

Focus

Lecture 4: Structural Alternatives

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1 Structural alternatives

Rooth 1985, 1992 assumes that alternatives are model-theoretic objects of the same type as ordinary semantic values.

'[~ C] α ' presupposes (wrt assignment g) that $g(C) \subseteq \llbracket \alpha \rrbracket_f^g$.

- (1) a. $\llbracket \text{Chomsky}_F \rrbracket_o^g = \llbracket \text{Chomsky} \rrbracket_o^g \in D_{\langle s, e \rangle}$
b. $\llbracket \text{Chomsky}_F \rrbracket_f^g = D_{\langle s, e \rangle}$
- (2) a. $\llbracket \text{saw}_F \rrbracket_o^g = \llbracket \text{saw} \rrbracket_o^g = \lambda w_s. \lambda x_e. \lambda y_e. y \text{ saw } x \text{ in } w$
b. $\llbracket \text{saw}_F \rrbracket_f^g = D_{\langle s, \langle e, \langle e, t \rangle \rangle \rangle}$
- (3) a. $\llbracket [\text{vp saw Chomsky}_F] \rrbracket_o^g = \lambda w_s. \lambda y_e. y \text{ saw } \llbracket \text{Chomsky}_F \rrbracket_o^g(w) \text{ in } w$
b. $\llbracket [\text{vp saw Chomsky}_F] \rrbracket_f^g = \{ \lambda w_s. \lambda y_e. y \text{ saw } f(w) \text{ in } w \mid f \in D_{\langle s, e \rangle} \}$
 $= \{ \lambda w_s. \lambda y_e. y \text{ saw } x \text{ in } w \mid x \in D_e \}$
- (4) a. $\llbracket [\text{vp saw}_F \text{ Chomsky}] \rrbracket_o^g = \lambda w_s. \lambda y_e. y \text{ saw } \llbracket \text{Chomsky}_F \rrbracket_o^g(w) \text{ in } w$
b. $\llbracket [\text{vp saw}_F \text{ Chomsky}] \rrbracket_f^g = \{ \lambda w_s. \lambda y_e. R(w)(\llbracket \text{Chomsky}_F \rrbracket_o^g(w))(y) \mid R \in D_{\langle s, \langle e, \langle e, t \rangle \rangle \rangle} \}$
- (5) a. $\llbracket [\text{vp saw Chomsky}]_F \rrbracket_o^g = \lambda w_s. \lambda y_e. y \text{ saw } \llbracket \text{Chomsky}_F \rrbracket_o^g(w) \text{ in } w$
b. $\llbracket [\text{vp saw Chomsky}]_F \rrbracket_f^g = D_{\langle s, \langle e, t \rangle \rangle}$

For Kratzer 1991a and Wold 1996, the focus semantic value under focus assignment h is one specific alternative.

We will consider the alternative possibility that focus alternatives are interpretable expressions with structure, or *structural alternatives* (Fox 1999, Fox & Katzir 2011).

- Structural alternatives contain more information than Roothian alternatives, because they have morphosyntactic properties in addition to the model-theoretical objects they denote.
- So the burden of proof is on the proponents of structural alternatives.

2 Katzirian formal alternatives

Fox & Katzir 2011 propose that formal alternatives to α are derived by one of the following ways (based on Katzir 2007):

1. Replacing words in F -marked constituents in α with words in the lexicon [lexical substitution]
2. Simplifying F -marked constituents in α [simplification]
3. Replacing phrases in F -marked constituents in α with contextually salient phrases [phrasal substitution]

(6) $[\sim C] \alpha$ presupposes (wrt assignment g) that $g(C) \subseteq F_c(\alpha)$.

More formally:

(7) *Formal alternatives (with respect to c)*

$$F_c(\alpha) = \left\{ \beta \mid \begin{array}{l} \alpha' \text{ is derivable by replacing } F\text{-marked constituents } \beta_1, \dots, \beta_n \text{ in } \alpha \\ \text{with } \beta'_1, \dots, \beta'_n \text{ such that } \beta'_i \leq_c \beta_i (1 \leq i \leq n) \end{array} \right\}$$

- (8) $\beta' \leq_c \beta$ iff β' is derivable from β by successively replacing subconstituents with:
- a. lexical items;
 - b. sub-constituents of β ; or
 - c. constituents salient in c .

