The cartography of the left periphery:
- The status of criterial markers.
- Properties and consequences of labeling.

LUIGI RIZZI
TG2
Plan

- The cartography of syntactic structures: some ideas and results on CP.

- The criterial approach to scope-discourse properties.

- The morpho-syntactic status of overt Top and Foc markers: part of the clausal spine or case-like elements?

- The labeling algorithm.
The cartographic projects

- Syntactic structures are complex objects. It is worthwhile to devote a line of research to focus on the shape of structures and their internal articulation.

- This can be done by drawing maps as detailed as possible of syntactic configurations, disentangling invariant and variable properties.

- Under the cartographic magnifier, each zone of more traditional syntactic trees is split into a configuration of finer components characterized by rich functional sequences.

- The complexity arises from the recursive application of very simple computational mechanisms (primarily merge and move), operating on a very rich functional lexicon and constrained by principles of the language faculty (locality, interface constraints, etc.).
Splitting the IP

Splitting the CP

(1) CP
   C

(2)
   Force
   Top*
   Int
   Top*
   Foc
   Top*
   Mod
   Top*
   Qemb
   Fin
Cross-linguistic impact of cartographic studies

https://www.unige.ch/lettres/linguistique/syncart/home/  G. Bocci, G. Samo, UNIGE


Types of complementizers

Functional elements introducing embedded clauses are traditionally analyzed as complementizers occupying the same C position:

(1) Credo che partirò
    ‘I believe that I will leave’

(2) Ho deciso di partire
    ‘I decided to leave’

(3) Non so se partirò
    ‘I don’t know if I will leave’

(4) CP
    C
    IP
    che
    di
    se
Status of *di* as a C (Kayne 1983)

Could *di* be a head of the inflectional system, akin to *to*?

(1) John decided [ [ PRO to leave ] ]
(2) Gianni decise [ di [ PRO partire ] ]

Order with respect to negation:

(3) John decided [ [ PRO not to leave ] ]
(4) Gianni decise [ di [ PRO non partire ] ]
Interference with Raising (Rizzi 1982, Kayne 1983)

(1) John seems [ __ to have left ]

(2) a Gianni sembra [ __ essere partito ]
   b * Gianni sembra [ di [ __ essere partito ]

(3) A Gianni sembra [ di [ PRO essere partito ]
   ‘To Gianni it seems PRO to have left = that he has left’
Topic – Comment structures with Clitic Left Dislocation

(1) Il libro, Gianni lo leggerà domani

‘The book, Gianni will read it tomorrow’
Ordering of the sequence: Force – Int – Fin

But different kinds of complementizers *che, di, se* are ordered differently with respect to Topics:

1. *Credo che il tuo libro*, lo leggerò domani
   *‘I believe that your book, I will read tomorrow’*  
   *che > Top*

2. *Ho deciso, il tuo libro*, di leggerlo domani
   *‘I decided your book, to read it tomorrow’*  
   *Top > di*

3. *Non so, il tuo libro*, se a Gianni, glielo leggerò domani
   *‘I don’t know your book, if to Gianni I to-him-it will read tomorrow’*  
   *Top > se > Top*

4. *... Force ... Top ... Int ... Top ... Fin ...*  
   *che se di*
In some languages, such elements can co-occur in the same structure

“Reported questions” in Spanish:

(1) María preguntó que el lunes si había periódicos
    ‘Maria asked that the Monday if there were newspapers’ (Spanish: Plann 1982)

(2) Le pregunté que Juan Top como Foc cocinaba
    ‘I asked him/her that Juan how cooked’

NB: in Italian in such cases the higher head would not be lexicalized
Hungarian *hogy*

(1) Kiváncsi vagyok, *hogy* elmentek-e, a vendégek.

I-am-curious that part-left-3pl-E the guests-nom
I wonder if the guests have left

(2) Kiváncsi vagyot *hogy* kit Foc keresett Zeta

Curious be-PRES-1p that who-ACC looked for Zeta-NOM
‘I wonder whom Zeta looked for’

(3) Kiváncsi vagyot *hogy* Zeta Top kit Foc keresett

Curious be-PRES-1p that Zeta-NOM who-ACC looked for
‘I wonder whom Zeta looked for’

(Puskas 2000:226)
Hungarian yes-no and wh embedded questions

(1) ... hogy Int [ .... V .... ]

(2) ... hogy Int Foc [ ... wh ... ]
Van Craenenbroek (2009) on transitivity

In certain Northern Italian Dialects we find

i. ... that Top ...

ii. ... Top Wh ...

iii. ... Wh that ...

So, *that* should be both higher then Top and lower than Top (by transitivity) $\rightarrow$ transitivity arguments give rise to paradoxes.

BUT: the argument overlooks the fact that the same functional morpheme may occupy distinct positions (think of *to, for* in English). That, and its equivalents, is a versatile morpheme which may lexicalize distinct positions in the LP.
(3) CHE < CLLD
Me dispiace che a Marco i ghe gabia ditto cussi.
‘I am sorry that they said so to Marco.’ (Venetian)

(7) CLLD < WH
Me domando el premio Nobel a chi che i ghe lo podarìa dar.
‘I wonder to whom they could give the Nobel Prize.’ (Venetian)

(1) WH < CHE
Me domando chi che Nane ga visto al marcà.
‘I wonder who Nane saw at the market.’ (Venetian)
Multiple occurrences of *that* in distinct positions

(1) a. I thank *that*, if they arrive on time, *that* they will be greeted (McCloskey 1992, Radford 2011)

b. Le mandò a dire *che* tutte quille dinare *che* le voleva dare re de Franza per l’armata

‘He sent (someone) to tell him that all this money that the king of France wanted to give him for the army’ (Old Southern Italian varieties, Ledgeway 2003, 131)

c. A chërdo *che*, col liber, *ch’* a l’ abia già lesulo

‘They believe that, that book, that s/he has already read’ (Turinese, Paoli 2003)
Spanish vs Brazilian Portuguese

(1) a. Dice que con tu hermana que no se puede contar
   ‘He says that on your sister that we cannot count’
   (Spanish: Villa-Garcia 2015)

b. A Joana acha que A MARIA que o João encontrou no cinema
   ‘Joana thinks that MARIA that João met in the cinema’
   (Brazilian Portuguese, Mioto 1999)

In Spanish only the topic licenses the second que, in BP only the focus does.

