Backwards association (Erlewine, 2014b)

1 The question

The interpretation of *focus-sensitive operators* (e.g. *only*, *even*, *also*) depends on the placement of *focus* in the sentence (formally, F-marking):

(1) **Association with focus:**

　　a. John $\left\{ \begin{array}{c} \text{only} \\ \text{even} \\ \text{also} \end{array} \right\}$ met Mary at the [party]$_\text{F}$.

　　b. John $\left\{ \begin{array}{c} \text{only} \\ \text{even} \\ \text{also} \end{array} \right\}$ met [Mary]$_\text{F}$ at the party.

The choice of focus affects these operators in a systematic way: focus introduces alternatives that these operators quantify over (Rooth, 1985, 1992).

Q: Can the focused constituent move out of the scope of its focus-sensitive operator?

(2) **Associating "backwards":**
α_F ... [*Op* [... ____ ...]]　　　　(with α interpreted as the associate of the operator)

Previous answers:

- *No:* Tancredi (1990); Aoun and Li (1993); Beaver and Clark (2008), all primarily based on Tancredi's observations on English *only*

- *Yes:* Barbiers (1995) based on Dutch; Rullmann (2003) based on English *also*

Erlewine (2014b): In theory: yes. In practice: it's complicated.

(3) **Backwards association with *even* and *also* but not *only*:**
　　a. 　* [Mary]$_\text{F}$, John *only* met ____ at the party.　　(based on Tancredi, 1990, ex. 57b)
　　b. 　✓ [Mary]$_\text{F}$, John *even* met ____ at the party.
　　c. 　✓ [Mary]$_\text{F}$, John *also* met ____ at the party.

2 Basic data

☞ In a variety of contexts, *even* but not *only* is able to associate backwards.[1]

(4) **Backwards association with topicalization:**
   a. * [John]_F, they *only* consider ____ intelligent.
   b. ✓[John]_F, they *even* consider ____ intelligent.   (Kayne, 1998, fn. 75)

(5) **Backwards association with a *wh*-phrase:**
   a. * You'll never guess [which [president]_F he *only* met ____].
   b. ✓You'll never guess [which [president]_F he *even* met ____].

Jackendoff (1972) noted that *even* but not *only* can associate with a leftward subject:

(6) **Backwards association with the subject:**
   a. * A [professor]_F will *only* come to the party.
   b. ✓A [professor]_F will *even* come to the party.

With the VP-internal subject hypothesis, (6) can be unified with (4–5).

The same can be observed with covert movement:

(7) **Baseline scope ambiguity and assumed LFs:**
   Someone wants to meet every boy in the room.   ✓∃ > ∀, ✓∀ > ∃
   a. <u>LF for ∃ > want > ∀</u>: someone wants [[every boy...] PRO meet ____]

   b. <u>LF for ∀ > ∃ > want</u>: [every boy...] someone wants [PRO meet ____]

(8) **Association with *only* restricts QR:**   (based on Aoun and Li, 1993)
   a. Someone wants to *only* meet [every [boy]_F in the room].   ✓∃ > ∀, *∀ > ∃
   b. Someone wants to *even* meet [every [boy]_F in the room].   ✓∃ > ∀, ✓∀ > ∃

(9) ***Only* but not *even* restricts Antecedent-Contained Deletion ellipsis size:**
   a. John wants to *only* read [every [book]_F that Mary did/does △].
                                                  ✓"read," *"want to (*only*) read"
   b. John wants to *even* read [every [book]_F that Mary did/does △].
                                                  ✓"read," ✓"want to (*even*) read"

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[1]*Also* patterns with *even* for the data here, although there is a complication in the prosodic realization of backwards association with *also*. See Krifka (1998) and Erlewine (2014b, appendix to chapter 5).