(Putting aside presuppositions)

$$(9) \quad \llbracket [\text{only}_{VP} C] VP \rrbracket^{c,g} = \lambda w_s. \lambda x_e. \llbracket VP \rrbracket^{c,g}(w)(x) = 1 \text{ and for each } \alpha \in g(C), \\ \text{if } \alpha \text{ is distinct from } VP \text{ (modulo } F\text{-marking),} \\ \llbracket \alpha \rrbracket^{c,g}(w)(x) = 0$$

Side note: Other ways of formulating the exclusion clause (cf. Lecture 3; see Panizza & Sudo 2020 for a type-generalized definition of innocent exclusion).

- ‘if VP does not entail α (in the sense of generalized entailment)’
- ‘if α is innocently excludable with respect to VP and $g(C)$ ’

We (can but) need not compute the alternatives recursively in the compositional semantics. Alternatives generate them at the level at which $\sim$ applies.¹

2.1 Examples of lexical substitution

- (10) $I \text{ only}_C [\text{VP saw Chomsky}_F]_{\sim C}$
 $\Rightarrow$ I didn't see Jackendoff, I didn't see Kratzer, etc.

Let's suppose that no particular constituent is contextually salient in c . Then:

$$(11) \quad F_c([\text{VP saw Chomsky}_F]) = \{ [\text{VP saw } \alpha] \mid \alpha \text{ is a proper name} \} \\ = \left\{ \begin{array}{l} [\text{VP saw Chomsky}], \\ [\text{VP saw Jackendoff}], \\ [\text{VP saw Kratzer}], \dots \end{array} \right\}$$

Another example

¹See Kadmon 2001 for a version of Roothian Alternative Semantics where Roothian alternatives are similarly derived ‘globally’.

(12) I only_C [v_P read some_F of the books]_{~C}

(13) $F_c([v_P \text{ read some}_F \text{ of the books}])$
 $= \{ [v_P \text{ read } \alpha \text{ of the books}] \mid \alpha \text{ is a quantificational determiner} \}$
 $= \left\{ \begin{array}{l} [v_P \text{ read some of the books}], \\ [v_P \text{ read most of the books}], \\ [v_P \text{ read all of the books}], \\ [v_P \text{ read none of the books}], \dots \end{array} \right\}$

2.2 Example of simplification

(14) John's only_C [v_P required to know [either English or Spanish]_F]_{~C}
 $\Rightarrow$ John's not required to know English
 $\Rightarrow$ John's not required to know Spanish
 $\Rightarrow$ John's not required to know German
 $\Rightarrow$ John's not required to know either Spanish or German

(15) $F_c([v_P \text{ required to know [either English or Spanish]}_F])$
 $= \left\{ \begin{array}{l} [v_P \text{ required to know English}], \\ [v_P \text{ required to know Spanish}], \\ [v_P \text{ required to know German}], \\ [v_P \text{ required to know either English or German}] \dots \end{array} \right\}$

2.3 Example of phrasal substitution

(16) Detective B concluded that the robbers stole the books but not the jewelry.
 Detective A only_C [v_P concluded that the robbers [stole the books]_F]_{~C}
 $\Rightarrow$ Detective A did not conclude that the robbers stole the books but not the jewelry.
 $\Rightarrow$ Detective A did not conclude that the robbers stole the books and the jewelry.
 (adapted from Fox & Katzir 2011: p. 103)

In this context, 'the books but not the jewelry' is salient.

(17) $F_c([v_P \text{ concluded that the robbers [stole the books]}_F])$
 $= \left\{ \begin{array}{l} [v_P \text{ concluded that the robbers stole the books}], \\ [v_P \text{ concluded that the robbers stole the books but not the jewelry}], \\ [v_P \text{ concluded that the robbers stole the jewelry}], \\ [v_P \text{ concluded that the robbers killed the security}], \\ \dots \end{array} \right\}$

2.4 The symmetry problem

Fox & Katzir 2011 argue that structural alternatives solve the *symmetry problem*.

