

The cartography of the left periphery:

- The status of criterial markers.
- The role of interface principles.
- The role of locality.
- Freezing effects.
- Properties and consequences of labeling.

LUIGI RIZZI

TG4



On the selective incompatibility of focus and wh

Incompatibility of two foci in Italian (here corrective foci):

- (3)
- a. A GIANNI dovresti dare il libro, non a Piero
'TO GIANNI you should give the book, not to Piero'
 - b. IL LIBRO dovresti dare a Gianni, non il disco
'THE BOOK you should give to Gianni, not the record'
 - c. * A GIANNI IL LIBRO dovresti dare, non a Piero il disco
'TO GIANNI THE BOOK you should give, not to Piero the record'

This holds both in main and embedded environments. Exactly the same pattern is found when the clause is introduced by “tutti pensano che...” (everyone thinks that...).

Incompatibility Foc wh: only in main questions

Foc and Wh are incompatible in main questions:

- (2) * **A GIANNI che cosa** dovresti dare, non a Piero?
'TO GIANNI what you should give, not to Piero?'

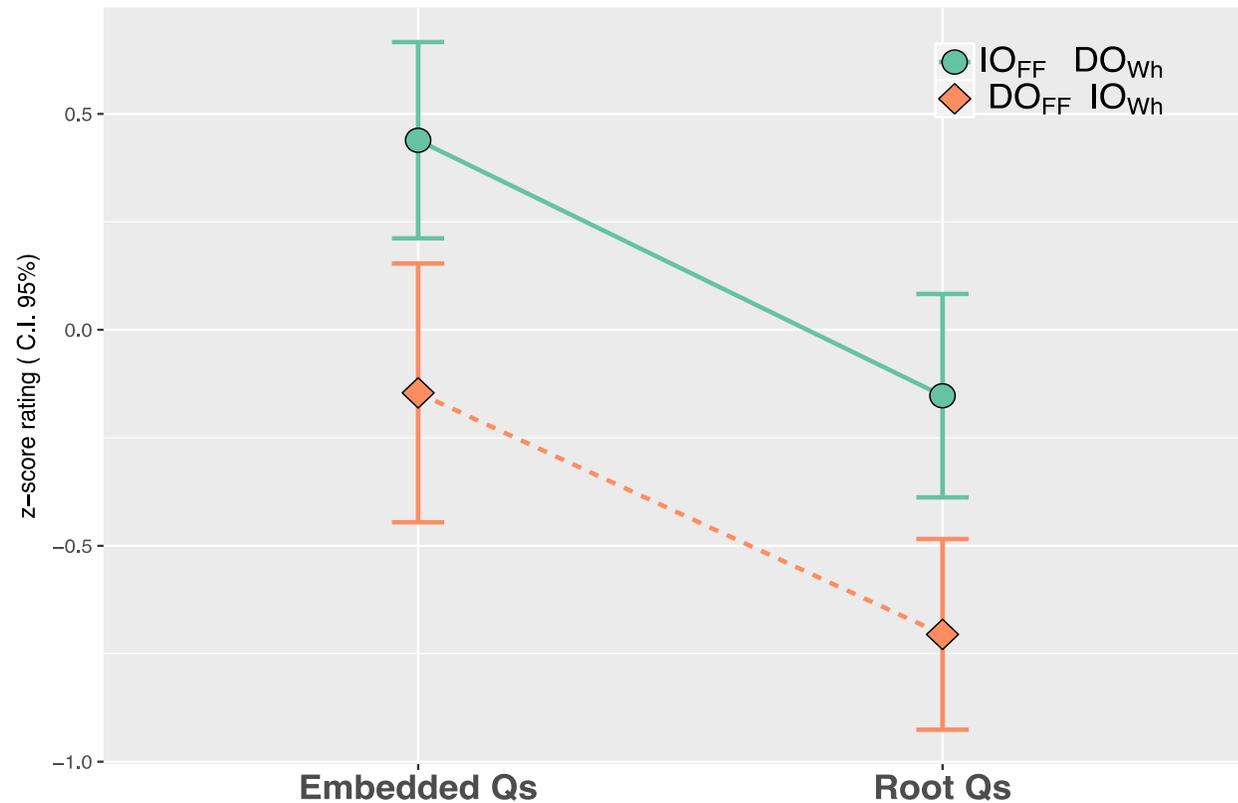
But not in embedded questions:

- (4) Mi domando **A GIANNI che cosa** dovresti dare, non a Piero
'I wonder TO GIANNI what you should give, not to Piero'

An experiment (Bocci, Rizzi, Saito 2018) Figure 1.