3 Two things you might try

3.1 Forced reconstruction

Maybe *even* associates backwards by forcing the DP to reconstruct into the scope of *even*?[2]

(10) **Subjects can scope reconstruct into their *v*P-internal position:**
Every professor didn't come to the party. $\checkmark \forall > \neg$, $\checkmark \neg > \forall$
<u>Assumed LF for inverse scope:</u> NEG [$_{v\text{P}}$ every professor come to the party]

(11) **Syntactic reconstruction feeding backwards association with *even*:**
$\checkmark$ Every [professor]$_\text{F}$ will *even* come to the party.
  a. <u>Narrow syntax:</u> [Every [professor]$_\text{F}$] FUT *even* [____ come...]
  b. <u>Pronounce higher position:</u> "Every PROFESSOR will *even* come to the party."
  c. <u>Interpret lower position:</u> [~~every [professor]$_\text{F}$~~] FUT *even* [every [professor]$_\text{F}$ come...]
                  $\Rightarrow$ *even* can then associate with "professor"

This predicts the backwards-associating DP to have to take narrow scope, contrary to fact:

(12) **Backwards association is compatible with different scopes for the DP:**
[$_\text{DP}$ Every [student]$_\text{F}$] didn't *even* come to the party.
  a. $\checkmark \forall > \text{Neg:}$ $\Rightarrow$ No student came.
  b. $\checkmark \text{Neg} > \forall:$ $\Rightarrow$ Not every student came, but some may have.

A further problem is that a derivation as in (11) would predict backwards association to also be possible with *only*.

☞ This issue is discussed in detail in chapter 7 of Erlewine (2014b). Let's assume that syntactic reconstruction cannot be used to feed focus association.

3.2 Extending the scope of *even*

Maybe *even* can extend its scope in some way, so the intended associate is in its LF scope?

(13) **The scope theory as potential solution to backwards association:**
  a. <u>PF:</u> A [professor]$_\text{F}$ will [*even* [come to the party]]
  b. <u>LF:</u> *even* [A [professor]$_\text{F}$ will [____ [come to the party]]]
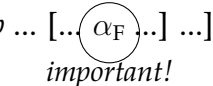
☞ We will discuss this theory on Monday. For our purposes today, let's assume this is not an option and *only* and *even* both take scope where they are pronounced.

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[2]This is suggested as a possibility in Kayne (1998, fn. 75).

4 The idea

Adopt **the Copy Theory of movement** (Chomsky, 1993). Whenever a focus-sensitive operator seems to associate "backwards," it is actually associating with **F-marking in the lower copy** of the movement chain, which may be unpronounced.

(14) **Copying F-marking:**
 a. Narrow syntax: [... α_F ...] ... [*Op* ... [... α_F ...] ...]

 b. LF: [... α_F ...] ... [*Op* ... [...(α_F)..] ...]
    important!
 c. PF: [... α_F ...] ... [*Op* ... [... α_F ...] ...]

(15) **When backwards association is not possible:**
 a. the base position of movement does not include the F-marking; or
 b. the resulting meaning is problematic.

☞ Under this proposal, backwards association is possible only if *the movement chain originates in the operator's scope.*

(16) Baseline: The report convinced the judges that we spied on the Canadians.

(17) *Even* **associating with leftward topic requires base position in *even*'s scope:**
 a. ✓The [Canadians]_F, the report *even* convinced the judges that we spied on ____ .
 b. ✓The [Canadians]_F, the report convinced the judges that we *even* spied on ____ .
 c. ✓The [judges]_F, the report *even* convinced ____ that we spied on the Canadians.
 d. * The [judges]_F, the report convinced ____ that we *even* spied on the Canadians.
    (Ungrammatical with the intended association of *judges* with *even*.)

(18) *Even* **linearly preceding the gap is not sufficient:**
 * The [judges]_F, [for the report to *even* impress me] would annoy ____ .   (DP, p.c.)

(19) **Backwards association across raising vs control:**
 a. ✓ A [professor]_F seems to *even* be at the party.   *raising*
 b. * A [professor]_F wants to *even* be at the party.   *control*

This contrast is explained under the common view that raising involves a movement chain, but the control construction does not:

(20) a. ✓ [A [professor]_F] seems to *even* [[a [professor]_F] be at the party].   *raising*

 b. * [A [professor]_F]_i wants to *even* [PRO_i be at the party].   *control*

5 Background: interpreting lower copies

At LF, the lower copy must be converted into a definite description bound variable via *Trace Conversion* (Rullmann and Beck, 1998; Fox, 2002): the determiner is replaced with "the" and a bound variable restrictor is added to the domain.

