

Focus and Recursion

UCL Workshop on Information Structure.

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- Anaphoric Destressing and Contrastive Stress can be accounted for by one and the same focus sensitive operator, which can be recursively nested.
- Recursive nesting provides a better explanation for cases that Neeleman and Reinhart (1998); Szendrői (2001); Reinhart (2006) argued warrant a distinction between *anaphoric destressing* and *stress shift*.
- Recursive provides a better account of word order restrictions on contrastive topics, compared to a theory that postulates to two different operators (Büring, 1997, 2003, CT vs. F marking)

1. What are the conditions under which one can mark something as given?

- (1) Smith walked into a store. What happened next?
 - a. A detective ARRESTED Smith.
 - b. # A detective arrested SMITH.

Sauerland (2004) proposes a presuppositional account with similar predictions as Schwarzschild (1999). G-marking ‘Smith’ introduces the presupposition that the individual is part of a salient assignment function:

- (2) $\llbracket G \rrbracket = \lambda x^e. \exists i. g(i) = x : x$
- (3) Similarly with respect to predicates Schwarzschild (cf. 1999, 146):
John drove Mary’s red convertible. What did he drive before that?
 - a. He drove her BLUE convertible.
 - b. # He drove her blue CONVERTIBLE.

For Sauerland, the predicate ‘convertible’ in (3a) carries a G-marker:

- (4) He drove a BLUE convertible_G.

G is an operator that introduces the presupposition that the predicate ‘convertible’ is given, and requires there to be a salient antecedent proposition of the form ‘x is a convertible’:

- (5) $\llbracket G \rrbracket = \lambda f^{et}. \exists x \in D^e. f(x) = 1 : f$

The presuppositional notion of ‘givenness’ explains why givenness marking is obligatory, due to the principle ‘maximize presupposition’ (Heim, 1991). (or alternatively: Williams (1997, 592)’s *Don’t overlook anaphoric possibilities*). A problem:

- (6) John's aunt, who is incredibly rich and owns a bicycle factory came to his wedding. I wonder what she brought as a present.
- a. Guess what: She brought a used BICYCLE.
 - b. Guess what: She brought a USED bicycle.

But it's not sufficient for *bicycle* to be given, as can be shown by the following example:

- (7) John's aunt, who is incredibly rich and owns a bicycle factory came to his wedding. I wonder what she brought as a present.
- a. Guess what: She brought a brand new BICYCLE.
 - b. ?# Guess what: She brought a BRAND NEW bicycle.

Deaccenting *bicycle* is only possible if there is a salient alternative Y' to the sister of *bicycle* such that $[y'bicycle]$ is given. (basic idea in Williams (1997): sister of constituent that is marked as given must be 'disanaphoric'.)

Proposal using alternative semantics (Wagner, 2005): Constituent that x is marked as given must be given *relative to its sister y* , i.e., an alternative $x'y$ must be salient.

This can also be stated with the operator ' \sim ' from Rooth (1992b). It requires antecedent of the shape $[x' y]$, where x' is an alternative to y :

- (8) Implementation with Rooth (1992b):



Why is the same apparently not true for the case of deaccenting a direct object, such as 'Smith' above?

The prediction in Sauerland (2004) is that referring expressions can be marked as given whenever they have introduced into the discourse:

- (9) $[[G]] = \lambda x^e. \exists i. g(i) = x : x$

The presupposition in (9) seems appropriate for (??), and the presupposition of relative givenness seems too strong. But consider:

- (10) Smith was suspected to have been involved in the burglary. Do you know what happened in the end?
- a. I'm not sure. The thing I heard last is they were going to arrest JONES or SMITH.
 - b. ?? ..to arrest Jones OR Smith.
 - c. # ...to arrest JONES or Smith.

Marking ‘Smith’ as given in a coordinate structure introduces a presupposition stronger than just that there is antecedent for ‘Smith’.

