WHAT SCOPE ECONOMY TELLS US ABOUT RECONSTRUCTION AND QR

Aim The aim of this paper is to lay bare two conflicts between Fox's (2000) Scope Economy Condition and different theories of movement. First, I will present new data that show that Scope Economy does not hold for Reconstruction. This is a problem for the Quantifier Lowering theory. Then I will show that this problem can be resolved using the Copy Theory of movement, but when we consider QR data it turns out there is also a conflict between the Copy Theory of Movement and Scope Economy. I will conclude that if we maintain Scope Economy, this has consequences for the way we can account for the interpretation of object quantifiers.

Scope Economy in Fox (2000): QR Scope Economy states that a scope shifting operation that is not needed for type reasons is licensed only if it changes the truth conditions of the proposition. In the derivation in (2) the first movement of *every teacher* is allowed because it resolves the type clash of the object quantifier, but the second step, which would yield an inverse scope reading, is blocked by Scope Economy as it would not effect a semantic change.

(1) Mary admires every teacher.

(2) [every teacher$_2$ [$_{TP}$ Mary$_1$ [$_{vP}$ t$_2$ [$_{vP}$ t$_1$ [$_{VP}$ admires t$_2$]]]]]

This can be tested using ellipsis. In (3-b) the elided *every teacher* cannot take scope over *Mary* in the ellipsis sentence. Parallelism — the principle that in ellipsis constructions, the antecedent and the ellipsis sentence must have identical scope configurations — prohibits *every teacher* from taking scope over *a boy* in the antecedent sentence. As a result, only surface scope is possible for the antecedent sentence in (3-b). When there is no scopal commutativity, as in (3-a), Scope Economy does not prevent movement and both scope configurations are available.

(3) a. A boy admires every teacher. A girl does, too. $[\exists > \forall]$; $[\forall > \exists]$

b. A boy admires every teacher. Mary does, too. $[\exists > \forall]$; $*[\forall > \exists]$

(Mayr and Spector (2012) and Fleisher (2015) propose modifications of Scope Economy. As far as I can see, their predictions regarding the data in this paper are the same as Fox's.)

New Reconstruction data In the examples involving Reconstruction in (4) both scope configurations are possible in the antecedent sentences.

(4) a. A student is required to attend the meeting. Thomas is, too. $[\exists > \Box]$; $[\Box > \exists]$

b. A kid may have set off the fire alarm. Annette may have, too. $[\exists > \Diamond]$; $[\Diamond > \exists]$

c. Every child didn't laugh. Lucy didn't, either. $[\forall > \neg]$; $[\neg > \forall]$

d. Someone from our class is likely get a job in Paris. $[\exists >$ *likely*$]$; $[$*likely* $> \exists]$
Lydia is, too. *(pace Fox)*

Fox assumes the Quantifier Lowering (QL) account of Reconstruction (May, 1977), where inverse scope readings come about by lowering the subject to a position below the operator it interacts with at LF, as in the (simplified) representation of (4-a) in (5).

(5) [$_{TP}$ t$_1$ [$_{TP}$ required [$_{vP}$ Thomas$_1$ [$_{VP}$ attend the meeting]]]]

Scope Economy should block this movement here as it is semantically vacuous. The incorrect prediction is that only surface scope is available in the ellipsis sentences in (4) and so, because of Parallelism, only surface scope should be available in the antecedent sentences. If we assume Scope Economy, the data in (4) and QL are incompatible. This is the first conflict.

Reconstruction in the Copy Theory of Movement If we analyse Reconstruction in the Copy Theory of Movement (CTM) (Chomsky, 1993), the issue is resolved. In the CTM, moved elements do not leave traces but rather fully fledged copies of themselves in their base position. (4-a) then has the syntactic structure in (6). When this structure is sent to LF, LF can delete the lower copy of *Thomas* and interpret the higher one, which yields the surface scope reading, or it can delete the higher copy and interpret the lower one, which yields the inverse scope reading.

