Overt Scope: A Case Study in Hungarian

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Abstract

We describe here a representative sample of Hungarian quantificational structures. We argue that principles of mirror theory are crucially involved in the explanation of inverse scope, which typically arises when the linearly first quantifier Q is embedded in some constituent C which is structurally higher then the linearly second quantifier Q' but where C is nevertheless in the scope of Q'. In mirror theory such structures need not involve movement or chain relations, they can be considered "base generated", with C continuing its extended word (extended projection) via a structural specifier relation. Such right-to-left scoping call for a notion of scope that is not a purely graph-theoretic relation between the wide scope taker and its domain but is, instead, crucially mediated by the head that the wide scope taker shares features with; an independently motivated move in the assumed framework.

Keywords: Quantifier scope , Hungarian syntax, mirror theory, c-command, domination, morphology, antisymmetry, specifiers, reconstruction

1 Introduction

This paper has two goals. The more general goal is to argue that the set of structures where the assumption of overt scope assignment can be maintained without complementing it with non-feature-driven movements may be significantly larger than often thought. The specific descriptive goal is to account for direct and inverse scope in Hungarian, with specific reference to the differential behavior of quantifiers. The theoretical tools will be developed and substantiated in the context of Hungarian.

Kayne (1998) proposes that scope is predominantly assigned by the overt movement of quantifiers into feature-checking positions such as the specifiers of negation, only, a distributive operator, etc. The reason why, in languages like English, these movements are not visible to the naked eye is that further leftward movements (for instance, that of a remnant VP) mask them.

(1) [a] $[_{VP}$ marry no one]
$[_{NegP}$ no one$_i$ $[_{VP}$ marry $t_i]]$
$[_{WP}$ $[_{VP}$ marry $t_i]_j$ $[_{NegP}$ no one$_i]$ $t_j]$

The same combination of overt operator-feature checking and subsequent remnant movement can generate inverse scope; for example, the scoping of no one over the matrix verb force:

[1] [b] $[_{VP}$ force you to marry no one]
$[_{NegP}$ no one$_i$ $[_{VP}$ force you to marry $t_i]]$
$[_{WP}$ $[_{VP}$ force you to marry $t_i]_j$ $[_{NegP}$ no one$_i]$ $t_j]$

As has been noted by various authors, the remnant movements that restore the initial order in this proposal do not seem to be triggered by lexical features. Müller (1999), for example, proposes that the problematic movements in Kayne 1998 are instances of repair, motivated by Williams' (1999) principle "conserve VP-shape".[1]

In this paper, we adopt the overt operator-feature checking part of Kayne's theory but argue that the surface orders that seem to involve non-feature-driven movement / chains need not be due to movement / chain relations at all; instead, they may be "base-generated" (i.e. trivial, one-member, chains). In Mirror Theory (Brody 2000), the linear order of a head and its selected dependent is contingent on the morphological nature of the head: roughly, the selected dependent follows the head if the head is a suffix and precedes it otherwise. We argue that the "selected dependent precedes head" variant is what ultimately accounts for the orderings which, on the Kayne/Müller analysis, result from non-feature-driven movement. On our analyis, the remnant VP in (1a,b) precedes no one without having gotten into its surface position by movement.

The empirical focus of the paper is on Hungarian. Quantifiers in Hungarian overtly move to feature-checking positions, whose linear order then determines their scopal order. For example:

(2) [$_{Dist}$ Minden fiú [$_{F}$ pontosan hat filmet [látott]]]
every boy exactly six films saw
`For every boy, there were exactly six films that he saw'

Since these movements are not masked by remnant VP-movement, Hungarian is a promising language in which to investigate Kayne's theory further.

Hungarian also makes inverse scope available. Alongside unambiguous (2), we find ambiguous (3). (3ii) is an inverse reading in that linear order and scope order do not match.

(3) Pontosan hat filmet látott minden fiú
exactly six films saw every boy
[i] direct scope: exactly six films > every boy
[ii] inverse scope: every boy > exactly six films

There are essentially three ways to account for (3ii): (a) by covert movement of the postverbal quantifier, (b) by reconstruction of the preverbal quantifier, and (c) by relating (3ii) to (2) via ordering the remnant pontosan hat filmet látott before minden fiú, in such a way that does not affect their scope relation. (c) is the most interesting option but, if implemented by a movement / chain relation, it presents the same problem as Kayne's VP-preposing to W: it has no identifiable trigger. (Additional problems with this type of derivation are discussed in Brody 1997.)

Refining some assumptions of Mirror Theory, we show that it affords a non-movement implementation of option (c) along the lines sketched for (1), in conformity with antisymmetry. Part of the demonstration involves the explication of scope. Mirror Theory makes c-command as a primitive notion superfluous. Instead, X is defined to scope over Y iff X's features dominate Y. We show that scope as featural domination delivers the correct results for direct and inverse scope as well as for the binding of the trace within the remnant, and receives further support from cases where a specifier of a specifier scopes over the complement.

In an Appendix, we observe that option (c) can account for most but not all inverse readings in Hungarian. The most serious exception is the type of (4ii), where (c) is not viable, because, as (5) shows, there exists no grammatical direct scopal order comparable to (2).

(4) A legtöbb kérdést megválaszolta minden fiú
the most questions prt-answered every boy
[i] direct reading: most questions > every boy
[ii] inverse reading: every boy > most questions

(5) *Minden fiú a legtöbb kérdést megválaszolta
every boy the most questions prt-answered

(5) is ungrammatical because the feature-checking positions of quantifiers come in a fixed order, in which the Ref-projection that hosts most-phrases precedes the Dist-projection that hosts every-phrases. As will be shown in detail, option (c) unfailingly respects the rank order of these projections. Therefore, reading (4ii) can only be derived via covert movement or reconstruction; of these two, we invoke here reconstruction (into successive cyclic A-bar positions). The need to appeal to reconstruction, a generally more powerful tool, now threatens to make the attractive "selected dependent precedes head" option (c) superfluous. We show, however, that reconstruction is blocked in contexts where (c) is available, which indicates that these are indeed two distinct processes that coexist also in the grammar of quantification.

2 The Overt Syntax of Direct Scope in Hungarian

2.1 The Overt Ref*--Dist*--F Sequence

Hungarian has come to be known as a language that "wears its LF on its sleeve." As has been demonstrated extensively in the past twenty years, any number of quantifiers may occur in the preverbal field, and the linear order of preverbal quantifiers disambiguates their scope order. Most relevant to us is the fact, pointed out in Brody 1990, Kiss 1992, and Szabolcsi 1997 among others, that quantifiers do not simply line up in the desired order. Instead, each quantifier type occurs in its own designated position, and it does so whether or not it interacts with another scope-bearing element.

The following examples illustrate these points. Few-phrases invariably occur in a position adjacent to the verb stem (6), and every-phrases in one separated from it by the verbal particle (7). When they co-occur in the preverbal domain, the every-phrase invariably precedes the few-phrase and scopes over it (8). Linear and scope order is

uniquely determined by quantifier type, and is unaffected by which of the quantifiers is the subject and which is the object (9).

(6) [a] Kevés filmet néztem meg.
few film-acc saw-I prt
`I saw few films'
[b]*Kevés filmet megnéztem.

(7) [a] Minden filmet megnéztem.
every film-acc prt-saw-I
`I saw every film'
[b]*Minden filmet néztem meg.

(8) [a] Minden filmet kevés ember nézett meg.
every film-acc few people saw prt
`Few people saw every film'
[i] every > few
[ii] *few > every
[b]*Kevés ember minden filmet megnézett/nézett meg.

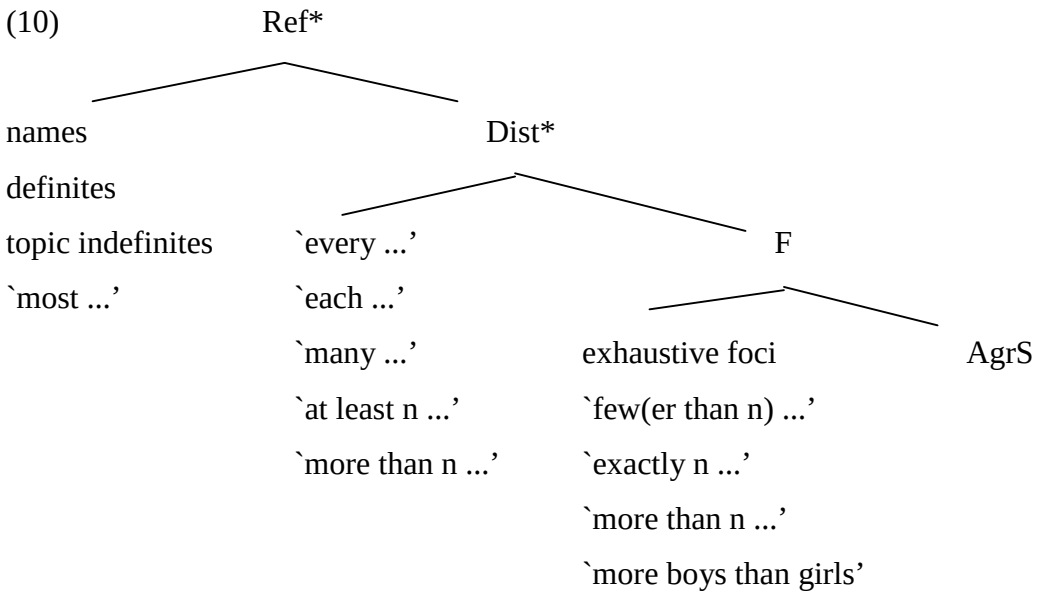
(9) [a] Minden ember kevés filmet nézett meg.
every person few film-acc saw prt
`Every person saw few films'
[i] every > few
[ii] *few > every
[b]*Kevés filmet minden ember megnézett/nézett meg.

The straightforward interpretation of these data is that quantifiers overtly check certain characteristic features in designated positions, and when the sentence happens to contain more than one quantifier, the hierarchy of the checking positions automatically determines their scope order. In other words, these data support the scope theories in Beghelli--Stowell 1997 and Kayne 1998. At the same time, these data argue against the assumption of non-feature-driven QR (May 1977, 1985), the claim that quantifiers move only when this makes a truth-conditional difference with respect to another scopal element (Fox 1995, 1999), or the claim that scope is a by-product of the checking of Case-features (Hornstein 1995).

Drawing directly from Brody 1990 and Szabolcsi 1997, we propose that the preverbal field in Hungarian contains at least the functional head families Ref, Dist, and F. That each label belongs to a family means that several quantifiers may occur in each area; these may be either interchangeable or more or less subtly ordered with respect to each other. In this paper, we are not concerned either with a finer-grained analysis of these families or with their semantic characterization. For our purposes it suffices to give a good sample of what quantifiers occur in each position, possibly in complementary distribution. AgrS marks the position of the finite verb.[2],[3]

The reader will note that in (10), we write X instead of XP. At this point, this should be regarded as an abbreviatory convention. The notation will become significant in section 4, where we present an analysis using Mirror Theory.

(10)



Caveat: throughout this paper, we disregard sentence-initial phrases that exhibit a fall-rise intonation contour. Such contrastive topics are analyzed as left-dislocated in Kiss 1987. In Hungarian, any quantifier can be left dislocated and if so, it takes narrow scope with respect to some or all of the scope-bearing elements that follow it. Left-dislocation needs to be controlled for, because it will create irrelevant apparent counterexamples to all the well-established claims about word order and scope.

2.2 The Reiteration of Ref--Dist--F

In theories where scope corresponds to an independently necessary feature-checking structure, only one reading is directly predicted for simple sentences like (8)-(9): the one that happens to reflect the hierarchy of the checking positions.[4] Both Hornstein (1995) and Beghelli--Stowell (1997) invoke reconstruction to obtain the object wide scope reading in (11).

(11) Few people saw every film.

[a] [$_{AgrSP}$ **few people** ... [$_{DistP/AgrOP}$ **every film** [$_{VP}$ (few people) ... (every film)]]]

[b] [$_{AgrSP}$ (few people) ... [$_{DistP/AgrOP}$ **every film** ... [$_{VP}$ (every film) ... **few people**]]]

If all quantifiers were bound to occur in the preverbal operator-feature checking positions and the order of these indeed disambiguated scope (i.e. if reconstruction is not at work), we would make an even more extreme prediction for Hungarian. Not only would we expect each string to be unambiguous; we would expect for there to be no string at all where a <u>few</u>-phrase scopes above an <u>every</u>-phrase. The reason is that Dist, the checking position of <u>every</u> is higher than F, the checking position of <u>few</u>.