Syntactic experiment results: rating judgments (in z-scores) by type of *syntactic context* (embedded questions vs. root questions) and by type of *syntactic function* (IO_{FF} - DO_{Wh} vs. DO_{FF} - IO_{Wh}). 44 monolingual native speakers of Italian, using a 7 pt. Likert scale.

The factor *syntactic context* was extremely significant: root questions were overall rated significantly lower than embedded questions (*Estimate* $-.5752$, *St. Err.* $.1343$, $p < .001$).



Same main embedded asymmetry found in Hungarian

(Puskas 2000) Thanks to Flora Lili Donati per providing the examples

(2) *PAULAHOZ kit osztottak be?

PAULA.ALLATIVE who.ACC assigned VM-in

TO PAULA who did they assign?

(4) Azt kérdeztem, hogy PAULAHOZ kit osztottak be, nem Marcellához!

that.ACC asked-I that Paula.ALLATIVE who.ACC assigned VM-in not Marcella.ALLATIVE

'I asked you TO PAULA who they assigned, not to Marcella!'

Incompatibility of two foci in the same simple clause

(10) [.....] Foc_x [.....]
“Focus_x” “Presupposition”

(13) * [A GIANNI] Foc1 [[IL LIBRO] Foc2 [dovresti dare ...]]
‘TO GIANNI THE BOOK you should give...’

Incompatibility focus – wh in main clauses

The incompatibility can be made to follow from the same assumptions if wh-elements are necessarily move to Foc in main questions:

(2) * [A GIANNI] Foc1 [[che cosa] Foc2 [dovresti dare ___]]]
 ‘TO GIANNI’ what you should give ___’

But why can Foc and wh co-occur in embedded questions?

(4) Mi domando **A GIANNI che cosa** dovresti dare, non a Piero
 ‘I wonder TO GIANNI what you should give, not to Piero’

Main vs embedded questions

The comparison between (2) and (4) leads to the conclusion that *wh* elements in embedded clauses do not necessarily target a focus position, so that the interpretive clash observed in main questions does not arise.

In fact, it is not unnatural to assume that the necessary association with focus is a specific property of main *wh* questions: main questions invite answers in a well-formed dialogic exchange, and the value of the *wh*-variable will be focal in the answer: natural considerations of **question-answer congruency** (Bianchi, Bocci, and Cruschina 2017) will lead us to expect that also the *wh*-element is focal (see also Bocci and Cruschina, *forthcoming*; Bocci, Bianchi, and Cruschina *in preparation*).

Main vs embedded questions

On the other hand, indirect questions do not invite answers in the same way, i.e., if I say “Mary wonders what Bill saw” I do not expect my interlocutor to provide the value of the variable in “Bill saw x”. So, there is no congruency condition to respect, and the wh-element can target a distinct “pure Q” position, not necessarily a focus position (Rizzi 1997, Rizzi & Bocci 2017). The representation of (4) could then be something like the following:

(18) Mi domando [A GIANNI] Foc1 [[che cosa] Q [dovresti dare]], non a Piero
‘I wonder TO GIANNI what you should give, not to Piero’

Here, the sequence [[*che cosa*] Q [*dovresti dare*]] does not (necessarily) include a focus position, so that the interpretive clash does not (necessarily) arise. The main-embedded asymmetry is thus amenable to a natural explanation.