(6) [$_{TP}$ Thomas [$_{TP}$ required [$_{vP}$ Thomas [$_{VP}$ attend the meeting]]]]

The Reconstructed reading can now be obtained without any movement operations at LF; it merely involves choosing to interpret the lower copy. As Scope Economy is a restriction on

movement, the prediction is that it cannot prevent Reconstruction here. Of course *Thomas* has moved from its vP-internal position to TP, but this is a syntactic movement that has taken place for independent reasons (EPP) and is thus unaffected by Scope Economy. In sum, the CTM, unlike QL, correctly predicts that Scope Economy does not hold for Reconstruction.

QR in the Copy Theory of Movement However, if we assume the CTM we get in trouble with the QR data in (3-b). In the CTM the derivation of the ellipsis sentence would proceed as in (7). We start with *every teacher* in its initial position, as in (7-a). Then *every teacher* moves for type reasons, as in (7-b). The closest node of type *t* is above the lower copy of *Mary*, so this is where it attaches. In (7-c) *Mary* moves to its final position and in (7-d) there is an optional extra movement step for *every teacher* to take scope over *Mary*.

(7) a. $[_{vP}$ Mary $[_{VP}$ admires every teacher]]
b. $[_{TP}$ every teacher $[_{vP}$ Mary $[_{VP}$ admires every teacher]]]
c. $[_{TP}$ Mary $[_{TP}$ every teacher $[_{vP}$ Mary $[_{VP}$ admires every teacher]]]]
d. $[_{TP}$ every teacher $[_{TP}$ Mary $[_{TP}$ every teacher $[_{vP}$ Mary $[_{VP}$ admires every teacher]]]]]

The problem is that *every teacher* already outscopes *Mary* in (7-b). As this movement is necessary to avoid a type clash, it is exempt from Scope Economy. Because *Mary* has left a full copy of itself in the vP rather than a trace, we can interpret *Mary* there. As a result, we get an inverse scope configuration in (7-b). So: the fact that object quantifiers need to move to avoid a type clash in conjunction with the CTM, which allows us to interpret the lower copy of *Mary*, yields the prediction that Scope Economy should allow inverse scope in (3-a), contrary to fact. This is the second conflict.

Interpreting object quantifiers In sum, if we assume QL we get a problem with the Reconstruction data in (4) and if we assume the CTM we get a problem with the QR data in (3-b). In view of the data in (4), I see no way to maintain both Scope Economy and QL. If we want to maintain Scope Economy and the CTM, the consequence is that something in (7) needs to change. The offending step in the derivation is (7-b), where *every teacher* takes scope over *Mary* without violating Scope Economy. The only way to prevent *every teacher* from doing this is to posit an account where object quantifiers can be interpreted *in situ*, for example by assuming that the type of a transitive verb is $\langle\langle\langle e,t\rangle,t\rangle,\langle e,t\rangle\rangle$ instead of $\langle e,\langle e,t\rangle\rangle$. This way, *every teacher* does not have to move for type reasons. The movement in (7-b) is no longer independently motivated so Scope Economy can block it, and we correctly predict that inverse scope is not licensed for (3-b). To sum up, Scope Economy and the contrast between the QR and Reconstruction data lead to the conclusion that we need not only the CTM (for Reconstruction) but also the assumption that object quantifiers do not move for type reasons (for QR).

Other considerations In the full paper I discuss two other accounts of Reconstruction: PF movement (Sauerland & Elbourne, 2002) and Semantic Reconstruction (Chierchia, 1995; Cresti, 1995; Rullmann, 1995; Ruys, 2015), and I show that neither theory can account for the full range of data. I also discuss the ramifications of the considerations presented here for coordinate structures that involve Reconstruction in both conjuncts.

Conclusion I have presented new data that reveal that Scope Economy does not hold for Reconstruction, and I have shown that two conflicts arise between Scope Economy and theories of movement: 1) a conflict between Scope Economy and QL for the Reconstruction data; and 2) a conflict between Scope Economy and the CTM for the QR data. I have argued that the only way out of this conflict seems to be to assume that object quantifiers do not move for type reasons. This indicates that Scope Economy has more far-reaching consequences for the interpretation of quantifiers than previously thought.

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