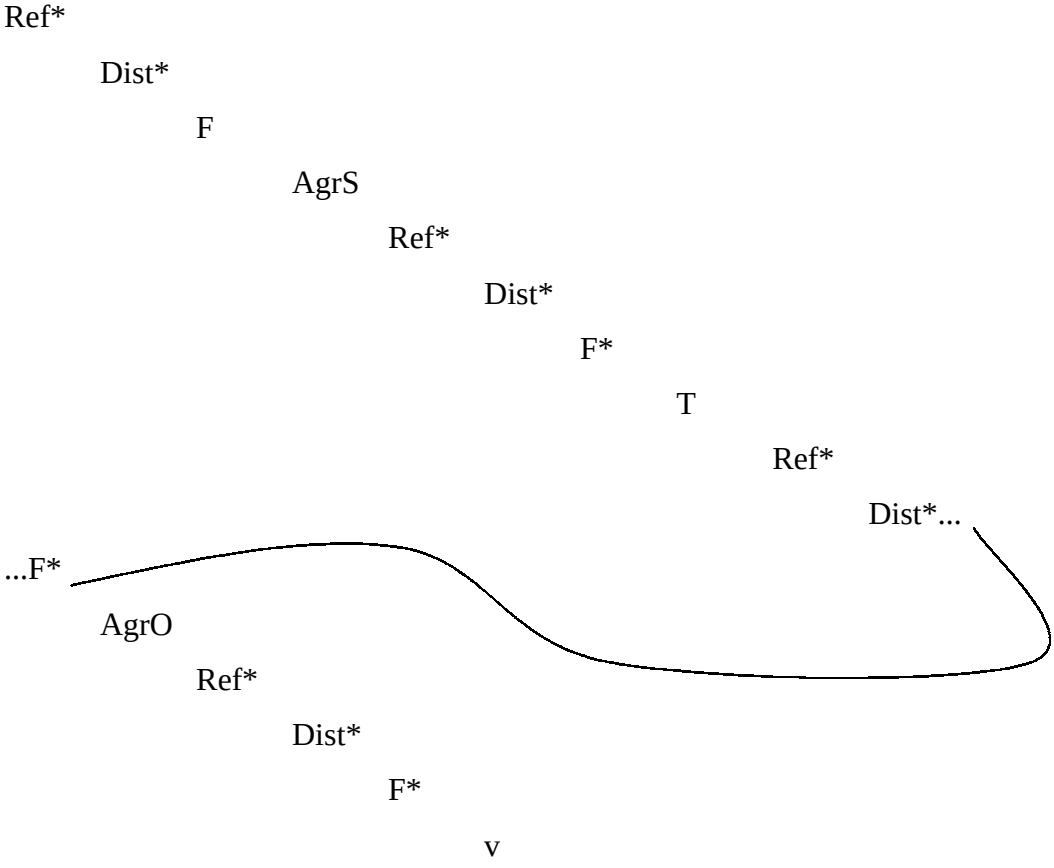
This extreme situation does not obtain. Quantifiers can, but need not, occur in the preverbal field. Thus, it is possible to vary the relative scope of <u>few</u>-phrases and <u>every</u>-phrases by leaving the latter postverbally. Compare:

(8a) Minden filmet kevés ember nézett meg.
every film few people saw prt
*few > every

(12) Kevés ember nézett meg minden filmet.
few people saw prt every film
ok few > every

In what kind of position is the <u>every</u>-phrase in (12)? We assume that all features are checked in an overt spec--head configuration. This entails that not only preverbal but also postverbal <u>every</u>-phrases are overtly in Spec, Dist. In general, in the spirit of Hallman's (1998) reiterative syntax, we assume that each of AgrS, T, AgrO, and v come with their own "scope series" in overt syntax.[5],[6]

(13)



Thus, the intended reading of (12) has the following structure:

(14) [$_{F}$ kevés ember [$_{AgrS}$ nézett meg [$_{Dist}$ minden filmet ...]]]

Preverbal quantifiers occur in a fixed order, because there is only one Ref*--Dist*--F series above AgrS. The postverbal field, however, may accommodate quantifiers in any order, because this field has more than one scope series and there is no overt element that stays in T, AgrO, or v to mark their boundaries. For example, ungrammatical (8b) contrasts with grammatical (15).[7]

(8b) *Kevés ember minden filmet megnézett/nézett meg.
few people every film prt-saw/ saw prt

(15) Tavaly nézett meg kevés ember minden filmet.
last-year saw prt few people every film
`It was last year that few people saw every film'
[$_{F}$ tavaly [$_{AgrS}$ nézett meg [$_{F}$ kevés ember [$_{T}$ [$_{Dist}$ minden filmet ...]]]]]

For ease of reference, we will say that a quantifier Q/1 outranks Q/2 iff the

checking position of Q/1 precedes that of Q/2 in the Ref*--Dist*--F sequence. E.g., an every-phrase outranks a few-phrase. Using this terminology, the assumptions about clausal architecture made in this section lead to the following generalization concerning direct scope.

(16) Rank order and direct scope

When Q/1 outranks Q/2, the Q/1>Q/2 reading can be obtained either by placing both quantifiers into the same series, or by placing Q/1 into a higher and Q/2 into a lower series. But the Q/2>Q/1 reading that goes against the ranking order can only be obtained if two distinct series are involved, with Q/2 in the higher and Q/1 in the lower one.

2.3 Successive Step Movement / Chains

We assume that the feature checking behavior of quantifiers is analogous to that of wh-phrases. They all are free to check their relevant features in any domain that contains an appropriate functional head, and they move to (in representational terms, form a chain with) their actual checking position in a successive step, i.e. locally linked fashion.

The question arises whether Hungarian exhibits a preference for checking quantifier features as low as possible, as relativized minimality or economy considerations might suggest. The answer is No. Foci (i.e. counting quantifiers and those with an [ei] feature, see note 3) must occur in the Agr series unless the Agr series contains another focus or a negative, imperative, etc. operator.[8] Quantifiers with [ref] and [dist] features do not have a comparable requirement but if there is a preference at all, they tend to occur as high as is compatible with their intended scope interpretation.[9]

These facts would be compatible with a theory of minimality along the following lines. Features that are interpretable in principle (e.g. number, dist, or wh) may or may not be interpreted in a given position (number for example is interpreted on the subject but not on Infl, wh on the selected C head but not in the argument position or the intermediate landing position of the wh-phrase). See Brody 1997a,b, 2000 for an approach to checking (bare checking theory) based on such assumptions; notice that the +/- interpreted distinction used here is different from the +/- interpretable distinction in

Chomsky 1995. A functional head may have a feature that is interpreted (in which case the specifier can be the head of a chain) or a feature that is not (in which case the specifier can only be an intermediate link of a chain); see the analysis of wh-chains in Brody 2000. Each functional head has only one relevant (interpreted or noninterpreted) feature, whence multiple specifiers and adjunction are excluded.

Thus we could assume that a quantifier can traverse several specs if the corresponding heads do not have an interpreted feature. The existence of A-bar chains of the F-to-F, Dist-to-Dist, and Ref-to-Ref type will become important in the Appendix, where we discuss a residual need for reconstruction.

3. The Overt Syntax of Inverse Scope in Hungarian

3.1. Generalizations About Inverse Scope

In the structures considered so far, the linear order of quantifiers is isomorphic to their scopal order. But the phenomenon of inverse scope is attested in Hungarian, too.

Hunyadi (1981, 1999) observed that whether a postverbal universal scopes below or above the preverbal focus depends on its stress. [10] When destressed, the postverbal universal takes narrow scope. This is the case that is typically discussed in the literature and also what we had in mind in section 2. When however the postverbal universal receives primary stress, it takes wide scope. Compare the two stress patterns for (12).

(17) [a] "Kevés ember nézett meg minden filmet.
few people saw prt every film
`The number of people who saw every film was small'

[b] "Kevés ember nézett meg "minden filmet.
few people saw prt every film
`Every film was seen by few people'

Thus, it is possible for a postverbal quantifier to take inverse scope over a preverbal one. Likewise, Szabolcsi (1997) observed that inverse scope is possible between two postverbal quantifiers. Here the same correlation with stress seems to hold: the universal takes inverse scope if it is not destressed relative to the few-phrase.

(18) [a] "Tavaly nézett meg kevés ember minden filmet

last-year saw prt few people every film

`It was last year that the number of people who saw every film was small'

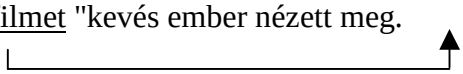
[b] "Tavaly nézett meg kevés ember 'minden filmet

last-year saw prt few people every film

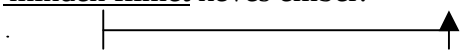
`It was last year that every film was seen by few people'

Kiss (1987, 1998) proposed to derive the inverse scopal (b) examples from the synonymous direct scopal (c) structures, by stylistic postposing of the every-phrase. Stylistic postposing does not feed interpretation, simply relocates a phrase retaining its original stress:

[17c] Minden filmet "kevés ember nézett meg.



[18c] "Tavaly nézett meg 'minden filmet kevés ember.



We adopt Kiss's insight that the inverse scopal (b) orders are to be related, in some way, to the direct scopal (c) structures. On the other hand, we would like to explore the possibility that inverse scope is not just a phonological phenomenon and keep it in syntax. There are two empirical reasons for not adopting stylistic postposing. One is that some speakers, one of the authors of this paper among them, are less stringent about stress than Hunyadi: they accept inverse readings regardless of the stress pattern. This makes a purely phonological account less plausible. Another reason is that stylistic postposing does not correctly capture the differential inverse scope taking abilities of different quantifier types.

An important generalization emerging from Liu 1990, 1997, Beghelli--Stowell 1997 and, implicitly, Hornstein 1995 was that counting quantifiers in English do not take inverse scope over every-phrases and most-phrases:

(19) Most (of the) men saw few films.

* `there are few films that were seen by most (of the) men'

(20) Every man saw few films.

* `there are few films that were seen by every man'

Compare:

(21) Few men saw most (of the) films.

ok `most of the films were seen by few men'

(22) Few men saw every film.

ok `every film was seen by few men'

The same generalization holds in Hungarian. Compare the good inverse readings of every over few in (17b) and (18b) with the impossibility of few over every below (unless the intonation indicates that the universal is to be interpreted as left dislocated):

(23) Mindenki tavaly nézett meg kevés filmet.
everyone last-year saw prt few films
* few > every

(24) Tavaly nézett meg mindenki kevés filmet.
last-year saw prt everyone few films
* few > every

Since quantifiers in Ref and Dist outrank those in F, we will refer to this as the "ranking generalization" about inverse scope. (The issue whether Dist-spec can take inverse scope over Ref-spec is taken up in the Appendix.)

Stylistic postposing, correctly, fails to derive the inverse reading for (23), because there is no grammatical position preceding mindenki from which kevés filmet might be postposed:

(25) *Kevés filmet mindenki tavaly nézett meg.

But stylistic postposing does derive an inverse reading for (24), which we think does not exist, by operating on kevés filmet in (26).

(26) "Tavaly nézett meg kevés filmet 'mindenki.

The problem cannot be solved by allowing only inhabitants of Ref and Dist to postpose, because, as in English, a counting quantifier can take inverse scope over another counting quantifier. These inverse readings may not be perfect but are significantly better than those over a universal, cf. (20) and (24):

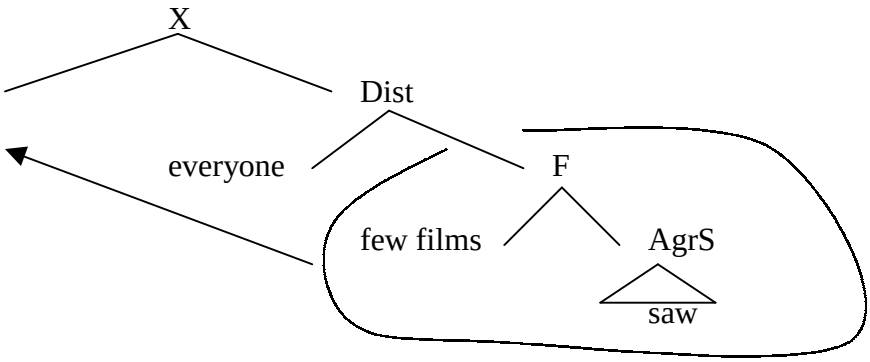
(27) Few boys saw more than one film.

(28) Tavaly nézett meg egynél több filmet kevés fiú.
last-year saw prt one-than more film few boys
ok `few > more than one'

3.2 Inverse Scope in Syntax: Is It Created by Movement (Chains)?

If inverse scope is to be created in syntax then, in antisymmetric frameworks, it cannot be a product of rightward movement. Indeed, Kayne (1998) and others offer a straightforward alternative. (29) exemplifies this. Instead of postposing everyone, the whole chunk few films saw is preposed; in non-movement terminology, few films saw has a nontrivial chain.

(29) Kevés filmet nézett meg mindenki
few films saw prt everyone



What shall be the interpretation of the resulting structure? It can be interpreted via reconstruction, in which case it carries the same interpretation as the "chain-less" order: every > few. This is as desired. In addition, it may be interpreted without reconstruction. In view of Kayne's (1994) definition of c-command, few films then scopes above everyone. This is fairly harmless, since the few > every reading is available for this string, although Hunyadi's correlation about stress and scope will no longer hold. If interpretation without reconstruction is for some reason excluded (at least for speakers like Hunyadi), then the few > every interpretation of our string will only be derived with a structure where few is in a higher series than every to begin with.

