Quantifier Scope Constraints in ACD: Implications for the Syntax of Relative Clauses

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1. It is widely assumed that restrictive relative clauses can have two potential structures; a raising structure (1) where the NP of the DP hosting the relative clause originates inside the relative clause and a matching structure (2) where the NP is generated outside of the relative clause which in turn contains an identical (matched) but elided version of the same NP (Vergnaud'74, Carlson'77, Bhatt'02, Sauerland'98, Sauerland&Hulsey'06).

(1) … [$_{DP}$ every [$_{CP}$ book that Mary read <book>]].

(2) … [$_{DP}$ every [$_{NP}$ book [$_{CP}$ ~~book~~ that Mary read t_i]]].

This paper argues for an amendment to the matching analysis such that the relative clause contains not only a copy of the NP but of the entire host DP. We propose, more specifically, a derivation for matching relative clauses where first the entire host DP is moved inside the relative clause to SpecCP via A'-movement which is then followed by deletion under identity with the RC external host DP, (3).

(3) … [$_{DP}$ every [$_{NP}$ book [$_{CP}$ ~~every book~~ that Mary read <every book>]].

2. Empirical support for our amendment to the matching analysis is semantic in nature. Specifically we present the generalization in (4) exemplified in (5),(7)-(11)about scope interactions in relative clauses with antecedent contained deletion (ACD), which suggests that the entire host DP is at some point in the derivation interpreted inside the relative clause.

(4) **ACD-Scope Generalization:** In a sentence of the form [… Op_1 ….[Op_2 … Op_3 …<VP>]], where Op_1 is matrix operator, Op_2 the host DP containing a relative clause with an ACD site and Op_3 an operator inside the relative clause, Op_2 can have inverse scope over Op_1 only if Op_2 and Op_3 are scopally non-commutative.

To get a first appreciation of (4) consider the contrast in (5) where we observe in (5a) that inverse scope of *every book that Mary did* over the matrix subject *a professor* is relatively unavailable compared to (5b), which differs from (5a) only in that the relative clause subject is an indefinite *a girl.* This contrast is rather reminiscent of Fox's (1998) Scope Economy generalization exemplified in (6). The contrast in (7) confirms that the driving force behind the inverse scope restriction is whether the host DP *every book* is scopally *commutative* with the relative clause subject. Indeed, as the data in (8) – (10) indicate, the paradigm can be expanded to cover operators like negation and modals.

3. We argue that this generalization can be explained within a focus based theory of ellipsis licensing (cf. Rooth'92, Heim'97, Schwarzschild'99, Rooth'06) assuming that ellipsis of a VP_2 is possible only if there is an antecedent VP_1 such that VP_2 is contained in a constituent (EC) that appropriately contrasts with an antecedent constituent (AC) containing VP_1. α contrasts appropriately with β iff the ordinary semantic value of β entails the grand union of the focus semantic value of α, $[[\beta]]^o \models \cup([[\alpha]]^f)$. Crucially, to derive the generalization we need to assume that the entire host DP (Op_2) is part of semantic calculation of $[[EC]]^o$ and $[[AC]]^f$, (11). Only the amended matching analysis can satisfy this requirement.

4. Further Evidence: Our matching supported empirical grounds as it makes the correct predictions, following Hulsey&Sauerland (2006), about BT(A), extraposition, and variable binding, (13)-(15).

Data and References

(5) a. A professor read every book that Mary did. *∀>∃
b. A professor read every book that a student did. ∀>∃

(6) a. A boy read every book and Mary did too. *∀>∃
b. A boy read every book and a girl did too. ∀>∃

(7) a. A girl read every book every boy did. *∀>∃
b. A girl read every book a boy did. ∀>∃

(8) Mary didn't read every book John did. *∀>not

(9) Mary didn't read every book John didn't. *not>∀

(10) Sue kissed two boys at the party last night. Mary can kiss at most one boy, but …
a. … she is allowed kiss every boy Sue kissed/#did. *∀>allow
b. … she is allowed to kiss every boy Sue was allowed to. ∀>allow

Sample calculations for Ellipsis Licensing: (a) represents the sentence (capital letters indicate F-marking), (b) a sketch of the assumed LF, (c) the focus semantic value of EC and (d) the relation between $[[AC]]^o$ and $\cup([[EC]]^f)$.

(11) a. A girl read every book a BOY did. every book > a girl
b. [Every [$book_x$ [a boy_y <y read x>]] [a $girl_z$ z read x]]
c. $\cup([[\text{every book}_x\ [\text{a BOY}_y\ \text{y read x}]]])^f = \cup(\{\text{that every book}_x\ [\text{a } P_y\ \text{y read x}]: P \in D_{et}\})$
d. [every $book_x$ [a $girl_y$ y read x]] $\models \exists P[P \in Alt(boy)$ & [every $book_x$[a P_z z read x]]]

(12) a. A girl read every book JOHN did. *every book > a girl
b. [Every [$book_x$ [$John_y$ <y read x>]] [a $girl_z$ z read x]]
d. [every $book_x$ [a $girl_z$ z read x]] $\not\models \exists y[y \in Alt(John)$ & [every $book_x$[y read x]]]

(13) a. A girl saw every picture of himself that John sent
b. *A girl saw every picture of himself that John did
BT(A) violation → matching

(14) a. A girl read every book (yesterday) that a boy did ∀>∃
b. A girl read every book (yesterday) that John did *∀>∃
ACD-Scope Generalization holds under extraposition → matching

(15) a. A girl saw every picture of him_i that $John_j$ did *∀>∃
b. A girl saw every picture of him_i that a boy_j did *∀>∃
Lack of inverse scope indicates no variable binding → matching

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