On the association of Foc and Q in main questions

The possible dissociation of Q and Foc in embedded questions raises the issue of the exact nature of the landing site of *wh*-movement in main questions: is it a simple Foc position, or a featurally complex mixed position, involving both specifications? There are syntactic reasons which seem to indicate that the syntactic landing site of *wh*-elements should be distinguished from a pure LP focus position. In Italian, a corrective focus is compatible with a preverbal subject, as in (19), whereas a *wh*-element must be adjacent to the inflected verb, and does not tolerate an intervening subject, as in (20)a. If the subject is null, or is postverbal, as in (20)b, the structure is fine:

(19) QUESTO Gianni dovrebbe dire, non qualcos'altro
 'THIS Gianni should say, not something else'

(20) a. *Che cosa Gianni dovrebbe dire?
 'What Gianni should say?'

 b. Che cosa dovrebbe dire (Gianni)?
 'What should say (Gianni)?'

On the association of Foc and Q in main questions

This state of affairs is naturally amenable to the following structural hypothesis: the Foc head, *per se*, does not require adjacency with the inflected verb in Italian, whereas a Q head (in main clauses) does, much as it does in English.

How does the complex attracting head Foc – Q arise in syntax? If UG permits complex featural conglomerates to be formed in the lexicon, it may enter syntax already formed with a composite nature.

If UG is more restrictive and disallows such conglomerates to arise pre-syntactically, main questions may involve simple Foc and Q heads generated in the functional sequence, and then combined through head movement. A complex head Foc – Q formed syntactically may then attract a *wh*-element, matching both its specifications. In embedded clauses, as the question – answer congruency requirement is not operative, Foc and Q heads may remain separate, each one attracting an attractee with matching features, and this gives rise to cases like (18).

- (18) Mi domando [A GIANNI] Foc1 [[che cosa] Q [dovresti dare]], non a Piero
'I wonder TO GIANNI what you should give, not to Piero'

Yes/no main questions are consistent with a lower Foc

Contrary to main wh-questions, main yes-no questions are consistent with focus fronting (Bianchi & Cruschina 2016):

- (23) A GIANNI hai dato il libro, e non a Piero?
'TO GIANNI you gave the book, and not to Piero?'

Here the left-peripheral focus does not have a corrective import, but rather a confirmative value: it requires confirmation of a piece of information which is considered unlikely compared to alternatives.

It has been proposed that yes-no questions involve a yes-no operator which is externally merged in the Int(errogative) position (Rizzi 2001), a position higher than Foc in the map of the left periphery. If the yes-no operator does not involve a Foc head, nothing prevents the occurrence of a lower LP focus, as no interpretive clash is triggered here. The representation of (23) would then be the following:

- (24) Op_{yes/no} Int A GIANNI Foc hai dato il libro, e non a Piero?
'TO GIANNI you gave the book, and not to Piero?'

Why questions

Why questions are also consistent with a LP focus (in a fixed order):

- (25) Perché A GIANNI hai dato il libro, e non a Piero?
'Why TO GIANNI you gave the book, not to Piero?'

In terms of the analysis in Rizzi (2001), *perché* differs from other *wh*-elements in that it is externally merged in the Spec of Int, much as the yes-no operator (see Shlonsky & Soare 2010 for a variant of this analysis involving movement, but still identifying the final landing site of *why* in the Spec of Int).

If *perché* is externally merged in Int, it can't move to the lower Spec Foc position, so if routine (10) is inherently linked to the Foc head, it is not triggered with *why*, and no clash arises (question-answer congruency may still be guaranteed if *why* can be inherently merged as focal in the lexicon).

Wh and focus can cooccur in separate clauses:

(1) A chi hai detto che IL TUO LIBRO dovremmo leggere, non il suo?

‘To whom did you say that YOUR BOOK we should read, not his?’

This follows if the presupposition is computed clause by clause (i.e., the presupposition of the main clause focus is just the main clause), and no special flattening contour is assigned to the string post-wh focus (whereas the special flattening contour is assigned to the string post-corrective or mirative focus)

Freezing in the low focus position

Belletti (2002, 2004): there is a focus position in the vP periphery, typically used for focalizing a subject in NSL (Chomsky 1975: backward pronominalization is inconsistent with focus):

(82)a Alla sua_i festa, Gianni_i ha cantato

In his party, Gianni sung

b * Alla sua_i festa, ha cantato Gianni_i

In his party, sung Gianni

Normally, the use of the low focus position is optional, so in order to test freezing effects we need a construction which forces the use of low focus (this can be done straightforwardly for Q, given the selectional requirements of main verbs, and for Subj, given the EPP)..