Now the question is, what triggers/licenses the construction of the chain whose members are copies of F and whose top member is in the specifier of X. The examples discussed above as well as in the literature always involved a universal taking inverse scope over focus (exhaustive focus or a counting quantifier). If this was indeed a general restriction, we might hypothesize that preposing is driven by some feature that the whole chunk dominated by F (as opposed to the specifier of F) carries. Unfortunately, there is

no such general restriction. Various quantifiers which, as indicated by the procliticization of the verbal particle, occur in some Spec,Dist and not in Spec,F get inversely scoped over; see below. Relevant is the fact that in all these cases, there is a grammatical, synonymous structure without preposing.

Mindenki `everyone', legalább két film `at least two films,' and gyakran `often' reside in the specifiers of some member of the Dist family. Thus, in (30)-(31), Dist/2 gets preposed relative to Dist/1. A legtöbb film `most films' resides in Spec,Ref. Thus, in (32), Dist gets preposed relative to Ref. All the examples are chosen so that in the variant with preposing, the linearly second quantifier can induce referential variation in the linearly first and therefore clearly scopes over it:

(30) [a] "Mindenki legalább "két filmet megnézett.
everyone at-least two films prt-saw
`every > at least two'

[b] Legalább "két filmet megnézett "mindenki.
at-least two films prt-saw everyone
`every > at least two'

(31) [a] "Mindenki "gyakran eljött.
everyone often pfx-came
`every > often'

[b] "Gyakran eljött "mindenki.
often pfx-came everyone
`every > often'

(32) [a] A "legtöbb filmet legalább "két ember megnézte.
the most films at-least two people prt-saw
`most > at least two'

[b] Legalább "két ember megnézte a "legtöbb filmet.
at-least two people prt-saw the most films
`most > at least two'

These examples show that preposing is in no way restricted either to particular quantifiers or to particular quantifier types. But then it does not seem very likely that we can identify an obvious syntactic feature that drives preposing.

The same conclusion is reached by asking what the pragmatic difference is between the two truth-conditionally equivalent order-variants. We have not been able to come up with any systematic difference. We have not found discourse contexts that strongly favor one variant over the other (the non-inverted variant is probably more typical).

In sum, "preposing to X", like Kayne's own "preposing to W", appears to lack an identifiable driving force, whether syntactic, semantic or pragmatic. Note that it cannot even be construed as a repair-type movement, along the lines of the Müller proposal (based on Williams 1999), to reinterpret Kayne: our preposing does not restore an "original" order of any sort; on the contrary. If having either of these motivations is the hallmark of movement (chain formation), then "preposing to X" cannot be an instance of movement (chain formation).

Can preposing be phonologically motivated, then? It is not obvious how. If the input of preposing is as grammatical as the output, what might be the phonological problem that can only be resolved by movement?

We are led to the following conclusion:

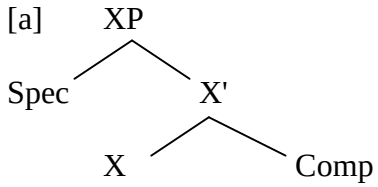
(33) Wanted: A way to account for the fact that certain structures (like (17a,c), (30), (31), (32), but not any structure) can be linearized in two alternative ways.

In the following sections we are going to argue that Mirror Theory (Brody 2000) provides such an account. Section 3.3 states the claim in informal terms and lays out its descriptive consequences. Section 4 provides a somewhat more precise version and discusses its relation to current theorizing.

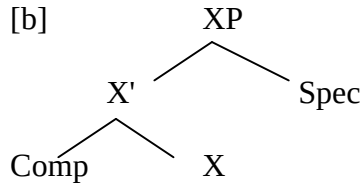
3.3 Inverse Scope as Specifier/Complement Reordering

Consider the following two structures. The specifier is higher than the complement in both. They differ only in whether the specifier precedes the head, or the other way around:

(34) [a]



[b]

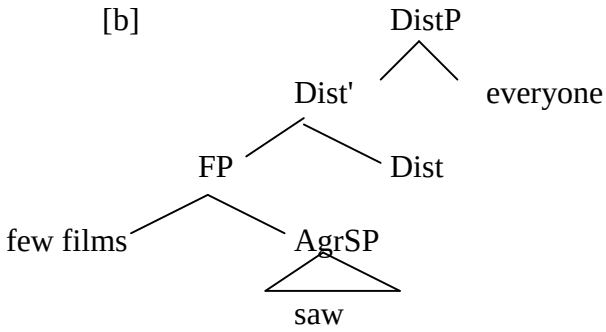


Now imagine, for the sake of the argument, that both instantiations of the X-bar theoretic schema were available. If so, the direct scope orders might be taken to instantiate the "complement follows specifier" option of the relevant projection, and the inverse scope orders the "complement precedes specifier" option. In (35a,b), where the relevant projection is that of Dist, (35a) instantiates (34a), and (35b) corresponds to (34b).

(35) [a] [$_{DistP}$ Mindenki Dist [$_{FP}$ kevés filmet [$_{AgrSP}$ nézett meg]]]

everyone few films saw prt

[b]



Thus, if scopal projections as complements have the option to precede, rather than follow, the specifier, the inverse scopal orders are available without recourse to movement. Under such assumptions, the problem that the preposing operation considered in 3.1 has no easily identifiable trigger would vanish. A further advantage is that now there is no need for reconstruction. Note that the hierarchical relations in (a) and (b) are identical.

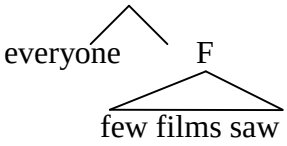
Unfortunately, having both instantiations of the X-bar schema goes against Kayne's (1994) antisymmetry hypothesis, according to which there is a precise match between hierarchical and linear order. Therefore,

(36) Wanted: A way to predict the availability of both the "complement follows specifier" and the "complement precedes specifier" orders, in conformity with antisymmetry.

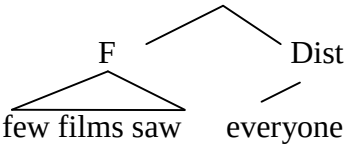
In section 4, we are going to argue that Mirror Theory makes both these options available. The structures that replace (35a,b), for example, will be notated as follows. It is

important to underscore that in (37b), the two Dist's are segments of the same head. In spite of this, as we shall see, (37b) is not an adjunction structure (note that the lower Dist does not dominate a trace of F).

(37) [a]



[b]

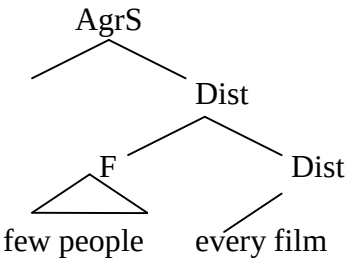


In this section, we simply anticipate this result and lay out its empirical aspects. To make transparent how these empirical considerations bear on the mirror theoretic ones, we are going to use the official notation to be developed in the next section right away.

Most of the examples discussed so far had a simple two-quantifier format that directly matches (37a,b). In the cases where the two scope heads are not Dist--F but Dist1--Dist2, Ref--Dist, or Ref--F, only the labels need to be changed.

Inverse scope within the postverbal field follows the same pattern. The relevant part of (18b) is as follows:

(38)



Although the "complement precedes specifier" option is maximally local, the complement chunk that gets to precede the specifier can be arbitrarily large. For example, in (39b), the sentence-final quantifier scopes over all the other material.

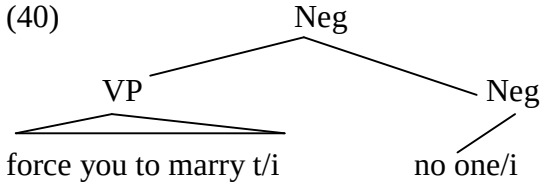
(39) [a] [$_{Dist}$ "Mindenki [$_{F}$ egy "angol filmet nézett meg háromnál többször]]
everyone an English film saw prt three-than more-times
'For everyone, it was an English film that he saw more than three times'

[b] [$_{Dist}$ [$_{F}$ egy "angol filmet nézett meg háromnál többször] "mindenki]
`same'

By the same token, application to Kayne's (1998) biclausal example (1b) will require no special effort. No one moves to the matrix Neg, as in Kayne. But this is not followed by

VP-preposing to WP, instead, the VP that contains the trace of no one precedes spec,Neg to begin with.

(40)



In (39b), the linearly third quantifier scopes above the linearly first and second, which exhibit a direct order between them. But if the complement precedes the specifier in more than one category, the mirror image order also becomes available. Note that this requires that ultimate quantifier outrank the penultimate, and the penultimate the antepenultimate. (41a) represents the direct order. In (41b), the F-chunk precedes, rather than follows, the specifier of Dist, and the Dist-chunk precedes, rather than follows, the specifier of Ref.

(41) [a] [$_{Ref}$ egy magas lánnyal [$_{Dist}$ mindenki [$_{F}$ tegnap akart táncolni]]]

a tall girl-with everyone yesterday wanted dance-inf

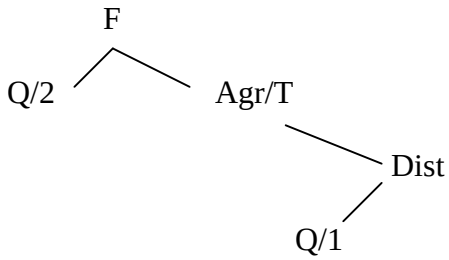
`There is a tall girl x such that for everyone y, it was yesterday that y wanted to dance with x'

[b] [$_{Ref}$ [$_{Dist}$ [$_{F}$ tegnap akart táncolni] mindenki] egy magas lánnyal]

`same'

The fact that the "complement precedes specifier" option is entirely local, i.e. involves only the specifier and the complement of the same head, plays an important role in capturing the ranking generalization about inverse scope: spec,Ref or spec,Dist can scope inversely over spec,F, but not vice versa. The reason why locality plays a role is this. As was observed in (16), a consequence of our clausal architecture is that when Q/1 outranks Q/2, the Q/2>Q/1 reading can only be obtained if two distinct series are involved, with Q/2 in the higher and Q/1 in the lower one. E.g.,

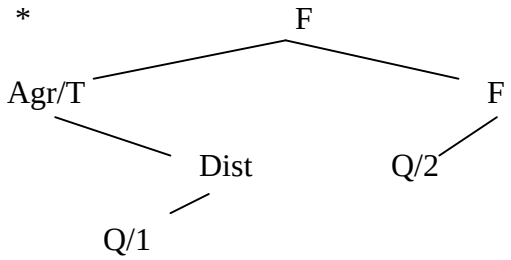
(42)



If reordering allowed a category in a lower series to come to precede a specifier in a higher series, then lower-ranking Q/2 would end up linearly following higher-ranking Q/1 and nevertheless scoping over it, in violation of the cross-linguistic generalization.

If , however, the "selected dependent precedes head" option is available to the dependents of any head, the beneficial effects of locality get voided, and spec,F will easily take inverse scope over spec,Dist. Here is why. As soon as the category that separates the two scopal series (Agr or T) can be ordered to precede Q/2, the undesired inverse reading obtains. (Whether or not Dist is also ordered before Agr/T plays a role in exactly what linear order we get but is not crucial in obtaining the inverse reading per se.) Witness:

(43) *



With respect to the domain of facts we are concerned with, the obvious conclusion is this:

(44) Wanted: The prediction that scopal categories, but not inflectional categories, have the freedom of being ordered either before or after the specifier of the selecting head.

In section 4, we argue that Mirror Theory can naturally make this prediction without reference to scope-specific considerations.

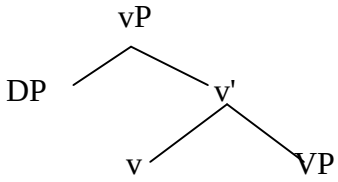
4 The proposal

4.1 Background: Mirror Theory (mt)

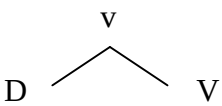
The Linear Correspondence Axiom (LCA) states that linear order matches asymmetric c-command, and thus hierarchical structures are antisymmetrical. The elements of the mirror theoretical representation of structure, heads/nodes and their links are such that only antisymmetric structures can arise. These conform to the LCA, but no LCA is necessary to achieve this effect. Instead, antisymmetry is a result of the fact that the theory contains no tools to build structures that the LCA is meant to exclude.

Eliminating the X-bar theoretic distinction between projection levels, mt represents traditional (45a) as (45b). The relation between the v and the D nodes in (46b) is best interpreted as expressing the standard "vP dominates DP" configuration; similarly for the v and V nodes.

(45) [a]



[b]



The representations do double duty in this way. Nodes like D, v, V, taken by themselves, are heads. If however they are taken together with all the nodes they dominate, they correspond to the phrasal nodes of the standard framework, modulo the fact that categorial projection is now eliminated. (In the text below, we will refer to the nodes as "heads", and to a head/node together with all other nodes it dominates as a phrase. We also talk about nodes (heads, in this terminology) dominating other nodes (heads).)

