dist'. Dist' branches into Dist and AspP. AspP branches into Spec and Asp'. Asp' branches into Asp and VP.]

[Tree diagram b: DistP branches into Spec and Dist'. Dist' branches into Dist and FP. FP branches into Spec and F'. F' branches into F and VP.]

(5a) illustrates the kind of structure needed for the analysis of *Mindenki eljött*, where *mindenki* is in [Spec,DistP], *el* in [Spec,AspP] and the verb raises to the Asp head (cf. É. Kiss 2002: 61). (5b) is the structural description assigned to *Mindenki JÁNOST hívta fel*, with the quantifier in the specifier position of the (now pre-focus) DistP, *JÁNOST* in [Spec,FP] and (according to É. Kiss 2002: 86) the verb remaining in its original VP-internal position.

Having moved from some basic observations to a relatively straightforward technical analysis of Hungarian distributive quantifiers, we might note that the logic-based account also seems plausible for a number of theoretical reasons. First, it is well known that mainstream generative grammar sees a strong connection (perhaps even isomorphism) between syntactic structure and logico-semantic structure: one common reason why certain elements move to the front of the clause is that they are logical operators in need of preceding and c-commanding their scope. From this perspective, Hungarian quantification is just one instantiation of a general and widely attested pattern. Second, English is often said to exhibit covert Quantifier Raising (in invisible syntax, on route to LF, cf. May 1985) so the curious property of Hungarian is simply that it complies with the principles affecting scope interpretation at an earlier point in the derivation, prior to Spell-Out. This parametric difference between English and Hungarian is reminiscent of the split between Chinese and English in terms of wh-movement (with only covert movement in the former, cf. Huang 1982) so there is even some typological support to positing different degrees (or stages) of compliance with the scope principle. Third, intra-linguistic theoretical support comes from the fact that Hungarian focus and negation are standardly treated as involving operators; hence, introducing an-

other operator position comes at no extra cost and leads to an elegant general-ization. As É. Kiss (2002: 3) puts it, "[t]he preverbal section of the [Hungari-an] predicate phrase contains operator positions". Such general statements would be impossible if we were to reject the logically inclined analysis of Hungarian quantifiers.

1.2. Problems with the standard analysis

In this section I turn to some of the problematic aspects of the standard analysis of Hungarian quantifiers. There are two types of problem: first, there are cases where the theory makes a strong claim (an elegant generalization) which turns out not to be tenable in the proposed form (wrong predictions). Second, there are phenomena that seem to call for a strong claim (an elegant generalization) but instead we find that the model over-complicates matters as if to avoid that claim at all costs. As we shall see, the two problems are closely interrelated: one elegant generalization is missed precisely in order that another could be maintained.

1.2.1. Wrong predictions

There is no doubt that the logic-based analysis of Hungarian quantifiers has an immediate appeal: as we saw in the previous section, it allows for a highly restrictive and theoretically plausible account of how word order and interpret-ation go together. Especially attractive is the proposal (made as early as É. Kiss 1984: 82) that in Hungarian surface syntax, "each operator c-commands and precedes its scope". Unfortunately, there are at least two notable excep-tions to the rule which É. Kiss (1998a) is ready to acknowledge.

First, just in case they are stressed, VP-internal distributive quantifiers have scope over a quantifier in [Spec,FP], as (6) below illustrates.

(6)   KEVESEN   nézték   meg ′mindegyik filmet.
        in a small number   watched-3PL VM   every/each film-ACC
        'Each film was watched by only a few people'

To solve the problem, É. Kiss (1998a: 63) proposes the following con-straint: "the stress of a VP-internal quantifier signals that the quantifier is to be interpreted as though it were in a quantifier position" (my translation). Of course, it is not entirely clear how the "as though" clause is to be formally encoded; but to be fair, É. Kiss's (1998a) work is intended for a wider (non-professional) audience so she has every reason not to go into technical details.

É. Kiss (2002: 121–122) reviews several possible lines of analysis including her own earlier account based on a stylistic postposing rule (É. Kiss 1987), Hunyadi's (1997a,b) approach drawing on the notion of intonational phrases and a hierarchical ranking of operators, and finally Brody and Szabolcsi's (2000) proposal couched in Brody's (1997) Mirror Theory – but the overall impression one gets is that none of these accounts provides a fully satisfactory solution to the problem posed by postverbal wide-scope quantifiers. It seems that the ideal trade-off point has not been found between descriptive simplicity and theoretical appeal: at one extreme, the postposing rule is decidedly simple but rather *ad hoc*, while at the other, Brody and Szabolcsi's solution involves what might be regarded as unduly complex syntactic machinery.[3]

A related, but somewhat less problematic, issue concerns the contrastive topicalization of distributive quantifiers, as in (7) below.

(7) [$_{TopP}$ $^/$*Minden könyvet* [$_{FP}$ csak KETTEN olvastak el   a vizsgára]]
       every book-ACC   only two   read   VM the exam-for
       'All the books, only two persons read for the exam.' / 'It is true of
       only two persons that they read all the books for the exam.'
                        (cf. É. Kiss 2002: 122)

(The forward slash marks that the constituent is to be pronounced with rising intonation, highlighting its status as contrastive topic.)

É. Kiss first notes that sentences like (7) are in apparent violation not only of the scope principle, but also of the restriction that topics must be [+referential] and [+specific]. However, she continues by saying that in fact none of these principles is violated, given the interpretation assigned to contrastive topics. As she puts it, "[t]he contrasting of a non-individual-denoting expression is a means of individuating it, i.e., presenting it as the name of a distinct property. Quantifiers individuated by contrast function as the names of cardinality properties of sets. In [7] the property 'maximal set of books' is implicitly contrasted with the property 'non-maximal set of books'. As the name of a property, the expression *minden könyvet* 'every book' is a legitimate target of topicalization. In Spec,TopP it functions as the logical subject of predication; it is predicated of it that only two persons read a representative of it" (É. Kiss 2002: 123). Having explained why topicalization is possible in the first place, É. Kiss moves on to address the scope issue: "[T]he quantifier functions as the name of a property, and as such, it is outside the scope of all operators; in some sense, it has maximally wide scope. It gives nevertheless the impression of a narrow scope quantifier because whatever is

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[3] For É. Kiss's (2008a, 2008b) solution, see section 3.

predicated about a property is evaluated with respect to concrete represent-atives of the property, which can be referentially different. This referential variability is superficially similar to that attested in the case of narrow scope quantifiers" (É. Kiss 2002: 123–124).