Does the second que lexicalize Fin, or Top/Foc? The selectivity suggests that it may directly lexicalize Top/Foc.
Reported questions in Japanese

(1) Taroo-wa Ziroo-ni [CP dare-ga kare-no ie-ni kuru no ka to] tazuneta

T.-TOP Z.-DAT who-NOM he-GEN house-to come no ka to asked

‘Taroo asked Ziroo that who is coming to his house’

(Japanese: Saito 2012)
Invariance and variation: mirror image of the complementizer sequence in Romance and Japanese

**Romance** (Rizzi 1997, 2013):

\[
[ \text{Force/Report} \ [ \text{Int} \ [ \text{Fin} \ [\text{IP} \ldots] \ldots \ldots] \ldots] ]
\]

\[
\text{che} \quad \text{se} \quad \text{di}
\]

**Japanese** (Saito 2012):

\[
[ \ldots [ \ldots [ \ldots [\text{IP} \ldots] \text{Fin} ] \text{Int} ] \text{Force/Report} ]
\]

\[
\text{no} \quad \text{ka} \quad \text{to}
\]
The criterial approach to scope-discourse constructions

The LP is populated by a system of functional heads related to the expression of scope-discourse properties (Top, Foc, Q), which form a functional sequence and have a dual function:

I. In syntax, they attract movement of a phrase with matching features.

II. At the interfaces with sound and meaning they activate procedures for the assignment of the intonational contour (PF) and of the interpretation (LF), also determining conditions for appropriate use in discourse.
The steps of “Movement” as Internal Merge

(1) Which girl will the boy see ___?

i.  [ Q  [the boy]  [will [see [which_Q girl]]]  ➔  Search ➔

ii.  [ Q  [the boy]  [will [see [which_Q girl]]]  ➔  Phrase identif. ➔

iii.  [ Q  [the boy]  [will [see [which_Q girl]]]  ➔  Internal Merge ➔

iv.  [ [Which_Q girl]  Q  [the boy]  [will [ see <[which_Q girl]> ]]]
A useful guideline

(1) One property, one feature, one head

This maxim naturally leads to the splitting approach, decomposing arbitrary porte-manteau heads like C or I into finer, featurally simple components (favoring local simplicity at the price of a higher global complexity).

But the guideline must be qualified: a single head cannot literally contain just one featural specification.
The featural specification of a head

A head must specify:

I. its categorial feature

II. Formal features specifying the head’s capacity to trigger syntactic actions; these specifications can vary across languages, and characterize the parametrization of the system:

   a. Merge features (the capacity to select a complement and a specifier)

   b. Move features (the capacity to trigger phrasal or head movement)

   c. Spell-out features (the possibility of leaving the head and/or its dependents unpronounced)
An example: Subj (or AgrS)

**Category:** Subj

**Merge features:** selects TP

**Phrasal move features:** attracts nominal element to Spec

**Head move features:** attracts +V (Italian, French, but not English)

**Spell-out features:** licenses *pro* in Spec (Italian, Spanish, but not English, French).
The criterial approach to scope-discourse semantics

The left periphery is populated by a system of functional heads (Q, Top, Foc,...) which attract phrases with matching features:

(1)a Which book should you read ___ ?
   b This book, you should read ___ tomorrow
   c THIS BOOK you should read ___ (, not that one)

(2)a Which book Q should you read __ ?
   b This book, Top you should read ___ tomorrow
   c THIS BOOK Foc you should read ___ (, not that one)
Languages which overtly express Criterial heads

(5)a Ik weet niet [ wie of [ Jan ___ gezien heeft ]]
   ‘I know not who Q Jan seen has’
   (Dutch varieties, Haegeman 1994)

b Un sè  [ do  [ dan lo  yà [ Kofi hu  i ]]]
   ‘I heard that snake the Top Kofi killed it’
   (Gungbe, Aboh 2004)

c Un sè  [ do  [ dan lo  weè [ Kofi hu  ___ ]]]
   ‘I heard that snake the Foc Kofi killed ’
   (Gungbe, Aboh 2004)
The Uniformity Principle

« In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances ».  
N. Chomsky (2001) Derivation by Phase, p.2

This guideline favors a transparent view of the syntax-discourse interface, in which discourse-relevant articulations are expressed by uniform **Spec – head – complement** schemata, with parametrisation restricted to the spell-out of the criterial head, over alternatives requiring language-specific catalogues of interpretive routines.
On the “syntacticization” of semantics-pragmatics of scope-discourse: Topic - Comment

The configurations created by merge and move are interpreted at the LF interface following the instructions associated to the criterial heads (Cinque & Rizzi 2010). E.g., for topics,

questo libro
this book

Top

lo dovremmo leggere __ domani
we should read __ tomorrow

“Topic”-“Comment”

Interpretation of topics

A topic picks out a referent and makes a comment about it.

The referent must be somehow connected to the discourse context (Discourse-linking, partitivity): An out of the blue, all-new context does not license a topic-comment structure:

Q1: Che cosa è successo? (what happened?)
A: Un camion ha tamponato un autobus (a truck bumped into a bus)
A’: # Un autobus, un camion lo ha tamponato (a bus, a truck bumped into it)

Q2: Che cosa è successo all’autobus per Roma? (what happened to the bus to Rome?)
A: L’autobus per Roma, un camion lo ha tamponato (the bus to Rome, a truck bumped into it)
(1) A: Secondo me non avranno mai il coraggio di partire da soli per le Maldive...