Traditionally, a dependent of a head qualifies as a specifier or as a complement in two different senses. One is the interpretive sense: the specifier shares features with the head, and the complement is selected by or forms an extended word/projection with the head. The other is a structural sense, reflected in the linear order: the specifier precedes and the complement follows the head. In mt these two senses are separated. The terms s(tructural)-specifier and s(tructural)-complement are reserved for use in the structural sense: a s-specifier is the left daughter and a s-complement is the right daughter of the head. The term i(nterpretive)-complement refers to dependents that are selected by or form an extended word/projection with the head, i.e. it covers the whole traditional interpretive sense of the term complement.[11] The term i(nterpretive)-specifier refers to a

feature sharer.

The separation of the interpretive and the structural senses of these terms is important for the following reason. Categories that share features with a head and are in this sense specifiers interpretively are invariably also specifiers structurally. (Feature-sharing is by spec--head agreement.) We assume that thematic role assignment also takes place under feature sharing spec--head relations. On the other hand, whether an i-complement occurs as a s-specifier (left daughter) or as a s-complement (right daughter) of the head does not directly follow from their interpretive relation. In mt, it follows from their morphological relation. This is a consequence of the fact that in mt the generalization known as the mirror principle is taken to be an axiom as stated in the principle of the Mirror:

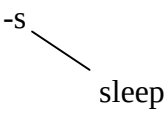
(46) Mirror:
If Y is the s-complement of X in syntax, then the sequence Y-X is a morphological unit, i.e. a word.

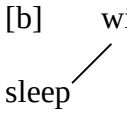
In this way, in mt syntactic structure at least partially determines morphological interpretation. For example, the fact that the atomic predicate V is the s-complement of the atomic predicate v in syntax is interpreted as V-v forming a word in morphology.

To determine where a morphological word is actually pronounced, further information is needed regarding which of the components have "strong" features, just like in the standard frameworks. For instance, both French and English have morphological words of the form V-v-AgrO-T-AgrS, but the inflected verb is pronounced in v in English and in AgrS in French, the highest strong position in each language. Thus, this theory replicates the effect of head movement without carrying out the construction of morphological units in syntax.

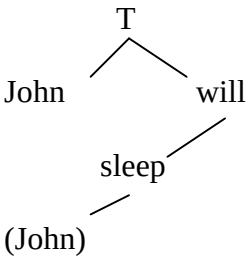
As noted above, feature-sharing is always under spec--head agreement. If a head shares a feature with a dependent, the dependent must occur as a s-specifier, i.e. as a left daughter, and they may or may not form a word phonologically. For instance, Romance type clitics in s-specifier positions may form a phonological word with the head.[12] But the spec-head relation itself is interpretively neutral: a non-feature-sharing dependent, ie. an i-complement also occurs as a s-specifier when it does not form a word with the head. In (47) for example sleep is the s-complement of -s but the s-specifier of will, although

the interpretive relations are the same.

(47) [a] 

[b] 

The structure in (47b) seems to predict that the spell-out order is sleep will.[13] This conclusion is avoided if will is the complement of a separate T head and is pronounced in T. This T in turn also offers a specifier position to host the subject, something that will cannot do, since its specifier position is already occupied by sleep. Thus (b) is part of the following larger structure:

[c] 

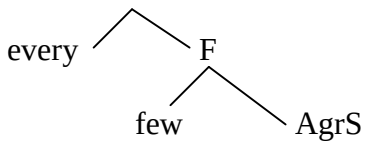
4.2 Why is the "Reordered" Representation of Scope Projections Possible?

The generalization that emerged in (44) was that scopal categories, but not inflectional categories, have the freedom of being ordered either before or after the feature-sharing specifier of the selecting head. Deriving this generalization has two parts. One, the fact that there is an ordering freedom needs to be derived. Two, the fact that this freedom is reserved for particular categories needs to be derived. Appeal to Mirror Theory is promising in both respects. One, mt crucially assumes that complements in the interpretive sense may either be right-daughters or left-daughters. Two, mt makes the choice dependent on the morphological relation between the head and its i-complement. This promises to cut the cake right. We will want to say that scopal heads have a kind of ordering freedom that inflectional heads do not, because morphologically, they do not form as tight a relationship with each other as inflectional heads do. This is the intuition that we attempt to formalize. In the remainder of section 4.2, we simply assume that scopal categories have the freedom of occurring either as s-complements or as s-specifiers of the head that selects them. In section 4.3, we address the issue as to why inflectional categories appear to lack this freedom.

The informal reasoning above only refers to the alternate ordering of the head and its i-complement. But we want more: we in fact need to order the i-complement to precede the feature-sharing i-specifier. Recall that we argued that this latter is the constellation that yields inverse scope.

To see how this result follows, take a closer look at how the requisite relations can be realized. Take arbitrary scopal heads, say, Dist and F, supplemented by AgrS to make the layout more transparent (the verb, we assume, is pronounced in AgrS). In (48a), F is the s-complement of Dist. What might be the structure where F is the s-specifier of Dist? Since each node has only one left daughter, if F is the left daughter of Dist, there is no space for establishing the feature-checking relation between every and Dist. This relation is unlikely to be mediated by an agreement-type node AG, in part because every is not a subject.[14] Thus, the simplest way of making F a specifier of Dist, (48b), is out.

(48) [a]



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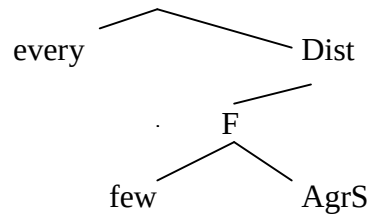
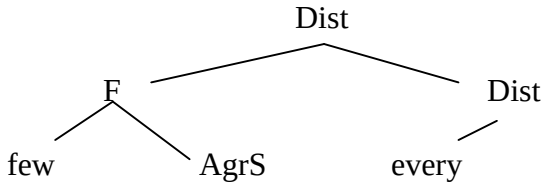


Consider instead (49), where F is a specifier of Dist. We assume that the two Dist's form a single head. (49) may look like an adjunction structure, but it is not.[15]

(49)



We know that two identical heads can be generated on top of each other. For instance, Dist selects Dist in examples like this: [16]

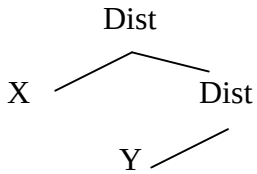
(50) Mindenki mindent ért.
everyone everything understands
`Everyone understands everything'

Thus, nothing special needs to be said to allow for Dist as a complement of Dist. What needs to be shown is that in (49) the two identical categories are interpretable as forming

a single head. For this, it needs to be shown that the two specifiers in (49) are respectively interpretable as this head's selected i-complement and its feature-sharing i-specifier.

In a configuration like (51), only the lower specifier Y can be the feature-sharer, because a feature-sharer needs to be dominated by the category it shares features with. (We adopt the standard terminology going back to May 1985, that A is dominated by a category B iff all segments of B contain A.)

(51)

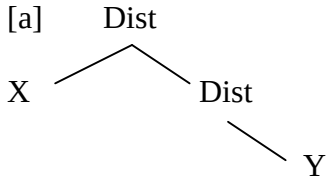


Dominance is required, because features of syntactic representations cannot percolate downward (cf. Brody 1995, 1998 for relevant discussion). If X were to share a feature with the higher Dist, that feature would not go down to the lower Dist, whence the two Dist's are not identical and therefore cannot form a single head. In (49), every, but not F, is dominated by Dist; indeed, every is the category that checks its [+dist] feature with Dist.

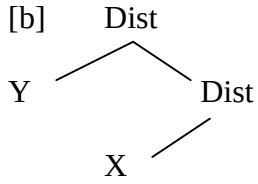
If so, the only role left for the higher s-specifier, X is that of the i-complement, and there is nothing that speaks against it playing that role. Specifically, the formation of an extended word (extended projection in standard terms) does not require for one member of the extended word to dominate the other: it suffices for one to contain the other. Indeed, in (49), the higher specifier F is a category that Dist can form an extended word with.

Let us show, too, that a category cannot be "doubled" arbitrarily. For example, (52a,b) below, where X would represent the i-complement and Y the feature-sharer, cannot be interpreted with the two Dist's forming a single head.

(52) [a]



[b]



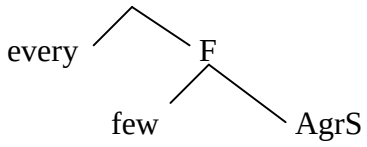
In (52a), Y can be the i-complement but not the feature-sharer, because although it is dominated by Dist, it is not a specifier. And X cannot be the feature-sharer, because it is

not dominated by Dist. The bottom line is that the two-segment Dist cannot find a feature-sharer, and X cannot find a role for itself, in this constellation. Likewise, in (52b), which is essentially (48b) with AG replaced by a Dist segment, Y cannot be the feature-sharer, because it is not dominated by Dist. Thus (52a,b) are incoherent.

In sum, we take (49) to legitimately represent the situation where the i-complement of a scopal head precedes the i-specifier. This appears to be the only legitimate realization of the option of taking the i-complement to be a s-specifier of the scopal head: neither (48b) nor (52b) are viable. In other words, if the i-complement of a scopal head is not its s-complement but, instead, occurs as a s-specifier, the feature-sharing i-specifier must follow it in a two-layered constellation

We now have legitimate structures for our two scopal constellations:

(53) Dist direct scope, every > few (=48a)



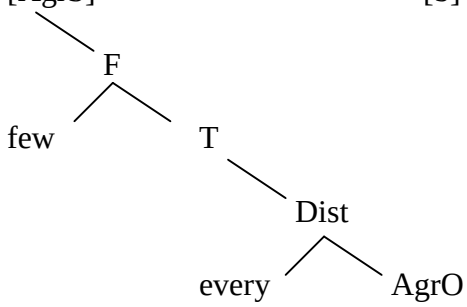
(54) Dist inverse scope, every > few (=49)

The structures we are proposing are strictly antisymmetrical (precedence and hierarchy match up), but scope itself is not: it is possible for a category to scope over one that precedes it. We return to these issues in section 5.

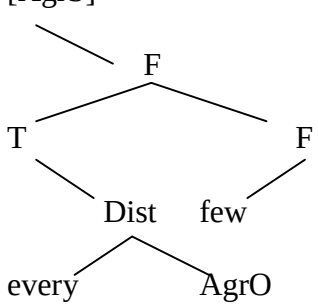
4.3 Why Is the Alternate Order of Agr and T Not Possible?

The most robust empirical restriction on inverse scope is that when Q/1 (e.g. a universal) outranks Q/2 (e.g. a counting quantifier), Q/2 cannot take inverse scope over Q/1. As was pointed out in the foregoing sections, if Agr and T, the categories that separate the scopal series, participated in the chains that create the reordering effect, it would be possible to violate this restriction. Thus, alongside (55a), (55b) would be available with the same meaning, contrary to fact.

(55) [a]



[b] *

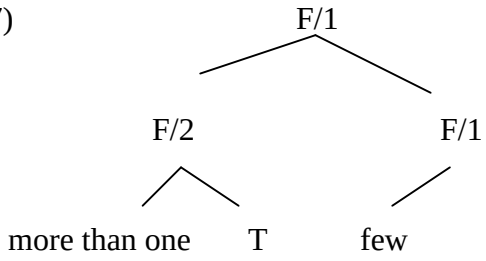


The crucial fact about (55b) is that T (which dominates every) is reordered with respect to few. Why is this excluded? If it were the case that a counting quantifier can never take inverse scope at all, it might be the easiest to stipulate that F cannot have two segments. We have seen, however, that the generalization is not this simple in either English or Hungarian. To derive the inverse scope in (28), repeated here as (56),

(56) Tavaly nézett meg egynél több filmet kevés fiú.
last-year saw prt one-than more film few boys
ok `few > more than one'

we need to assume that at least some of the T, AgrO, and v series can have multiple Fs and the lower one can "reorder", i.e. precede the higher one:[17]

(57)



Therefore, the problem does not lie exclusively with F, and we need a more general solution.[18] We sketch out two alternatives, neither of which is scope-specific. In the spirit of mt, they relate to assumptions about morphology.

4.3.1 Mirror as formulated in (46) is not a biconditional. Hence any i-complement may occur either as a s-complement or as a s-specifier (in the former case it must form a morphological word with the selecting head, and in the latter case it may or may not). The ranking generalization regarding inverse scope can, under this assumption, be

derived by assuming that the order Ref--Dist--F, part of the universal clausal architecture, is stated in a relativized manner:

(58) The scopal head that Ref* most immediately dominates can be Dist* (or F*), and the one Dist* most immediately dominates can be F*.