- (11) Did they arrest only Smith?
No, they arrested Jones AND Smith. (given constituent: ‘only Smith’)

Sentence (10c) requires a contrasting individual for ‘Smith’:

- (12) They want to arrest Lee or Smith?
No, they want to arrest JONES or Smith. (Given Constituent: ‘Lee or Smith’)

Proposed solution: *‘Smith’ is not the sister of the predicate.*

- (13) [[λx . [The police arrested x.]] Mary]

This movement weakens the presupposition associated with givenness marking. This effect can also be observed for indefinites (example from Ladd, 1980, 81):

- (14) Has John read Slaughterhouse-Five? He doesn’t READ books.

Prediction of movement account: Interaction between givenness marking and syntax:

- (15) Do you know Mordecai Richler?
a. Funny you should ask that, we were just talking ABOUT him.
b. Funny you should ask that, we were just TALKING about him.

The data in German, which lacks p-stranding, is quite different:

- (16) Do you know Mordecai Richler?
a. # Komisch, wir haben gerade ÜBER ihn geredet.
b. Komisch, wir haben gerade über ihn GEREDET.

What’s special about pronouns?

- (17) The police ARRESTED him there.

Maybe nothing: When presented with (17) out of context, speakers have to accommodate the presuppositions introduced by the pronouns. The accommodated context in turn satisfies the presupposition for givenness marking.

- (18) Why do you think Mary might have been involved in the burglary?
a. They say they arrested John and/or HER.
b. ?? They say they arrested JOHN AND/OR her.
c. ?# They say they arrested JOHN and/or her.

Languages without givenness marking tolerate stress on pronouns:

- (19) Mary is in town, did you know?
Spanish: Si, ya he hablado con ELLA.
‘Yes, I’ve already talked to her.’

- Moving a given constituent changes the sister relations and consequently the presupposition introduced by marking a constituent as given.
- Moving thus facilitates givenness marking: givenness marking in situ would not have been possible, since the presupposition introduced would have been too strong.

2. An Argument for a Contrast between Contrast and Anaphoric Destressing?

- (20) Neeleman and Reinhart (1998): Prominence differences in post-nuclear domain
- Only MAX can afford buying cars.
 - Only MAX can afford seeing her.

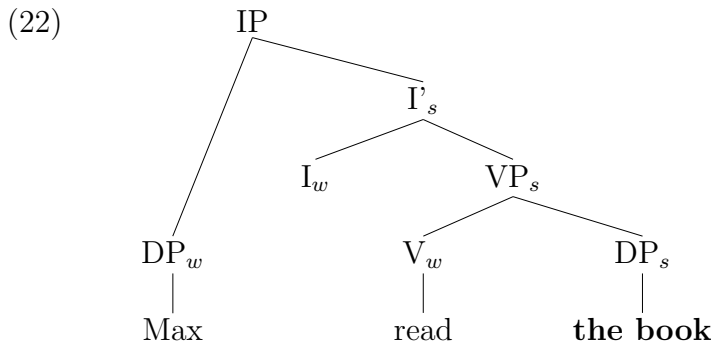
MAX receives main stress by virtue of main stress shift; within the VP, *seeing* receives prominence by virtue of anaphoric destressing.

Reference Set Approach: Main Stress Shift vs. Anaphoric Destressing

(Neeleman and Reinhart, 1998; Szendrői, 2001; Reinhart, 2006)

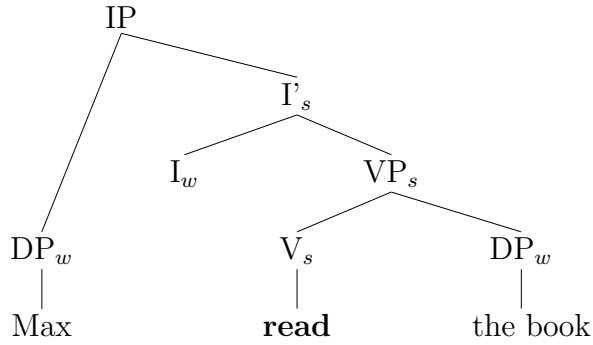
- (21) **Nuclear Stress Rule (Szendrői, 2001):**

Assign a strong label to the node that is syntactically more embedded at every level of the metrical tree. Assign Weak to its sister node.