- A pair of symmetric alternatives cannot be both negated consistently with the preja-cent.
- In the standard Roothian framework, we have to rely on the pragmatics of *C* to make sure that there are no symmetric alternatives.

- Fox & Katzir 2011 claim that pragmatics cannot ‘break symmetry’.

$$(18) \quad \text{I only}_C [\text{VP read some}_F \text{ of the books}] \sim_C \\ \Rightarrow \text{I read all of the books}$$

For Rooth, $g(C)$ will be a subset of (19) (ignoring presuppositions):

$$(19) \quad \{ \lambda w_s. \lambda x_e. Q(w)(\lambda y_e. y \text{ is a book in } w)(\lambda y_e. x \text{ read } y \text{ in } w) \mid Q \in D_{\langle s, \langle \langle e, t \rangle, \langle \langle e, t \rangle, t \rangle \rangle} \}$$

One such Q is the ‘some-but-not-all’ determiner:

$$(20) \quad \lambda w_s. \lambda P_{\langle e, t \rangle}. \lambda Q_{\langle e, t \rangle}. \exists x \in D_e [P(x) = Q(x) = 1] \wedge \neg \forall x [P(x) \rightarrow Q(x)]$$

If this is negated by *only*, the sentence should have the unattested entailment.

Similarly, the ‘some-but-not-most’ alternative would give rise to the inference ‘I read most of the books’.

There are no readings with these entailments, even when the relevant alternatives are intuitively contextually relevant.

- (21) A: Who is still doing the homework?
B: John_F only did some_F of the homework.
 $\Rightarrow$ John did all of the homework.
- (22) A: The leftovers from yesterday are in the fridge. We have a lot of food, like pasta, pizza, chicken, ice-cream, ...
B: How much pasta do we have?
A: We only ate some_F of it yesterday.
 $\Rightarrow$ We ate most of it yesterday.

The structural approach excludes the problematic determiners, based on their structural complexity. There are no simple determiners that denote these functions.

$$(23) \quad F_c([\text{VP read some}_F \text{ of the books}]) \\ = \{ [\text{VP read } \alpha \text{ of the books}] \mid \alpha \text{ is a quantificational determiner} \} \\ = \left\{ \begin{array}{l} [\text{VP read some of the books}], \\ [\text{VP read most of the books}], \\ [\text{VP read all of the books}], \\ [\text{VP read none of the books}], \dots \end{array} \right\}$$

2.5 Pragmatics does not break symmetry

What if there is a contextually salient phrase that denotes the problematic alternative?

— Even in a context like that, unattested entailments do not arise.

$$(24) \quad \text{Last week, I did some but not all of the homework.} \\ \text{?This week, I only } [\text{VP did some}_F \text{ of the homework}]. \\ \Rightarrow \text{I did all of the homework this week.}$$

This unattested entailment would arise, if the following contextually salient alternative is negated:

$$(25) \quad [\text{VP did some but not all of the homework}]$$

Fox & Katzir claim that this alternative cannot be negated, because whenever it is in $\mathcal{C}$, their symmetric counterpart, (26), must be in $\mathcal{C}$ too.

(26) $[\text{VP did all of the homework}]$

Symmetric alternatives are alternatives that cannot be both negated consistently with the prejacent.

- The prejacent says I did (at least) some of the homework.
- The prejacent + the negation of (25) means I did all of the homework.
- The negation of (26) means I did not all of the homework.

The version of *only* that uses innocent exclusion negates neither of the symmetric alternatives (the other versions derive contradiction).

Another example:

(27) $\text{In today's robbery, they stole the books but not the jewelry.}$
 $\text{In last week's robbery, they only } [\text{VP stole the books}]_F$
 $\Rightarrow \text{In last week's robbery, they stole the jewelry, in addition to the books.}$
(adapted from Fox & Katzir 2011: p. 102)

The symmetric alternatives:

(28) a. $[\text{VP stole the books but not the jewelry}]$
b. $[\text{VP stole the jewelry}]$

In Fox & Katzir's formulation of formal alternatives, they also allow, which can be derived from (28a) with further replacements, but Trinh & Haida 2015 and Trinh 2018 claim that this should not be allowed.

