Cartography and explanatory principles:
Locality, labeling, and interpretive procedures.

1. Cartographic sequences and explanation.

The fine structure of clauses and phrases has been charted for about 20 years (see Rizzi & Cinque 2016, *The Annual Review of Linguistics*, 2 for an overview). The emerging picture:

- each X-bar layer of traditional representations like (1) can be seen as an abbreviation for a much richer structural zone; for instance, the CP layer is split into finer components, and is expanded as in (2) (Rizzi & Bocci 2016);

\[(1) \quad [\text{CP} \ldots C \ldots [\text{IP} \ldots I \ldots [\text{VP} \ldots V \ldots ]]]\quad \text{(Chomsky 1986)}\]

\quad \text{(Rizzi & Bocci 2016)}\]

- more generally, complex **functional sequences** emerge for each zone; the program leads to the discovery of rich sets of properties of such sequences: ordering, mutual incompatibility, freezing, etc.

(4) Functional sequences connect to the issue of linguistic explanation in two ways:

- Functional sequences may enter into explanatory analyses of various morphosyntactic phenomena (e.g., in nanosyntactic work on constraints on syncretism: Caha 2009, Zompi 2017, etc., in work on the fine-grained structure of that-trace effects: Rizzi & Shlonsky 2007, etc.).

- Reciprocally, functional sequences should be looked at as **explananda** in and of themselves: why do they have the ordering and distributional properties that we observe?

(5) Why is it that we typically find certain orders and certain properties in the functional sequences, rather than others? It is unlikely that the hierarchy may be an absolute syntactic primitive: why should UG have evolved to include complex precompiled structures like (2), or Cinque’s (1999) clausal structure? We have here the familiar tension between considerations of learnability and considerations of evolvability. The tension can be resolved in this case (Cinque & Rizzi 2010) if the properties of the functional hierarchy may be rooted elsewhere, and deduced from deeper and simpler principles.

(6) Two kinds of principles may be invoked:

- interface principles: selection, interpretive principles for criterial configurations, etc.

- principles constraining the syntactic machine: locality, labeling, etc..

The cartographic enterprise involves a large descriptive comparative dimension: we want to know what the right maps are, and what kinds of invariant and variable properties of the maps we can find across languages.

Moreover, as soon as we ask questions on the deeper reasons of the arrangements we observe, cartography can become a powerful generator of empirical issues for syntactic theory, which can nourish theoretical studies and enlarge their empirical basis.
2. The Criteria

(7) The criterial approach: the LP is populated by a sequence of functional head (Top, Foc, Q, Rel, Excl,….) which have a dual function:
   1. In syntax, they trigger movement (and determine freezing effects).
   2. At the interfaces with sound and meaning, they trigger interpretive procedures for the proper assignment of scope-discourse properties at LF, and the appropriate intonational contour at PF.

(8) a Which book Q should you read ___?
b This book TOP you should read __ tomorrow
c THIS BOOK FOC you should read __, not Bill’s book

(9) a Ik weet niet [ wie of [ Jan ___ gezien heeft ]](Dutch varieties, Haegeman 1996)
   ‘I know not who Q Jan seen has’
b Un sè [ do [ dan lo yà [ Kofi hu i ]]]] (Gungbe, Aboh 2001)
   ‘I heard that snake the TOP Kofi killed it’
c Un sè [ do [ dan lo we [ Kofi hu ___ ]]] (Gungbe, Aboh 2001)
   ‘I heard that snake the FOC Kofi killed ’

(10) [ ___ ] Top [ ___ ] (11) [ ___ ] Foc [ ___ ]
   “Topic” “Comment” “Focus” “Presupposition”

Interpretive routines at the semantic-pragmatic interface define the conditions for appropriate use in discourse, and assign the appropriate intonational contour. A topic selects a presupposed referent and makes a comment about it:

(12) 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.’

(13) Topic – Comment (from Bianchi, Bocci, Cruschina 2014)

A left peripheral corrective focus singles out a piece of information attributed to the interlocutor (typically expressed by the interlocutor in the immediate discourse context) and corrects it.

(14) 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!’

(15) (Corrective) Focus – Presupposition (from Bianchi, Bocci, Cruschina 2014)

3. There can be multiple topics, but LP focus is unique: the role of LF interface principles.

Many languages permit a proliferation of topics, e.g. Italian, and Abidji (Hager-Mboua 2014):

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

(24) kòfí ékè òkòkò è ékè è pipjé ni.
Kofi TOP banana DEF TOP ASPpeel RES PRON
‘Kofi, the banana, he peeled it.’