É. Kiss seems to suggest here that contrastively topicalized quantifiers are no longer variable binding operators; rather, they are [+referential] and [+specific] "names of properties" (if they were operators, they would have to occupy one of the operator positions on the preverbal section of the predicate phrase). However, it is not clear then in exactly what sense these names of properties can be claimed to have "maximally wide scope", while at the same time giving the impression of narrow scope quantifiers. (It seems that the notion of scope is being loosened up here, with the consequence that the analysis resists evaluation.) A second problem is that contrastively topicalized quantifiers apparently receive a distributive interpretation just as their DistP counterparts (compare (3) above):

(8) $^/$*Minden fiú* nem vitte fel a   zongorát   az emeletre.
          every boy not took VM the piano-ACC upstairs
     'It is not true of every boy that they took the piano upstairs individually'
     (i.e. only some of them did)

It is dubious how the name of a property could have the same quality of distributivity as an ordinary variable binding operator. Issues like these seem to cast doubt on the viability of É. Kiss's (2002) account, although there may be solutions I am not aware of. In any case, it is now time to turn to a problem that is more central to my investigation.

1.2.2. A missed generalization[4]

So far we have seen that the standard analysis is strongly committed to formal logic: notions like distributivity and scope (viewed in terms of variable binding) play a significant part in explaining the syntactic and semantic properties of Hungarian quantifiers. An elegant generalization ("each Hungar-ian operator c-commands and precedes its scope") is made, and subsequently maintained despite the apparent problems posed by postverbal and contrastive-ly topicalized quantifiers. Overall, it looks as though the generalization enjoys

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[4] Most of the points I am making in this section cannot be directly applied to É. Kiss's (2008a, 2008b) new analysis of quantifiers. However, it is still interesting to see how adherence to the QP/DistP account forced É. Kiss (1998a, 2002) into proposing problematic solutions, with the collection and interpretation of empirical data reflecting a theoretical bias.

a privileged status and is not open to questioning any more – presumably because it lends such vital support to the argumentation that Hungarian is a 'logical' language.

Suppose there is another elegant generalization to be made on descriptive grounds (call it Generalization X), which, however, would go against the privileged one just mentioned. In such a case we would expect that Generalization X is avoided at all costs. This scenario seems to be unfolding when the analysis is faced with strong parallels between quantifiers and various kinds of adverbial modifiers. Let us begin with a limited set of examples:

(9)   a. Sokan   meg   oldották.
            many-MOD VM   solved-it-3PL
             'Many people solved it'
      b. Sokszor   meg   oldották.
            many-times VM   solved-it-3PL
             'They solved it many times'
      c. Ügyesen meg   oldották.
            cleverly   VM   solved-it-3PL
             'They solved it cleverly'

In (9a), there is a distributive quantifier, *sokan*, meaning something like 'in a great number'. Morphologically, it consists of the stem *sok-* 'many', and the *-An* suffix which turns the numeral into an adverb of extent. In the first word of (9b), the stem (*sok-*) is the same but the suffix different, with *-szOr* 'times' producing a frequency adverb. Finally, *ügyesen* 'cleverly' in (9c) shows the same *-An* suffix as *sokan* but now with a different stem (*ügyes-* 'clever'), so this time the overall word form serves as an adverb of manner.[5] It seems that the three words, *sokan*, *sokszor* and *ügyesen* are cross-associated on semantic, morphological, and syntactic grounds alike. Semantically, they are either 'quantifiers' (expressing some quantity) or 'qualifiers' (expressing some quality), with certain adverbs showing properties of both (e.g. expressing a measurable degree which at the same time denotes a high quality). There is hardly any doubt that the notions of quantity and quality are semantically related.[6] Morphologically, as we have just observed, the word forms in

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[5] That the *-An* suffix in both *sokan* and *ügyesen* is the same would be hard to refute, given that both *hányan / mennyien* 'in what number' and *hogyan* 'how' have it but none of the other wh-expressions (cf. **ki-en*, **hol-an*, etc.). Historical data reveal that *milyen* 'how / what kind of' (adjectival) is a later development in the language but it may also have been influenced by the analogy of *hogyan* and *hányan*.

[6] It is beyond the scope of this paper to provide a detailed and fully explicit account of the semantic relationship between quantity and quality. Instead, I only note some semantic facts

question have strikingly similar make-ups, with the *-An* suffix regularly occurring on (a representative sample of) both quantifiers and qualifiers. Finally, there is also a syntactic parallel, with each of these words preceding the verbal predicate without triggering the inversion of verbal modifier and verb. (Remember that so far we have only examined a limited set of examples; more wide-ranging syntactic parallels will be discussed in section 2.1. For now, only note that it is also possible to focus *sokan*, *sokszor* and *ügyesen*, just in case their use involves an element of contrast.)

Traditionally speaking, there are three main types of criteria for deciding if a group of words (or word forms) belong together: semantic, morpho(phono)logical, and syntactic. From this perspective, there seems to be substantial **converging evidence** that the sentence-initial words in (9) above ought to be treated in a unified way.[7] This, however, turns out to be just the sort of Generalization X that the standard analysis avoids, whatever the cost.

É. Kiss (1998a) seems to draw the line between quantifiers on the one hand, and all types of adverbial modifiers on the other. That is to say, she proposes different analyses for (10a) and (10b) below.

(10) a. János sok barátját   meg hívta.
        John many friends-of-his-ACC VM called
        'John invited many of his friends'
                (cf. É. Kiss 1998a: 54)
      b. János sokszor   el késik   az iskolából.
        John many-times VM is-late the school-from
        'John arrives late in school many times'
                (cf. É. Kiss 1998a: 56)

In the former case, É. Kiss argues that *sok barátját* 'many friends of his' is in quantifier position. (I suspect that *sokan* 'in a great number' would also be

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(and their syntactic reflexes) in support of the intuition that they are similar. First, both quantity and quality are measurable / evaluable and hence provide natural dimensions for comparison; in fact it is hard to think of any **other** dimension along which such comparison can be made. Second, and related, is the fact that language often encodes quality in terms of quantity, and vice versa (arguably as a result of conceptual parallels); in other words, there are significant metaphorical mappings between the two domains. This can be seen in a fully conventionalized form in English comparative adjectives such as *more beautiful*, where *more* has undergone a grammaticalization process and schematization of meaning from 'more in terms of quantity' to 'of a greater degree / higher quality'. For the opposite direction of semantic shift, consider Hungarian *néhány* 'some' vs. *jónéhány* 'quite a few, good many', where the adjective *jó* 'good' is used to mark an increase in the quantity expressed by *néhány*.