‘According to me, they will never have the courage of traveling alone to the Maldives...’

B: Beh, alle Maldive, ci sono andati in viaggio di nozze.

‘Well, to the Maldives, they went (there) on honeymoon.’
On the “syntacticization” of scope-discourse semantics-pragmatics: \( \text{Focus}_{\text{corrective}} \) - Presupposition

NB: on the different types of peripheral focus: Belletti 2009, Bianchi, Bocci & Cruschina (2016)

“\( \text{Focus}_{\text{corr}} \)” - “Presupposition”  
we should read ___ (not Gianni’s)
Context of corrective focus

A: Dovreste leggere il libro di Gianni...
   ‘You should read Gianni’s book...’

B: No, IL TUO LIBRO dovremmo leggere, non quello di Gianni
   ‘No, YOUR BOOK we should read, not Gianni’s book’
(2) A: Se ho capito bene, sono andati alle isole Vergini.
   ‘If I understood correctly, they went to the Virgin Islands.’

B: Ti sbagli! ALLE MALDIVE sono andati in viaggio di nozze!
   ‘You are wrong! TO THE MALDIVES they went on honeymoon!’
Another kind of left-peripheral focus in Italian: Mirative focus (Cruschina 2012)

(1) ...E io che credevo che fossero dei poveracci! Figurati un po’...
‘...and I believed they were poor people! Can you imagine...

ALLE MALDIVE sono andati in viaggio di nozze!
‘TO THE MALDIVES they went on honeymoon!

Here the value of the focus variable falls outside natural expectations given the speaker’s previous beliefs.
Mirative focus (Bianchi, Bocci & Cruschina 2016): intonational contour
New information focus does not target the LP in Italian

New information focus does not allow movement to the LP in standard Italian (and many regional varieties), unless it can be contextually salvaged as a corrective or mirative focus:

(1)Q  Che libro hai comprato?
    ‘What book did you buy?’

A   Ho comprato il libro di Gianni
    ‘I bought Gianni’s book’

A’ # Il libro di Gianni, ho comprato
    ‘Gianni’s book, I bought’

Belletti (2001, 2004): new information focus targets a low focus position in the vP periphery in standard Italian (but it may target a LP position in regional varieties such as Sicilian and Sardinian: Cruschina 2012).
...but it does in certain regional varieties

The Sicilian dialect (and the regional variety of Italian spoken in Sicily and other southern regions) uses a clause initial position also for new information focus:

(1) Q: Chi scrivisti? (Sicilian)
    ‘What did you write?’

    B: N’articulu scrissi
    ‘An article I wrote’

Cruschina (2012) argues that Sicilian specifies a left peripheral new information focus position distinct from and lower than the left peripheral contrastive focus position, which is prosodically more marked and does not require T to C movement.
Two hypotheses on scope-discourse markers
(discussions with K. Abels, cartographic workshops Oslo, Nov 2017, Barcelona, May 2018)

The marker M is part of the clausal spine, in a Spec-head relation with XP.

The marker M is a case-like specification attached to XP, not part of the clausal spine.
Does a marker appear only in the LP element, or also on the *in situ* element?

Foc marking in Gungbe:

(1) a. fité *wè* é yì?
   ‘Where Foc he went?’

   b. é yì fité (*wè)?
      Echo questions
      ‘he went where (foc)?’

NB: wh-elements when in LP position systematically occur with the Foc marker *wè*. So *wè* expresses both Q and Foc.
Multiple questions

Many languages permit multiple questions with just one wh-element moving to the LP:

(1) What did you give __ to whom?

Does the special Q marker occur only on the left-peripheral element (as predicted by A) or on all wh-elements in multiple questions (as expected under B)?

(2) What Q did you give to whom?

(3) What Q did you give to whom Q?
Multiple questions in Dutch varieties

(2) Ik vraag me af    [ wie of    wat (*of)    gezegd heeft ]

‘I ask myself off    who Q    what (*Q)    said has’

The marker appears adjacent to the moved wh-phrase, not on the wh-elements in situ. This is expected if the marker is a left-peripheral head (approach A).

(thanks to L. Haegeman)
Does the markers appear once or twice in coordinations of topics or foci?

(1) John and Bill  M ....

(2) John  M and  Bill  M ....

Approach A (clausal spine) predicts only (1) to be possible. Approach B (DP-internal) is consistent with both (1) and (2)

(See also the “clausal spine” view of wa-marking and (double) ga-marking in Japanese: Paul & Whitman 2017)
Focus marker in coordinate structures in Gungbe (thanks to Enoch Aboh)

(1) [xwé kpó mó tô kpó] wè Súrù xò
    house    COORD    car    coord    FOC    Suru    buy
‘Suru bought A HOUSE AND A CAR’.

(2) * [xwé wè kpó mó tô wè kpó] Súrù xò
    house    FOC    COORD    car    FOC    COORD    Suru    buy

(3) * [xwé `kpó wè mó tô ` kpó wè] Súrù xò
    house    COORD    FOC    car    coord FOC    Suru    buy
Topic marker in a coordinate structure in Gungbe (thanks to Enoch Aboh)

(1) [xwé ló kpó móto ló kpó] yà Súrù xò yè
   house DET COORD car DET COORD TOP Suru buy 3PL

   ‘As for the house and the car, Suru bought them’.

(2) *[xwé yà kpó móto yà kpó] Súrù xò yé
   house TOP COORD car TOP COORD Suru buy 3PL
-ra marking in Persian  (thanks to Bahareh Samimi)

(1) [maqale o ketab]-o xund-am.
article and book RA read-1SG
◦ ‘I read the article and the book.’