Backward anaphora as a test for focus

It is well-known, ever since Chomsky (1975), that focus is inconsistent with backward anaphora, as in (9)a vs (9)b, where John is defocused:

(9)a * His_i mother will introduce JOHN_i to the president

b His_i mother will introduce John_i to THE PRESIDENT

Direct and inverse copular constructions

One such case may be provided by inverse copular constructions, in the sense of Moro (1997, 2000), illustrated by in pairs like

(83) Gianni è il direttore

‘Gianni is the director’

(84) Il direttore è Gianni

‘The director is Gianni’

Low focus obligatory with inverse construction

The important property of this construction for the current argument is that the subject in inverse copular sentences is always focal, as is shown by the impossibility of backward pronominalisation:

(85)a Nella foto della sua_i classe, Gianni_i è il più bello

‘In the picture of his class, Gianni is the most handsome’

b * Nella foto della sua_i classe, il più bello è Gianni_i

‘In the picture of his class, the most handsome is Gianni’

Heycock (2012)

Direct construction:

(88)a Who is the culprit? John or Bill?

b John is the culprit

(88')a Tell me about John: is he the culprit, or the victim?

b John is the culprit

Inverse construction:

(90)a Who is the culprit? John or Bill?

b The culprit is John

(90')a Tell me about John: is he the culprit or the victim?

b # The culprit is John

Ruwet's (1975) paradigm

DIRECT:

- (1)a Il carattere di Gianni_i è il suo_i problema principale
'Gianni's character is his main problem'
- b Il suo_i carattere è il problema principale di Gianni_i
'His character is Gianni's main problem'

INVERSE:

- c Il problema principale di Gianni è il suo_i carattere
'Gianni's main problem is his character'
- d * Il suo_i problema principale è il carattere di Gianni_i
'His main problem is Gianni's character'

The derivation of copular sentences

(16) Subj is [[John] [Pred [the president]]
OK



(17) Subj is [John] [Pred [the president]]
*



Presumably, a direct movement of the predicative DP into Spec Subj is forbidden by RM:

Conjecture: focalization of the subject is a way to circumvent the locality problem.

Focus movement as a necessary intermediate step for the inverse construction

(1) Foc [John Pred [the president]]



(2) [John Foc [___ Pred [the president]]]



(3) Subj is [___ Pred [the president]] [John Foc ___]



(4) [the president] Subj is [___ Pred ___] [John Foc ___]

The Krapova-Cinque interpretation of RM

Why doesn't the trace of John in the PredP block A-movement of the predicative DP?

Krapova & Cinque (2008) propose the following:

(1) In ...X...Z...Y..., Z intervenes between X and Y only if all the occurrences of Z intervene.

This is to account for order preservation in languages permitting multiple wh movement:

(2) Cine cu cine ___ a votat ___ ? (who for whom voted?)

(3) * Cu cine cine ___ a votat ___ ? (for whom who voted?)

This interpretation captures the fact that the subject trace in (4) does not give rise to a RM effect because only one occurrence of the subject intervenes.

The « smuggling » step

The movement of the predicative small clause is part of a large family of leftward movements of a predicate, such as

1. passive, under Collins' (2005) approach
2. v-projection movement in Romance causatives (ever since Kayne 1975)
3. the reordering responsible for « surprising » Adv sequences (Cinque 1999: *He doesn't [always win] anymore* __)
4. Psych-verbs with the theme promoted to Subj position over the experiencer (Belletti & Rizzi 1988, 2012: This worries John)

Freezing effects in the low focus position

We can now test the freezing effect in the inverse construction. A salient property of this construction, well-described in the literature (Longobardi 1985, Moro 1997, 2000) is that the postverbal subject is unmovable. Compare direct and inverse copular constructions:

