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Notes on labeling and subject positions*

Luigi Rizzi

This paper investigates aspects of the “halting problem” for subject movement: under what conditions is it obligatory? Where must it stop, giving rise to freezing effects? I will first introduce a particular implementation of the labeling approach presented in Chomsky (2013), and illustrate its explanatory power in connection with freezing effects. Then, I will use this approach to address subject-object asymmetries in extraction contexts. The freezing properties of subjects will be illustrated both for the preverbal subject position and for the special focal position in the low periphery of the clause analyzed in Belletti (2001b, 2004). A brief discussion of the consequences of labeling for the possibility of moving specifiers and complements will conclude the paper.

Keywords: labeling; subject positions; freezing; Relativized Minimality; focus

o. Introduction

The study of subject positions has illuminated different aspects of syntactic theory as well as the study of the interface with meaning and discourse. For instance, the analysis of the constraints on subject movement has nourished much research on locality, leading to various versions of the Empty Category Principle (Chomsky 1981) and to the subsequent study of freezing effects; and then the discovery that “free subject inversion” in Romance is in fact local movement of the thematic subject to a low focus position (Belletti 2001b, 2004) has profoundly influenced the study of the Null Subject Parameter (and, more broadly, significantly affected the general conception of the parametric approach), and has contributed to establishing the transparent view of the syntax – pragmatics interface which is congenial to cartographic studies. In this paper I would like to address some properties of subjects which interact in significant ways with a key ingredient of syntactic computations: the algorithm that assigns labels to

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the structures created by merge. I will first adopt a version of the approach proposed in Chomsky (2013), according to which the assignment of labels is essentially a matter of locality. The functioning of the system will be illustrated on the basis of the implementation proposed in Rizzi (2015), in connection with the fact that subjects typically must undergo movement and vacate their thematic position. This raises a “halting problem” for subject movement: under what conditions can it stop? Where does it have to stop, giving rise to a freezing configuration? Can freezing effects on subjects be amenable to a “further explanation” in terms of fundamental computational ingredients such as labeling? This will lead us to address the properties of the different stopping points for subjects: the canonical, clause initial subject position, giving rise to familiar *that*-trace effects, and Belletti’s clause final low focus position, which will also be shown to give rise to observable freezing effects. Our argument here will be based on the syntax of inverse copular constructions, in Moro’s (1997, 2000) sense. A brief outline of the general consequences of the labeling approach for the movability of complements and specifiers will conclude the paper.

1. Background: Labeling, freezing, and maximality

A fundamental idea of Chomsky’s (2013) approach to labeling is that the assignment of a label to a category is a particular case of minimal search/Relativized Minimality (see also Chomsky 2008; Cecchetto & Donati 2010 for different approaches, and Adger 2012 for a critical assessment):

- (1) Node α created by merge receives the label of the closest head

Closeness may be computed in terms of intervention (Rizzi 2015): a given head H is the closest to a given node when no other head intervenes in hierarchical terms. More formally:

- (2) H_1 is the closest head to α iff
 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 .

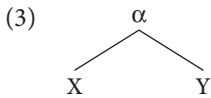
A second fundamental assumption characterizing the labeling system of Chomsky (2013) is that complete labeling is an interface requirement. This is rather natural, as the interpretive systems must know what kinds of objects they are interpreting: a nominal expression, a verbal expression, a clausal expression, etc., plausibly trigger distinct interpretive procedures. An implication is that if labels are necessary at the interfaces, labeling can be delayed till when the structure is transferred to the interfaces. In particular, labeling is not a prerequisite for further applications of merge (so that an

unlabeled structure can be merged with another element), but labeling must take place before the structure is sent to the interfaces (i.e. in a phase-based architecture, before the end of the phase).