But multiple left-peripheral (corrective) focus seems to be systematically proscribed:

(25) Italian: * A MARIA (,) IL TUO LIBRO devi dare (non a Giulia, il disco)
‘To Maria your book you should give, not to Giulia the record’ (Rizzi 1997)

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

(27) (E)Armenian: * YEREK SALORN ê SiranƏ kerel (Giorgi & Haroutyunian 2016)
‘YESTERDAY THE PLUM has Siran eaten’

(28) Hungarian: * EMŐKE ATTILÁVAL beszélt
Emőke-NOM Attila-INSTR talk-PAST-3SG (Puskas 2000: 83)

(29) 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)

(30) Jamaican: * A di bami a di pikni im gi
The bammy the child he give (Durrleman 2008:75)

(31) Gungbe: * wémà lò wè Sèna wè zé
THE BOOK SENA took (Aboh 2004)
I may want to correct two element in a statement produced by my interlocutor, but I cannot do so in a single clause with two corrective foci:

(33) 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; e poi, I
   MONDIALI , ha vinto, non le olimpiadi
   ‘You are wrong: this year GIANNI won an important competition, not Piero; moreover, THE WORLD CHAMPIONSHIP he won, not the Olympics.

Rizzi (1997): Uniqueness of LP focus follows from the interpretive properties of the structure: if a FocP was recursively embedded as the complement of a higher Foc, we would have that the complement of a higher Foc (underscored in (35)), a presupposition according to (34), contains a focus position, an inconsistent interpretive property.

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

   ‘To MARIA YOUR BOOK you should give

On the other hand, no interpretive requirement blocks recursion of topic – comment structures: the only requirement on the comment is that it must contain new information, but this is consistent with a (reiterated) topic – comment structure.

(36) [A Maria] Top1 [ [ il tuo libro ] Top2 [ glielo devi dare ] ]
   ‘To Maria your book you it-to-him should give

4. Principles and parameters: A role for PF interface?

In Italian, a single LP focus can appear in complex clauses:

(37)a. A GIANNI ho detto __ che dovremmo leggere il tuo libro
     ‘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’
Rizzi (1997, fn. 15) : this follows from the (34) : the LP focus in the lower clause is part of the presupposition of the higher focus, therefore a clash arises also when the two foci are not in the same LP.

But if two LP foci in the same clause are systematically banned across languages, the co-occurrence of LP foci in different clauses is clearly permitted in some languages, e.g., Gungbe (Aboh 2004):

\[(38)\]
\[
\begin{array}{llllllll}
\text{a} & \text{Sena} & \text{we} & \_ & \text{sè} & \_ & \text{dɔ} & \text{Remi} & \text{we} & \_ & \text{zé} & \_ & \text{hi lɔ} \\
\text{Sena Foc} & \text{hear-Perf} & \text{that} & \text{Remi Foc} & \text{take-Perf} & \text{knife} & \text{+def} \\
& \text{SENNA heard that REMI took the knife'} \\
\end{array}
\]

\[
\begin{array}{llllllllll}
\text{b} & \text{Sena} & \text{we} & \_ & \text{sè} & \_ & \text{dɔ} & \text{hi lɔ} & \text{we} & \text{Remi} & \text{zé} & \_ & \text{hi lɔ} \\
\text{Sena Foc} & \text{hear-Perf} & \text{that} & \text{knife} & \text{+def} & \text{Foc Remi} & \text{take+perf} \\
& \text{SENNA heard that Remi took THE KNIFE'} \\
\end{array}
\]

One could imagine that a parameter is involved here, perhaps along the following lines:

\[(39)\]
- the presupposition associated to Foc extends
  i. to the simple clause c-commanded by Foc (Gungbe)
  ii. to the whole complex sentence c-commanded by Foc (Italian)

But this approach seems to raise serious learnability issues: how would the language learner come to determine the language-specific parametric value? A more promising avenue would be to try to connect the observed difference to another salient different between the two languages. A clear difference exists at the PF interface.

(40) In Italian, a double LP focus may be inconsistent with the specific contour assigned to such structures (as in (13)): the obligatory flattening of the contour in the complement of Foc may be inconsistent with the assignment of another high focal prominence. This is not an obvious assumption (see Bocci 2013 for discussion), but it seems to be intuitively plausible, so I will pursue this possibility here.