(21) **Interpreting copies in a movement chain:**
  "John read every book."
  a. Quantifier Raising as copying: [every book] John read [every book]
  b. LF after Trace Conversion: [every book] λx John read [the book x]

6 *Even* vs *only*

The difference between *even* and *only* derives from their different semantics:

(22) **Relevant semantic properties of *even* and *only* (Horn, 1969):**
  a. *Even uses focus alternatives to introduce a non-assertive inference*, expressing the relative unlikeliness/noteworthiness of the prejacent (the stated value, boxed below) relative to its alternatives. It does not affect the truth conditions.
  b. *Only uses focus alternatives to introduce a new truth condition*, that the non-prejacent alternatives must be false. This truth-conditional meaning will then compose with material above it.

Consider the following configuration:

(23) A [professor]$_F$ will *Op* come to the party.   (6)
  a. Narrow syntax: [A [professor]$_F$] TNS *Op* [a [professor]$_F$] come to the party
  b. LF after Trace Conversion:
     [A [professor]$_F$] λx TNS *Op* [$_{vP}$ [the [professor]$_F$ x] come to the party]
  c. Alternatives to F-marked "professor": $\left\{ \boxed{\text{professor}}, \text{student} \right\}$
  d. Alternatives in the scope of *Op*:
     $$\left\{ \begin{array}{l} \boxed{\lambda w.\ \text{the professor } x \text{ comes to the party in } w}, \\ \lambda w.\ \text{the student } x \text{ comes to the party in } w \end{array} \right\}$$

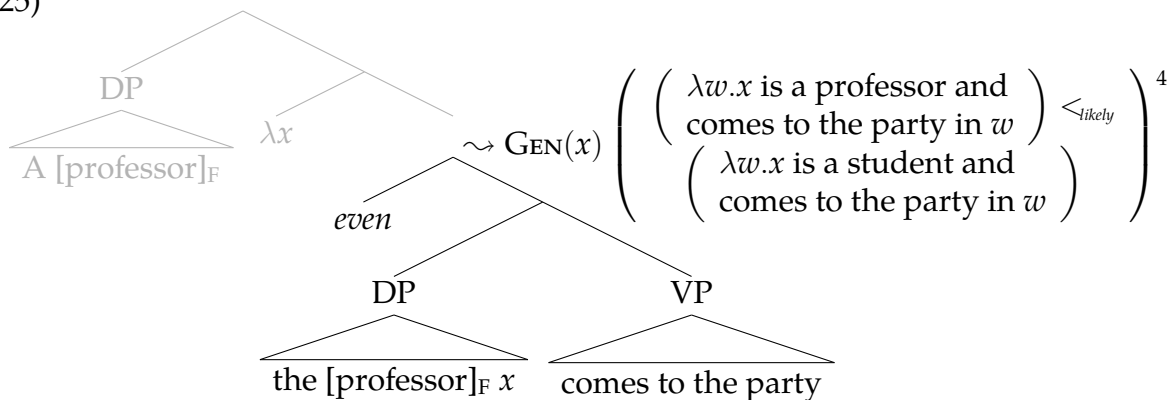☞ Note that the alternatives in the scope of *Op* include an unbound variable (x).

The semantics of *even* and *only* (22) deal with this unbound variable differently:

(24) **Unbound variables in the complement of *Op*:**
   a. *Even* will produce a non-assertive inference, which does not compose with material above it (like the λ-binder). So the variable gets bound where *even*'s inference is computed, using generic quantification.[3]
   b. *Only* uses the alternatives to build a truth condition which composes with material above it, so unbound variables will get bound above.

Even can compute its scalar inference using the alternatives in its complement, binding the variable x generically. (Think of GEN as $\forall$, but allowing some exceptions.)