In order to illustrate the consequences of this approach, we now have to focus on the typology of merge. Merge can be looked at as a unitary operation, but it gives rise to distinct subcases. One familiar distinction is between external and internal merge, depending on whether the two elements undergoing merge are separate, or are already part of the same syntactic configuration. A less familiar distinction, but an important one for the functioning of the labeling algorithm, is based on a typology of the elements that are merged with respect to the head – projection divide: the two elements undergoing merge may both be heads, or both projections, or one may be a head and the other a projection. Using the traditional X-bar notation, we thus have:

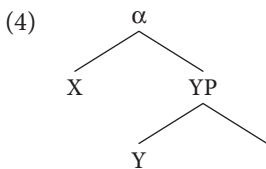
I. X – Y Merge:

Two heads taken from the lexicon are merged together



Here neither X nor Y satisfies the definition of “closest head”, as the other head intervenes in the technical sense defined in (2). But clearly a Merge-based derivation must start somewhere, so some cases of (3) must be possible. Here I will follow Chomsky, *op. cit.*, in assuming that (3) can arise when either X or Y is an unlabeled root, *à la* Borer (2005), Maranz (2013) and much related work, so that it has no label to contribute. This allows correct labeling of, e.g. [_n book + n], as n, etc. So, the labeling system (1)–(2) is “relativized” to the heads containing a label.

II. X – YP Merge:

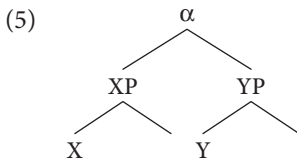


Here X is closer to α than Y (or any other lower head) hence α gets the label of X.¹

1. Notice that here the system needs a way to distinguish heads and phrases. We have achieved this in (4) by borrowing from classical X-bar theory the distinction between Y and

Configuration (4) clearly represents the productive case of recursive merge, yielding such familiar structures as $[_V V DP]$, $[_v v VP]$, $[_T T VP]$, $[_C C TP]$, $[_D D NP]$, etc., or their equivalents in functionally richer cartographic representations.

III. Phrase – Phrase Merge:

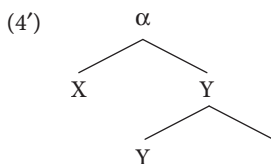


This corresponds to a case in which two already formed phrases are externally merged together, e.g. a subject DP and a vP. And also to all the cases of phrasal movement (internal merge), with XP taken from inside YP.

Under both external and internal merge, here an ambiguity arises: both X and Y would qualify as “the closest head” to α according to (2), as neither head intervenes, in the technical sense defined in (2), between the other head and α . We may assume that under such circumstances the system blocks, and α is left unlabeled.

But this can only be a temporary state of affairs. If nodes need labels at the interfaces for proper interpretation, α must receive a label before being passed on to the interpretive systems. So, something must happen here to make labeling possible. If

YP. If one were to adopt a strict version of Bare Phrase Structure (Chomsky 1995, Chapter 4), in which bar levels are not expressed, (4) would look like the following:



But then, if the YP was simply labeled Y, the structure would be indistinguishable from (3), with both X and Y labeled as heads, so the system based on (1)–(2) would block. In Rizzi (2015), Footnote 6, the following technical solution is proposed to express the difference between head and projection: elements drawn from the lexicon bear a [+lex] feature; syntactic objects created by merge normally do not inherit this feature, so heads are objects marked as [+lex] and phrases are not (in special cases, [+lex] may be passed on under merge, and then one forms a complex head). Heads, i.e. elements marked [+lex], but not phrases, are taken into account by the labeling algorithm.

Here, I will put aside the problem and will continue to informally use the X-bar theoretic X-XP distinction, keeping in mind that, if Bare Phrase Structure is adopted, a way to encode the difference between heads and phrases would be necessary.

structures are transferred to the interpretive systems at the end of a phase, labeling must take place at the latest immediately before (or at) the end of each phase.

Chomsky (op. cit.) indicates two possible solutions to deal with the labeling problem in (5). One is movement: if XP moves out of [_α XP YP] in (5), YP (in fact its head Y) remains as the only candidate for labeling α (essentially along the lines of Moro 2000, an approach in which movement also resolves conflicting configurations for dynamic antisymmetry).