[7] The word *converging* is important here: one might call into question any of the three types of argument but together they make a strong case for the proposal.

regarded as a quantifier, given that its negative counterpart, *kevesen* 'in a small number', is.) Not so with *sokszor* 'many times', which is **adjoined** to the VP. The simplified analyses therefore look like the following (remember that É. Kiss (1998a) is intended for a wider audience, and makes no use of X'-theory, hence the exocentric S label and other simplifications):

(11)   a. [$_S$ János [$_{QP}$ sok barátját [$_{VP}$ meghívta]]]
        b. [$_S$ János [$_{VP}$ sokszor [$_{VP}$ elkésik az iskolából]]]

This solution looks highly problematic. The morphological, syntactic and semantic (not to mention prosodic) parallels between *sok barátját* [*meghívta*] and *sokszor* [*elkésik*] far outweigh their differences, and do not seem to warrant the QP (substitution) vs. VP (adjunction) distinction proposed here.

Adverbs of manner are also said to be adjoined to VP, yielding (12a), cf. É. Kiss (1998a: 56). Alternatively, the adverb of manner can also be focussed, as in (12b), cf. É. Kiss (1998a: 57).

(12)   a. János [$_{VP}$ gyorsan [$_{VP}$ fel szaladt a   lépcsőn]]
           John   quickly   VM ran   the stairs-on
           'John ran up the stairs quickly'
        b. János [$_{FP}$ GYORSAN [$_{VP}$ szaladt fel a lépcsőn]]
           'It was quickly (rather than slowly) that John ran up the stairs'[8]

It is easy to see how Generalization X (the unified analysis of Hungarian quantifiers and qualifiers) is avoided: given a phrase structure grammar, superficially similar linear positions (e.g. the position preceding a VM + verb sequence) can be argued to be hierarchically different. It is also easy to see **why** it is avoided: *gyorsan* 'quickly' could hardly be treated on a par with distributive quantifiers (what would it "quantify over"? in what sense could it be considered "distributive"?), so a unified analysis would cast considerable doubt on the logic-based analysis of quantifiers.[9]

A similar strategy is adopted in É. Kiss (2002) as well, although now she admits more adverbial modifiers into the class of quantifiers than previously. In particular, she proposes that in one of their uses, "[a]dverbs expressing a

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[8] In this paper, I use the cleft construction for translating Hungarian identificational foci, irrespective of whether or not the focussed element in question is allowed to be clefted in English. This is because in situ focus would not be sufficient to express the kind of 'exclusion by identification' (cf. Kenesei 1986) commonly associated with Hungarian structural foci.

[9] According to É. Kiss (2008b), the notion of (relative) scope is applicable to both quantifiers and adverbial modifiers; hence, a unified logical treatment is not unthinkable. However, this approach is not without its own problems, cf. section 3.

positive (but non-universal) frequency can move […] to Spec,DistP" (É. Kiss 2002: 127). As a result, examples like (11b) above are now treated as involving DistPs. However, she maintains that "[f]or adverbs of degree, and adverbs of manner, the position left-adjacent [i.e. adjoined] to the AspP projection seems to be the only possibility in the preverbal field" (É. Kiss 2002: 128). Her main reasons for making this generalization include the perceived impossibility of a focussed adverb of manner (13a), and the ungrammaticality of having the adverb precede the focus phrase (13b):

(13) a. *[DistP Mindenki [FP TÖKÉLETESEN/GYORSAN értette   meg a relativitáselméletet]]
        everybody   perfectly/quickly   understood VM the relativity theory-ACC
        'It was perfectly/quickly that everybody understood relativity theory'

    b. *[DistP Mindenki [FP *tököletesen/gyorsan* [FP A RELATIVITÁSELMÉ-LETET értette meg]]]
        'It was perfectly/quickly relativity theory that everybody understood'

                                                    (É. Kiss 2002: 128)

By deeming *Mindenki GYORSAN értette meg a relativitáselméletet* 'It was quickly that everybody understood relativity theory' ungrammatical, É. Kiss (2002) contradicts her earlier (and in my opinion correct) assessment according to which adverbs of manner like *gyorsan* 'quickly' could indeed be focussed (cf. (12b) above). It is likely that the choice of main verb plays a crucial role in É. Kiss's grammaticality judgments: while it is difficult to imagine a context in which (13a) makes sense (with the speaker stressing that it was quickly, rather than slowly, that everbody understood relativity theory), it is much easier to evoke the communicative situation for (12b), with special emphasis on the (perhaps surprising) quickness of John's running.

The ungrammaticality of (13b) is something to agree on – however, as we shall see in the following section, this piece of evidence may be insufficient to rule out Generalization X, i.e. the unified analysis of Hungarian quantifiers and qualifiers. Instead, it only highlights the need for abandoning some of the theoretical assumptions underlying mainstream analysis.

2. Quantifiers and qualifiers: a unified approach

2.1. Back to observations. The relational definition of distribution and its consequences

In this section, I turn to the task of providing a unified analysis of Hungarian quantifiers and qualifiers. The analysis will involve two interrelated steps: a) closer scrutiny of the facts, and b) replacing some of the standard theoretical assumptions by new ones.

First of all, note that the discussion so far has been limited to positive (but non-universal) quantifiers and their qualifier counterparts, with *sokan* 'in a great number' representing the former and *ügyesen* 'cleverly' (as well as *gyorsan* 'quickly') the latter group. If the parallel between these elements is to be taken seriously, one would expect that other types of quantifiers and qualifiers also line up to yield a systematic pattern. The data below seem to confirm this hypothesis.

(14)   **Preverbal quantifiers and qualifiers**

I. Universally (maximally) positive

a. Mindenki   meg oldotta   Tökéletesen meg -oldották   / -értették.
   everybody VM   solved-it   perfectly   VM   solved-it-3PL understood-it-3PL
   'Everybody solved it'   'They solved / understood it perfectly'
b. *MINDENKI oldotta meg.   TÖKÉLETESEN oldották / *értették meg.

II. Non-universally (non-maximally) positive

c. Sokan meg oldották.   Ügyesen meg oldották.
   'Many people solved it'   'They solved it cleverly'
d. SOKAN oldották meg.   ÜGYESEN oldották meg.
   'MANY (not few) people solved it. 'They solved it CLEVERLY (not poorly)'

III. Non-universally (non-minimally) negative

e. *Kevesen   meg oldották.   *Rosszul meg oldották.
    in a small number VM solved-it-3PL   poorly   VM   solved-it-3PL
f. KEVESEN oldották meg.   ROSSZUL oldották meg.
    'Only a few people solved it'   'They solved it poorly'

As the examples above illustrate, both quantifiers and qualifiers divide into at least three groups: universally (maximally) positive, non-universally (non-maximally) positive, and non-universally (non-minimally) negative. I have omitted universal negative quantifiers and corresponding qualifiers such as *senki sem* 'nobody' and *sehogy sem* 'in no way / not at all' for simplification, and because they would necessitate a more complex discussion involving Hungarian negation as well.