- (97)a Conosco Gianni, che è il direttore
'I know Gianni, who is the director'
b * Conosco Gianni, che il direttore è ___?
'I know Gianni, who the director is'
- (98)a E' Gianni che è il direttore
'It is Gianni that is the director'
b * E' Gianni che il direttore è ___
'It is Gianni that the director is'

criterial freezing effects in three positions

(1) I wonder [[which_Q BOOKS_{FOC}] **Q** John read, not which articles



(2) Mary said [that [John **Subj** was here]]



(3) The director is John **Foc**



criterial freezing with the Q Criterion

(1) I wonder [[which_Q BOOKS_{FOC}] **Q** John read], not which articles



(1') * [which_Q BOOKS_{FOC}] I wonder [___ **Q** John read], not which articles

criterial freezing with the Subj Criterion

(2) Mary said [that [John **Subj** was here]]



(2') * John, Mary said [that [____ **Subj** was here]]

criterial freezing with the low Foc Criterion

(3) The director is John **Foc**



(3') * It is John that the director is ____ **Foc**

Chomsky (2013) on Labeling

(1) Labeling Algorithm: the syntactic object created by merge receives the label of the closest head.

(2) Labeling must be complete at the interfaces.

In this system, labeling is not a prerequisite for further applications of merge, but is required by the interpretive systems.

Hypothesis (2) implies that labeling can be delayed till the end of the phase.

An implementation (Rizzi 2013)

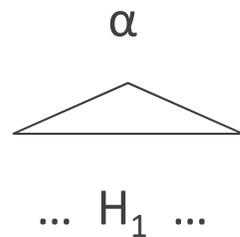
(1) α receives the label of head H_1 such that:

i. α contains H_1 , and

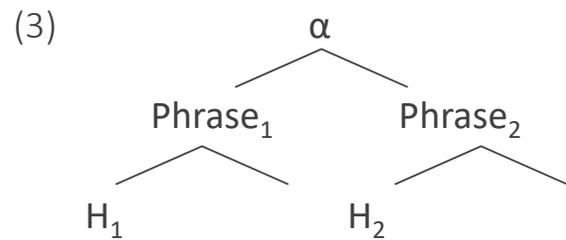
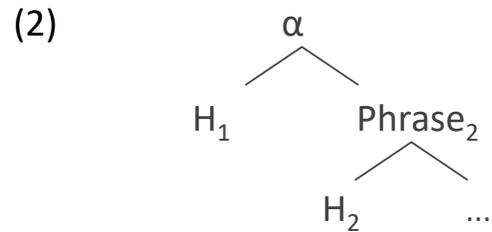
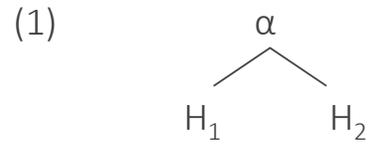
ii. there is no H_2 such that i. α contains H_2 , and

ii. H_2 c-commands H_1 .

(2)



Three kinds of merge



Phrase – Phrase Merge

Chomsky (2013): the labeling problem in the Phrase – Phrase configuration can be solved in two ways:

1. One phrase moves out of α (see also Moro 2000):

(1) Phrase₁ ... [α < ___ > Phrase₂]


2. Phrase – Phrase is a criterial configuration:

(2) [α [which_Q book] [did_Q you read ___]]

The “halting problem” of (wh) movement

(1)a You think [C [Bill read [which_Q book]]]

b * You think [_α [which_Q book] [C [Bill read ___]]]

c [_β [which_Q book] [Q [you think [_α ___ [C [Bill read ___]]]]]]