This statement is meant to exclude other direct dominance relations, such as F dominating Dist* or Ref*. With appropriate provisions, this directly ensures that the ranking generalization is observed. In both (55a,b), F dominates Dist with the intervention of T. The difference between (55a) and (55b) can be accounted for if T is visible to principle (58) only in the complement path. In (55b), the nearest visible scopal head that F dominates is Dist, which is excluded. In (55a) the Dist head under T is not visible, so no violation results. Recall that the mirror theoretic s-specifier and s-complement correspond, in traditional terms, to a purely syntactic and to a morphological relation, respectively. The syntactic relation between a head and a dependent need not be entirely local. For instance, verbs that select for nouns must see through the intervening determiner layer (but see Sportiche 1999 for an interesting contrary view). So, we assume that in (55b), F sees through the intervening T and so finds itself immediately dominating Dist, which is excluded. On the other hand, morphological relations seem to be more local. If so, then in (55a) F only sees T, whence the occurrence of Dist below T is legitimate.[19]

4.3.2 The second alternative rests on the assumption that Mirror is strengthened to a biconditional: Y is the s-complement of X in syntax iff the sequence Y-X is a morphological unit. Although this strengthening encounters some problems, especially with prefixes and with some suffixes like the genitive 's, we could nevertheless adopt the biconditional, and sidestep these problems by distinguishing phonological and morphological words. A morphological word is necessarily also a phonological word, but not conversely. The prediction is that words that do not obey the mirror principle must be phonologically constructed; their "wordness" has no morphosyntactic relevance.

While there seem to be some clear cases, we do not undertake here to define in general when a bound morpheme forms a morphological or only a phonological word with its host. We shall refer to a morpheme that must form a morphological word with its

host as morphologically bound and those that do not as morphologically free. In fact, we assume that there is no general rule to separate morphologically bound and morphologically free, and we take the property to be lexically specified. So morphemes are either marked or unmarked as morphologically bound (the latter being morphologically free) in the lexicon. Morphologically bound is always phonologically bound. Morphologically free morphemes can also be further specified as phonologically bound. Their phonological boundness may be context dependent (as in the case of compounds like blackbird and pickpocket) or a stable property (as in the case of clitics).[20] There are probably interesting subregularities in this domain that we expect further research that is mindful of the type of distinctions drawn here to uncover. In sum,

(59) Biconditional Mirror:

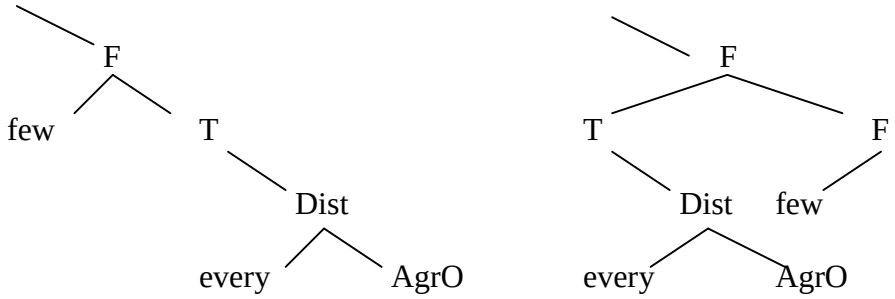
Y is a s-complement of X if and only if X is morphologically bound with respect to Y, i.e. Y-X form a word both in morphology and phonology.

These notions form a basis of the account of why the alternate ordering of scopal heads is possible. We shall assume that heads that are systematically empty do not need to be inherently specified as morphologically free or morphologically bound. They may in principle be either (although they may be forced to be one way or the other by the independent needs of other morphemes, see the comment below (63)).

The heads Ref, Dist, and F are systematically empty in Hungarian: although they are operators with well-defined semantic content (Ref is an existential, Dist a distributive, and contrastive F an identificational operator), there is no overt morpheme in the language that serves as a vehicle for these contents. This contrasts with T, for example. Although the present tense morpheme is null, the past tense morpheme is not, i.e. T is not systematically empty. Our interpretation of this contrast is that there is no real morphological sense in which, say, Dist can be argued to form or not to form a word with F, while it is important for the morphology of Hungarian to ensure that T forms a word with v. Consequently, F can in principle be either a s-specifier or a s-complement of Dist, but v must be a s-complement of T.

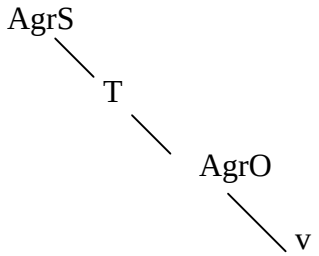
We can now return to the contrast between (55a,b), repeated here.

[55] [a] [AgrS] [b] * [AgrS]



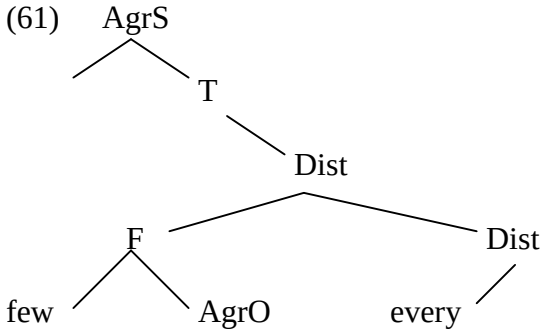
We will now assume that the illegitimate reordering in (55b) disrupts the morphological word v-AgrO-T-AgrS. To see how this works, the definitions pertaining to morphological words need to be generalized to take the presence of scope projections into account. When no scope projections intervene, we know that the only legitimate constellation is a sequence of s-complements by Mirror.

(60)



To allow for a universal to take inverse scope over a counting quantifier, for example, we also need to allow the following inverse scope configuration:

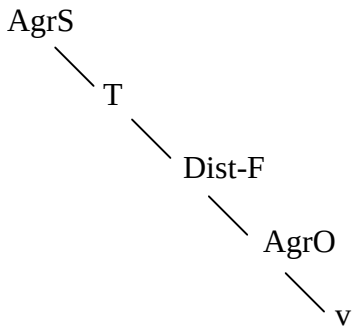
(61)



Although AgrS and v are not connected by an uninterrupted "s-complement path," that path is interrupted only by the Dist--F segment. But Dist and F do not seem to form a morphological word between them in any interesting empirical sense. (In the sense of Brody 1997a, 2000a,b, AgrS-T-Dist-F-AgrO-v-V form an extended word, much like Grimshaw's extended projection, a concept that is different from that of the

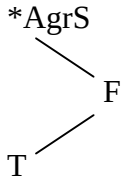
morphological word.) It is perhaps not unreasonable to assume that Dist and F can be ignored in the assembly of the v-AgrO-T-AgrS morphological word, and that Dist and F can be ignored because they are systematically empty (unlike Agr for example that may or may not be empty) and can be collapsed into a point such that this point is the complement of T and v is the complement of it. We will notate this point as Dist-F: [21]

(62)



On the other hand, in the ungrammatical (55b), T is, crucially, a specifier of F, wherefore T cannot be the complement of AgrS even in the looser sense just outlined.

(63)



Note, by the way, that although v, AgrO, T, and AgrS do not form an overtly visible morphological word with the scope heads that happen to immediately dominate them, the above considerations force them to appear as complements of these, or else the formation of v-AgrO-T-AgrS would be disrupted. This holds irrespective of whether inverse scope is involved.[22]

Our account says, in effect, that a category that separates two scopal series cannot occur as a s-specifier if it needs to form a morphological word with a higher category. This works easily when the s-specifierhood of T is at stake: it needs to form a morphological word with AgrS. But how does this account rule out the possibility for AgrS to occur as a s-specifier? If AgrS is the highest element that enters into the word, nothing rules it out. To rule out the reordering of AgrS, we speculate that v-AgrO-T-AgrS forms a morphological word with some complementizer (i.e. one of the functional heads that Rizzi (1997) factors C into) that itself has no scopal series. Then any reordering of

AgrS with a preverbal scope projection prevents the formation of the word ...-AgrS-C and is thus ungrammatical.

It might appear that the reordering of AgrS is automatically ruled out, because the only F of the clause would wind up in postverbal position, which is to be excluded somehow in any event, see note 8. But this cannot be the solution. First, it is fairly easy to require that F cannot be used in the T, AgrO, or v series unless F (or Neg, etc.) in the AgrS series is used. But the postverbal F in (64a) would in fact be in the AgrS series; only linearly would it follow the verb. It is entirely unclear how this might be prohibited.

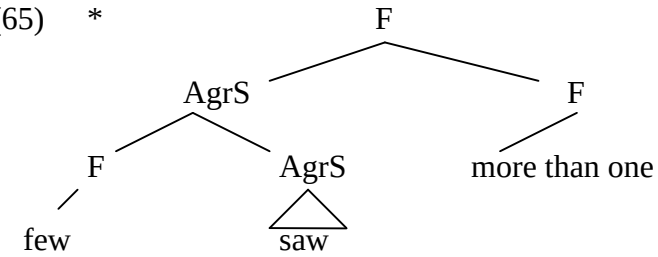
(64) [a] *[Minden filmet látott] kevés fiú.
every film saw few boys
` few > every'

Worse still, take (64b) with one preverbal and one postverbal counting quantifier, where a purely linear prohibition that might rule (64a) out cannot help, since the string itself is perfectly grammatical.

[64] [b] Kevés filmet látott egynél több fiú.
few films saw one-than more boy
ok `few > more than one'
* `more than one > few'

While <u>more than one</u> can scope inversely over <u>few</u> when both are postverbal, it absolutely cannot do so in (64b). But if "reordering" of AgrS to precede F were allowed, the following structure would yield the non-existent reading:

(65) *

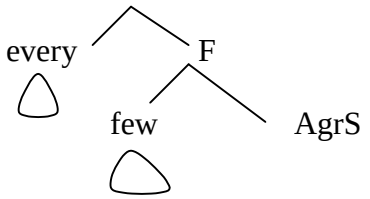


On the other hand, if reordering of AgrS is excluded as in the text, the inverse reading does not come about, because it would require for there to be two F's in the AgrS-series, which does not obtain.[23]

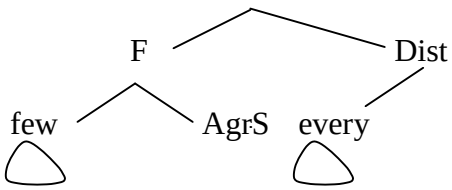
5 Scope

As was pointed out in section 3, one attractive feature of the "selected dependent precedes head" option is that the interpretation of inverse scope does not require reconstruction. This is so because, at least in the preliminary form exhibited in (34a,b), the direct and the inverse orders have identical hierarchical structures. The question is how the advantageous properties of these configurations can be preserved within an antisymmetrical framework. Recall that it is the equivalence of the following kind of structures that we need to guarantee. (Triangles are added below the quantifier heads to highlight the fact that they represent heads-cum-dependents.)

(66) [a]



[b]



Mirror Theory eliminates the need for a primitive notion of c-command, and factors it into dependency and domination relations, notions that are independently necessary (cf. Brody 1997a, 2000 for discussion). Thus scope also needs to be defined in these terms.

Departing from the traditional concept of c-command, we are not going to state the scope relation between two quantifiers directly. This is natural, since their relation is always mediated by some functional head. In the absence of adjunction, no quantifier occurs in a position where it is not a dependent of a head. The definition that suggests itself is this:

(67) X has scope over Y iff X's features dominate Y.

According to this definition, the features of <u>every man</u> in (66a,b) dominate everything under F. <u>Every man</u> is the feature-sharing dependent of Dist, hence Dist inherits its features, and Dist dominates F. On the other hand, the features of F do not dominate <u>every man</u>, the reason being that F is not a feature-sharing dependent of Dist.[24] Consequently, no quantifier inside F scopes over <u>every man</u>. Thus, (66a) and (66b)

exhibit the same asymmetrical scope relation, as desired.

One immediate consequence of this definition is that the every-phrase in (66b) scopes over (binds) its own trace inside the remnant F (below AgrS).

As was pointed out above, defining scope in terms of featural domination amounts to saying that sentence-internal interpretive relations, traditionally recognized to be contingent on c-command by the dominant term of the relation, are in fact established by some head, activated by agreement with an appropriate specifier. For example, the scope relation between every man and few films is established by the Dist head. Following Beghelli--Stowell 1997 and Szabolcsi 1997, Dist is analyzed as a distributive operator. Dist is a function that takes as its arguments the generalized quantifier denoted by the specifier (every man) and the property denoted by its i-complement (here: F). Dist operates on these by grabbing the (unique) witness set of the specifier and distributing the property denoted by the i-complement over its elements:

(68) Dist = $\lambda\wp\lambda P\forall x \in$ unique-witness($\wp$) [P(x)]

For Every man read few books, the result is,

(69) $\forall x \in$ man' [read-few-books'(x)]

Every man makes few books referentially dependent, because the contribution of the latter is part of the property distributed over the elements of the set of men, a set determined from the denotation of the phrase that the Dist head shares a feature with. Likewise, the licensing of negative polarity items will be attributed to the head that the licensor checks its feature with.

One pecularity of Kayne's (1994:18) definition ("X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y") is that it allows the specifier of the specifier to c-command the complement. Since specifier--head feature transmission may continue if the head is also the i-specifier of a higher head, the present approach yields the same result by default, i.e. if the feature in question can be transmitted via spec--head agreement at all.[25] We present some data below that suggest that this is empirically correct.