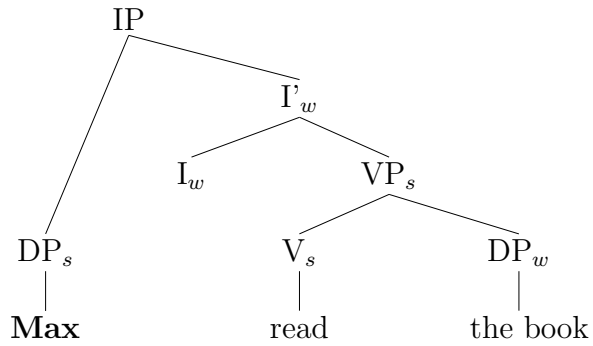


Focus Set: { DP_{object}, VP, IP }

- (23) **Main Stress:** [...] falls on the terminal node that is connected to the root node by a path that does not contain any weak nodes, including the root node itself and the terminal node. [...]
- (24) a. **Focus Set:** The focus set of a derivation D comprises all and only subtrees (constituents) which contain the main stress of D.
- b. **Stress Shift** (global): Relocate the main stress on a constituent you want to focus.
- c. **Destressing** (local): Mark a constituent that is given with 'w' (for Reinhart, only applies to referential DPs, not indefinites, predicates, or VPs, ...)
- (25) 'Destressing': Assign W to an anaphoric node.



(26) Main Stress Shift: Assign S to a node α and every node dominating α



Main Stress Shift *does* change the focus set:
 Focus Set: { DP_{subject}, IP }

Why is it that (26)—according to Reinhart—is not compatible with a question with wide focus? The focus set includes IP...

Answer: Economy, evaluated by Reference Set Computation.

(27) Global Economy: Marked and Unmarked derivations

- a. For a sentence meaning with a certain focus there may be marked and unmarked derivations that express the meaning and whose focus set includes the required focus marking.
- b. Only the most economical element of this set is grammatical.
 Stress shift is costly (in fact, each single s—w change in the case of main stress shift is costly).

(28) Example

- d: Max read a BOOK {DP_{object}, VP, IP} →
 MAX read a book {DP_{subject}, IP}
- i: Focus: IP

‘Max read a BOOK’ blocks ‘MAX read a book’

But is this true?

Is Prominence on subject incompatible with wide focus?

- (29) a. IP-Focus: What's this noise?
[_F My neighbor is building a **desk**].
#[_F **My neighbor** is building a desk].
- b. VP Focus: What's your neighbor doing these days?
My neighbor [_F is building a **desk**].
My neighbor [_F is **building** a desk.]

Contrary to Reinhart (2006)'s claim, anaphoric destressing of VPs and indefinites is possible:

- (30) Last week, there was a lot of noise because Bill was building a desk. What's the noise today?
#[_F My neighbor is building a **desk**].
[_F **My neighbor** is building a desk].
- (31) Last time I saw her, your neighbor was looking for a desk at a yard sale. What's she doing these days?
My neighbor [_F is building a **desk**].
My neighbor [_F is **building** a desk.]

In fact, destressing can explain many shift cases:

- (32) Who build a desk?
#[_F My neighbor] is building a **desk**.
[_F **My neighbor**] is building a desk.
- (33) What did you say your neighbor is doing with a desk? # My neighbor is [_F building] a **desk**.
My neighbor is [_F **building**] a desk.

Remaining problem: The contrast between (30) and (34) (cf. Schwarzschild, 1999):

- (34) Last week, there was a lot of noise because Bill was building a desk. Now I think your neighbor is making a lot of noise. What is he doing?
[_F My neighbor is building a **desk**].
#[_F **My neighbor** is building a desk].

A possibility: the question under discussion filters antecedents. The search space for antecedents for anaphoric destressing is restricted by the set of propositions under discussion.

- The data can be accounted for with a unique operation, anaphoric destressing.
- Based on the arguments above, this must introduce a stronger condition though, constituents are anaphorically destressed relative to their sister.

Nested Givenness Marking

- (35) Neeleman and Reinhart (1998): Prominence differences in post-nuclear domain
- Only MAX can afford buying cars.
 - Only MAX can afford seeing her.