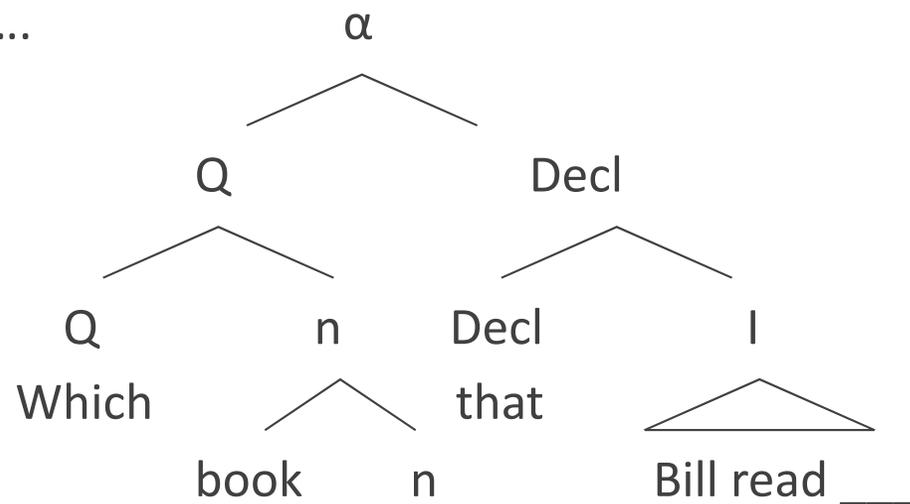
(2) a John wonders [Q [Bill read [which_Q book]]]

b John wonders [_α [which_Q book] [Q [Bill read ___]]]

c * [_β [which_Q book] [Q [John wonders [_α ___ Q [Bill read ___]]]]]

Movement must continue

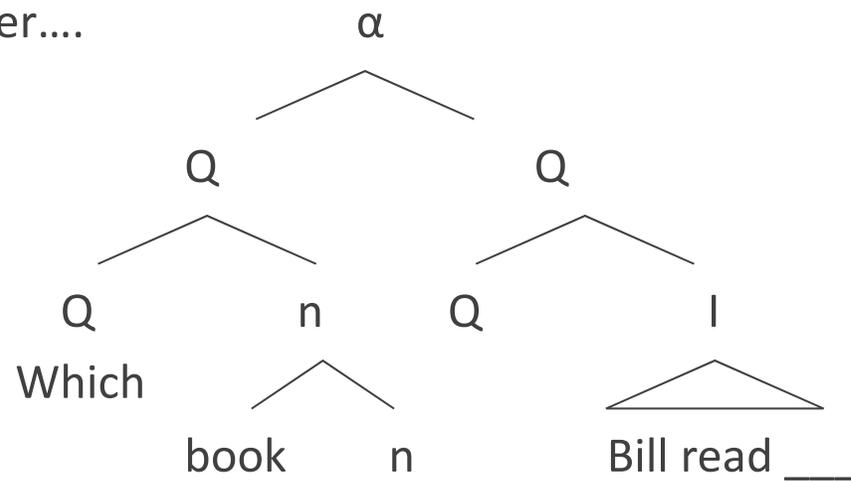
(1) think....



Here *which book* must move further to permit labeling of α as Decl Force.

Movement can (and must) stop

(1) wonder....



Here which book is in a criterial configuration, hence α can be labeled as Q , an embedded question. But here movement **MUST** stop, we have the freezing effect.

Maximality

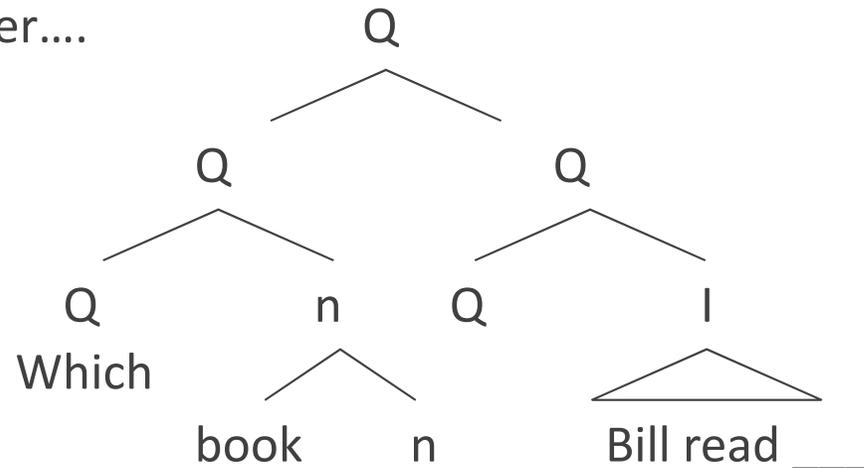
In terms of traditional X-bar theory, intermediate projections are inert for movement, only maximal projections can undergo phrasal movement .