(41) “…no stress mechanism arises in the Gungbe focus strategy. Focusing is realized only through movement of the focused element to the left-adjacent position to we…” (Aboh 2004: 238)

So, these considerations suggest the following picture:

(42)
- a. The computation of the presupposition at LF is generally local, perhaps limited to the content of the same phase, the material which is immediately available when transfer to the LF interface occurs. This captures the general ban against more than one LP focus in the same clause.

- b. The contour assignment mechanism at PF is language-specific. In a language like Italian the contour assignment mechanism (in particular, the obligatory flattening of the contour in the post-Foc string) also excludes the non-local co-occurrence of two LP foci in cases like (37).

- c. In languages like Gungbe the special contour assignment mechanism for Foc does not apply, hence the non-local co-occurrence of two foci is allowed, as in (38), whereas the local co-occurrence, as in (31), continues to be banned by the general interpretive mechanism at LF.
5. The ban on double topics: English vs Italian, and the relevance of locality.

The theory of locality can capture certain cross-linguistic differences in the organization of the sequence (Abels 2012, Haegeman 2013, Rizzi 2013; see also Cinque & Krapova 2013, Callegari 2014 for critical assessment). English contrasts with Italian (and other Romance languages) in not allowing more than one topic DP:

(45) Gianni, la tua macchina, lo ho convinto a comprarla
    ‘Gianni, your car, I him convinced to buy-it’

(46)a John, I convinced ___ to buy your car
    b Your car, I convinced John to buy ___
    c * John, your car, I convinced ___ to buy ___

This difference may be amenable to an independent difference between the topic constructions in the two languages and the theory of locality. In Italian, an object Topic is obligatorily resumed by a clitic (Clitic Left Dislocation):

(47) La tua macchina, *(la) comprerò ___ l’anno prossimo
    ‘Your car, I it-will-buy ___ next year’

Cinque (1990): clitic resumption is obligatory because otherwise a gap not bound clause-internally would be interpreted as a variable, and the topic, per se, is not an operator, hence a variable remains unbound in (47).

English has no clitics, so the language uses a null operator to connect the topic and the gap (Cinque 1990, based on Chomsky 1977):

(48) Your car, Op I will buy ___ next year

The operator, a kind of functional equivalent of the clitic, is null in English, but may optionally be overt in other closely related languages, like Dutch (Koster 1978):

(49) Die man, (die) ken ik __
    ‘That man, (whom) know I’

Under this analysis, a representation with a double topic in English would involve an Op crossing another Op, a violation of Relativized Minimality, as in (50). The Italian/Romance construction involves no Op, so a configuration with multiple topics does not violate RM:

(50) * John Op, your car Op, I convinced ___ to buy ___

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

(51) Words like that, in front of my mother, I would never say ___ ___ (I. Roberts, p.c.)
Here presumably the adverbial PP can target the Mod layer dedicated to adverb preposing, and different from the genuine topic position, among other reasons, in that it alleviates that-trace effects (Bresnan 1977), whereas genuine topics do not:

(52)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

If adverbial PP’s can selectively target Mod, the representation of (51) is

(53) 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).

6. Criterial freezing

(48)a Bill wonders [[which book] Q [ John published __ this year ]]
   b * Which book does Bill wonder [ ___ Q  John published __ this year ]] (Lasnik & Saito 1992)

(49) Criterial freezing: An element satisfying a criterion is frozen in place (Rizzi 2006, 2011)

Cases like (48)b could be plausibly ruled out as not properly interpretable, or would be amenable to an inactivation approach (Boskovic 2008). But there are more complex cases in which the same complex phrase contains two criterial features F1 and F2, and in which no (obvious) interpretive problem, or problems of inactivation, would arise (Rizzi 2006, 2011): In this case, too, we observe freezing effects.

(50)a  Non so [ quantiQ ARTICOLIFoc ] Q abbianopubblicato __ , non quanti libri
   ‘I don’t know how many ARTICLES they have published, not how many books’
   b * [ Quanti ARTICOLI ] Foc non so ___ Q abbianopubblicato __ , non quanti libri
   ‘How many ARTICLES I don’t know they have published, not how many books’

No obvious interpretive problem would arise in (50)b: under the copy theory of traces, the trace in the embedded C-system would contain an occurrence of the Q-operator quanti, which could be interpreted there:

(52) Quanti ARTICOLI Foc non so [ <quanti ARTICOLI>  Q abbianopubblicato __], non quanti libri
   ‘How many ARTICLES I don’t know [ <how many ARTICLES> they have published ], not how
   many books

An element can be subextracted from a criterial configuration if there are no other violations:

   ‘It is by this author that I don’t know how many book have been published in 1967’

The subextraction option shows that (49) should be revised by making reference not to the whole criterial phrase, but to the “criterial goal”, the element carrying the criterial feature:
(49’) In a criterial configuration, the criterial goal is frozen in place

So, a criterial configuration cannot be “undone” by movement, while the whole configuration can be moved, or an element can be subextracted from the criterial phrase if no other constraint is violated.