Second occurrence can be treated similarly. Rooth (1996), (Beaver, 2004), Fery and Ishihara (to appear) show that relative prominence of second occurrence focus is marked:

- (36) The students in the class show less and less enthusiasm. Last time, Mary only BROWSED the readings.
This time, Even JOHN only *browsed* the readings.

This suggests that givenness marking can apply recursively, i.e. that several focus sensitive operators can be recursively added to an expression.

3. Another Case of Nested Focus/Givenness Marking: Contrastive Topics

Büring (1997, 2003): In an utterance with a contrastive topic (CT) two constituents invoke alternatives, a CT and a focus (FOC), with distinct intonational correlates (English: B and A accent respectively; German: hat-contour). A typical use Büring (1997, 55–56):

Notation: Accented elements are in capitals, some diacritics: **fall:** \ ; **rise:** / ; **fall–rise:** ∨

- (37) (Contrastive) Aboutness Topic: What did you buy on 59th street?

English: ‘B-Accent’, followed by ‘A-Accent’:

On /FiftyNINTH Street∨, I bought the SHOES\ .

German: ‘Hat Contour’

Auf der /NEUNundfünfzigsten Straße habe ich die SCHUHE\ gekauft.
on the 59th street have I the shoes bought

Part I of Büring’s Analysis: Topic Semantic Value. CT and FOC together invoke a set of questions, i.e., a set of sets of propositions, the *topic-semantic value*:

- (38) CT-value Formation (Büring, 2003, 519)
- Step 1: replace focus with wh-word and front the latter; if focus marks the finite verb or negation, front the finite verb instead.
 - Step 2: form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it.

- **Prediction of Part I:** CT and FOCUS expected to be syntactically freely distributed with respect to each other...
- **The Puzzle:** This prediction is not borne out (as already observed in Büring (1997)).

Proposed solution to the puzzle:

- Empirical Observation: Correlation with syntax of nested focus constructions.
- Compositional Analysis: Contrastive topic-Focus configurations (CTFCs) involve two recursively nested focus operators; we call the one taking wider scope CT.

The Challenge: Part II of the standard analysis: Pragmatic Effects

What about about the special pragmatic import of contrastive topics? These were used in Büring (1997) to argue against such a compositional analysis in terms of multiple focus constructions.... Simplified paraphrases, for reasons of exposition:

Büring (1997): There is disputable question in the topic semantic value that remains open.

Büring (2003): An utterance U containing a contrastive topic must be part of a strategy, i.e., a non-singleton set of questions that jointly answer a super-question, such that this set contains U and each element in it is an element of the topic semantic value of U.

Response to challenge

- Pragmatic implications can be dissociated from the topic/focus semantic value and are the result of independent operators that have intonational realizations.

The Puzzle: The distribution of CTs is syntactically restricted

The distribution of CTs relative to FOC is not free (as observed in Büring (1997, 65)). In English, a CT can either precede or follow a FOC:

- (39) What did you buy on 59th street?
- CT \prec FOC: On /fiftyNINTH street \vee , I bought SHOES.
 - FOC \prec CT: I bought SHOES on /fiftyNINTH street \vee .

In German, FOC \prec CT is infelicitous:

- (40) a. CT \prec FOC:
Auf der /NEUNundfünfzigsten Straße habe ich die SCHUHE\ gekauft
- b. FOC \prec CT:
Ich habe die SCHUHE auf der NEUNundfünfzigsten Straße gekauft.
I have the shoes on the 59th street bought

(40b) is odd under any rendition places an accent on 'NEUNundfünfzigste Straße')

CT and FOC are not freely distributed across languages. Why?

Nested Focus Operators

Krifka (1992, 24) identifies five configurations for multiple focus constructions:

- (41)
- a. John only_1 introduced [Bill] $_{F1}$ to [Sue] $_{F1}$
 - b. Even $_1$ [John] $_{F1}$ drank only_2 [water] $_{F2}$
 - c. John even $_1$ [only_2 drank [water] $_{F2}$] $_{F1}$.
 - d. John even $_1$ only_1 drank [[water] $_{F2}$] $_{F1}$.
 - e. John even $_1$ drank [only_2] $_{F1}$ [water] $_{F2}$.