Under bare phrase structure, being a maximal node is not an inherent property of a node, it is a property to be determined dynamically:

- (1) A is maximal iff the node immediately dominating it, B, is distinct from A
- (2) Maximality: only maximal objects with a given label can undergo phrasal movement.

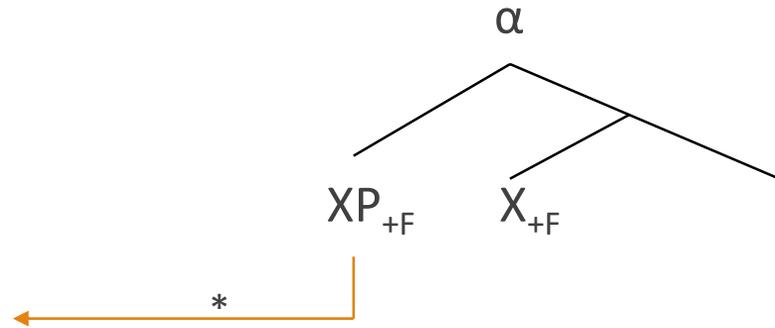
Freezing derives from labeling and maximality

(1) wonder....



As soon as a criterial configuration is created, the moved phrases ceases to be a maximal node with a given label, hence it cannot be moved alone under maximality. Only the whole criterial configuration can be moved as a whole.

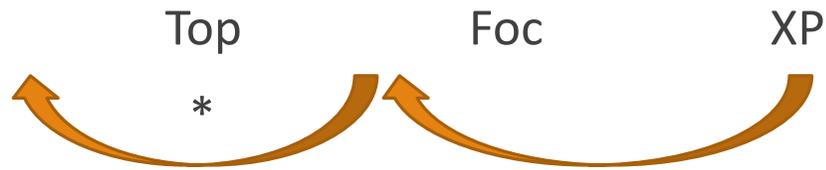
criterial freezing in general



This generalization has been argued to be derivable from the labeling algorithm (Chomsky 2013, 2015) and a maximality principle (Rizzi 2015, 2016, 2017). In a nutshell: $+F$ labels α , so that XP_{+F} is not maximal w.r.t. $+F$, and only maximal nodes can be moved.

A prediction

A movement of a phrase from Spec Foc to Spec Top should be ruled out by Criterial Freezing:



This may be difficult to test if there are interpretive constraints which make it hard for an XP to bear both focal and topical interpretation.

Still, there is at least one phenomenon reported in the literature which seems to support the prediction. This concerns certain yes-no questions in Gungbe with special interpretations

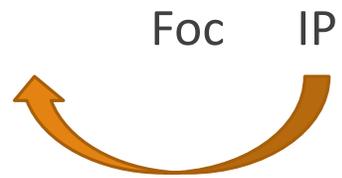
The normal order of markers in Gungbe is Top - FOC (Aboh 2004)

The normal order in Gungbe is Top – Foc, as in many other languages:

(23) Ùn sè do xwé lo **yà** Kòfí **wè** Àsíbá gbá-è ná
1SG hear that house DET TOP Kofi FOC Asiba build-3SG for
'I heard that, as for the house, it is for KOFI that Asiba built it'

... Top Foc

IP movement to the LP in « special » yes-no questions



« Disagreement » :

Did he eat rise?! (he shouldn't have



« D-linking » :

Did he eat rise ? (as planned)

What happens in « disagreement » **and** D-linked questions?