(2) ?? [maqala]-ro o [ketab]-o xund-am.
article RA and book RA read-1SG
‘I read the article and the book.’
Che marking exlamatives in Italian

(1) Che macchina *(che)* hai comprato!
   ‘What a car (that) you bought!’

(2) Quante ragazze (*che*) e quanti ragazzi *(che)* sono venuti alla festa!
   ‘How many girls and how many boys (that) came to the party!’

NB: this instance of che could be an Excl marker, or a lower Fin marker: in both cases it is part of the clausal spine, hence the unique occurrence is expected. On the other hand, the first che of (1) is a DP-internal exlamative operator, hence it occurs twice in coordination:

(3) Che macchina e *che* moto *(che)* hai comprato!
   ‘What a car and what a motorcycle that you bought!’
The markers interfere with other processes like V2

(1) a. Ik weet niet [ wie (of) [ Jan gezien heeft ]]
   ‘I know not who Q Jan seen has’

   b. Wie (*of) heeft Jan gezien?
   ‘Who has Jan seen?’
Criterial markers and V2

Under an approach to V2 like Samo (2018), the inflected verb moves to create a Spec-head configuration with the relevant criterial phrase. So, it competes with a criterial particle:
Scandinavian *som* also interferes with V2

(1) a. *Hun spurte hvem *(som)* kom.* [Norwegian]
   
   she asked who SOM came

   “She asked who came.”

b. *Hun spurte hvem *(som)* Johan møtte.*
   
   she asked who SOM Johan met

   “She asked who John met.”

(2)  *Hvem *(som)* kom?*

   Who came?
Prenominal Focus marker *a* in Jamaican Creole

Some languages use prenominal, rather than post-nominal markers for focus, as in Jamaican Creole

(13) A di bami Piita nyam (…nutn muor)  
Foc the bammy Peter eats (…nothing more) (Durrleman 2008: 74)

Durrlemann analyses this as involving *a* in Foc head attracting the focused phrase to its Spec, and then moving up via head movement to the next higher head (see also Durrleman & Shlonsky 2015).

NB: similarities/differences with initial *shi* focus construction in Chinese?
Durrleman’s (2008) analysis
Head movement and criterial freezing

Criterial configurations give rise to freezing effect. So, isn’t further movement of Foc a violation of freezing?

No: In the criterial configuration, freezing effects involve the phrase (the « criterial goal »), not the head, which remains a « free agent ». Eg, the subject DP cannot move further (under the subject criterion), but the Subj head can, e.g. in I to C movement:

(1) * Who do you think [ that [ ___ Subj came ]?  
(2)  What did [ John ___ buy ]?

The question remains open, though, of what attracts Foc to a higher head.
Prenominal topic and focus markers in Maori

Maori has both topic and focus markers (in that order) preceding topic and focus, analysed by Pearce along similar lines:

(14) **Ko**  te  hipi  nā  Pita  I  fihore
    *Ko*  the  sheep  *nā*  Pita  T/A  fleece
    ‘As for the sheep, it was Pita who fleeced it’  (Pearce 1999)

Pierce proposes, in essence, the analysis we just reviewed for JC.
Two hypotheses on pre-nominal markers

A

The criterial view + movement: the marker M is part of the clausal spine, in a Spec-head relation with XP; then it moves to a higher head.

B

The marker M is a P-like specification attached to DP, not part of the clausal spine.
Prenominal markers are part of the clausal spine in JC (Durrleman 2008)

(16)a  A di bwai an di gyal mi si lass nait
   ‘Foc the boy and the girl I saw last night’

   b *A di bwai an a di gyal mi si laas nait
   ‘Foc the boy and Foc the girl I saw last night’
Two views on scope-discourse markers
(discussions with K. Abels, cartographic workshops Oslo, Nov 2017, Barcelona, May 2018)

A

XP
  M
    wè

B

XP
  M
    wè

The criterial view: the marker M is part of the clausal spine, in a Spec-head relation with XP

The marker M is a case-like specification attached to XP, not part of the clausal spine
The XP-internal options is motivated in some cases

For instance, Durrleman argues that the topic marker in JC is expressed by the particle *de* (there), and that it is DP internal.

(18) [da bwaai *de*], mi laik im
    that boy [Top] I like him
    ‘A for that boy, I like him’

And in fact, in this case, the marker is replicated with conjoined topics:

(19) Da pikni *de*, da buk *de*, dem piipl *de*, mi no wahn ha notn muo fi du wid dem!
    ‘As for that child, that book and those people, I don’t want to have anything more to do with them!’

In conclusion, one should look at the language internal evidence to adjudicate between the two options, head of the clausal spine or DP-internal marker.
Two hypotheses on pre-nominal markers

Focus marker in JC (Durrleman 2008)
Topic marker ne in Chinese?
(from Paul & Whitman 2017)

(20)a. Wǒmen jǐ gèrén dōu xǐhuān tǐyù yùndòng

‘1PL several CLF person all like sport’

b. Lǎo mā ne, xǐhuān lánqiú

‘Lao Ma TOP like basketball’

c. Xiǎo zhāng ne, xǐhuān zúqiú

‘Xiao Zhang TOP like football’

d. wǒ ne, jiù xǐhuān dǎ yǔmáoqiú

‘1SG TOP then like beat badminton’

‘We all like sport; as for Lao Ma, he likes basketball, Xiao Zhang, he likes football, and me, I like badminton. (Lü 2000, 413)’
Ne as a topic marker
(Paul & Whitman 2017)

Ne cannot co-occur with a wh element. This is expected if ne is a topic marker:

(56) Shéi (*ne) yào lái]?  
   who TOP want come  
   ‘Who wants to come?’
Other overt topic markers
(Hu, Gavarro, Guasti 2016)

“The topic marker can be null as in (1a), or overt like ya in (1b). Not only ya, but also a, me, ne and ba can be used as topic markers (Li and Thompson, 1981).”