The preverbal distribution of these groups of elements differs in interesting ways. Quantifiers and qualifiers expressing a universal quantity or maximal quality typically precede the verbal predicate without triggering the inversion of verbal modifier and verb, although maximal qualifiers seem to show a higher degree of flexibility depending on verb choice. *TÖKÉLETESEN oldották meg* 'It was perfectly that they solved it' sounds fine if contrasted with imperfect solutions, while **TÖKÉLETESEN értették meg* 'It was perfectly that they understood it' is severely degraded, presumably because an 'understanding event' more strongly implies perfect fulfilment than a 'solving event'.[10] The tendency for the VM + verb sequence will become clear in section 2.2. Non-universal (non-maximal) but positive quantifiers and qualifiers allow for two different word orders, with or without inversion; this is a major issue to be addressed later on. Finally, negative quantifiers and qualifiers only permit the inversion pattern, which also demands explanation.

Before turning to these issues, let us note that before the identificational focus, the parallel between quantifiers and qualifiers looks significantly weaker (as we saw earlier, this prompted É. Kiss to opt for a VP-adjunction analysis for adverbs of manner). As (15) below demonstrates, no qualifier is allowed to precede the focus (in the relevant meaning), although many of the quantifiers can.

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[10] To put it more precisely: *megérteni* 'to understand' seems to denote an event with a natural endpoint in its profile, without much regard to the process leading up to that point, while *megoldani* 'to solve' has a stronger processual profile. When you understand something it does not really matter how you got there (cf. [#]*How did you understand it?*); by contrast, there may be many different solutions to the same problem, some more effective than the others, and each deserving attention in its own right (cf. *How did you solve it?*). This might be the reason why a perfect solution lends itself quite easily to comparison with imperfect ones, whereas a perfect understanding is almost a tautology and hence an awkward candidate for comparison. The analysis is also supported by the fact that one can hardly say [#]*Várj, éppen értem meg a feladatot* ('Wait, I'm [in the process of] understanding the task'), while *Várj, éppen oldom meg a feladatot* 'Wait, I'm [in the process of] solving the task' comes naturally; in other words, *megoldani* is more compatible with progressive aspect than *megérteni*.

(15)   **Pre-focus quantifiers and qualifiers**

a.   Mindenki A   HARMADIK FELADATOT oldotta   meg.
     everybody the third   task-ACC   solved-it-3SG VM
      'It is true of everybody that it is the third task that they solved'
b.   Sokan A HARMADIK FELADATOT oldották meg.
      'It is true of many people that it is the third task that they solved'
c.   *Kevesen A HARMADIK FELADATOT oldották meg.
d.   *Tökéletesen A HARMADIK FELADATOT oldották meg.
e.   *Ügyesen A HARMADIK FELADATOT oldották meg.
f.   *Rosszul A HARMADIK FELADATOT oldották meg.

The four ungrammatical sentences above are in fact acceptable just in case their initial words serve as contrastive topics. However, the positive quantifiers *mindenki* 'everybody' and *sokan* 'in a great number' may also precede the focus without getting relegated into the topic part of the clause, unlike their qualifier counterparts, *tökéletesen* 'perfectly' and *ügyesen* 'cleverly'. Does this necessarily mean that the parallel between these quantifiers and qualifiers is to be denied completely? Remember that their preverbal distributions looked remarkably similar (cf. (14) above), and there was also significant converging evidence in favour of a unified account (cf. the analysis of (9)).

It is at this point that I need to make a crucial departure from the theoretical assumptions guiding standard analysis. Specifically, I posit the following preliminary definition of the distribution of Hungarian quantifiers and qualifiers:

(16)   Hungarian quantifiers and qualifiers precede and are adjacent to the predicates they modify.[11]

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[11] Here I confine myself to defining the use of Hungarian quantifiers and qualifiers on the preverbal field (excluding postverbal and topicalized uses). The possibility of these follows partly from my rejection of the logic-based analysis (e.g. it is no longer an issue why operators may take scope from behind the verb once the scope principle itself is taken out of the equation), and partly from independent properties of topicalization. In addition, one might note that the preverbal (as opposed to postverbal) use of quantifiers and qualifiers typically marks that the quantification or qualification expressed by these elements represents prominent and new information. Compare *Mindenki eljött* vs. *Eljött mindenki* 'Everybody came / has come': preverbal use puts more emphasis on the universal degree expressed by the quantifier than postverbal. In fact in the latter case *mindenki* behaves almost like an ordinary argument (which is not uncommon in languages: English quantifiers with the grammatical function of objects typically behave as objects in general do).

There are several things to note about the definition above. First, it makes no use at all of phrase structural positions; rather, it defines the distribution of the elements concerned in a **relational** way, with respect to other elements in the clause. In particular, quantifiers and qualifiers are required to **precede and be adjacent to predicates**. (For syntactic models built on a relational definition of distribution, see e.g. Sleator–Temperly 1993, Newson 2004, and Newson–Maunula 2006). Second, we need to answer the question as to what these predicates referred to may be. Obviously the verb is itself a predicate, so the definition accounts for word order patterns where a quantifier or qualifier is in front of the verbal predicate, which for my purposes includes the verbal modifier (inversion is an issue to be addressed later on). Second, as argued for in e.g. É. Kiss (2006a), the identificational focus may also be analysed as a predicate; for example, a sentence like *JÁNOS jött el* can be translated into the cleft construction 'It is JOHN who came' or the pseudo-cleft 'Who came was JOHN', suggesting that the identification performed by the focussed element is of an essentially predicative character (hence the two finite clauses in the English examples). This in turn explains why quantifiers and qualifiers may (in principle) precede not only the verb but also the identificational focus. However, it is important to note that the definition implies a crucial restriction here: quantifiers and qualifiers are required to precede **the predicates they modify**. Presumably, not all types of predicate can be modified by all types of quantifiers and qualifiers; in particular, it seems safe to suggest that identificational predicates are semantically incompatible with qualifiers. The English cleft construction is a case in point for illustration:

(17)   a. It was JOHN who quickly solved the problem.
         b. *It was quickly JOHN who solved the problem.

Since quickness can only be attributed to the 'solving event' but not to the identification of John as the 'solver', (17b) is ruled out. In light of this, it comes as little surprise that the qualifier + focus sequences in (15d–f) above are also dismissed as ungrammatical.

Something the definition in (16) does not do is account for the relative order of two or more quantifiers / qualifiers when they pre-modify the same predicate (as in (2)). In such cases, each of the modifiers will want to precede the predicate in question, but only one can be strictly adjacent to it. Which one will it be? It seems that when a quantifier and a qualifier are aligned to the same predicate, the latter will come closer: *sokan ügyesen megoldották* 'many people solved it cleverly' is preferred to **ügyesen sokan megoldották*. This does not seem to be a matter for any scope principle to decide (although see É. Kiss 2008b: 27) as *ügyesen* could hardly be regarded as the same sort of

variable binding operator as *sokan*. Rather, word order seems to reflect **how close the semantic relationship is** between a given modifier and the predicate: since *ügyesen* is more specifically relevant[12] to the characterization of *megoldották* than *sokan* (with the former pertaining to the **type** of event being described, and the latter only to the number of **instances** / participants), the quantifier + qualifier word order is to be expected.[13] Note in passing that the corresponding nominal expression also shows the same sequence of element types (*sok ügyes megoldás* 'many clever solutions').

