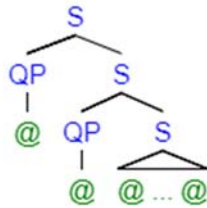


I. Clause internal scopal diversity and scope transparency^{i-Readings}

A theory that provides just one scope rule can be correct if QPs are impenetrable atoms @ -- their internal structure and components need not be accessed and consulted in the course of scope assignment. (I.e. only when the derivation is done do we see how each QP contributed to sentence meaning.)



We are going to show, step by step, that these assumptions are wrong. The first step is to show that QPs cannot be all alike: they exhibit a diverse behavior within their own clause.

I/a. English: Some inverse scopes are available, others are not:

In (1)–(2) the prepositional object *every show* easily scopes over the subject, but *more than one show* does not:

- (1) More than one soprano sings in every show.
OK 'every show has **more than one** (potentially different) soprano in it'
- (2) Every soprano sings in more than one show.
'**more than one** show has **every** soprano in it'

In (3)–(4) the direct objects *a famous soprano* and *more than one famous soprano* may scope over the negation, but in (5) *every famous soprano* cannot:

- (3) Zdenka did not greet a famous soprano.
OK 'there is **a** famous soprano who Zdenka did **not** greet'
- (4) Zdenka did not greet more than one famous soprano.
OK 'there is **more than one** famous soprano who Zdenka did **not** greet'
- (5) Zdenka did not greet every famous soprano.
'**every** famous soprano is such that Zdenka did **not** greet her'

Each of *a soprano*, *more than one soprano*, and *every soprano* is syntactically singular (see verb *has* and pronoun *her*):

- (8) { A / more than one / every } great soprano has her own dressing room.

But in (9) *a soprano* appears to both scope in the matrix clause and be referred back to with a singular pronoun (*her*) in the second conjunct, whereas in (10)–(11) *more than one soprano* and *every soprano* do not:

- (9) Taro thinks that **a soprano** applied and wants to hire **her**.
OK 'there is a soprano who Taro thinks applied and who Taro wants to hire'
- (10) Taro thinks that **more than one soprano** applied and wants to hire {**her*/^{ok} them}.
- (11) Taro thinks that **every soprano** applied and wants to hire {** her* / ^{ok} them}.

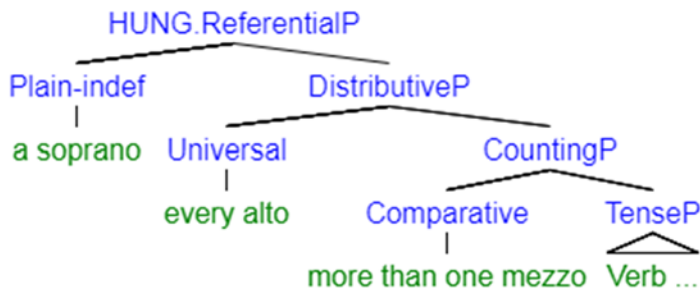
I/b. The data above show that QPs in English fall into at least three classes based on their scope behavior.

Plain indefinites: a soprano (two sopranos, etc.)
 Comparative indefinites: more than one mezzo (more mezzos than altos)
 Distributive singular universals: every alto (each alto)

Beghelli & Stowell (1997) accounted for this by moving the members of the three classes into distinct dedicated positions at Logical Form (LF) in English, as opposed to indiscriminately adjoining them to the sentential node. Interestingly,

Hungarian practically replicates B&S's LF in its surface constituent order. Both the membership of the classes and their relative hierarchical positions are the same.

In Hungarian, multiple QPs can occur both before and after the main verb. In the preverbal field, QPs line up in a particular order. This order is independent of which QP is the subject, direct object, etc. and depends only on the meaning of the quantifiers. The acceptable Hungarian structure below is labeled with B&S's RefP, DistP, and CountP.