The data set (70) contains se- expressions, interpretable as universal quantifiers that are licensed when scoping immediately above negation.[26] Assume that this scoping obtains when they check their [se] feature with an appropriately positioned Se head. (70b,

c) indicate that the [se] feature is inherited from the specifier. Especially in (c), it is quite unlikely that the se- expression gets licensed by moving out, either overtly or covertly.[27]

(70) [a] [Senkivel] nem beszéltem.
nobody-with not spoke-I
`I didn't speak with anyone'

[b] [Semelyik fiú apjával] nem beszéltem.
no boy's father-with not spoke-I
`I didn't speak with any boy's father'

[c] [Senkivel való beszélgetésbôl] nem tanultam ennyit.
nobody-with being talking-from not learnt-I this much
`I didn't learn this much from talking with anyone'

The sets below will show that a feature of the specifier of the specifier also serves to license another phrase: a negative polarity item or a bound reading of más `(a/something) different'.

Valami is/bármi is `even something' is an NPI which, like I-NPIs in Serbo-Croatian, is licensed in the scope of downward entailing operators other than clause-mate negation (Progovac 1989).[28]

(71) [a] [Kevesektôl] tanultam valamit is/bármit is.
few-from learnt-I something even
`From few people did I learn anything'

[b] [Kevés fiú apjától] tanultam valamit is/bármit is.
few boy’s father-from learnt-I something even
`From few boys' fathers' did I learn anything'

[c] [Kevesekkel való beszélgetésbôl] tanultam valamit is/bármit is.
few-with being talking-from learnt-I something even
`From talking with few people did I learn anything'

Más `(something) different' has a bound reading when it is within the scope of a distributive universal and a deictic reading otherwise:

(72) [ai] [Mindenkitôl] mást kaptam. (bound más)
everyone-from different got-I
`I got something different from everyone'

[aii] [A fiúktól] mást kaptam. (deictic más)
the boys-from different got-I
`I got something different from the boys'

[bi] [Minden fiú szüleitôl] mást kaptam. (bound más)
every boy's parents-from different got-I
`I got something different from every boy's parents'

[bii] [A fiúk szüleitôl] mást kaptam. (deictic más)
the boys' parents-from different got-I
`I got something different from the boys' parents'

[ci] [Mindenkivel való beszélgetésbôl] mást tanultam. (bound más)
everyone-with being talking-from different learnt-I
`I learnt something different from talking with everyone'

[cii] [A fiúkkal való beszélgetésbôl] mást tanultam. (deictic más)
the boys-with being talking-from different learnt-I
`I learnt something different from talking with the boys'

In all these cases, we can say that the big noun phrase occurs in spec,Se, spec,F or spec,Dist because its specifier has the relevant feature and its interaction with the rest of the sentence is in fact the doing of the Se, F or Dist head it shares features with.

Note, by the way, that the English translations of (67b) and (68bi), From few boys' fathers did I learn anything and I got something different from every boys's parents (bound reading) are also acceptable, whereas the English translations of (67c) and (68cii), From talking with few people did I learn anything and I learnt something different from talking with everyone (bound reading) are not. This correlates with a contrast in wh-pied piping: From whose father did you learn this? but not From talking with whose father did you learn this? The uniform acceptability of the Hungarian examples stems from the fact that bearer of the relevant feature is invariably on the left edge, i.e. in specifier position.

The question arises what the binding properties of these specifiers are. Recall that in English, they can bind epithets and pronouns, though not anaphors (Hornstein--Weinberg 1991, Kayne 1994):

(73) Every girl's parents love the kid / her / *herself.

Note that in both languages, a quantifier licenses a singular epithet only within its

sentence-internal scope:

(74) [a] Every boy is asleep. *The kid is tired.

[b] Minden fiú alszik. *A srác fáradt.

`same'

In Hungarian, epithets are licensed by the specifier of a specifier, but pronouns (here: pro) are much worse:

(75) [b] [Kevés/minden fiú anyja] tudja, hogy mutál-e a srác hangja.
few/every boy's mother knows whether breaks the kid's voice
`Few/every boy(s)'s mother knows if the kid's voice is breaking'

[c] [Kevés/minden fiúval való beszélgetésbôl] világos, hogy mutál-e a srác hangja.
few/every boy-with being talking-from clear whether breaks the kid's voice
`It is clear from talking with few/every boy(s) if the kid's voice is breaking'

(76) [b] ? [Kevés/minden fiú anyja] tudja, hogy mutál-e a hangja.
few/every boy's mother knows whether breaks the voice-poss.3sg
`Few/every boy(s)'s mother knows if his voice is breaking'

[c] ? [Kevés/minden fiúval való beszélgetésbôl] világos, hogy mutál-e a hangja.
few/every boy-with being talking-from clear whether breaks the voice-poss.3sg
`It is clear from talking with few/every boy(s) if his voice is breaking'

Interestingly, however, the same contrast between epithets and pronouns obtains when the intended antecedent is a name, which should be able to simply corefer:

(77) [a] [Péter anyja] tudja, hogy mutál-e a srác hangja.
Peter's mother knows whether breaks the kid's voice
`Peter's mother knows if the kid's voice is breaking'

[b] ? [Péter anyja] tudja, hogy mutál-e a hangja.
Peter's mother knows whether breaks the voice-poss.3sg
`Peter's mother knows if his voice is breaking'

Leaving the explanation of the epithet/pronoun contrast to future research, on the combined strength of the más data and the epithet data we conclude that variable binding abilities are also passed up in the manner of spec-head agreement.[29]

Hendriks (1993) shows that semantically, for quantifier A to have wide scope within a constituent B that has sentential scope is the same as for A to have sentential scope on its own (if finer matters of distributivity do not interfere). The above considerations seem to indicate that this conclusion remains tenable in empirical syntactic terms, a conclusion that is especially interesting in connection with the binding data.

To conclude, it is worth reiterating a point made in Brody 2000a and above. Mirror theoretic structures conform to antisymmetry: the universal syntactic order is spec--head--complement and, given the lack of phrasal projections, specifiers of a head h cannot be lower than the complement of h. Given further the lack of adjucntion (both left- and right-), in this theory no structures can be built that would violate syntactic antisymmetry. Note that in the specific case of (66b), where F precedes the universal, it is also structurally higher. (For the purposes of cross-theoretical comparison, structural height can be defined with reference to the first branching node.) So mirror theory ensures the syntactic effects of the LCA. Do the principles that create these structures entail the LCA itself, the principle that ensures antisymmetry in Kayne 1994? Since Mirror Theory does not have c-command as a primitive notion, the obvious alternative way of raising this question would be to phrase it with reference to scope. To this question the answer is no. F in (66b) does not scope over the universal, because our notion of scope is not purely graph-theoretic. This is all well. Mirror Theory does not need a principle specifically designed to ensure antisymmetry: the whole theory is designed to produce only antisymmetrical representations to begin with. Consequently, the central reason for the existence of c-command and a non-interpretive, purely graph-theoretic notion of scope disappears.

6. Appendix: Reconstruction

We have outlined a proposal that is fully Kaynean in spirit (employs no covert or feature-movement) and moreover avoids reconstruction, in-situ feature checking and non-feature-

driven movement, each of which is present, to some extent, in Kayne's theory. Let us assume that our proposal provides an adequate account of the facts discussed above (and provides a good input to metrical phonology, cf. Hunyadi 1999).[30]

Our proposal undergenerates, however, in two respects. One, it predicts that no quantifier can take inverse scope over a higher ranking one. Two, it does not generate certain orders even if they do not conflict with ranking.

6.1 Inverse Readings That Go Against Rank Order

Let us begin with the first issue, which is more significant. In 3.1, we noted that inverse scope observes a ranking generalization in both English and Hungarian:

(78) Widely attested ranking generalization about inverse scope:
Counting quantifiers (more/fewer than three men, three or more men, few men, more men than women, etc.) do not take inverse scope over every and most phrases.

In English, counting quantifiers reside in the appropriate AgrPs according to Beghelli--Stowell (1997). In Hungarian, they reside in F, according to Szabolcsi 1997. Every and most phrases outrank counting quantifiers because Dist and Ref are higher than F; hence the name "ranking generalization".[31]

The "specifier/complement reordering" technique only yields inverse scopes that conform to the generalization. The reason is that it performs nothing but a local "switch". In fact, precisely for this reason it predicts a stricter version of the ranking generalization:

(79) Predicted ranking generalization about inverse scope:
If Q/1 outranks Q/2, Q/2 cannot take (unmediated)[32] inverse scope over Q/1. That is, spec,F does not take inverse scope over spec,Dist or spec,Ref, and spec,Dist does not take inverse scope over spec,Ref (likewise for strictly ordered members of the Dist and Ref families).

How strict is the ranking generalization in reality? There is an observation in Liu 1990, 1997 about English that suggests that it is as strict as (79). Liu noted that while every can make most referentially dependent when it scopes over it directly, it cannot do so in the inverse configuration:

(80) Every man read most (of the) books.
ok 'every > most'

(81) Most (of the) men read every book.
* 'every > most'

This contrast, unexplained in Beghelli--Stowell 1997, would fall out from (79) on the assumption that, much like in Hungarian, most-phrases in English reside in Ref. Then every is to most as few is to every.

On the other hand, the prediction that spec,Dist cannot inversely scope over spec,Ref is contradicted by Hungarian (83). Some-phrases, as the ungrammaticality of (82b) shows, must be higher than Dist; we assume they are in Ref.

(82) [a] [$_{Ref}$ Valamit [$_{Dist}$ mindenki [$_{AgrS}$ kölcsönadott]]]
something everyone lent

[b] *Mindenki valamit kölcsönadott.
everyone something lent

(83) 'Valamit kölcsönadott 'mindenki.
something lent everyone
ok `Everyone lent (me) something'

Pragmatically, (83) only makes sense if everyone lent a different thing, and the sentence makes sense indeed (in contrast to (82a), which is pragmatically strange). But the availability of the 'every some' reading for (83) is not predicted by the "specifier/complement reordering" strategy. Notice that this reading is equally unpredicted by Kiss's stylistic postposing, which would have to use nothing but (82b) as its input. Both these theories predict that this reading can only be expressed using the direct scopal order in (84).

(84) Mindenki kölcsönadott valamit.
everyone lent something

We can now go further and show that there are readings involving 'every >most' that can only be expressed using inverse scope in Hungarian. For instance:

(85) Minden tanár kevés példát adott fel a legtöbb osztályban.
every teacher few problems assigned prt the most classes-in
ok `for every teacher x, for most classes y, x assigned few problems in y'

This reading simply cannot be expressed using only direct scope. The reason is that few must occur in the preverbal F (it could only occur in a postverbal F if the preverbal one was already occupied). But then most would need to occur between every and few in the preverbal series, to obtain the intended interpretation, and this is impossible:

(86) *Minden tanár a legtöbb osztályban kevés példát adott fel.
every teacher the most classes-in few problems assigned prt

Such examples demonstrate that any theory that derives inverse readings from synonymous direct orders necessarily undergenerates. To obtain the outstanding readings, either covert (feature/expletive-associate) chains of the intended wide scope quantifier or reconstruction of the intended narrow scope quantifier must be invoked.

We propose an account in terms of reconstruction. As was discussed in 2.3, when a quantifier occurs in the non-lowest scopal series, it forms a chain with copies in the same positions in the lower series (moves successive cyclically, in derivational terms). Reconstruction, then, amounts to interpreting one of the deleted A-bar copies of the quantifier. For example, the inverse reading of (85) will be derived by interpreting the bold faced copies. The deleted copies are in parentheses:

(87) [$_{Ref}$ Valamit [$_{AgrS}$ kölcsönadott [$_{Ref}$ (valamit) [$_{Dist}$ **mindenki** [$_{T}$ [$_{Ref}$ **(valamit)** [$_{Dist}$ (mindenki) [$_{v}$ ...

Reconstruction comes cheap but is not innocuous. Since it is generally more powerful than "specifier/complement reordering," the question arises whether reconstruction is not the only grammatical device that creates inverse scope. Moreover, just as reconstruction facilitates violations of the stricter version of the ranking generalization, it will facilitate violations of the looser version. In other words, it may wipe out all our results so far.

Fortunately, it is possible to show that the set of readings derivable by reconstruction does not properly subsume the set of those derivable by "specifier / complement reordering". Specifically, it turns out that reconstruction is blocked by negation and focus in a way "specifier/complement reordering" is not. Hence the two devices are distinct and coexist in grammar.

We know that some outranks every and every outranks few. (88)-(89) show that every also outranks another member of the Dist family, at least n.

(88) Mindenki legalább egy kérdést nem értett meg.

everyone at least one question not understood part

(89) Mindenki legalább egy helyen nem érezte jól magát.
everyone at least one location-at not enjoyed himself

Now consider the following minimal pairs. All the examples are impeccable on the direct reading, which we do not write out. In judging the availability of the [i] readings, it is important that the linearly first quantifier does not have a left dislocation intonation.