What about the situation when both modifiers are quantifiers, as in (2) above (*mindenki többször is eljött* 'everybody came several times' vs. *többször is mindenki eljött* 'several times, everybody came')? Whereas in the previous example, semantic proximity could be invoked on an a priori, "offline" basis (*ügyesen* being more specifically relevant to *megoldották* than *sokan*), this time we have a case of "online" choices in optimization. Word order can be seen as a means of giving instructions to the hearer about how the clause's interpretation proceeds:[14] *többször is mindenki eljött* is about a situation with several cases when everybody came (instructions: 1) imagine several cases; 2) assign the same proposition to each), whereas *mindenki többször is eljött* expresses that it holds for everybody that they came several times (instructions: 1) imagine all the people in the contextually defined set; 2) assign the same proposition to each). While this is superficially similar to what the scope principle produces in formal logic, there is no reason to suppose that natural languages work with the same 'engine' as any meta-language developed by logicians for purposes of logic. Rather, the readings associated with different word order patterns follow from general properties of language such as the relational definition of distribution and the syntactic encoding of semantic proximity, either on an "offline" or an "online" basis.

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[12] In Bybee (1985), the notion of relevance is used to motivate, amongst other things, the relative order of affixes in a word form, and the degree of fusion between elements. Under her definition, "a meaning element is relevant to another meaning element if the semantic content of the first directly affects or modifies the semantic content of the second" (13). For example, it is predicted that 'walk through water' is more likely to get lexicalized into one word (cf. *wade*) than 'walk on a cloudy day', which is expressed syntactically instead. This is because "whether one has one's feet on dry land or in water is quite relevant to the act of walking" (Bybee 1985: 13), whereas whether the sky is sunny or cloudy is usually not.

[13] Correspondingly, there are much stronger selectional restrictions holding between qualifiers and predicates than between quantifiers and predicates. Whereas almost any human action / experience could be performed / shared by many people at the same time, only a subset of these could be evaluated as "clever" performances / experiences (cf. #*clever sleeping*).

[14] This is essentially the spirit of Wedgwood (2003), where "[t]he surface structures of natural language are viewed […] as consisting of incrementally processed instructions to the interpreter to build certain kinds of structured propositional form" (28).

There are two issues I have not addressed yet. First to be explained will be the preverbal distributional difference between positive and negative quantifiers / qualifiers (*Sokan megoldották* vs. KEVESEN *oldották meg*, cf. (14c, 14e) above), before I move on to account for the two distinct word order patterns of positive ones (*Sokan megoldották* vs. SOKAN *oldották meg*, as in (14c, 14d)).

2.2. Positive versus negative quantifiers / qualifiers: a predicate-based account

A well-known fact of Hungarian is that elements like *kevesen* 'in a small number' and *rosszul* 'poorly' are obligatorily "focussed" (to put it in standard terms). *Kevesen* is categorized by mainstream generative grammar as a negative existential quantifier, while *rosszul* as a negative adverb of manner, so the parallel between the two is simply that both are negative in some sense. But just why are negativity and focussing so strongly interrelated?

É. Kiss (2002: 89) suggests that negative existential quantifiers, and negative adverbs of frequency, degree, and manner are "inherent foci", i.e. they are [+focus] marked already in the lexicon. However, this is not a solution yet but simply the relegation of a syntactic problem into another component of the grammar: the interesting question now is, why are they [+focus] marked lexically? É. Kiss's (2002: 90) answer is that their [+focus] feature is the manifestation of "some semantic property", which "becomes clear from the case of *csúnyán* 'uglily'. *Csúnyán* must only be focussed if it means 'in an ugly manner'. If it is used to express the great degree of some ugly deed, it is not focussed (but is adjoined to AspP)". É. Kiss's examples are the following:

(18)   a. János [$_{FP}$ CSÚNYÁN [$_{VP}$ írta   meg a   leckét]
           John   uglily   wrote VM the lesson-ACC
           'John wrote the lesson (i.e. did his homework) in an ugly way.'
    cf. b.*János [$_{AspP}$ csúnyán [$_{AspP}$ meg írta a leckét]]

(19)   Jánost [$_{AspP}$ csúnyán [$_{AspP}$ be   csapták]]
        John-ACC   uglily   VM deceived-3PL
        'John was badly deceived.'

Central to É. Kiss's assumptions is the idea that *csúnyán* has two different meanings (which may have to be listed in the lexicon independently), and this is the ultimate reason why the two word order patterns are different. In what follows, I propose an alternative solution to the problem which also correctly predicts the preverbal distributional difference between positive and negative quantifiers / qualifiers.

A recurring feature of my analysis so far has been a **relational** view of how linguistic structure is organized. Recall that the preliminary definition of the distribution of Hungarian quantifiers and qualifiers in (16) was based not on phrase structural positions (or the syntactic units occupying them) but rather on the relation between quantifiers / qualifiers and the predicates (verbs or foci) they modified. Again, my suggestion is that to account for the distributional difference between the two uses of *csúnyán* in (18–19) above, the locus of the explanation must shift from individual units to the relations between them. That is to say, *csúnyán* will be said to trigger inversion in one case but not the other depending on the kind of relationship it has with the verbal predicate. More specifically, I am going to propose that *csúnyán* affects the context of the predicate's interpretation in two sharply different ways in the relevant examples. Of course this entails that the interpretation of the verbal predicate will have to be seen as context-dependent, which goes very much against the assumptions held in mainstream generative grammar (e.g. adherence to a strictly compositional semantics). This is in fact the second point (the first having been the elimination of phrase structure) where I take a radical departure from the standard approach.

In Imrényi (2007), I introduced the notion of a **proto-statement** for capturing the default function of (Hungarian[15]) verbal predicates. In effect, this meant that the verb was regarded not as an atomic part of the clause but rather a schematic clause in itself. Semantically, the verbal predicate is about an event in the broadest sense (including actions, states, etc.) but it is now also seen as having the default pragmatic function of making a statement[16] (*contra*

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[15] At the present stage, the descriptive coverage of the analysis has been limited to Hungarian, and it is yet to be seen how far it can be extended to other languages. For example, if there is any use to be made of proto-statements (basically, the notion of a declarative clausal core) in the description of English, it will have to include the subject as well as a verbal element.