(29) $[\text{VP stole the books and the jewelry}]$

Fox & Katzir 2011 propose a closure condition on $\mathcal{C}$ so that whenever one of the symmetric alternatives is a member, the other one is too.

- The precise formulation depends on whether or not we allow (29).
- E.g., assuming that (29) is not a formal alternative (*pace* Fox & Katzir), and α is the prejacent with a conjoinable type, we require the following (with respect to c and g). We write $\Box$ for generalized Boolean operations.

(30) a. $\alpha \in g(\mathcal{C})$
b. $g(\mathcal{C})$ must be Boolean-closed with respect to c and $F_c(\alpha)$ in the following sense:
(i) For each $\beta \in g(\mathcal{C})$, if for some $S \subseteq F_c(\alpha)$, $\neg[\beta]^{c,g} \in \text{BC}(\{[\gamma]^{c,g} \mid \gamma \in S\})$, then for each $S \in \min\{S \subseteq F_c(\alpha) \mid \neg[\beta]^{c,g} \in \text{BC}(\{[\gamma]^{c,g} \mid \gamma \in S\})\}$, $S \subseteq g(\mathcal{C})$; and
(ii) For each $\beta, \beta' \in g(\mathcal{C})$, if for some $S \subseteq F_c(\alpha)$, $[\beta]^{c,g} \wedge [\beta']^{c,g} \in \text{BC}(\{[\gamma]^{c,g} \mid \gamma \in S\})$, then for each $S \in \min\{S \subseteq F_c(\alpha) \mid [\beta]^{c,g} \wedge [\beta']^{c,g} \in \text{BC}(\{[\gamma]^{c,g} \mid \gamma \in S\})\}$, $S \subseteq g(\mathcal{C})$.
c. $\text{BC}(A)$ is the smallest set B such that $A \subseteq B$ and for each $x, y \in B$, $\neg x \in B$ and $x \wedge y \in B$.

2.6 Challenges for Fox & Katzir 2011

2.6.1 *Breaking symmetry by context*

Fox & Katzir's 2011 closure condition fails to account for (31) (cf. Trinh & Haida 2015, Breheny et al. 2018).

- (31) *Jacopo runs and also doesn't smoke. Paul only runs_F.*
⇒ Paul smokes.

2.6.2 *Disjunctive alternatives*

Schwarz & Hirsch 2026 points out that disjunctive alternatives are sometimes necessary.

- (32) Suppose that John has the following reading assignment:
a. He is required to read *1984*.
b. In addition, he is required to read one more book by George Orwell, whichever is fine.

In this context, (33) has a reading that is false.

- (33) *John is only [vp required to read 1984_F].*

In order for this to be false, disjunctive alternatives like following needs to be in *C*.

- (34) *John is only [vp required to read *Animal Farm* or *Homage to Catalonia*].*

Another example:

- (35) *Al only [vp has to [cook]_F].* (Schwarz & Hirsch 2026)

This can be read as suggesting that Al has no further obligations, including disjunctive ones.

2.6.3 *Negative alternatives*

Similarly, Schwarz & Hirsch 2026 observed that negative alternatives are also sometimes necessary.

- (36) *Mary only [vp said that [it rained]_F].*
⇒ Mary did not say that it snowed.
⇒ Mary did not say that it did not snow.

The second inference requires a structurally more complex alternative.

- (37) a. *[vp said that it snowed]*
b. *[vp said that it did not snow]*

2.6.4 *Complex structures with simple concepts*

- (38) *He only [vp saw_F Chomsky]*

Intuitively, some of the relevant alternatives seem to be structurally more complex:

- (39) a. [VP talked to Chomsky]
 b. [VP had a conversation with Chomsky]
 c. [VP took a picture with Chomsky]

2.7 Pragmatics after all?

Schwarz & Hirsch 2026 propose that there are no structural constraints on the members of $\mathcal{C}$, but each of them needs to be an answer to the current Question under Discussion (QuD) (cf. Roberts 2012, Schwarzschild 1999, Beaver & Clark 2008).