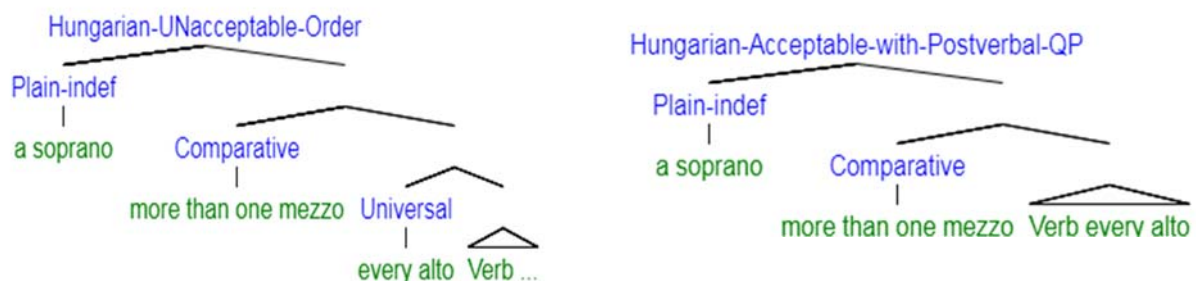


Moreover, the acceptable order in Hungarian is also **unambiguous**. The scopal order matches the surface linear order (no inverse scope):

(12) *A soprano(obj.) > every alto(subj.) > more than one mezzo(ind.obj) > introduced.*
 'There is a soprano whom every alto introduced to more than one mezzo'

Other orders in the preverbal field of Hungarian are unacceptable.

Therefore, if you want to express a scope interpretation other than (12), you must also use the postverbal field:



The convergent evidence from English and Hungarian suggests that **we cannot treat all QPs alike: they do not behave alike.**

We need (i) multiple distinct scope-assignment rules, or (ii) one rule complemented by other tools, or (iii) a combination of these. See Tuesday for (ii)!

I/c. Cross-linguistic preference for Scope Transparency:

**Linear order and scope interpretation should match, whenever possible.
But non-transparent scope is okay when there's no transparent option.**

In English, the surface order of QPs is largely determined by their grammatical functions. Scope interpretation cannot be always transparent. Inverse scope is often possible, cf. (1).

In Hungarian, the surface order of QPs is largely independent of their grammatical functions (subject, object, postpositional phrase); instead, it is determined by what kind of quantifier they contain. Scope interpretation at the sentence level is very transparent: it systematically matches linear order.

Can we say that some languages are scope transparent and others are not? Is this a parameter that is set for languages as wholes? (Bobaljik & Wurmbrand 2012)

In Japanese, linear order is not as flexible as in Hungarian, but it enables more scope transparency than English (object universal can precede subject):

				Order	Inv.scope possible?	
(13)	dareka-ga	subete-no	hon-o	yonda	$\exists_ \forall$	# $\forall > \exists$
	someone-NOM	all-GEN	book-ACC	read		
(14)	subete-no	hon-o	dareka-ga	yonda	$\forall_ \exists$	$\forall > \exists$
	all-GEN	book-ACC	someone-NOM	read		

German is similar to Japanese, although the sentence-level data are more complicated. But sub-sentential German data add an important insight. When no matching order is acceptable ((15) with genitive -s), inverse scope of \forall is possible (non-transparency).

But inverse scope of \forall cannot compete with an acceptable transparent one ((16) with *von*, without special intonation).

					Order	Inv.scope?
(15) a.	Peter hat	eine Platte	jedes	Musikers	aufgelegt.	
	Peter has	a/one record	every.GEN	musician	played	$\exists_ \forall$
	'Peter played a record by every musician'					$\forall > \exists$
b.	*Peter hat	jedes	Musikers	eine Platte	aufgelegt.	# $\forall_ \exists$
	Peter has	every.GEN	Musician	a/one record	played	
(16) a.	Peter hat	eine Platte	von jedem	Musiker	aufgelegt.	
	Peter has	a/one record	of every	musician	played	$\exists_ \forall$
	'Peter played a record by every musician'					# $\forall > \exists$
b.	Peter hat	von jedem	Musiker	eine Platte	aufgelegt.	
	Peter has	of every	musician	a/one record	played	$\forall_ \exists$
	'Peter played a record by every musician'					

So, German shows that **scope transparency is a property of constructions** (what orders are available?), **not of languages en bloc**.