[16] Some discussion is in order here on the general arguments supporting the notion of proto-statements. 1. Weather verbs and 'pro drop' phenomena are high on the list of empirical arguments, although they also suggest that the notion is to be relativized to languages to a certain extent. Hungarian weather verbs like *havazik* 'it snows' can express a statement about an event on their own, and a similar analysis holds for verb forms such as *megérti* ('s/he understands it'), *meghívlak* 'I invite you', etc. which are fully functional clauses in themselves, given the required amount of shared information as part of the context of speech. (English verb-based constructions are of course considerably different.) 2. Another interesting phenomenon is sentential negation, which is manifested in the majority of languages as predicate negation (with the negative element appearing near the finite verb rather than at the beginning of the clause), implying that the predicate serves to "represent" the full clause. In formal logic, predicate negation and sentential negation are considered different, e.g. *John is not smart* 'It is not the case that John is smart' and *John is non-smart* 'John is a member of the set of non-smart individuals' may receive distinct interpetations. 3. From a historical point of view, it is worth noting that the Hungarian verbal inflections marking person come from

mainstream generative analysis which introduces illocutionary force as some-
thing external to the description of the event). Strictly speaking, arguments of
the predicate do not **add** information to the clause but rather **elaborate**
implicit aspects (or "schematic substructures", cf. Langacker 1987) of the
predicate.[17] Looked at from the opposite direction, a fully elaborated clause
can sometimes be **reduced** to a mere proto-statement, although this seems to
be subject to significant language-specific constraints. In Hungarian, reduction
is generally possible (in the appropriate context), as the examples in (20)
below suggest.

(20)   a. Meg hívja.
              VM   invites-DEFINITE OBJECT
           'S/he invites him/her'
         b. Meg hívja Marit.
                     Mary-ACC   elaboration   reduction
              'S/he invites Mary'
         c. János meg hívja Marit.
            John
            'John invites Mary'

In (20a), the proto-statement *Meghívja* alone is able to express that some contextually recoverable person has invited another one. (Verbal morphology marks the person and number of the subject as well as the person and the definiteness, or more precisely the contextual recoverability, of the object.) In (20b), the proto-statement is upheld, and the object argument (*Marit*) elaborated, presumably because this piece of information is now not available (uniquely identifiable) from the context. Finally, in (20c), both arguments are elaborated (with *János* further assuming the role of topic) as neither is recoverable.

From this perspective, it is easy to understand why *csúnyán* behaves in two different ways in (18a) and (19). First consider the relation between the proto-statement of (18a), *megírta* 's/he wrote / has written it', and its subject and object arguments.

(21)   a. Megírta.
            'S/he wrote it'
        b. Megírta a leckét.
            'S/he wrote the lesson' (i.e. 'did his/her homework')
        c. János megírta a leckét.
            'John wrote the lesson' ('did his homework')

Clearly, this is a case of progressive elaboration entirely parallel to what we had in (20a–c). Importantly, elaboration does nothing to change the context for the predicate's interpretation as it only specifies information which is schematically already present in the proto-statement. *Csúnyán*, however, is in a relation with *megírta* that is not purely elaborational but rather **restrictive**. As a result, the information of *csúnyán + megírta* is not reducible to *megírta*, which is the likely reason why inversion occurs, yielding (22). Note that under the proposed analysis, inversion has a strong iconic character: it is a motivated choice for the expression of restricted function.

(22)   János CSÚNYÁN írta meg a leckét.

By contrast, when the proto-statement is about an ugly deed in itself, *csúnyán* only serves to specify the great degree at which it happened. Hence, the three sentences in (23) below can be analysed (roughly) as increasingly elaborated versions of the same proto-statement.

(23)   a. Be   csapták.
          VM deceive-3PL-him/her
          'S/he was deceived'
       b. Jánost   be csapták.   elaboration   reduction
          John-ACC
          'John was deceived'
       c. Jánost csúnyán be csapták.
          'John was badly deceived'

Now we are in a better position to understand why *sokan* and *kevesen*, or *ügyesen* and *rosszul*, distribute differently before the verbal predicate (cf. (14) above). While negative expressions **restrict** the validity / applicability of the proto-statement ('only a few people came', 'they solved it poorly', etc.), positive quantifiers and qualifiers do the opposite.[18] I would hesitate to call it mere elaboration, though; rather, these positive expressions usually **extend** the validity / applicability of the proto-statement to a higher level than previously known or expected. (The same reasoning seems to apply to universal quantifiers, which invariably perform an extension operation, hence their failure to trigger inversion.[19]) In other words, *Sokan eljöttek* does more than elaborate a substructure of *Eljöttek*; it adds an element of evaluation to the effect that the validity of *Eljöttek* is increased. Whereas elaboration and reduction can be seen as the same process from two different perspectives, restriction and extension are two different operations manifested in separate types of clauses. For illustration, consider the analysis of *Sokan eljöttek* versus *Kevesen jöttek el*

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[18] For analogous English examples, consider *John brilliantly solved the problem* vs. */??John poorly solved the problem*. Although *brilliantly* and *poorly* both specify a certain way in which the problem was solved by John, the positive adverb is more likely to be placed in front of the verb. Arguably, the reason behind this is that it is more compatible with the default interpretation (evaluation) assigned to the verb than the negative. To resolve the conflict between the two meanings, *poorly* normally appears in either postverbal or sentence-initial focus (the latter being stylistically marked in present-day English), cf. a) *John solved the problem POORLY*, b) *POORLY did John solve the problem*.

[19] Another possible solution is also worth mentioning. Recall that in section 2.1., I explained the "relative scope"-effect of multiple quantifiers modifying a single predicate in terms of the speaker's incrementally processed instructions to the hearer about how the clause's interpretation proceeds (in the spirit of Wedgwood 2003). Elements like *mindenki* and *többször is* may be regarded as "set builders" from this perspective: they invoke sets to which propositions can (or indeed must) be assigned. If this is so, then the failure of *mindenki* and *többször is* to trigger inversion results not only from the fact that they typically extend the proto-statement's validity (predicate-based analysis) but also from the fact that they need to be linked to propositions for their meaning to be complete (quantifier-based analysis). These solutions should be viewed as complementary rather than mutually exclusive.

vis-à-vis the proto-statement *Eljöttek* (with a neutral evaluation regarding the number of participants).

(24)   a. El jöttek   (valahányan).
            VM came-3PL in a certain number
            'They came (in a certain number)'
    b. Sokan   el   jöttek.   extension
            many-MOD VM came-3PL
            'Many people came'

(25)   a. El jöttek   (valahányan).
            VM came-3PL in a certain number
            'They came (in a certain number)'
    b. KEVESEN jöttek   el.   restriction
            few-MOD   came-3PL VM
            'Only a few people came'

(At this point, some might want to remark that *csúnyán* in (23c) also performs an extension on the proto-statement's validity / applicability rather than simply elaborating it. While this suggestion is justified, (23c) does seem to permit reduction to (23a), suggesting that the boundary between elaboration and extension is not completely clear-cut. In fact this close relationship between the two operations might be the very reason why Hungarian quantifiers and qualifiers may appear postverbally, in the default domain of arguments performing elaboration.)