- Schwarz & Hirsch 2026 see the QuD to be a Hamblin set (Hamblin 1973; see also Heim 1994), and the denotation of each alternative in $g(\mathcal{C})$ to be a member of it.
- One could assume the QuD to be a partition (Groenendijk & Stokhof 1984) and require the members of $g(\mathcal{C})$ to ‘match’ it (e.g., by Partition by Exhaustification of Fox 2018).

2.7.1 Problematic examples?

But if *all* is not relevant, ‘only’ + ‘some’ should be able to have a reading that is compatible with ‘all’.

- (40) A: The leftovers from yesterday are in the fridge. We have a lot of food, like pasta, pizza, chicken, ice-cream, ...
 B: How much pasta do we have? Can I have some of it?
 A: I only want some_F of it for my lunch later.

Similarly,

- (41) A: Did Patrick and Chomsky see each other?
 B: No, Patrick saw, but was not seen by, Chomsky.
 B': #No, Patrick only saw_F Chomsky.
 $\Rightarrow$ Chomsky did not see Patrick

Why not the alternative VP ‘was seen by Chomsky’, which is intuitively relevant?

Side note: Schwarz & Wagner 2026 propose that scalar inferences are constrained in such a way that the overall meaning with a scalar inference must not be expressed by an alternative to the prejacent that is not structurally more complex. One could assume this constraint for *only* but it won’t account for (41).

2.7.2 No need for structural alternatives?

Also, if no structural constraints, we don’t need formal alternatives.

We will give further motivation for structural alternatives.

3 The problem of unnatural functions

Recall the problem of unnatural functions:

- (42) Patrick only [saw]_F Chomsky.

Unnatural alternatives like the following lead to overgeneration in the Roothian framework.

- (43) a. $\lambda w_s. \lambda x_e. \lambda y_e. y$ saw Halle in w
 b. $\lambda w_s. \lambda x_e. \lambda y_e. y$ saw Quine in w
 c. $\lambda w_s. \lambda x_e. \lambda y_e. y$ saw Stalnaker in w
- (44) a. $\lambda w_s. \lambda x_e. \lambda y_e. y$ sneezed in w
 b. $\lambda w_s. \lambda x_e. \lambda y_e. y$ jumped in w
 c. $\lambda w_s. \lambda x_e. \lambda y_e. y$ met Halle in w
 d. $\lambda w_s. \lambda x_e. \lambda y_e. y$ ate pasta in w
 e. $\lambda w_s. \lambda x_e. \lambda y_e. y$ walked to the park in w
- (45) a. $\lambda w_s. \lambda x_e. \lambda y_e. \text{it was raining in } w$
 b. $\lambda w_s. \lambda x_e. \lambda y_e. \text{the tallest person in the world was having lunch in } w$
- (46) a. $\lambda w_s. \lambda x_e. \lambda y_e. x$ sneezed in w
 b. $\lambda w_s. \lambda x_e. \lambda y_e. y$ jumped in w and x didn't jump in w
 c. $\lambda w_s. \lambda x_e. \lambda y_e. x$ saw y in w

If alternatives are structural, we can prevent some of them:

- Natural language do not allow ‘idle arguments’, so no grammatical alternatives can express functions that do not mention the subject y and/or the object x .
- If we assume a structural complexity constraint, we can also block (46a) and (46b).

But recall that intuitively, alternatives that are structurally a little bit more complex than the prejacent seem to be available.

- (47) a. [_{VP} talked to Chomsky]
 b. [_{VP} had a conversation with Chomsky]
 c. [_{VP} took a picture with Chomsky]

As discussed above, the algorithm of Fox & Katzir 2011 is too strong, and the QuD constraint of Schwarz & Hirsch 2026 is too weak.

4 Tanglewood

Recall the problem of co-varying foci.

- (48) Alex only [_{VP} went to Tanglewood_F because Bob did ~~<go to Tanglewood>~~]
- (49) a. You always see more Edsels than I do.
 b. No, I only saw more [pink]_F Edsels than you did.
 (adapted from Kratzer 1991b: p. 831)

Kratzer 1991b puts forward a binding mechanism to ensure co-variation (see also Wold 1996, Erlewine 2014).