(90) [a] Legalább egy kérdést nem értett meg mindenki
at least one question not understood everyone
[i] ok every > at least one > not
[ii] * not > every > at least one

[b] Kevés kérdést nem értett meg mindenki
few questions not understood everyone
[i] ok every > few > not
[ii] * not > every > few

[c] Valamit nem értett meg mindenki
something not understood everyone
[i] * every > some > not
[ii] * not > every > some

(91) [a] Legalább egy helyen nem érezte jól magát mindenki
at least one location-at not enjoyed himself everyone
[i] ok every > at least one > not
[ii] * not > every > at least one

[b] Kevés helyen nem érezte jól magát mindenki
few locations-at not enjoyed himself everyone
[i] ok every > few > not
[iii] * not > every > few

[c] Valahol nem érezte jól magát mindenki
somewhere not enjoyed himself everyone
[i] * every > some > not
[ii] * not > every > some

Of the inverse readings, only (ai) and (bi) can be produced by specifier/complement

reordering, and only these are available. The (ci) readings could only be produced by covert movement of every, and the (ii) readings could only be produced by reconstruction of at least one, few, and some. The (ci) and the (ii) readings are all unavailable.[33] This shows that even if covert/feature/expletive-associate chains and/or reconstruction are operative in grammar, specifier/complement reordering has its own independent existence.

The fact that we do not assume covert movement accounts for the unavailability of the (ci) readings.Why are all the (ii) readings not available here? The fact that vala- `some' phrases are positive polarity items in Hungarian as much as they are in English might suggest that (90cii) and (91cii) are out just because not scopes over some. But at least n and few phrases are not PPIs, whence the unavailability of the (aii)-(bii) readings suggests that it is reconstruction that is blocked by the intervening negation. In this paper we do not attempt to answer the question why negation has this effect; for our purposes it suffices to observe that it does.[34]

The observation that negation blocks reconstruction, in conjunction with the absence of covert movement, also explains the robust fact that in Hungarian, a quantifier that precedes negation can never be included in its scope (unless it is left dislocated).

Although these examples already establish that not all inverse readings are produced by reconstruction (and that some are probably produced by specifier / complement reordering), it is useful to note that negation is not the only thing that seems to block reconstruction. It appears that focus does, too. (As above, the direct readings are impeccable, and the left dislocation reading of the linearly first quantifier is irrelevant.)

(92) Legalább egy titkot kevés lánynak mondott el mindenki
at least one secret few girls-to told everyone
[i] ok every > at least one > few
[ii] * few > every > at least one

(93) Valamilyen titkot kevés lánynak mondott el mindenki
some secret few girls-to told everyone
[i] * every > some > few
[ii] * few > every > some

The significance of the blocking effect of F is that it explains why reconstruction

does not entirely level out the inverse scope taking abilities of different quantifiers. If any quantifier could be reconstructed across any other, even the looser version of the ranking generalization would not be descriptively valid: a universal that linearly precedes a counting quantifier might be reconstructed into the scope of the latter. This, however, does not happen, even if both quantifiers are legitimately postverbal, cf. the discussion of (26). In fact, note that even if speakers disagree about somewhat subtle facts like (26), every taking narrowest scope in (94) is entirely unthinkable -- and this could be easily derived if reconstruction was free.

(94) Mindenki tegnap mondott el kevés titkot
everyone yesterday told prt few secrets
only `For everyone, it was yesterday that he told many secrets'

To summarize, the observation that reconstruction is, for some reason, blocked by negation and focus is instrumental both in showing that not all inverse readings are products of reconstruction and in explaining that the looser version of the ranking generalization remains generally valid. [35]

6.2 Inverse Readings With "Permutation Problems"

Specifier/complement reordering undergenerates in another respect as well. Take a string of three QPs, linearly [1 2 3]. Out of six logically possible scope orders compatible with the ranking generalization, it derives four:

(95) Readings:
1>2>3 derived
1>3>2 derived, if 3 outranks 2
3>1>2 derived, if 3 outranks 1
3>2>1 derived, if 3 outranks 2 and 2 outranks 1
2>1>3 not derived (1 cannot "prepose" without 3)
2>3>1 not derived (1 cannot "prepose" across [2 3])

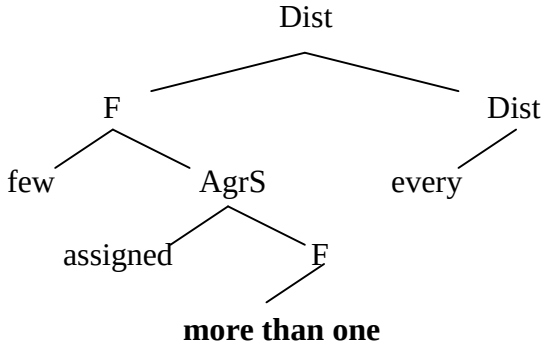
Of the scopal orders not derived, 2>1>3 is available if 2 outranks 1, e.g. `every > few Det', where Det may be any determiner, for example:

(96) Kevés példát adott fel minden tanár egynél több osztályban
few problems assigned prt every teacher one-than more class-in

`Every teacher used few problems in more than one class' (i.e. teachers rarely re-used problem sets)

To illustrate what the problem is, consider the structure in (97). It expresses the intended scope relations, but does not have the desired linear order: <u>in more than one class</u> precedes, rather than follows, the universal.

(97)



The other problematic order, 2>3>1 is less generally available. In fact, it seems quite unavailable when 3, the linearly third quantifier is one that resides in F. Probably, the reason is that a post-verbal F must be within the scope of a preverbal F (or negation , imperative, or modal). Since on this interpretation 3 scopes above 1, 1 cannot license the post-verbality of 3. Thus, the above discussed sentence lacks this reading:

(98) Kevés példát adott föl minden tanár egynél több osztályban

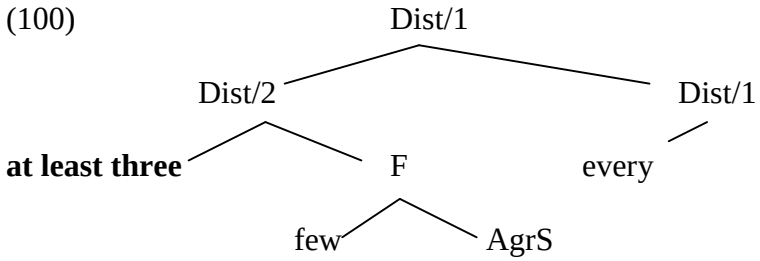
?* 2>3>1: every > more than one > few'

On the other hand, sentences where the linearly third quantifier is a Dist or Ref inhabitant allow the reading where the preverbal quantifier takes lowest scope (every > at least 3/most > few). The availability of these readings can be highlighted by using the mass term <u>kevés lecke</u> 'little homework' in the place of 'few problems', since it can only take narrowest scope, for reasons discussed in Szabolcsi--Zwarts 1993.

(99) Kevés leckét adott fel minden tanár legalább három osztályban
little homework assigned pfx every teacher at least three class-in
`For every teacher, there were at least three classes in which she assigned little homework'

The structure in (100) expresses the intended reading but, again, does not have the desired linear order. <u>in at least three classes</u> ends up first instead of last.

(100)



The fact that the presence of extra material makes it difficult to derive certain scope relations does not seem like an artifact of our system. For instance, Kayne (1998) observes that (101), but not (102) has a matrix no one interpretation, the reason being that the final particle in (102) cannot be removed to yield the correct order. (See also issues that motivate stacking in Koopman--Szabolcsi 2000.)

(101) I requested that you leave out no one.

(102) I requested that you leave no one out.

On the other hand, the particular form in which these issues arise is specific to our theory, which does not rearrange the pertinent constituents using relatively long-distance movement, but instead appeals to an entirely local ordering option.

Now the task is to find a way to derive the attested 2>1>3 and 2>3>1 readings. One might attempt to model the solution after Williams' (1998).[36] It turns out, however, that reconstruction, which we admitted into the grammar in 6.1, will deliver the desired readings. In (96) and (97), for example, few/little will be reconstructed from the F of the AgrS-series into the F of the T-series. These sites are indicated by _ below:

(103) Kevés példát adott fel minden tanár _ egynél több osztályban
few problems assigned pfx every teacher one-than more class-in
`Every teacher used few problems in more than one class' (i.e. teachers rarely re-used problem sets)

(104) Kevés leckét adott fel minden tanár legalább három osztályban _
little homework assigned pfx every teacher at least three class-in
`For every teacher, there were at least three classes in which she assigned little homework'

7. Conclusion

In this paper we have described what we consider to be a fairly representative sample of Hungarian quantificational structures. We have made no explicit attempt to provide indication of the UG parameters involved in the difference between Hungarian and other languages, say English. In the spirit of our analysis of Hungarian we expect such cross-linguistic differences to fall out from different lexical specifications in different languages that may well be partially or completely independent of quantification.

Apart from residual data where a different mechanism was involved (which we took here to be reconstruction into A-bar positions), principles of mirror theory were crucially involved in the explanation of inverse scope. We argued that inverse scope typically arises when the linearly first quantifier Q is embedded in some constituent C which is structurally higher then the linearly second quantifier Q' but where C is nevertheless in the scope of Q'. As we noted under the framework assumed here such structures need not involve movement or chain relations, they can be considered "base generated", with C continuing its extended word via a structural specifier relation, --an option independently motivated in the framework adopted. While the axioms of mirror theory entail the structural antisymmetry effects of the LCA, like the specifier-head-complement order, they allow right-to-left scope relations in special cases, which are relevant, among other matters, in the analysis of inverse scope. The mechanics of such right-to-left scoping call for a notion of scope that is not a purely graph-theoretic relation between the wide scope taker and its domain but is, instead, crucially mediated by the head that the wide scope taker shares features with. This move is natural in mirror theory, whose principles only make reference to either the domination or to the specifier-head relation, and thus it eliminates c-command with its strange and apparently unexplainable properties. Given that specifiers share their referential or quantificational features with the head they are the specifiers of, principles (involving scope, binding, etc.) that are standardly taken to refer to c-command can be restated in terms of (featural) domination.

In section 4.3 we showed that restrictions on lexical variation determining which heads allow their interpretive complement as their structural specifier can entail (at least for Hungarian) the major correlation between the probably universal scope hierarchy and

the possibilities for inverse scope. We suggested also that this correlation can equally well follow from the different properties of structural specifiers and structural complements (the latter equivalent to, and interpreted as, morphological specifiers) under mirror theory. Both solutions crucially exploit the basic tenets of this theory, in particular that syntactic complementation expresses a morphological relation.

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Notes

Acknowledgements

[1] It is an empirical question, in the case of every phenomenon, whether the remnant movement analysis is sufficiently motivated. For opposing views regarding verbal complex formation, see Brody 1997a, 2000b and Koopman--Szabolcsi 2000. Koopman and Szabolcsi assume that the varying orders in verbal complexes are accounted for phrasal movements to the specifiers of VP+, InfP, PredP, CP, etc. and are driven by genuine lexical features, whereas Brody extends to verbal complexes the mirror theoretic approach discussed here and in his earlier work.

[2] The position of the verbal particle plays a crucial role in diagnosing the position of quantifiers, but we are going to ignore it in our representations. See Brody 1995 and Koopman--Szabolcsi 2000 for different approaches.

[3] Our F is a cover term for two quite different kinds of heads. (i) Horvath (2000) argues that the [focus] feature itself never triggers movement, and the traditionally recognized preverbal position of foci in Hungarian is due to a phonetically null EI (exhaustive identification) operator which, like only, associates with intonational focus. We endorse this analysis. (ii) Szabolcsi (1997) observed that various counting quantifiers (predicate operators) occur in the same preverbal slot as foci, although there is nothing exhaustive or contrastive about their meaning.

[4] It is of course possible for quantifiers to be featurally ambiguous; if so, two readings are obtained directly through the checking of two different sets of features. Indeed, both Beghelli--Stowell (1997) and Szabolcsi (1997) argued that some quantifiers have several alternative checking positions. But no one has argued that featural ambiguity is the general source of variation in scope. Therefore, we put the justifiably ambiguous cases aside as irrelevant.

[5] Szabolcsi (1997) argued that Hungarian had two series of scope positions: one series above AgrS (as in (5)), and one below AgrS, the latter being used by postverbal quantifiers to check features at LF. The argument was based on the observation that postverbal quantifiers in Hungarian exhibit essentially the same patterns of ambiguity as subject--object pairs in English do. For instance, just as Few man saw every film is ambiguous but Every man saw few films is not, a postverbal few--every sequence in Hungarian is ambiguous, but a postverbal every--few sequence is not. (We come back to these data in section 3.1.) Thus, it was natural to accord the Hungarian data an LF treatment similar to Beghelli--Stowell's for English. To maintain that scope in Hungarian is fully determined at spell-out, Kiss (1998) proposed that the lower scope series be also considered overt, and assumed Ref--Dist--F recursion. Our present proposal agrees with Kiss's modification regarding the overtness of the lower series, though we hypothesize that this is not a language specific feature but a universal, see Kayne 1998.

[6] In the preverbal series, there is certainly only one F, hence the absence of the Kleene star from F in the AgrS-series. But at least the successive step derivation of

examples like Kevesen dolgoznak keveset `Few people work little' makes it necessary for the lower series to cater to multiple F's. The same assumption will account for the potential ambiguity of two postverbal counting quantifiers. How this preverbal single F / postverbal multiple F's asymmetry is to be dealt with is immaterial to the general concerns of this paper.