7. “Further explanation” of freezing effects: The labeling algorithm.

Why do freezing effects exist? Can a phenomenological principle like Criterial Freezing be deducible from fundamental ingredients of linguistic computations?

(55) Labeling algorithm: A node created by Merge receives the label of the closest head (Chomsky 2013)

(56) Complete labeling: Labeling must be complete at the interfaces (Chomsky 2013)

(57) α receives the label of H₁ such that:

I. α contains H₁, and

II. there is no H₂ such that

i. α contains H₂, and

ii. H₂ c-commands H₁. (Rizzi 2015a)

I. Head – Head Merge (X, Y):

(58) \[ \alpha \]

\[
\begin{array}{c}
H₁ \\
\hline
H₂
\end{array}
\]

II. Head – Phrase Merge (X, YP):

(59) \[ \alpha \]

\[
\begin{array}{c}
H₁ \\
\hline
\text{Phrase}_2 \\
\hline
H₂
\end{array}
\]

III. Phrase – Phrase Merge (XP, YP):

(60) \[ \alpha \]

\[
\begin{array}{c}
\text{Phrase}_1 \\
\hline
\text{Phrase}_2 \\
\hline
H₁ \\
\hline
H₂
\end{array}
\]

In case of Phrase – Phrase Merge, the situation is ambiguous, as both H₁ and H₂ qualify as the closest head to the new node created by Merge, so the algorithm gives inconsistent indications in (60), and α remains unlabeled. But this can only be a temporary state of affairs under Complete Labeling.
8. Two possible solutions for unlabeled XP – YP structures (Chomsky 2013).

I. Movement: Phrase$_1$ moves further from (60) (compare with Moro 2000). At that point H$_2$ remains without competitor, and labels the structure.

II. The creation of a criterial configuration: Moved phrases cannot “run away” indefinitely to escape labeling problems: at some point it stops. This happens when it reaches a criterial position.

A criterial configuration, both heads in XP-YP share criterial feature (by assumption, criterial features are categorial features, names of functional heads), which is Q in this case, so search of both XP and YP provides a non-ambiguous indication, Q, which can label the whole structure (a question):

(63)

\[
\begin{array}{c}
\alpha \\
Q \\
\text{Which} \\
\text{book} \\
\end{array}
\quad
\begin{array}{c}
\alpha \\
Q \\
\text{n} \\
\text{did}_Q \\
\end{array}
\quad
\begin{array}{c}
I \\
\text{you read } \\
\end{array}
\]

In general, what characterizes a criterial configuration is that it receives the label of the criterial feature (and we get, in traditional X-bar notation, QP, TopP, FocP, RelP, etc.)


In some positions movement must continue, whereas in others it must stop (the “halting problem” for wh-movement), depending on the selectional properties of the main verb:

(65)a John thinks [ C$_{\text{decl}}$ [Bill read [which$_Q$ book]]]
   b * John thinks [\([\alpha [\text{which}_Q \text{ book}] [ \ C_{\text{decl}} [\text{Bill read }] ] \)]
   c [\([\beta [\text{which}_Q \text{ book}] [ Q \text{ does } [ \alpha \text{ think } [\alpha \text{ C}_{\text{decl}} [\text{Bill read } ] ] ] \)]

(66)a John wonders [ Q [Bill read [which$_Q$ book]]]
   b John wonders [\([\alpha [\text{which}_Q \text{ book}] [ Q \text{ [Bill read }] ] \)]
   c * [\([\beta [\text{which}_Q \text{ book}] [ Q \text{ does } [ \alpha \text{ wonder } [\alpha \text{ Q } [\text{Bill read } ] ] ] \)]

In a nutshell, further movement is obligatory from a non criterial position, and forbidden from a criterial position (Chomsky 2013, 2015, Rizzi 2015a-b):

(67) think….

\[
\begin{array}{c}
\alpha \\
Q \\
\text{Which} \\
\text{book} \\
\end{array}
\quad
\begin{array}{c}
\alpha \\
Q \\
\text{n} \\
\text{C}_{\text{decl}} \\
\end{array}
\quad
\begin{array}{c}
I \\
\text{that} \\
\text{Bill read } \\
\end{array}
\]
In (68) we have a criterial configuration, hence the embedded clause can be correctly labeled as Q, an embedded question, and the wh-element is allowed to halt here, as far as labeling is concerned. But the effect is stronger: it MUST halt here, and we get the freezing effect, as in (66)c. Why is it so?