Under the assumption that one sentence can include two unpronounced focus operators, we might encounter any or all of these five configurations between the two.

Hypothesis:

CFCS involve two unpronounced focus operators in configuration (41b); we call the one taking wide scope CT.

Prediction:

If this is true, then the distribution of contrastive topics should mirror the distribution of the overt focus operator (and its associate) taking wide scope in configuration (41b).

Relative Scope in English

Here's an example with both *only* and *even* in one sentence:

- (42) **even** > **only**: Except for Bill, the kids in this summer camp have no respect for animals and the potential dangers, which makes them take too many risks, including with poisonous snakes.
- a. Even the most poisonous snake *only* frightens Bill.
 - b. Even the most poisonous snake frightens *only* Bill.

In this context, 'even' must outscope 'only'; some alternatives for the computation of 'only':

- (43)
- a. The most poisonous snake frightens Bill.
 - b. The most poisonous snake frightens Bill and individual x.
 - c. ...The most poisonous snake frightens everyone.

...and the alternatives for the computation of 'even' are:

- (44)
- a. least likely: The most poisonous snake frightens *only* Bill.
 - b. more likely: Average poisonous snakes frighten *only* Bill.
 - c. even more likely: Mildly poisonous snakes frighten *only* Bill.

'only Bill' must be part of every alternative considered. It is clearly be *more* likely that a more poisonous snake frightens Bill, but it is *less* likely that it would frighten *only* Bill.

(45) $\lambda P_1.$ even ([the most poisonous snake])(P_1) ($[\lambda x.(\text{only (Bill)} (\lambda y. x \text{ frightens } y))]$).

In (42), word order matches the scope. What about a different word order?

(46) **even** > **only**: Except for Bill, the kids in this summer camp have no respect for animals and the potential dangers, which makes them take too many risks, including with poisonous snakes.

- a. Only Bill is afraid of even the most poisonous snake.
- b. # Only Bill is even afraid of the most poisonous snake.

When the focus operators attaches to the focus constituent, as expected wide scope is possible. The fact that (46b) is bad constitutes evidence that movement is involved.

In English, a focus operator can take scope over focus operators to its left—if constraints on movement are obeyed.

Relative Scope in German

Focus operators must be ordered according to their scope.

(47) **even** > **only**: Except for Bill, the kids in this summer camp have no respect for animals and the potential dangers, which makes them take too many risks, including with poisonous snakes.

- a. **even** < **only**
 Sogar die GIFTIGSTE Schlange ängstigt nur BILL.
 Even the most poisonous snake frightens only Bill
- b. # **only** < **even**
 Nur den Bill ängstigt sogar die GIFTIGSTE Schlange.
 only the Bill frightens Even the most poisonous snake

With inverse scope, and ‘only’ taking wide scope:

(48) **only** > **even**: The kids in the summer camp are afraid of snakes to some degree, but it depends on how dangerous they are. Everyone is afraid of rattlesnakes, since they’re really poisonous, but almost everyone is ok with some less poisonous snake.

- a. **only** < **even**
 Nur den BILL ängstigt sogar die am WENIGSTEN giftige Schlange.
 only the Bill frightens even the at least poisonous snake
- b. #? **even** < **only**
 Sogar die am wenigsten giftige Schlange ängstigt nur Bill.
 Even the at least poisonous snake frighthens only Bill

In German, the higher focus operators must outscope the lower one, just as a contrastive topic has to outscope the focus.

The Case of Italian

- (49) A: Cosa hai comprato sulla cinquantanovesima strada?
what have.2nd bought on-the 59th street?

‘What did you buy on 59th street?’

B: Sulla cinquantanovesima strada ho comprato le scarpe. E sulla
on-the 59th street have.1st bought the shoes. And on-the
cinquantaduesima strada ho comprato la giacca.
52th street have.1st bought the jacket.

‘On 59th street, I bought the shoes. And on 52nd street I bought the new jacket.’

Inverting the two focus constituents is dispreferred in this context:

- (50) B: ?? Le scarpe, lo ho comprato comprato sulla cinquantanovesima
the shoes them have.1st bought on-the 59th street
strada. E la giacca, la ho comprato sulla cinquantaduesima strada.
. And the jacket it have.1st bought on-the 52th street

‘I bought the shoes on 59th street. And I bought the new jacket on 52nd Street.’