(25)

$$\rightsquigarrow \text{GEN}(x)\left(\left(\begin{array}{c}\lambda w.x \text{ is a professor and}\\ \text{comes to the party in } w\end{array}\right) <_{likely} \left(\begin{array}{c}\lambda w.x \text{ is a student and}\\ \text{comes to the party in } w\end{array}\right)\right)^{4}$$

The resulting inference does not compose with material above it, but the truth conditions are unmodified by *even* and will compose with higher material.

Only asserts the negation of the non-prejacent alternative(s):

(26)   LF for (6a) after Trace Conversion:
   [A [professor]$_F$] λx TNS *only* [$_{vP}$ [the [professor]$_F$ x] came to the party]
   $\iff$ $\exists$ **professor** λx [the **student** x] didn't come to the party

☞   If the sets of "professors" and "students" are disjoint, the higher and lower copies of the DP introduce conflicting requirements on the variable.

The proposal in Erlewine (2014a) ends there. Erlewine (2014b) expands on this proposal by showing that the problem also occurs even if the alternatives are not disjoint, based on certain assumptions about presupposition projections.

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[3]This is argued for in detail in a chapter of the dissertation, based on the behavior of *even* in quantified sentences without backwards association.

[4]There is a local accomodation step here that applies to each alternative so the requirement that x be a professor or student is part of the content of each proposition.

7 Interim summary

The proposal above explains why *even* but not *only* can associate backwards with F-marking in the restrictor of a DP moved out of the operator's scope.

(27) ***Even* but not *only* can associate with material which has moved out:**
$[_{DP}$ D ... α_F ... $]$ ... $[$ $^\checkmark even/^*only$ $[$ ... $[_{DP}$ D ... α_F ... $]$ ... $]]$

Backwards association uses the F-marking in the *lower copy* of the DP at LF:

(28) **Associating with the F-marking in the restrictor of the lower copy:**
LF: $[_{DP}$ D ... α_F ... $]$ λx ... $[$ *even* $[$ ... $[_{DP}$ the ..(α_F).. x $]$ ... $]]$

But note that this explanation only holds for F-marking in **the *restrictor* of the DP**...

to be continued Monday...

8 Detecting lower copies

(29) **Association with *even* as a structural diagnostic:**
If *even* associates with α and there are multiple copies of α in the representation, *even* must c-command *at least one* copy of α.

Consider clausal complements which are extraposed and resumed with "it":

(30) ***Even*, but not *only*, can associate into an *it...that* clause:**

a. I $\left\{ \begin{array}{l} ^\checkmark even \\ ^\checkmark only \end{array} \right\}$ knew $[_{CP}$ that $[John]_F$ was a spy$]$.

b. I $\left\{ \begin{array}{l} ^\checkmark even \\ ^*only \end{array} \right\}$ knew *it* $[_{CP}$ that $[John]_F$ was a spy$]$.

☞ This teaches us that the *it*-extraposed CP originated lower (within the scope of *Op*) and moved out.

Now consider *tough*-movement. Chomsky (1977) argued that *tough* constructions involve $\overline{A}$-movement, but there is a debate as to whether this is movement of the subject or of a null operator:

(31) **Two hypotheses for the subject of *tough* constructions:**

a. The movement hypothesis:
[The reviewers] are tough [___ to please ___].

b. The base-generation hypothesis:
The reviewers are tough [*Op* to please ___].

Now consider association with *even*:

(32) <u>Context:</u> Translation is difficult.
    a. It's (✓*even*) hard to (✓*even*) translate [$_{DP}$ a [children's]$_F$ book].
    b. [$_{DP}$ A [children's]$_F$ book] is (✓*even*) hard to (**even) translate ____.   (DP, p.c.)

(33) <u>Context:</u> This town is terrible.
    a. It's (✓*even*) hard to (✓*even*) find [$_{DP}$ a good [sandwich]$_F$].
    b. [$_{DP}$ A good [sandwich]$_F$] is (✓*even*) hard to (**even) find ____.

☞ The inability to associate backwards with the lower *even* in the (b) sentences supports the view that the lower, A̅-chain is of a null operator, not the subject.

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