It is a general fact that phrasal movement can only involve maximal projections: i.e. given the traditional X-bar schema, XP can be moved, but the non-maximal projection X’ is inert for movement: there is DP movement, NP movement, VP movement, CP movement, but no D’, V’, C’ movement:

(69) a  He certainly is [very proud of this result]
   b  * [proud of this result] he certainly is [very ___]

(70) Maximality: only maximal objects with a given label can be moved.

Under bare phrase structure, being a “maximal projection” is not a rigid inherent property of a node, as XP nodes in standard X-bar notation, but it is a dynamic notion in the obvious sense that α is a maximal projection if the node immediately dominating it does not have the same label.

Then in the criterial configuration [XP YP], as in (68), neither is maximal, in the sense just defined: only the whole category [XP YP] is maximal; so, further movement of either XP or YP alone is excluded by the ban on movement of a non-maximal projection (70).

9. That-trace effects as freezing in subject position.

The subject position is a typical “halting” site of movement. Is it a criterial position? An interpretive property associated to the subject position is that it singles out the argument “about which” the event is reported. This is clear in active-passive pairs:

(71) Cos’è tutta questa confusione? Che cosa è successo?
   ‘What is all this confusion? What happened?’

(72) a  Un ragazzo ha buttato a terra un vecchio
   ‘A boy knocked an old man to the ground’

   b  Un vecchio è stato buttato a terra da un ragazzo
   ‘An old man was knocked to the ground by a boy’

The aboutness subject tends to be selected as the antecedent of pro in the following sentence:
...e immediatamente pro ha cominciato a gridare (after (72)a: the boy shouted; ‘...and immediately __ started shouting’ after (72)b: the old man shouted)

(74) The Subject Criterion approach
a. A Subj head is an obligatory component of the clausal spine much as T (= EPP)
b. In syntax, Subj attracts movement of a nominal expression to its Spec;
c. At the interface, Subj triggers the aboutness interpretation

(75) El fio el mangia l pom (Milanese)
   ‘The boy Subj eats the apple’ (Poletto 2000, Manzini and Savoia 2005, etc.)

(76)a * Who do you think [ that [ ___ Subj will come ]]?
   b Who do you think [ that [ Mary Subj will meet ___ ]]?

The thematic subject is attracted to Subj (as in (78)), and there it is frozen under Criterial Freezing:

(78) … you think [ that [ who Subj __ will come ]]

Different languages use different strategies to make subject extraction possible. In (Standard) English extraction is made possible by complementizer deletion. Presumably here the whole CP+SubjP complex is truncated, so that there is no freezing position and the subject can be extracted from a lower position (say, Spec T):

(79) Who do you think [ C [ Subj [ __ will come ] ]]

Null Subject Languages use a different strategy to systematically circumvent the freezing effect: expletive pro fills the Spec Subj position, thus formally satisfying the Subject Criterion and permitting extraction of the thematic subject from a lower position (as in Rizzi 1982):

(80) Chi credi [ che [ pro Subj __ verrà ]]?
   ‘Who do you think that __ will come?’

So, Criterial Freezing under the Subject Criterion is an alternative to the classical ECP analysis of the asymmetries.

Can the effect be deduced from labeling and maximality? Let us assume that Subj is +N, and attracts a +N element to its Spec. Then we have

(81) … you think [ that [ who+Subjl Subj+N __ will come ]]

Then, who+Subjl now is non-maximal wrt the +N feature of the SubjP, hence it cannot be moved alone under maximality, if we interpret maximality in the strong sense mentioned above: an element can undergo phrasal movement when it is maximal wrt all its categorial features.

NB: in languages with very liberal clausal pied-piping, a device to form a subject question is to pied-pipe the entire clause, as in Quechua (Rizzi & Shlonsky 2007: [Who will come] do you think __?). This strategy does not violate maximality. Other languages use other “avoidance strategies” to allow the thematic subject to skip the freezing Subj Spec position (e.g., French que > qui rule).
10. 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 festa, Gianni ha cantato
    In his party, Gianni sung
b * Alla sua festa, ha cantato Gianni
    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).