Italian groups with German in that contrastive topics precede foci. What about nested foci?

- (51) even > only: I ragazzi del campeggio estivo hanno tutti un po’ paura dei serpenti, ma dipende da quanto sono pericolosi. Tutti hanno paura dei serpenti a sonagli, perche’ sono veramente velenosi, ma quasi nessuno ha paura di quelli meno velenosi.

a. *Solo Paolo ha paura anche dei serpenti piu’ velenosi.
only Paolo has fear even of.the snakes most poisonous

b. Anche il serpente piu’ velenoso fa paura solo a Paolo.
even the snakes most poisonous make fear only to Paolo

If the verb *ha paura* ‘has fear’ is to be used, the only way is to get the right scope is by overly preposing, and as expected preposing is out for ‘fa paura’:

- (52) even > only

a. Anche dei serpenti piu’ velenosi, solo Paolo ha paura.
even of.the snakes most poisonous, only Paolo has fear

b. *Solo a Paolo anche il serpente meno velenoso fa paura.
only to Paolo, even the snake least poisonous makes fear.

Consider the context that motivates the inverse scope:

- (53) only > even: I ragazzi del campeggio estivo hanno tutti un po’ paura dei serpenti, ma dipende da quanto sono pericolosi. Tutti hanno paura dei serpenti a sonagli, perche’ sono veramente velenosi, ma quasi nessuno ha paura di quelli meno velenosi.

- a. Solo Paolo ha paura anche dei serpenti meno velenosi.
only Paolo has fear even of.the snakes least poisonous
- b. * Anche il serpente meno velenoso fa paura solo a Paolo.
even the snakes least poisonous make fear only to Paolo

Inverted word order:

(54) only > even

- a. * Anche dei serpenti meno velenosi, solo Paolo ha paura.
even of.the snakes least poisonous, only Paolo has fear
- b. ? Solo a Paolo anche il serpente meno velenoso (gli) fa paura.
only to Paolo even the snakes least poisonous make fear

But: Aren't topics and foci often morpho-syntactically different? In Italian, e.g., they behave differently with respect to clitic placement...

Direct Objects contrastive topics are left-dislocated and resumed by a clitic (Rizzi, 1997):

- (55) Il tuo libro, *(lo) ho comprato.
the your book, it have.I bought
'Your book, I bought.'

Left-Dislocated Direct Objects cannot be doubled by a clitic when they are foci:

- (56) IL TUO LIBRO *(lo) ho comprato (non il suo).
the your book it have.I bought (not the his)
'I bought YOUR book, not HIS.'

...but we can replicate these facts using two nested focus operators:

- (57) There is a petting zoo, and for some reason they put some poisonous snakes in there. but people didn't really want to pet them. In fact, most of the snakes were not petted at all, except for one: the least poisonous snake. And even that got petted by only one visitor. So:
- a. * Soltanto uno dei visitatori (lo) ha toccato anche il meno velenoso
only one of.the visitors (it) has touched even the least poisonous
dei serpenti.
of.the snakes
'Only of the visitors touched even the least poisonous snakes.'
 - b. Anche il meno velenoso dei serpenti, *(lo) ha toccato soltanto uno
even the least poisonous of.the snakes it has touched only one
dei visitatori.
of.the visitors
'Only of the visitors touched even the least poisonous snakes.'

Generalizations about Italian:

- Contrastive Topics must outscope (and therefore precede) the Focus; wide scope focus operators must precede lower scope operators.
- Left dislocation occur if otherwise this would not be the case.
- If the left-dislocated argument is a direct object, resumption with a clitic is obligatory.

Maybe an Italian sentence can only involve one focus operator, and apparent counter-examples involve hanging topics... (cf. ‘as for’: As for John, he’s in Paris.).

This might be part of a more general restriction: Calabrese (1984) gives evidence that multiple pair-list wh-questions are not grammatical in Italian...

Resumption might explain why contrastive topics have to be referential and cannot consist of negative or universal quantifiers (cf. Rizzi, 1997).