To conclude this section: I have argued that the distributional difference between positive and negative quantifiers / qualifiers (cf. (14c) vs. (14f)) is not to be explained in terms of the meanings of these units (linguistic atoms) as such but rather in terms of the functional relations holding between these elements and the verbal predicates they modify. Positive quantifiers and quali-fiers extend the proto-statement's validity / applicability, while their negative counterparts restrict it, a difference iconically encoded by the relative order of verbal modifier and verb in Hungarian (the absence or presence of inversion). One advantage of the proto-statement analysis is that it also helps motivate the two uses of *csúnyán* 'badly / in an ugly manner' (cf. (18–19)), obviating the need to resort to lexical stipulations.

In the next section, I finally turn to the issue of why positive quantifiers and qualifiers show up in two different distributional patterns, i.e. why SOKAN *jöttek el* / ÜGYESEN *oldotta meg* are possible in addition to *Sokan eljöttek* / *Ügyesen megoldotta*.

2.3. Inversion versus no inversion in the use of positive quantifiers / qualifiers

As we have seen before, positive quantifiers and qualifiers enjoy a higher degree of freedom than their negative counterparts: while the latter are only compatible with inversion constructions (in other words, they are invariably followed by a verb + verbal modifier sequence), the former can appear either with or without inversion. This is illustrated by the examples in (26), repeated from (14c–d).

(26)   a. Sokan megoldották.
         b. SOKAN oldották meg.

In the previous section, I gave a predicate-based account of (26a): this use of *sokan* amounts to extending the proto-statement's validity / applicability from a previous level (established by prior knowledge or expectations). Visually, this could be represented as an increase on a scale:

(27)
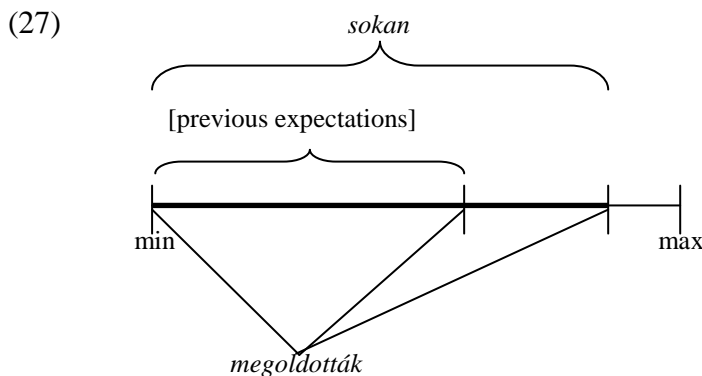
In (27) above, the horizontal scale marks the possible levels of validity associated with the proto-statement *megoldották* 'they have solved it' (it is important to stress that the scale has no independent existence, i.e. it only exists in relation to the proto-statement). There is a (not necessarily well-defined) level at which the proto-statement is expected or known to hold; what *sokan* does is perform an extension on it so that the proto-statement will be viewed as more valid than previously thought. The bold horizontal section highlights that the focus of attention is on the increase of validity; it also signals that the new level subsumes the previous one (rather than being

opposed to it). In Imrényi (2007), I called this phenomenon **scalar contrast**, defined as an extension on a section of the validity scale.[20]

(26b) shows a different kind of operation: in this particular use, *sokan* implies **polar contrast**. That is to say, *sokan* is now highlighted as the level of validity the speaker assigns to the proto-statement while at the same time excluding or suppressing other possible levels. This could be illustrated as in (28) below.

(28)

oldották meg
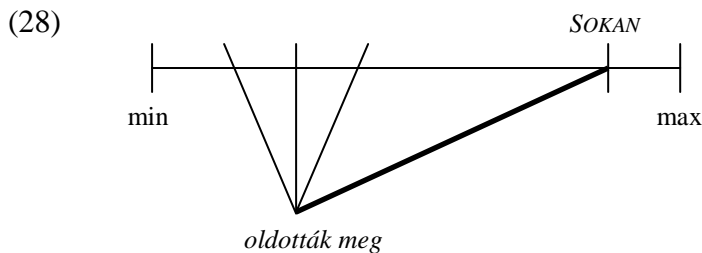
In this case, the emphasis is on the fact that there were many, rather than few, people who solved the problem. This is signalled by the bold line pointing to *SOKAN*. The range of excluded values is marked by the thinner vertical (or near-vertical) lines crossing the scale at lower points; these are intended as values that could be associated with *kevesen* 'in a small number', for example. Paradoxically perhaps, *sokan* in (26b) can be seen as performing a **restrictive** operation on the proto-statement. This is because although a relatively high value has been selected, it has been **selected** nevertheless, at the expense of excluding others. In other words, *SOKAN oldották meg* expresses that the proto-statement is valid only in one specific way out of a range of conceivable options.[21]

The difference between these two uses of quantifiers (and analogously, qualifiers) can be best illustrated with numerals like *hárman* 'in three'. In itself, *hárman* picks out a value on the scale while at the same time excluding others like *ketten* 'in two', *négyen* 'in four', and so on. Hence, this is a

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[20] The interpretation assigned here to positive quantifiers and qualifiers has its precursor in an early work by Kicska (1891), who argued that by using this type of expression, "I add something to a smaller extent, manner, number or amount; just as much as required for the extent to be complete" [my translation; "valaminek a kisebb mértékéhöz, módjához, számá-hoz, mennyiségéhez hozzáadok, hozzáfoglalok valamit, még pedig annyit, hogy a mérték tel-jes, egész legyen"] (quoted by É. Kiss 2006b: 444).
[21] Of course the idea that focussing involves selection from a set of alternatives is nothing new, cf. Rooth (1985). The novelty of my analysis lies only in the fact that Hungarian focus is now interpreted as a restrictive operation on a proto-statement (with selection viewed as necessarily restrictive).

restrictive operation triggering the inversion of verbal modifier and verb (cf. (29a)). However, used with a special *is* particle (literally meaning 'also'), the numeral becomes capable of performing an extension on a previously established level of validity. *Hárman is* in (29b) is not in polar contrast with *ketten*, *négyen*, etc. but rather marks an increase from 'two or fewer'.

(29)   a. HÁRMAN jöttek   el.
             in three   came-3PL VM
             'THREE people have come' (not two, not four, etc.)

         b. Hárman is   el jöttek.
             in three   also VM came-3PL
             'Three people have come' (which is more than previously thought)

To conclude this section: the distributional patterns of positive quantifiers and qualifiers can be seen as reflecting two different ways in which they can be interpreted in relation to the proto-statement's validity. In one use, they extend the proto-statement's validity from a previous level of expectation or knowledge; in another, they restrict it by picking out a value on the validity scale against the set of other possible values. In Hungarian, such restrictive operations trigger the inversion of verbal modifier and verb.