With structural alternatives, there is a way to dispense with the binding mechanism to account for these. Specifically, assume:

- F -marked phrases can be replaced with other (‘similarly complex’) phrases.
- In addition, non- F -marked parts can be changed, *if that is required for maintaining grammaticality* (e.g., agreement).

- Prosodic features, including ellipsis, need to be identical to the prejacent.

Crucially, all alternatives are syntactically well-formed.

The structural alternatives for (48) are:

- (50)
- Alex only [_{VP} went to Tanglewood because Bob did ~~<go to Tanglewood>~~]
 - Alex only [_{VP} went to Block Island because Bob did ~~<go to Block Island>~~]
 - Alex only [_{VP} went to Elk Lake Lodge because Bob did ~~<go to Elk Lake Lodge>~~]

We can exclude ones like (51), because they are ungrammatical due to mismatching ellipsis:

- (51)
- Alex only [_{VP} went to Tanglewood because Bob did ~~<go to Block Islands>~~]
 - Alex only [_{VP} went to Block Island because Bob did ~~<go to Tanglewood>~~]
 - Alex only [_{VP} went to Elk Lake Lodge because Bob did ~~<go to Tanglewood>~~]

We also exclude non-elliptical alternatives.

4.1 De-accenting

A prediction of this account is that if there is another grammatical phenomenon that requires identity, it should license co-varying foci. De-accenting is a case in point.

- (52) I only went to Tanglewood_F, because you went to Tanglewood.

If alternatives similarly need to involve de-accenting, co-varying foci should be possible.

4.2 Notes on φ -features in alternatives

It naturally follows from the above idea that φ -features are ‘ignored’ in focus constructions (see, e.g., Sudo 2012, Sauerland 2013, Bassi 2021).

- (53) Only I_F did my homework.

- This example has a bound reading. To account for it, we need to assume that *my* can be bound.
- Crucially, alternatives would need to change the φ -feature on *my* to maintain grammaticality, under binding.

- (54)
- You did your homework
 - John did his homework
 - Mary did her homework

In order to extend this analysis to gender and number mismatches, we have to assume that mismatching gender and number are ungrammatical (rather than grammatical but semantically/pragmatically deviant).

- (55)
- Only John_F did his homework.
 $\Rightarrow \neg$ (Mary did her homework)
 - Only [John]_F published a paper that criticizes a claim he had made elsewhere.

- ⇒ ¬(John and Mary published a paper that criticizes a claim they had made elsewhere)
- c. Only [the spaghetti]_F pleased the guests who ordered it.
 ⇒ ¬(The hamburgers pleased the guests who ordered them)

5 Multiple foci

The structural alternatives approach constructs alternatives syntactically, rather than using a second dimension of meaning in the compositional semantics.

5.1 One operator + two foci

- (56) John only introduced Bill_F to Sue_F. (Krifka 1991: p. 130)
- └──────────┘ └──────────┘

- (57) a. John introduced Bill to Sue
 b. John introduced John to Mary
 c. John introduced Chris to Katie
 ⋮

5.2 Two pairs, no crossing

- (58) Even John_F only drank water_F. (Krifka 1991: p. 131)
- └───┘
 └──────────┘

Alternatives for *only*:

- (59) a. drank water
 b. drank beer
 c. drank coffee
 ⋮

Alternatives for *even*:

- (60) a. John
 b. Bill
 c. Chris
 ⋮

Or maybe:

- (61) a. John only drank water_F
 b. Bill only drank water_F
 c. Chris only drank water_F
 ⋮

Why don't we consider alternatives like (62) for *even*?

- (62) a. John only drank water
 b. Bill only drank beer
 c. Chris only drank coffee
 ⋮

Suppose that F -marking can only be used once/for one operator. If it is used to construct alternatives for *even*, *only* will have no alternatives (other than the prejacent). It seems reasonable to assume that vacuous *only* is generally bad.

But in any case, can pre-DP *even* associate with a focus outside the DP?

(63) Even John _{F} drank water _{F} .

We'll consider pre-VP *even* next and come back to this issue.