(1) a. Li xiansheng, wo renshi e.
   Li  Mr.  I  know

   b. Li xiansheng, ya, wo renshi e.
   Li  Mr.  TOP  I  know
   ‘As for Mr. Li, I know (him).’
Cartography and «further explanation»

Cartographic studies involve a large descriptive endeavour, which discovers numerous properties of functional systems: order of positions, mutual incompatibility, freezing effects, etc. Some such properties are invariant, other properties are variable.

How can such properties be related to fundamental ingredients of linguistic computations?

The search for «further explanations» of cartographic properties may thus become a powerful generator of empirical problems, which can nourish fundamental theoretical research in syntax, and enrich the empirical basis of syntactic theory.
Where to look for forms of “further explanation”

Given the fundamental architecture of the grammatical system, “further explanations” of cartographic properties may come:

1. From principles which constrain the interface systems (interpretive procedures, etc.);
2. From principles which constrain formal syntax (locality, labeling, etc.)
A fundamental difference between Topic and LP Focus

Many languages admit **multiple Topics** in the left periphery (either a language admits a single topic, or a potentially unlimited number of topics)

Languages typically admit a **single Focus** in the left periphery.
Multiple Topics

(1) ITALIAN:

A Maria, il tuo libro, glielo devi dare al più presto
‘To Maria, your book, you it-to him should give as soon as possible’

(2) ABIDJI (Hager-Mboua 2014)

kòfí ëkë òkòkò è ëkë è pìpjé nì.
Kofi TOP banana DEF TOP ASPpeel RES PRON
‘Kofi, the banana, he peeled it.’
A single focus in the left periphery

(1) ABIDJI Topic

kòfí ēké  ḏókókò  ē  ēké  è pìpjé  nì.
Kofi TOP  banana DEF TOP  ASP.peel. RES PRON
‘Kofi, the banana, he peeled it.’

(2) ABIDJI Focus

*kòfí  bɛ  ḏókókò  ē  bɛ  è pìpjé
kofi  Foc  banana  Def. Foc  ASP.peel.
‘KOFI THE BANANA peeled’  (Hager-Mboua 2014)
Uniqueness of corrective focus in the left periphery

(1)A: So che quest’anno Piero ha vinto le olimpiadi...
   ‘I know that this year Piero won the Olympics…’

B: * Ti sbagli: quest’anno, GIANNI, I MONDIALI ha vinto, non Piero, le olimpiadi
   ‘You are wrong: this year, GIANNI, THE WORLD CHAMPIONSHIP won, not Piero, the Olympics

B’: Ti sbagli: quest’anno, GIANNI ha vinto una competizione importante, non Piero; inoltre, ha vinto I MONDIALI, non le olimpiadi
   ‘You are wrong: this year GIANNI won an important competition, not Piero; moreover, he won THE WORLD CHAMPIONSHIP, not the Olympics.'
Uniqueness of focus (in clefts) and multiplicity of topics in French

(1) Je donnerai ton livre à Jean demain
   ‘I will give your book to Jean tomorrow’

(2) Ton livre, à Jean, je le lui donnerai __ __ demain
   ‘Your book, to Jean, I it-to him will give __ __ tomorrow’

(3) * C’est à Jean que c’est ton livre que je donnerai __ __ demain
    ‘It’s to Jean that it’s your book that I will give __ __ tomorrow’
Some examples of uniqueness of LP focus

(1) Italian: * A MARIA (,) IL TUO LIBRO devi dare (non a Giulia, il disco) (Rizzi 1997)

(2) English: * TO MARY (,) YOUR BOOK you should give (not to Julie, the record

(3) (E)Armenian: * YEREK SALORN े SiranƏ kerel (Giorgi & Haroutyunian 2016)

‘YESTERDAY THE PLUM has Siran easten’

(4) Hungarian: * EMÖKE ATTIÁVAL beszélt

Emöke-NOM Attila-INSTR talk-PAST-3SG (Puskas 2000: 83)
Some examples illustrating the uniqueness of LP focus

(5) Hebrew: * le Maria (,) et ha sefer Sel- xa kedai Se titen (lo le Giulia et ha qaletet)

to M. acc the book of-2ms worthwhile that (you) give (not to G. acc the DVD)

(U. Shlonsky, p.c.. See also Shlonsky 2015)

(6) Jamaican: * A di bami a di pik ni im gi

The bammy the child he give

(Durrleman 2008:75)

(7) Gungbe: * wémà lọ we Sẹna we zë

THE BOOK SENA took

(Aboh 2004)

(8) Abidji: * òkókò́ ẹ́ bẹ́ kòfì bẹ́ ____ pipjé ____

banana Def. Foc Kofi Foc ____ peel.RES ____

« THE BANANA, KOFI ___ peeled ___ »

(Hager-Mboua 2014)
An interface explanation: A recursive focus would determine an interpretive conflict at LF

(1) [ ] Foc [ ]
    “Focus”    “Presupposition”

    ‘To MARIA YOUR BOOK you should give
Topic interpretation is compatible with recursion

(1) [ ] Top [ ]
   “Topic”    “Comment”

(2) [A Maria] Top1 [ [ il tuo libro ] Top2 [ glielo devi dare ] ]]
   ‘To Maria               your book               you it-to-him should give
Italian: a single corrective focus is possible in complex sentences

In some languages, a single LP focus position is possible in complex sentences (e.g., Italian):