3 A quick note on É. Kiss (2008a, 2008b)

It is not uncommon in the academic world that two approaches pointing to the same direction appear simultaneously, without one having been influenced by the other. É. Kiss (2008a, 2008b) has developed a new analysis of Hungarian quantifiers which has the important advantage over previous models (e.g. É. Kiss 2002) of offering a unified treatment of quantifiers and adverbial modifiers (including adverbs of manner, called 'qualifiers' in the present paper).

É. Kiss (2008a, 2008b) considers Q-Raising to be an adjunction operation. This is an idea she had already endorsed before (cf. É. Kiss 1987: 94), but now she decides to eliminate the directionality constraint from the scope principle (at least as far as it affects quantifiers): under the new proposal, quantifiers must c-command, but need not precede, their scope. Quantifiers and adverbial modifiers are either left-adjoined or right-adjoined to the appropriate phrases, so that e.g. (30) and (31) receive similar treatments, with multiple adjunction to PredP:

(30) [PredP Minden gyereket [PredP kétszer is [PredP meg hívott az osztályfőnök]]].
       every child-ACC   twice also   VM invited the form-master
       'The form master invited every child twice.'

(31) [TopP A tanár [PredP gyakran [PredP hangosan [PredP fel olvasta a dolgozatokat]]]].
       the teacher   frequently   loudly   VM read the papers-ACC
       'The teacher often read out the papers loudly.'

Where É. Kiss and I crucially differ is in drawing conclusions from the systematic parallels between the two groups. For É. Kiss, the similarities suggest that adverbial modifiers are amenable to the same logico-syntactic treatment as quantifiers. For example, she motivates the ungrammaticality of (32b) as opposed to (32a) by claiming that "since *gyakran* 'frequently' c-commands *hangosan* 'loudly' at the syntax−LF interface, it has scope over it everywhere" (É. Kiss 2008b: 27):

(32)   a. A tanár gyakran hangosan felolvasta a dolgozatokat. (cf. (31))
          b. *A tanár hangosan gyakran felolvasta a dolgozatokat.

This seems to be a case of circular argumentation. Quantifiers (and in an analogous way, adverbial modifiers) are by definition required to c-command their scope; hence, c-command cannot be used to **explain** why one modifier invariably has scope over the other. In fact, a natural expectation would be that *hangosan* 'frequently' and *gyakran* 'loudly' allow for two different scope interpretations depending on their relative word order, an expectation that is clearly not borne out by the data. É. Kiss would have to provide some independent reason why only the word order of (32a) is grammatical, not that of (32b), and she does not seem to offer any. Rather, she simply stipulates at the outset that manner adverbials have narrower scope than frequency adverbials (cf. É. Kiss 2008b: 27).

More generally, it is not entirely clear to me how the notion of scope can be applied at all to adverbs of manner. This would suggest that the fixed relative order of multiple attributes modifying the same noun is also a scope-driven phenomenon, cf. (33):

(33)   a. gyakori hangos metál zene   c. *hangos gyakori metál zene
           frequent   loud   metal music   d. *hangos metál gyakori zene
           'frequent loud metal music'   e. *metál hangos gyakori zene
          b. *gyakori metál hangos zene   f. *metál gyakori hangos zene

It seems unlikely that the logical notion of scope can shed sufficient light on such facts, let alone more complex examples involving an ordered set of five or more attributes (e.g. *nice small yellow English cotton shirt*). The best a logic-based analysis could do is stipulate the fixed relative scope relations: *nice* is wider-scope than *small*, which is in turn wider-scope than *yellow*, etc., with the further problem of having to prove that this is the same formal sense of scope as is adopted in the analysis of quantifiers.

The fact that scope has less (if any) relevance in the syntax of qualifiers seems to suggest that they are not amenable to the same formal logical treatment as quantifiers. (Other notions supporting the logic-based analysis are also out of place here: there is hardly any sense in which *hangosan* 'loudly' could be regarded as "distributive".) Hence, if one intends to provide a truly unified account of the two groups, one must be prepared to eliminate some of the theoretical machinery traditionally associated with quantifiers. In section 2, I took a few initial steps in this direction (e.g. by deriving the quantifier + qualifier order from Bybee's (1985) notion of relevance), although of course I cannot claim to have solved all the mysteries.

4 Conclusions

In this paper, my aim has been to show that virtually no formal logic is required for understanding the fundamental syntactic properties of Hungarian quantifiers. In section 1, I reviewed the (until recently) standard analysis of quantifiers, which grants a privileged status to the principle that "each Hungarian operator c-commands and precedes its scope" (É. Kiss 1984: 82). While there seems to be strong *prima facie* evidence to support the logically inclined analysis, there are also significant problems with it: first, there are systematic exceptions to the rule (as proponents of the standard analysis readily acknowledge); second, it fails to account for some wide-ranging parallels between quantifiers and various types of adverbial modifiers.

In section 2, I presented my own analysis, based on a closer scrutiny of the facts and some important changes in the set of theoretical assumptions. It was argued that with a relational definition of distribution, and the notion of proto-statements (cf. Imrényi 2007), quantifiers and 'qualifiers' (adverbs of manner) could be analysed in a completely analogous way, with all partial differences (e.g. the ungrammaticality of pre-focus qualifiers, or the ordering restrictions on multiple quantifiers / qualifiers modifying a single predicate) deducible from independent semantic reasons. The distributional difference between positive and negative quantifiers / qualifiers was seen as a consequence of how these expressions modified the context of the proto-statement's interpretation

(extension vs. restriction). Since value selection was also regarded as a restrictive operation, a similar analysis could be applied to the inversion pattern attested in one use of positive quantifiers / qualifiers.

In section 3, I briefly discussed É. Kiss's (2008a, 2008b) new approach to quantifiers, which is also aimed at providing a unified analysis of quantifiers and adverbial modifiers. Although I agree with her on the point that the two groups deserve a unified treatment, I have serious doubts if the logical notion of scope has any relevance in predicting or explaining the behaviour of qualifiers (which her analysis seems to imply). A more viable path seems to be to achieve unity by eliminating the notion of scope altogether, and look for alternative ways of providing a principled account of word order phenomena, something I attempted to do in section 2.

If the analysis proves to be successful, it may have strong implications for the syntax of Hungarian or perhaps more generally for the role of formal logic in the description of natural languages. Often hailed as a 'logical' language, Hungarian may turn out to be logical only in an informal sense of the term, with even its quantifier category defying (or at least: insufficiently motivating) a strictly logico-semantic interpretation.

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