[7] Exactly how many scope series are there below Agr? Hallman (1998) assumes that the reiteration of operator heads stops with v, essentially because the atomic predicates that make up the verb select for "reduced clauses" (an assumption compatible with Chomsky's (1995:4.6)). Thus, there may be more than two such series if it turns out that T and AgrO are not the only members of the verb's extended projection that comes between v and AgrS, but the number of such heads clearly sets a limit. It ought to be possible to test this empirically, by asking how many quantifiers that must be sitting in separate series can follow the verb, but testing is not straightforward. A sentence with more than two postverbal quantifiers easily becomes mind-boggling.

[8] Compare, for instance:

[i] *Megnéztem kevés filmet.
prt-saw-I few films

[iia] Tavaly néztem meg kevés filmet.
last-year saw-I prt few films
`It was last year that I saw few films'

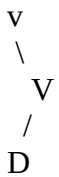
[iib] Ritkán néztem meg kevés filmet.
rarely saw-I prt few films
`Rarely did I see few films'

In this paper, we do not attempt a detailed account of focus; the licensing of postverbal foci might be similar to that of wh-in-situ in English, see Brody 1990, Kiss 1998.

[9] Although different in other respects, examples like Who remembers where we bought which book? are similar in that which book can be, but need not be, associated with the lowest CP.

[10] Not for all speakers: for some, including one of the authors of this paper, postverbal universals are ambiguous, irrespective of the stress pattern.

[11] Notice that while the direct object for example is a selected dependent of one of the atomic predicates that make up the verb and is thus an i-complement, it is not a s-complement (unless incorporated):



Note also that we do not take the relation between Ref, Dist, F, AgrS, T, AgrO, v, and V as instantiating selection in the same sense as the relation between the direct object and

the atomic predicate. Instead, as in Grimshaw 1991, these head series form extended projections, -- or rather extended words in mt terms (where no phrasal projection is countenanced).

[12] For some discussion on whether such clitics form also a morphological word with their hosts, see Brody 2000b.

[13] For more formal ordering statements see Brody 1997a, 2000a.

[14] Brody (1997a, 2000) assumes that in the John has come type, which is different from the configuration discussed in the text above, when the i-complement occurs as a s-specifier, the feature-sharing subject is accommodated under a node that is or carries agreement that we notate as AG in (48b).

[15] The lower specifier (every) scopes over the higher one (F), and not the other way around, as would be the case if F were adjoined to Dist. See the pertinent definition of scope in section 5.

[16] This is possible even if the two are not different kinds of members of the Dist-family. See the discussion of minimality in 2.3.

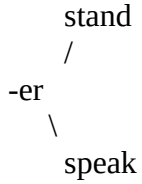
[17] Recall that the AgrS series has only one F (cf. note 6). Notice that inverse scope between two counting quantifiers arises only in the postverbal field. The preverbal field cannot contain two counting QPs to begin with, and a postverbal counting QP cannot scope inversely over a preverbal one: see (64b)-(65) below.

[18] There is another reason to seek a more general solution. In the Appendix, we will suggest that the ranking generalization is stricter than stated above: it prohibits any Q, not only counting quantifiers, from inversely scoping over a higher ranking one. That is, also Dist cannot inversely scope over Ref. (More precisely, we will argue that this actually happens, but only if reconstruction is involved.) This result could not be derived by making the explanation F-specific.

[19] The claim that morphological relations are local needs to be made more precise. For instance, parts of the morphological word V-v-AgrO-... must see each other despite the intervention scopal categories. We assume that all the members of a morphological word see each other's features, but this feature sharing, being nonsyntactic, is non-directional. Hence on the complement path, no violation of (58) can arise, since no directional information is available. For example if F dominates T and T dominates Dist and these are part of a morphological word, then the information that these elements are part of the word may be shared by all elements. But this is not enough for (58) to exclude the structure since locally the information that Dist is lower than F is still not available.

[20] Morphological boundness and phonological boundness differ from each other in at least one further respect. While the phonological notion is absolute within a phonological word (x is either free or bound), the morphological notion is absolute within a morphological word and relative to the host in a phonological word. So a morpheme

may be morphologically free with respect to the head whose s-specifier it is, but at the same time morphologically bound with respect to the head that is its s-complement. (E.g. in a compound like speakerstand, speak might be morphologically bound with respect to –er but morphologically free with respect to N. See the structure in (i).

(i)


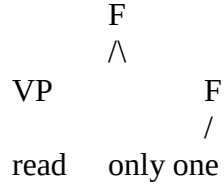
[21] The requirement is that those categories be in principle collapsible, not that they be actually collapsed.

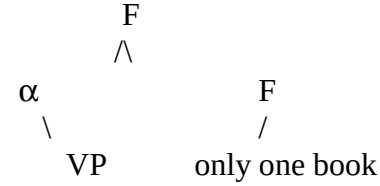
[22] However, if T in (55b) were the s-complement of some systematically empty node α that is immediately dominated by F, the resulting inverse scope structure would again be acceptable. This is because α could become the (higher, non-feature-sharing) spec of F and α and F could be collapsed into a node of which T is now the complement. It is thus crucial that in this structure no additional empty node be available that immediately dominates T.

In other cases the postulation of a node with a similar role may be advantageous. To show why, let us briefly revisit the Kaynean analysis. Kayne (1998) analyses the movements surrounding only one book in essentially the same way as those of no one. In what follows, we assume that only one book moves to spec,F, to make the case more directly comparable with the Hungarian proposal:

(i) $[_{VP}$ read only one book]
$[_{FP}$ only one book$_i$ $[_{VP}$ read $t_i]]$
$[_{WP}$ $[_{VP}$ read $t_i]_j$ $[_{FP}$ only one book$_i]$ $t_j]$

In present terms, it is natural to reanalyze the last step as follows: F in English is expressly not an m-bound morpheme, hence its i-complement (read) occurs as a specifier. The reasoning in 4.3 entails that read must also precede the feature-sharing i-specifier of F (only one book). Thus, the obligatory movement of VP to WP is replaced an obligatory base-generated order. Note, however, that in view of the considerations in the present subsection, if VP occured in the spec of F, the formation of the morphological word reads would be disrupted. We may therefore assume that VP is the s-complement of some phonetically empty node α:

(ii) [a]*


[b]


On Kayne's own proposal, Hungarian and English are alike in that focused phrases move overtly to the i-specifiers of appropriate functional heads, but they differ in that in English, the result is rendered invisible by the subsequent overt movement of VP to WP, while Hungarian lacks this latter step. On the present proposal, this particular

cross-linguistic difference can be made in the following terms. In Hungarian, F is in principle either morphologically free or bound, but there being no α to protect its i-complement, all well-formed structures have F as a bound morpheme. In English, F is morphologically free, and the availability of α enables its i-complement to nevertheless form a morphological word with inflectional suffixes.

[23] In addition, we may point again to the fact that in the Appendix, we will strengthen the ranking generalization, which also requires for the solution not to be specific for F.

[24] Recall that since F in (66b) is a specifier that is only contained in but is not dominated by Dist, it cannot possibly share features with both segments of Dist, hence it cannot share features with the category Dist.

[25] See Brody 1997a (section 3.5) and 2000a (section 5.1) for discussion of problems with this ssumption.

[26] This is the analysis in Szabolcsi 1981. It is based on two crucial facts: (i) In contrast to Romance negative concord, the presence of verbal negation is obligatory, and (ii) The assumption that se-phrases are universals scoping above negation makes their linear order, stress, and scope properties entirely normal, whereas assuming that they are existentials within the scope of negation would make all these properties a complete mystery. Using the same arguments, Giannakidou (2000) proposes the same analysis for Modern Greek and Slavic.

[27] The (b) examples involve a nominative possessor within a nominative possessor. (c) is a strictly left-branching construction in which the with-argument of talking must be "adjectivalized" by the formative való, literally the participle 'being'. See Szabolcsi 1994 for a discussion of both constructions. Relevant to us here is that neither nominative possessors, nor arguments buried under való can overtly extract in Hungarian. We assume that they cannot do so covertly, either.

[28] Cf. Serbo-Croatian Malo ljudi išta razume `few people I-NPI understand'. We choose few to be sure that it, and not nem, licenses the NPI.

[29] Without attempting to systematically address the pertinent issues of binding theory, we note that while quantificational features get transmitted to higher heads, referential or generally phi features do not, since the higher unit refers to something else than the lower one. Hence His father said Mary liked John does not violate condition C.

[30] Hunyadi (1999) assumes that when two operators are within the same prosodic domain, one may reduce the stress of the other and is thereby interpreted as scoping over the other. This process of stress reduction is governed by a specific hierarchy Hunyadi postulates (sentential operator > quantifier > non-quantifier > verb). In inverse scopal structures, stress reduction does not take place (i.e. both the preverbal, narrow scope and postverbal, wide scope quantifiers are stressed). He accounts for this by assuming that each of the quantifiers is located in a separate prosodic domain.

Without attempting to provide our own stress reduction algorithm, we point out that the structures proposed above map onto prosodic domains correctly. Following Selkirk (1986, 1995), the edges of maximal projections are aligned with the edges of prosodic domains. By prosodic domain we mean the domain between prosodic Word and Intonational Phrase. By maximal projections we mean XP itself or, when XP is in a position where it shares features with some head Y, then YP. We propose that the syntax/prosody mapping in Hungarian refers to the right edge only. Hence, the right edge of XP (YP) aligns with the right edge of the prosodic domain and there are as many prosodic domains as there are distinct right edges of XPs (YPs). In view of these definitions, a structure where all i-complements occur as s-complements will constitute a single prosodic domain but each occurrence of an i-complement as a s-specifier ("inversion") will split prosodic domains. Quantifiers then serve as heads of these prosodic domains. Since there can be only one head in the prosodic domain, quantifiers of the same prosodic domain undergo stress reduction (according to the hierarchy proposed by Hunyadi). Quantifiers occurring in different prosodic domains remain stressed. We thank László Hunyadi and Stefan Benus for discussion on these matters.

[31] Szabolcsi (1997) discusses at length the fact that certain quantifiers occur in more than one syntactic position. Thus, the ranking generalization as stated in (78) may have apparent exceptions. The real generalization is about quantifiers that actually do occur in F, indicated by the position of the verbal particle for instance.

[32] By "mediated" inverse scope, we mean the following type of situation:

[Q/3 V Q/1] Q/2 `Q/2 >Q/3 >Q/1'

The fact that Q/2 outranks Q/3 enables the whole [Q/3 V Q/1] chunk to occur to the left of Q/2. Contained in this chunk is Q/1, which outranks Q/2. It is true that Q/2 now takes inverse scope over Q/1, but only by transitivity: Q/1 is directly scoped over by Q/3 (legitimately so, because Q/1 is in a lower series than Q/3). Such examples arise when Q/1 is in Ref, Q/2 in Dist, and Q/3 in F, and are perfectly acceptable.

[33] The (ai)-(bi) readings might also be produced by covert movement, in addition to spec/comp reordering. On the strength of (ci), we assume that this derivation does not exist

.

[34] Developing a detailed syntax of negation in Hungarian goes beyond the scope of the present paper, but we may note that word order indicates that nem is the specifier of a phonetically null Neg head, and Neg is suffixal (takes Agr as a right-daughter in syntax).

[35] Reconstruction as it stands predicts that a preverbal sequence of two non-F quantifiers is ambiguous. Hunyadi (1999) claims that this is so, but our own judgment is that such sequences are unambiguous. Therefore, this prediction remains a problem.

[36] In a theory primarily developed to predict possible inflectional systems, Williams (1998) proposes two operations: Flip and Reassociate. Mechanically, Flip is equivalent to our "i-complement as s-specifier" option and, not being a movement

operation, it is similarly immune to various problems that the roll-up solutions have, including in particular that of the missing trigger. As it stands, Flip is quite free, wherefore its literal application to our scopal data would enable any violation of the ranking generalization. Nevertheless, if Flip were interpreted in the spirit of mirror theory, namely, that (s-)complementation is morphological but (s-)specification is not, the mt restrictions discussed in 4.4 would carry over. Given the additional device of Reassociate (in categorial terms, functional composition), Williams' grammar would also easily derive all logically possible orders for all scopal orders of three quantifiers, including the [123] linearization for the 2>1>3 and the 2>3>1 scopal orders. One might consider adding Reassociate to mirror theory: But Reassociate is not compatible with mirror theory, in the sense that mirror theory appears to allow only a proper subset of the structures that Reassociate can create. The restrictiveness of mirror theory seems empirically well motivated, for instance, Reassociate would have the power to eliminate the locality of head chain (mw) type relations. The major cases where Williams in fact uses Reassociate seem also treatable by the distinction between morphological and extended words --if phonological words and mw's are also distinguished. (Williams also assumes the basic distinction that mirror theory expresses as the difference between mw's and ew's, but without adopting the mirror theoretical link between mw's and complementation and using different terminology.)