Supplement to Bobaljik & Wurmbrand 2012

Scope Transparency (SCoT):

If the order of two elements at LF is X>Y, the order at PF is X>Y.

Japanese obeys the SCoT, English doesn't. Why? Intuition: because the "scrambling" of the direct object is possible in Japanese but not in English.

This intuition is expressible if

- (i) economy conditions such as SCoT are violable constraints,
- (ii) they are unidirectional:
interpretation is computed first and the question is how it can be linearized, and
- (iii) the "availability of QR" (i.e. scoping that doesn't correspond to surface syntax) varies with specific configurations, not with languages en bloc.

(3) *German, Japanese scrambling*

	LF	PF	SCoT
a. ✓	B»A»t _B	B»A»t _B	✓
* (QR)	B»A»t _B	A»B	*
b. ✓	A»B	A»B	✓
* (Reconstruction)	A»B	B»A»t _B	*

(3a) is a situation in German or Japanese in which the object takes scope over the subject (LF = B»A).

Since these are scrambling languages, there are two candidate PFs to consider: the "moved" order (PF = B»A) and the unmoved order (PF = A»B).

Of these, only the moved order faithfully reflects the scope order, satisfying SCoT. The combination of an unmoved surface order, but inverse scope, is thus excluded.

- (5) a. Syntax: [someone]-NOM [every book]-ACC read
 "Overt" QR: [every book] [someone] [every book] read
 b. LF output: [every book] [someone] [~~every book~~] read
 c. PF1: [every book] [someone] [~~every book~~] read ✓SCoT (2c)
 *PF2: [~~every book~~] [someone] [every book] read *SCoT (2b)

(4) *English*

	LF	PF	SCoT
a. * Scrambling	B»A»t _B	*B»A»t _B	✓
✓ (QR)	B»A»t _B	A»B	*
b. ✓	A»B	A»B	✓
* Scrambling	A»B	*B»A»t _B	*

The German/Japanese situation should be contrasted with English (4a). For the corresponding LF (scope of object over subject), the SCoT-respecting PF is unavailable, as English lacks scrambling. In this case, then, there is only one candidate PF to consider, namely PF = A»B. Although this pairing of LF and PF violates SCoT, there is no better pairing (in English), and hence it is permitted.

- (6) a. Syntax: *Some toddler read every book*
 "Overt" QR: [every book] [some toddler] read [every book]
 b. LF: [every book] [some toddler] read [~~every book~~]
 c. *PF1: [every book] [some toddler] read [~~every book~~] *Scrambling
 PF2: [~~every book~~] [some toddler] read [every book] *SCoT tolerated

In English, topicalization and passive do not count as competitors for QR (why? perspectival difference), and so they do not rule QR out.

Readings for Monday

Beghelli, Filippo and Timothy Stowell 1997. Distributivity and negation: The syntax of *each* and *every*. In: Szabolcsi, ed. *Ways of Scope Taking*. Springer, pp. 71–108.

Bobaljik, Jonathan D. and Susi Wurmbrand 2012. Word order and scope: transparent interfaces and the 3/4 signature. *Linguistic Inquiry* 43, pp. 371-421

May, Robert 1977. *The Grammar of Quantification*. PhD dissertation, MIT.

May, Robert 1985. *Logical Form: Its Structure and Derivation*. Cambridge, MA: The MIT Press.

Montague, Richard 1974a. The proper treatment of quantification in ordinary English. In: R. Thomason (ed.), *Formal Philosophy: Selected Papers of Richard Montague*, pp. 247–271. New Haven and London: Yale University Press.

Szabolcsi, Anna 2000. The syntax of scope. In: Mark Baltin and Chris Collins (eds.), *Handbook of Contemporary Syntactic Theory*, pp. 607–634. Oxford: Blackwell.

Szabolcsi, Anna 2010. *Quantification*, Cambridge UP.

Ch 2. Generalized quantifiers and their elements, pp. 4-19

Ch 11. Clause-internal scopal diversity, pp. 177-187.