(1)a. A GIANNI ho detto __ che dovremmo leggere il tuo libro, non a Piero
   'TO GIANNI I said that we should read your book, not to Piero'

b. Gli ho detto che IL TUO LIBRO dovremmo leggere __, non quello di Franco
   'I said to him that YOUR BOOK we should read, not Franco’'s''

c. *A GIANNI ho detto __ che IL TUO LIBRO dovremmo leggere __, non a Piero, quello di Franco
   'TO GIANNI I said that YOUR BOOK we should read, not to Piero, Franco’s'
Analysis 1 (1997): this follows from the same interface principle operative in simple clauses

\[(1) \quad \boxed{\text{Foc}} \]

“Focus”

“Presupposition”

If the presupposition includes the whole c-domain of Foc, the same interpretive clash is triggered in simple and complex sentences:

\*(2) *[A GIANNI] \text{Foc1} [ \text{ho detto __ che [IL TUO LIBRO] Foc2 dovremmo leggere __ } ]*

'TO GIANNI I said that YOUR BOOK we should read, not to Piero, Franco’s'
Counterevidence: in some languages more then one LP focus is possible in complex sentences

Aboh (2004): In Gungbe, more than one LP focus position is possible in complex sentences (one per clause):

(2)a Sena we ᖢ sè ᖢ ṭɔ Remi we ᖢ zé ᖢ hi lɔ
   Sena Foc hear-Perf that Remi Foc take-Perf knife +def
   'SENA heard that REMI took the knife'

b Sena we ᖢ sè ᖢ ṭɔ hi lɔ we ᖢ Remi zé ᖢ
   Sena Foc hear-Perf that knife +def Foc Remi take+perf
   'SENA heard that Remi took THE KNIFE'
Analysis 2: the computation of the presupposition is parametrized (LF)

A parameter: The presupposition is

i. The whole complex sentence complement of Foc (Italian);

ii. The simple clause complement of Foc (Gungbe)

(1) *[A GIANNI] Foc1 [ ho detto ___ che [IL TUO LIBRO] Foc2 dovremmo leggere ___ ]

'TO GIANNI I said that YOUR BOOK we should read, not to Piero, Franco's'

(2) Sena wè ___ sè ḍɔ hi lɔ wè Remi zé ___

Sena Foc hear-Perf that knife +def Foc Remi take+perf

'SENA heard that Remi took THE KNIFE'
The Uniformity Principle

« In the absence of compelling evidence to the contrary, assume languages to be uniform, with variety restricted to easily detectable properties of utterances ». 

N. Chomsky (2001) Derivation by Phase, p.2
Empirical evidence against a parametrized computation of presupposition

(1) A Dopo due ore di riunione, Maria ha detto che si doveva finire
   ‘After two hours of meeting, Maria said that we should finish’

   B. Ricordi male! GIANNI ha detto qualcosa, non Maria; e poi mi sembra che abbia semplicemente detto che voleva fare una pausa
   ‘You don’t remember well! GIANNI said something, not Maria! Moreover, I think he simply said that he wanted to take a break.’

   C. # Ricordi male! GIANNI è andato via, non Maria!
   ‘You don’t remember well! GIANNI went away, not Maria!’
- **Italian** has a special intonational contour involving the flattening of the post Foc string. This precludes multiple foci in complex clauses:

![Graph showing intonation contour](image)

- **Gungbe** has no special focus-related contour: focus is marked by the special particle *wè*, not by intonation (Aboh 2004). So, nothing precludes the occurrence of foci in distinct clauses. Multiple occurrences of focus in the same clause continues to be excluded by the LF clash mentioned earlier.
So, we have principles and parameters...

1. an **LF principle** determining the computation of presupposition in focal structures: the presupposition is the simple clause complement of Foc. This accounts for the general impossibility of multiple left-peripheral Foc positions in the same simple clause;

2. a **PF parameter**: a special flattening contour may be assigned to the post-focal string, or not. This accounts for the observed variation: some languages can have left peripheral foci occurring in different simple clauses (Gungbe), other languages have a single left-peripheral focus in a complex sentence (Italian).

The parametrization is where it should be expected under the Uniformity Principle.
Variation in topic constructions: Uniqueness vs. multiplicity of topics,

In Italian (and many other languages) multiple topics are possible:

(1)a Darò il tuo libro a Gianni domani
     ‘I will give your book to Gianni tomorrow’

    b A Gianni, il tuo libro, glielo darò domani
     ‘To Gianni, your book, I will give it to him tomorrow’

    c Il tuo libro, a Gianni, glielo darò domani
     ‘Your book, to Gianni, I will give it to him tomorrow’
In English, a single topic per clause is natural:

(2)a I will give your book to John tomorrow
   b To John, I will give your book ___ tomorrow
   c John, I will give your book to ___ tomorrow
   d Your book, I will give ___ to John tomorrow

(3)a * To John, your book, I will give ___ ___ tomorrow
   b * Your book, to John, I will give ___ ___ tomorrow
   c * John, your book, I will give ___ to ___ tomorrow
   d * Your book, John, I will give ___ to ___ tomorrow
Variation in topic constructions: Uniqueness vs. multiplicity of topics,

In Italian two direct object topics are possible:

(1)a Ho convinto Gianni ad affittare la macchina
   ‘I convinced Gianni to rent the car’

   b Gianni, la macchina, lo ho convinto ad affittarla
   ‘Gianni, the car, I him-convinced to rent-it’

In English, a single topic is possible:

(2)a I convinced John to rent the car
   b John, I convinced __ to rent the car
   c The car, I convinced John to rent __
   d * John, the car, I convinced __ to rent __
An independent difference between English and Italian

In English, the topic is linked to a gap: in Italian, an object topic is obligatorily resumed by a clitic:

(1) Your book, John will give ___ to Mary

(2)a Il tuo libro, Gianni _o darà ___ a Maria
   b * Il tuo libro, Gianni ___ darà ___ a Maria

Why is clitic resumption obligatory in Italian?