Top-Foc → Foc-Top with special yes-no questions in Gungbe (Aboh 2004)

- (1) a. Ùn kànbíó ɖò Kòfí ɖù lési wè? [Gungbe]
1SG ask that Kofi eat rice FOC-INTER
'I asked whether KOFI ATE RICE [e.g. he shouldn't do so because he is taking medicine]?'
b. Ùn kànbíó ɖò Kòfí ɖù lési yà?
1SG ask that Kofi eat rice TOP-INTER
'I ask whether Kofi ate rice [as planned/mentioned]?'
c. Ùn kànbíó ɖò Kòfí ní xò mótò wè yà?
1SG ask that Kofi MOOD buy car FOC TOP-INTER
'I asked whether KOFI SHOULD BUY A CAR [as planned/mentioned]?'
d. *Ùn kànbíó ɖò Kòfí ní xò mótò yà wè?
1SG ask that Kofi MOOD buy car TOP FOC-INTER

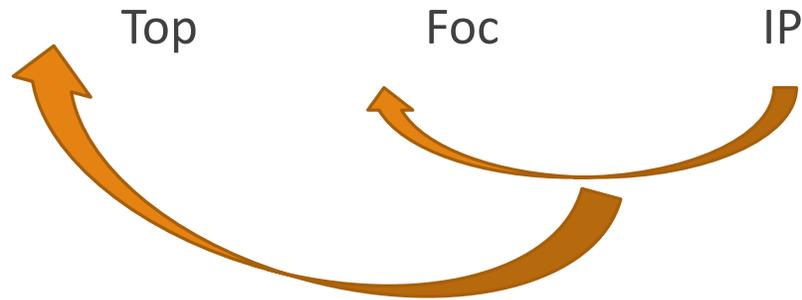
Successive cyclic movement of the IP is excluded by Criterial Freezing

A movement of the IP from Spec Foc to Spec Top is ruled out by Criterial Freezing:



So, the order IP – Top – Foc is correctly excluded.

A derivational option consistent with Freezing: Snowballing movement



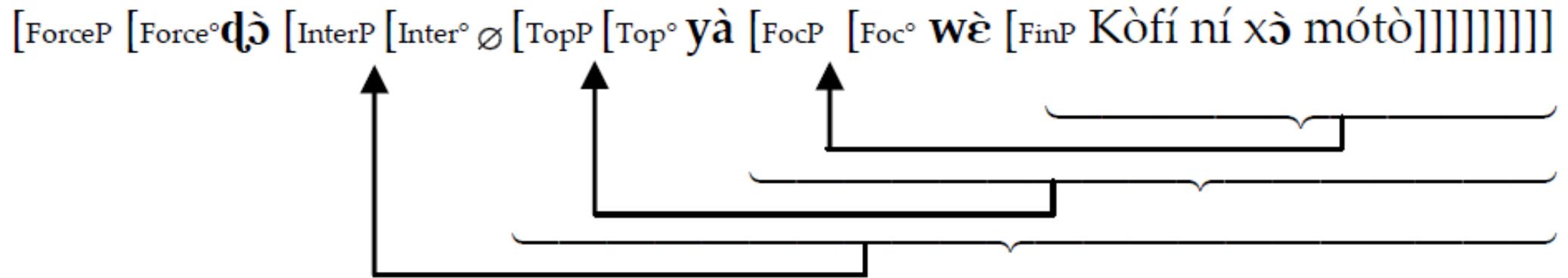
IP moves to SpecFoc, and then the whole FocP moves to SpecTop, without violating Criterial Freezing.

But this causes the reversal of the order: **[[IP Foc] Top]**

The reversal is thus expected under Criterial Freezing.

Top-Foc → Foc-Top with special yes-no questions in Gungbe (Aboh 2004)

(1)



Conclusion

- Foc and Top markers are part of the clausal spine in some languages, and case-like or preposition-like elements in other languages. Specific empirical evidence (coordination, interaction with other processes, etc.) is needed in a particular language.
- Freezing effects block further movement of phrases satisfying a criterion (possibly the effect is derivable from labeling and maximality).
- Freezing predicts that a Top or Foc marker cannot be stranded by moving its Spec to a higher position.
- The prediction appears to be testable in the case of special yes-no questions in Gungbe: the IP cannot move to Spec Foc and then to Spec Top stranding the Foc head and preserving the Top – Foc order. The only possibility consistent with freezing is snowballing movement, which determines a reversal of the order: IP Foc Top.