5.3 Two pairs in nested dependency with F -marking in independent domains

(64) John even [_{VP} [drank only water _{F}] [on his birthday] _{F}].

Alternatives for *water* are the same as above.

- (65) a. John only drank water _{F}
 b. Bill only drank water _{F}
 c. Chris only drank water _{F}
 ⋮

Alternatives for *even* for the intended reading:

- (66) a. only drank water _{F} on his birthday
 b. only drank water _{F} on Christmas
 c. only drank water _{F} at Bill's wedding
 ⋮

Is it possible to have the following alternatives?

- (67) a. only drank water _{F} on his birthday
 b. only drank beer _{F} on Christmas
 c. only drank coffee _{F} at Bill's wedding
 ⋮

If F -marking can be nested, this should be possible:

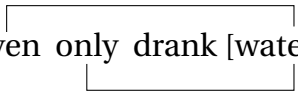
(68) John even [_{VP} [drank only [water _{F}] _{F}] [on his birthday] _{F}].

This interpretation seems to be hard to access(?). Consider also:

(69) John also [_{VP} [drank only [water _{F}] _{F}] [on his birthday] _{F}].

Can we say that an F -marked constituent cannot contain another F -marked constituent?
 As discussed in Lecture 3, some cases require such double F -marking.

5.4 Two operators + one focus

- (70)  John even only drank [water_F]_F . (Krifka 1991: p. 131)

Alternatives for *only*:

- (71) a. drank water
b. drank beer
c. drank coffee
⋮

Recall that this examples is multiply ambiguous with respect to the *F*-marking for *even*. It can be the whole VP, but the crucial reading is the one that targets just ‘water’. Under this reading, the alternatives for *even* will look like:

- (72) a. only drank water_F
b. only drank beer_F
c. only drank coffee_F
⋮

So we need to worry about the potential overgeneration issue of (68). But maybe the story is simple: whenever a parse without double or nested *F*-marking is available, you always strongly prefer that.

5.5 Two pairs in nested dependency with *F*-marking in the same domain

- (73) John only introduced Sue_F to Fred.
 John also only [VP introduced Sue_F to Bill_F]. (Wold 1996: p. 320)

The structural alternatives approach allow the intended reading (but recall that the availability of this reading is debated).

Alternatives for *only*:

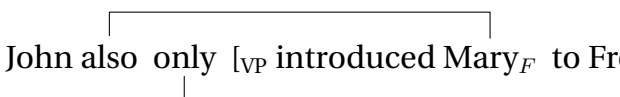
- (74) a. introduced Sue to Bill_F
b. introduced Mary to Bill_F
c. introduced Chris to Bill_F
⋮

Alternatives for *also*:

- (75) a. only introduced Sue_F to Bill
b. only introduced Sue_F to Fred
c. only introduced Sue_F to Chris
⋮

This is not really different from (64).

Our theory, as it stands, allows for cross-serial dependencies:

- (76) John only introduced Sue to Fred_F.


You could argue that

Alternatives for *only*:

- (77) a. introduced Mary_F to Fred
b. introduced Mary_F to Fred
c. introduced Mary_F to Fred
⋮

Alternatives for *also*:

- (78) a. only introduced Mary to Fred_F
b. only introduced Sue to Fred_F
c. only introduced Lisa to Fred_F
⋮

But cross-serial dependencies might be generally dispreferred (possibly by the parser), especially when readings without cross-serial dependencies are possible.

5.6 Summary

- Each focus-sensitive operator scans its scope argument, and constructs alternatives by replacing at least one *F*-marked constituent. Each focus-sensitive operator needs to be associated with at least one *F*-marked constituent (possibly to avoid triviality, rather than for syntactic reasons).
- Once *F*-marking is consumed by a focus-sensitive operator, it cannot be used by another focus-sensitive operator.
 - One way to formalize this is by using some kind of binding mechanism.
 - Or we can use movement (see next lecture).
- An *F*-marked constituent may contain another *F*-marked constituent, but this parse might be marked, especially when a parse that doesn't involve nested *F*-marking is available.
- Cross-serial dependencies might be dispreferred; unclear if they are to be allowed at all.
- The empirical status of Wold's example is debated (see Lecture 3).

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