Cinque (1990): a gap not bound with the clause is interpreted as a variable, but the topic is not an operator, so a variable remains unbound, in violation of Chomsky’s (1986) Full Interpretation.

What about English?
Topicalization in English

Chomsky 1977, Cinque 1990: English has no clitics, but it may utilize a null operator (of the kind used in many constructions across languages, appositive relatives, easy to please, parasitic gaps, etc.) to connect the topic and the variable:

(3) Your book, Op I will give __ to Mary

This analysis is made immediately plausible by the fact that in closely related languages, like Dutch, topicalization may use an overt operator:

(4) Die man (die) ken ik __ (Dutch: Koster 1978)

‘That man, I know’
Intervention effects and Relativized Minimality

Relativized Minimality:

In configuration ... X ... Z ... Y ... A local relation is disrupted between X and Y when:

1. Z hierarchically intervenes between X and Y, and
2. Z is a position of the same type as X


(1) **What** do you think [ **John** read __ ]?

   OK

(2) * **What**,Q  do you wonder [ **who** Q read __ ]?

   *

---

**What** do you think [ **John** read __ ]?

OK

* **What** Q  do you wonder [ **who** Q read __ ]?

*
The ban against double topic in English as a RM effect

(1) * John Op the car Op I convinced __ to rent __

If topicalization involves a null operator in English, in cases of double topicalization one operator will inevitably move across the other, in violation of RM.
Cases of multiple movement to the LP in English

It is not the case that English systematically disallows multiple movements to the LP. A topic can co-occur with a preposed adverbial PP:

(97) Words like that, in front of my mother, I would never say __ __ (L. Roberts, p.c.)

Here presumably the adverbial PP can target the Mod(ifier) layer dedicated to adverb preposing, and different from the genuine topic position:

(98)a John rapidly left the room
    b Rapidly, John left the room
Anti-adjacency

Among many other distinguishing properties, preposed adverbials alleviate that-trace effects (Bresnan 1977), whereas genuine topics do not:

(99)a * This is the man who I think that __ will buy my house next year

b This is the man who I think that, next year, __ will buy my house

c * This is the man who I think that my house, __ will buy __ next year
Anti-adjacency

If adverbial phrases (including adverbial PP’s) can selectively target Mod, the representation of (57) is

(100) Words like that Op, in front of my mother Mod I would never say __ __

In which RM is not violated (Op and Mod belong to different feature classes, in terms of the system of featural RM in Rizzi 2004).

In fact, “in front of my mother” has the same alleviating effect for that-trace that adverbial have:

(101) Here is the man who I think that, in front of my mother, __ would never say words like that
Another difference between English and Italian: Haegeman (2012) on topics in adverbial clauses

Assuming Cinque’s analysis, Haegeman (2012) traces to the same explanatory scheme another distributional differences between English and Italian topicalization. In Italian a topic structure is possible in various kinds of adverbial environments which disallow the construction in English, e.g., in temporal adverbial clauses:

(102) Quando gli esami di primo anno li hai superati __, ti puoi iscrivere al secondo anno.
‘When the first year exams you them have passed, you can register for the second year’

(103) * When the first year exams you have passed __, you can register for the second year
Haegeman (2012)

Then, Haegeman argues, if the subordinator *when* is moved from an IP internal position, it necessarily crosses the null operator associated to the topic; as *when* itself plausibly belongs to the class of operators, the derived configuration violates featural Relativized Minimality:

\[(1) \ [ \text{You \ when have passed the first years exams} \ ] \text{ you can register for the second year}\]

\[(2)* \text{When}_{op} \text{ the first year exams } Op \text{ you } \_ \_ \text{ have passed } \_ \_ \text{ you can register for the second year}\]
In Italian, no intervening Op

As the Italian topicalization construction involves no null operator, but only a topic (crucially, not a member of the operator class), no violation of locality arises. So, another apparently unrelated distributional difference can be deductively connected to the fundamental difference between English and Italian topicalization, the involvement of a null operator in the former by not in the latter.

(1) Quando_{Op} gli esami di primo anno_{Top} li hai __superati __, ti puoi iscrivere al secondo anno.

‘When the first year exams you them have passed, you can register for the second year’
Adv preposing in English is possible

Again, Mod is different from Top, and adverb preposing to Mod is consistent with the adverbial clause context:

(104) When, in a few years Mod, ___ Mary applies for graduate school, she ...
Locality would not be sufficient to rule out a double focus

A locality approach to the ban against two LP foci?

(105) * A MARIA, IL LIBRO devi dare ___ __, non a Piero, il disco
   ‘TO MARIA, THE BOOK, you should give, not to Piero, the record

A locality approach would not be general enough. Certain PP’s are base-generated in the LP (Reinhart 1982), where they “set the scene” for the state of affairs presented in the following clause:

(106)a In this picture of John$_i$, he$_i$ looks sick

   b * In this picture of John$_i$, he$_i$ found a scratch

   b’ * In this picture of John$_i$, he$_i$ found a scratch <in this picture of John$_i$>
Double focus in Reinhart’s sentences

(107)a  NELLA FOTO, Gianni sembra il più alto, non nel ritratto

‘IN THE PICTURE  Gianni looks the tallest one, not in the portrait’

b  Nella foto, GIANNI sembra il più alto, non Piero

‘In the picture, GIANNI looks the tallest one, not Piero’

c  *NELLA FOTO  GIANNI sembra il più alto, non nel ritratto, Piero

‘IN THE PICTURE  GIANNI looks the tallest one, not in the portrait, Piero’
Reinhart’s sentences and double focus

If Reinhart’s analysis is on the right track, the double focus in (107)c plausibly is not ruled out by locality:

(109)c’ * NELLA FOTO Foc1 ___ ... GIANNI Foc2 ___ sembra il più alto, non nel ritratto, Piero