Apparent morph-syntactic differences between contrastive topics and foci might reflect more general differences in the realization of wide-scope focus operators between Italian and English.

Decomposing Contrastive Topics

Hypothesis: CTFC configurations involve two unpronounced focus operators in configuration (41b); we call the higher one CT.

I assume the following unpronounced focus operator, which takes two arguments analogous to ‘only’. The operators is a version of Rooth (1992a)’s \sim , stated in terms of domain restriction (von Stechow, 1994), taking two overt arguments (similar to Wagner (2007)’s G_R) and marks one constituent as given/focus relative to the other (thanks for corrections to DB):

$$(58) \quad \forall\sigma: \llbracket FOCUS_{\sigma}^C \rrbracket = \lambda x_{\sigma}. \lambda P_{\langle \sigma, t \rangle} : x \in dom(P) \& \exists a \in C [P(a) \text{ is salient and } P(x) \not\subseteq p(a)]. P(x)]$$

A sentence involving a FOCUS operator:

- (59) FOCUS (Moby Dick) (λx . John read x)
- a. Assertion: John read Moby Dick.
 - b. Presupposition: There is a salient alternative $x' \in C$, such that *John read x'* is salient and John read Moby Dick $\not\leftrightarrow$ John read x.

What happens when we nest two FOCUS operators? Remember that when two focus operators are nested, it was crucial that one was in the scope of the other.

- (60) A: What did you buy on 59th street? B: /On 59th street \vee I bought the shoes \setminus .
- (61) λP_1 . FOCUS (on 59th street)(P_1) ($[\lambda x$. (FOCUS (shoes) (λy . I bought y at x))].

(62) Presuppositions¹

- a. There is an alternative y' to *the shoes* such that *I bought y' on 59th street* is salient.
- b. There is an alternative x' to *on 59th street* such that there is an alternative y' to *the shoes* such that *I bought y' at x'* is salient.

There is an asymmetry in the strength of the presupposition associated with the two focused constituents, and switching the roles in this context changes the meaning:

(63) A: What did you buy on 59th street? B: I bought /the shoes_V on 59th street\ .

(64) λP_1 . FOCUS (the shoes)(P_1) ($[\lambda x$. (FOCUS (on 59 street) (λy . I bought x at y)]).

(65) Presuppositions

- a. There is an alternative y' to *on 59th street* such that *I bought the shoes at y'* is salient.
- b. There is an alternative x' to *the shoes* such that there is an alternative y' to *on 59th street* such that *I bought y' at x'* is salient.

The first presupposition is not fulfilled in this context. This is why marking ‘shoes’ as a CT and ‘on 59th street’ as a FOC is infelicitous. Crucially, there is an asymmetry between the presupposition introduced by the lower FOCUS and the higher FOCUS.

The analysis correctly captures that in some of the contexts listed as typical uses of contrastive topic in Büring (1997, 2003), contrary to the expectation of that analysis CT and FOC can be fairly freely exchanged (cf. Neeleman and van de Koot, 2007):

(66) Who invited whom?

John invited Mary, Bill invited Sue, and Sarah was invited by Jill.

This is because in a pair-list context, the presuppositions of either scope of the two focus operators are fulfilled. So in this context, German also allows a switch in Word Order:

(67) Who invited whom?

Der Hans hat die Maria eingeladen, der Peter die Hannah, und die Monika wurde
The Hans has the Mary invited, the Peter the Hannah, and the Monika was
vom Johann eingeladen.
of.the Johann invited.

‘Hans invited Mary, Peter invited Hannah, and Monika was invited by Johann.’

- Nested FOCUS operators introduce presuppositions that together can account for (some) distributional facts regarding contrastive topics.
- This does not, however, capture the pragmatic import of contrastive topics...

¹There is an unresolved issue here: in order to get these to come out right, I think I have to make additional assumptions about how the structure is built up.

4. Pragmatic Effects of Contrastive Topics

Aren't the pragmatic implications of contrastive topics a good reason to distinguish contrastive topics from two nested focus operators?