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’

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 classe, Gianni è il più bello
    ‘In the picture of his class, Gianni is the most handsome’
b * Nella foto della sua classe, il più bello è Gianni
    ‘In the picture of his class, the most handsome is Gianni’

The necessarily focal character of the subject in inverse copular constructions can be shown in many different ways in different languages. Heycock (2012), an argument extended to Hebrew in Shlonsky & Rizzi (2016).

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
Conjecture: the necessarily focal character of the subject in inverse copular constructions can be made to follow from locality (Relativized Minimality) (Rizzi 2015b).

Direct copular constructions may be derived as follows (for concreteness, I borrow Bowers’ assumption that the small clause is a PredP):

(91) \[ \text{Subj} \in [\{\text{Gianni} \mid \text{Pred} [\text{il direttore}]\}] \]

Presumably, the inverse copular construction cannot be directly derived from this representation because movement of \textit{il direttore} to Spec Subj crossing Gianni would violate RM.

(92) \[ \text{Il direttore} \in \text{Subj} \in [\{\text{Gianni} \mid \text{Pred } \_\_\] \]

The problem seems to be analogous to the locality problem observed in passive: how can the internal argument be raised across the external argument? Collins (2005): a predicative chunk can be moved across the EA, thus “smuggling” the internal argument, which can then be moved.

Rizzi (2015b): The derivation of the inverse construction can proceed across similar lines.

(93)\[ a \text{ Subj} \in [\{\text{Gianni Foc } [\text{SC } \_\_ \mid \text{Pred} [\text{il direttore}]\}] \]

\[ b \text{ Subj} \in [\{\text{SC } \_\_ \mid \text{Pred} [\text{il direttore}]\}] [\{\text{Gianni Foc } \_\_] \]

\[ c \text{ Il direttore} \in [\{\text{SC } \_\_ \mid \text{Pred } \_\_] [\{\text{Gianni Foc } \_\_] \]

The movement of the SC may be to the Spec of a functional head, which has the capacity of attracting a lower predicative projection (one case of a large class on movement of predicative chunks within the IP: passive (Collins 2005), apparent reordering of adverbials (Cinque 1999), Romance causatives (Belletti 2015), PsychVerbs (Belletti & Rizzi 2012), etc..

So, focalisation of the subject is required here, in order to permit the derivation of the inverse construction without violating locality. But if the trace of \textit{Gianni} is still present in the smuggled constituent in (93)b under the copy theory of traces, why doesn’t it trigger a violation RM?

(94) Krapova & Cinque (2006)’s interpretation of Relativized Minimality: \textit{In … X … Z … Y …, Z counts as an intervener between X and Y only if all the occurrences of Z intervene.}

(95)\[ c’ \text{ Il direttore} \in [\{\text{SC <Gianni>}[\text{Pred <il direttore>}]\}] [\{\text{Gianni Foc <[SC Gianni [Pred il dir.]]>}] \]
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’

This is what is predicted by the freezing approach, in conjunction with the hypothesis that the subject locally moves to the low focus position in inverse copular structures:

(99)   Il direttore Subj è [ __ [ Pred __ ] ] [ a Gianni+Foc Foc __ ]

The effect is derivable from labeling and maximality: Phrase α would be labeled as Foc, under the assumed algorithm, because it is the label of a criterial configuration. Gianni would not be maximal with respect to the Foc feature here: therefore, if we continue to assume the restrictive interpretation of maximality stating that an element is maximal when all its categorial features are maximal, Gianni would be unmovable under Maximality.

11. Further developments: the status of Maximality

The maximality principle has potential applications in many areas of syntax (from left-branch effects to the ban against excorporation), to be developed.

(100) Epstein, Seely, Kitahara (2015): Maximality says something specific to movement, hence it is inconsistent with the idea that movement is a subcase of Merge, Internal Merge.

The argument is well-taken, but one may try to turn it around: could Maximality be generalized as a condition on Merge (External and Internal)? What would a version of Maximality applying to all cases of Merge look like?

(101) Maximality (generalized): An operation O applies to elements which are maximal w.r.t. the requirements of O.

So, a proper formulation should yield as a particular case the requirement that External Merge applies to an element not dominated by another element. In other words, if in the workspace we have { … α, [γ … β …], … }, α cannot be merged with β, which is not maximal, but only with γ.

So, in connection with the identification of the Goal for IM, Maximality yields Criterial Freezing; in connection with EM and IM it may cover the empirical domain of the Extension Condition (and No Tampering).
References.

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