‘IN THE PICTURE GIANNI looks the tallest, not in the portrait, Piero’

So, an interface analysis is needed anyway for such cases.
Criterial Freezing

(1)a John wonders [which book Q [ Bill read ___ ]] 

b * Which book does John wonder [ __ Q [ Bill read __ ]] 

(Lasnik & Saito 1992)

(2) Criterial Freezing: A phrase satisfying a Criterion is frozen in place

Under this view, A’-movement chains are a way to connect a thematic position to a scope-discourse position, and they are in fact delimited by these two positions

Can descriptive principle (2) be deduced from something else?
The « inactivation » approach

Chomsky (1995):

Movement can take place when the moved element has a feature to check

(2) John seems [ __ to be sick ]

(3) * John seems [ __ is sick ]
Bošković (2008): inactivation in A’-chains

(1) John wonders [Q [ Bill read \textit{which}_Q \textit{book} ]] \rightarrow \text{movement}

(2) John wonders [\textit{which}_Q \textit{book} Q [ Bill read \_ ]] \\

At this point, Q is checked, so that the phrase is not movable, and the following cannot be derived:

(3) * \textit{Which}_Q \textit{book} does John wonder [ \_ Q [ Bill read \_ ]]
More complex cases. Q and Foc

If a phrase contains two criterial features, the inactivation approach would predict that the phrase could move to one position and check one feature, and continue to move to another position and check the other feature, but this never happens:

(1) Foc John wonders [Q [ Bill read which$_Q$ BOOK$_{Foc}$ ]]] (not which article)

(2) Foc John wonders [which$_Q$ BOOK$_{Foc}$ Q [ Bill read __ ]]] (not which article)

(3) * Which$_Q$ BOOK$_{Foc}$ Foc John wonder [ __ Q [ Bill read __ ]]] (not which article)
More complex cases: Q and Top

(1) \([\text{quale}_Q \text{ di questi libri}_{\text{Top}}]\)

‘Which one of these books’

(1) Gianni si domandava \([\text{quale}_Q \text{ di questi libri}_{\text{Top}}]\) \(Q\) [ volessimo leggere ___]

‘Gianni wondered which one of these books we wanted to read’

(3) \([\text{Di questi libri}_{\text{Top}}]\) \(\text{Top}\) Gianni si domandava \(\left[ [\text{quale}_Q \text{ ___ } ] \right] Q\) [volessimo leggere ___ ]]

‘Of these books, Gianni wondered which one we wanted to read’

(4) * \([\text{Quale}_Q \text{ di questi libri}_{\text{Top}}]\) \(\text{Top}\) [ Gianni si domandava [ ___ \(Q\) [ volessimo \ [ leggere ___]])]

‘Which one of these books Gianni wondered we wanted to read read’
A revision of criterial freezing

(3) \[\text{Di questi libri}_\text{Top} \text{ Top Gianni si domandava } [ [\text{quale}_Q \_\_\_ ] Q [\text{volessimo leggere} \_\_\_] ]\]

‘Of these books, Gianni wondered which one we wanted to read’

The possibility of subextracting a constituent from the criterial configuration shows that the original formulation is too strong

(1) Criterial Freezing I: A phrase satisfying a criterion is frozen in place

(2) Criterial Freezing II: In a criterial configuration the criterial goal is frozen in place
Criterial freezing

(1) A phrase satisfying a Criterion cannot undergo further movement

Three illustrations, at different heights in the syntactic tree:
- Q criterion in the LP
- Subj criterion in the IP
- Foc criterion in the low periphery (Belletti 2004)
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\textsubscript{Q} BOOKS\textsubscript{FOC} ] Q ] John read ], not which articles

(1') * [ which\textsubscript{Q} BOOKS\textsubscript{FOC} ] I wonder [ [ ___ Q ] John read ], not which articles
Focus movement from a non-criterial position is possible

(1) Ho detto che dovresti leggere un LIBRO, non un articolo
   ‘I said that you should read a BOOK, not an article’

(2) Un LIBRO ho detto che dovresti leggere __, non un articolo
   ‘A BOOK I said that you should read, not an article’
Subextraction from a criterial phrase is possible, but not pied-piping of the whole phrase

(1) Di quale libro non sai [ quanti capitoli __ ] Q dovremo leggere __?
   ‘Of which book don’t you know how many chapters we should read’

(2) * Quanti capitoli di quale libro non sai __ Q dovremo leggere __?
   ‘How many chapters of which book don’t you know we should read?’

The « criterial goal » is the element marked with the criterial feature and attracted (with a phrase containing it) to the LP

Criterial Freezing: in a criterial configuration, the Criterial Goal is frozen in place
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
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 $\alpha$, so that $\text{XP}_{+F}$ is not maximal w.r.t. +F, and only maximal nodes can be moved.

Here am interested in the consequences of Criterial Freezing for overtly marked Top and Foc structures.
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 constraint 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) ̀Un 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

What happens in « disagreement » and D-linked questions?
Top-Foc → Foc-Top with special yes-no questions in Gungbe (Aboh 2004)

(1) a. Ûn kànbíø qɔ Kɔfi qù lësi wë?
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. Ûn kànbíø qɔ Kɔfi qù lësi yà?
1SG ask that Kofi eat rice TOP-INTER
‘I ask whether Kofi ate rice [as planned/mentioned]?’

c. Ûn kànbíø qɔ Kɔfi ní xɔ móto wè yà?
1SG ask that Kofi MOOD buy car FOC TOP-INTER
‘I asked whether KOFI SHOULD BUY A CAR [as planned/mentioned]?’

d. *Ûn kànbíø qɔ Kɔfi ní xɔ móto yà wë?
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:  

\[ [\text{IP Foc}] \text{ Top } \]

The reversal is thus expected under Criterial Freezing.
Top-Foc $\Rightarrow$ 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.