Scope Fixing, Scope Economy and Focus Movement

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Synopsis. We present a new argument for focus movement by looking at the scope-shifting behavior of pre-VP *only*. We show (i) that in contrast to standard assumptions pre-VP *only* can undergo covert movement and (ii) that in many cases where it is not able to this is due to independently motivated grammatical constraints.

1. Scope fixing effects. It is commonly assumed that pre-VP *only* has rigid scope (Taglicht 1984, Rooth 1985, Bayer 1996, i.a.). An exemplification of this is provided in (1)-(2). While the sentence in (1a) can be true even if you are allowed to learn, say, German, the sentence in (1b) cannot. This contrast is usually explained by *only Spanish* being able to scope above *be required* in (1a), yielding the proposition that only Spanish is such that you are required to learn it, and by a parallel construal not being available for (1b) (e.g., Rooth 1985).

(1) a. You are required to learn only SPANISH (require > only, only > require)
     b. You are required to only learn SPANISH (require > only, #only > require)

This state of affairs is unexpected on the movement approach to focus association, according to which the focused phrase moves to the complement of *only* to form a quantifier (Chomsky 1976, Drubig 1994, Wagner 2006, i.a.). Namely, there is no obvious reason why this quantifier should not be able to undergo further covert scope-shifting operations (CSSOs), as illustrated in (2).

(2) [… [$_{((et)t)}$ only$_C$ Spanish$_F$] [$_{(et)}$ λx [you learn x]]

Accordingly, scope fixing with pre-VP *only* can be construed as an argument against a version of focus movement (see esp. Rooth 1985, Ch. 3). In contrast, if the interpretation of pre-VP *only* is assumed not to involve focus movement but rather indirect association with alternatives induced by focus (*in situ* approach of Rooth 1985, 1992), its scope rigid behavior is to some extent expected: if movement of such *only* were assumed, it would for reasons of interpretability have to leave no trace, ruling it out as an instance of A'-movement (see Rooth 1985 for further discussion).

2. Scope interactions with nominal quantifiers. The scope rigid nature of pre-VP *only* appears to be corroborated by the behavior of pre-VP *only* with respect to nominal quantifiers like *some*. For example, the sentence in (3B) only allows for a contextually vacuous surface scope reading.

(3) A: We need to pay bonuses to our married workers. Who must get a bonus?
     B: ?Someone is only married to JOHN (some > only, #only > some)

However, if the sentence is embedded in a downward-entailing environment, its contribution appears to be felicitous, that is, it can have an inverse scope reading that only John is married.

(4) A: We need to pay bonuses to our married workers. Does that mean only John?
     B: I doubt that someone is only married to JOHN

The contrast between (3) and (4) can be shown to follow from the following condition:

(5) **Generalized Scope Economy Condition (GSEC)** A CSSO is licensed in a sentence S only if there exists a constituent C of S such that the CSSO does not make the semantic value of C entail what it would be without the CSSO (Mayr & Spector 2013)

The inverse scope reading in (3) entails the surface scope reading, represented in (6). Accordingly, a CSSO that would yield the inverse scope reading is ruled out by GSEC.

(6) [only J.] λx [someone is married to x] ⇒ [someone [λx [only J.] λy [x is married to y]]

However, embedded in a downward-entailing environment, (4B), the entailment pattern of the readings is reversed at the level of the matrix sentence. Accordingly, a CSSO that yields the inverse scope of *only-XP* and the existential quantifier satisfies GSEC and is licensed.

3. Scope interactions with modal quantifiers. Pre-VP *only* may scope above universal modals *have to, need to,* the negative polarity *need*, and *must* (this holds for deontics but not epistemics, which prefer widest scope, cf. von Fintel & Iatridou 2003). This is shown in (11): the sentence is felicitous on the inverse scope reading – to pass the exam only one book is such that you must read it; surface scope reading is pragmatically odd – you must read exactly one book to pass the exam – namely, it contradicts the shared assumption that the more you read the better you do in exams.

(7)   To pass the exam, you {have to/need to/need/must} only read ONE book

Note that although *must* is a positive polarity item, it can scope below *only* but not negation (Iatridou & Zeijlstra 2013), suggesting that it is indeed *only* taking scope above *must* in (7) rather than, say, an abstract negation associated with *only* (cf. von Fintel & Iatridou 2007).

4. Issue for Generalized Scope Economy. Pre-VP *only* may also scope above existential modal verbs like *allow to.* For example, the sentence in (8) has the inverse scope reading: you are allowed to eat one cookie but not allowed to eat two. This is unexpected on the formulation of GSEC in (8): a CSSO that takes *only-XP* above *allow* leads to a stronger meaning.

(8)   Since we are having dinner early, you are allowed to only eat ONE cookie

More generally, modals appear to systematically obviate GSEC (but see Mayr & Spector 2013, Sec. 7). For example, on the preferred reading of the sentence in (9), the QP takes scope above the existential modal, yielding the meaning that fewer than three women are eligible brides for Waldo.

(9)   Prince Waldo is allowed to marry fewer than three women, namely Princesses Zoe and Sara

Since the inverse scope reading is stronger than the surface scope reading in (9), it is falsely ruled out by GSEC. In short, GSEC must modified so as to pertain to non-modal operators (cf. Takahashi 2006), which could be fleshed out for the purposes of the abstract as a constraint on Quantifier Lowering (Johnson & Tomioka 1997): to obtain inverse scope, a quantifier undergoes QL (QPs never move QR above other QPs due to tucking-in property of A'-movement, Richards 2001).

5. Some apparent counterexamples. Not all occurrences of pre-VP *only* appear to be able to undergo CSSOs. For example, the sentence in (1b) appears to only allow the surface scope reading. We illustrate in (10) that inverse scope readings can be found even with such configurations: for ACD resolution, *only* together with the DP containing focused *one* takes scope above *require*.

(10)   To pass the exam, you are required to only solve ONE exercise that the students who want to get a perfect score are <s>required to solve/*solve</s>   (#require > only, only > require)

Furthermore, we propose that the inverse scope reading with pre-DP *only* in (1a) is more accessible than that of pre-VP *only* due to information structure considerations that are independently known to facilitate disambiguation (Büring 1997): if rising intonation is on *required* and falling intonation is on *only Spanish*, the inverse scope may be facilitated, (1a); this is not possible with the pre-VP *only* in (1b) (unless the entire VP is focused). This gives rise to the expectation that if the whole VP is focused, wide scope of pre-VP *only* may be facilitated. This is borne out, as shown in (12).

(11)   You are /required to learn [only SPANISH$_F$]$_F$\
         (Uncertainty inference: 'You are allowed to learn X.' Facilitation of inverse scope.)
(12)   Some classes require you to only SHOW UP but this one requires you to put in some effort

6. Conclusion and outlook. We have shown that pre-VP *only* can undergo CSSOs – this can be naturally captured on focus movement approach but not obviously so on the alternative semantics approach. The appearance of scope fixing can be attributed to independent grammatical principles, say, GSEC. Future work: A study of scopal interactions of *only* with a greater variety of operators is mandated as well as a more careful investigation of other focus particles (*even, also* etc.).

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