- Claim: The pragmatic effects and the intonational tune associated with them can actually be dissociated and independently composes with focus semantic value of its complement.
- Expectation I: The Tune and pragmatic effects should be able to occur without nested FOCUS operators (or 'topic semantic values' following Büring)
- Expectation II: Nested FOCUS operators should be possible without these pragmatic effects.

5. Conclusion

- A single focus sensitive operator can account for anaphoric destressing and contrastive stress
- If this operator can be recursively nested, then apparent arguments for a difference between focus effects and anaphoric destressing can be accounted for.
- Recursive nesting of focus operators also provides a new perspective on the analysis of contrastive topics.

References

- Beaver, David I. 2004. Five only pieces. *Theoretical Linguistics* 30:45–64.
- Büring, D. 2003. On D-trees, beans, and B-accents. *Linguistics and Philosophy* 26:511–545.
- Büring, Daniel. 1997. *59th street bridge accent on the meaning of topic & focus*. London: Routledge.
- Calabrese, Andrea. 1984. Multiple questions and focus in Italian. In *Sentential complementation: Proceedings of the International Conference Held at UFSAL*, ed. W. de Geest and Y. Putseys, 67–74.
- Fery, Caroline, and Shinishiro Ishihara. to appear. Interpreting second occurrence focus. In *NELS Proceedings*. Berlin: Mouton de Gruyter.
- von Stechow, Kai. 1994. Restrictions on quantifier domains. Doctoral Dissertation, University of Massachusetts, Amherst.
- Heim, Irene. 1991. Artikel und Definitheit. 487–535. Berlin: de Gruyter.
- Jacobs, Joachim. 1997. I-Topikalisation. *Linguistische Berichte* 168:91–133.
- Jacobs, Joachim. 2001. The dimension of topic-comment. *Linguistics* 39:641–681.
- Krifka, Manfred. 1992. A compositional semantics for multiple focus constructions. In *Informationsstruktur und grammatik*, ed. Joachim Jacobs, volume Sonderheft 4 of *Linguistische Berichte*, 17–53. Opladen: Westdeutscher Verlag.

- Ladd, Robert. 1980. *The structure of intonational meaning*. Bloomington: Indiana University Press.
- Lappin, Shalom, ed. 1996. *The handbook of contemporary semantic theory*. London: Blackwell.
- Neeleman, Ad, and Hans van de Koot. 2007. The nature of discourse templates. Ms. UCL.
- Neeleman, Ad, and Tania Reinhart. 1998. Scrambling and the PF-interface. In *The projection of arguments*, ed. Miriam Butt and Wilhelm Geuder, 309–353. CSLI.
- Reinhart, Tanya. 2006. *Interface strategies*. Cambridge, Ma.: MIT Press.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman. Kluwer.
- Rooth, Mats. 1992a. Ellipsis redundancy and reduction redundancy. In *Proceedings of the Stuttgart Ellipsis Workshop*, ed. S. Berman and A. Hestvik, number 29 in Arbeitspapiere des Sonderforschungsbereiches 340: Grundlagen für de Computerlinguistik. Universität Stuttgart/Tübingen.
- Rooth, Mats. 1992b. A theory of focus interpretation. *Natural Language Semantics* 1:75–116.
- Rooth, Mats. 1996. On the interface principles for intonational focus. In *Salt vi*, ed. T. Galloway and J. Spence, 202–226. Ithaca, NY: Cornell Working Papers in Linguistics.
- Sauerland, Uli. 2004. Do not interpret focus! why a presuppositional account of focus fails, and how a presuppositional account of givenness works. Presented at Sinn und Bedeutung, Nijmegen.
- Schwarzschild, Roger. 1999. Givenness, AVOIDF and other constraints on the placement of accent. *Natural Language Semantics* 7:141–177.
- Szendrői, Kriszta. 2001. Focus and the syntax-phonology interface. Doctoral Dissertation, University College London.
- Wagner, Michael. 2005. Prosody and recursion. Doctoral Dissertation, MIT.
- Wagner, Michael. 2007. Givenness and locality. In *Proceedings of SALT XVI*, ed. Masayuki Gibson and Jonathan Howell.
- Williams, Edwin. 1997. Blocking and anaphora. *Linguistic Inquiry* 28:577–628.