At that point we get:

(6) XP ... [_α ⟨XP⟩ YP]

Suppose that we understand “α contains β” in (2) as meaning “α contains all the occurrences of β”. In this sense, XP and X are not contained by α in (6) (under the copy theory of traces, some occurrences of XP and X are, but some are not), so that X does not qualify as a possible labeler or intervener and Y wins the labeling competition. This determines the necessary continuation of wh-movement (successive cyclicity), i.e. the step to derive (7)b from an intermediate representation (7)a in a case of step-wise wh-extraction from an embedded clause:

(7) a. John thinks[[which book] [Decl [Bill read ___]]]
 b. Which book does Bill think [___ [Decl [Bill read ___]]]?

The second possible solution is that XP – YP form a criterial configuration in terms of Rizzi (1991, 1997), i.e. when they agree in terms of a criterial feature expressing properties of scope-discourse semantics. E.g., when a wh-phrase is internally merged with a clause to be interpreted as an indirect question (hence marked by the criterial head Q):

(8) I wonder [_α [which_Q book] [Q [Bill read ___]]]

Here both XP ([which_Q book]) and YP ([Q [Bill read ___]]) are headed by a Q head, hence both elements unambiguously indicate what they have in common, the criterial feature, for the labeling of α, which is then labeled as Q.

The embedded complementizer is thus a possible “halting site” for wh-movement; but in fact the empirical conditions are stricter here. There is a freezing effect, and the wh-element cannot move further; in other words, the criterial position is a necessary halting site (Lasnik & Saito 1992; Rizzi 2006, 2010; Bošković 2008; Boeckx 2008; Lohndal 2011):

(9) *Which book do you wonder [_α ___ Q [Bill read ___]]

Can the freezing effect be amenable to labeling? The proposal in Rizzi (2015) is the following.

It is a well-known property of phrasal movement that it can only involve maximal phrases. I.e., in traditional X-bar terms, it is typically not possible to move the

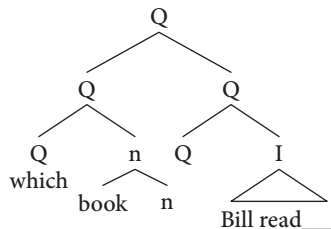
head and the complement (the X' constituent) and strand the specifier: i.e. there is DP movement, but no D' movement, PP movement but no P' movement, AP movement, but no A' movement, etc.²

In a system not based on rigid bar levels, such as Bare Phrase Structure (BPS), this maximality requirement can be expressed by a principle like the following:

- (10) Maximality: Phrasal movement can only involve maximal objects with a given label. (Rizzi 2015)

In a system not based on bar levels such as BPS, if a given node γ is maximal or not is determined by the label of its immediately superordinate node δ : if the label of δ is different from the label of γ , then γ is maximal; otherwise it is not. In our concrete case (11), once α has been labeled as Q, the obtained configuration is:

- (11) I wonder...



here *which book* has ceased to be a maximal object, as its immediately superordinate node has the same label, Q. So, movement of the object from the criterial configuration is blocked by (10), and the freezing effect is thus derived from labelling and maximality.

Maximality predicts that not only XP, but also YP should be unmovable in the criterial configuration. This additional freezing effect may be illustrated, e.g. in the Dutch varieties in which the *wh*-element and an overt Q marker (*of* = *if*) can co-occur, as in (12) (thanks are due to Liliane Haegeman for data and discussion):

2. For instance, if an AP is topicalized, a quantifier modifying the adjective cannot be stranded by simple movement of the A':

- (i) a. He certainly is [very proud of this result]
 b. [very proud of this result] he certainly is ____
 c. *[proud of this result] he certainly is [very ____]

If phrases typically involve a richer functional structure, *very* could be analyzed as a head, or as the specifier of a functional head higher than the adjective, in which case the quantifier would not be the specifier of A, and (i)c would fall under a different constraint. Nevertheless, the fact remains that there seem to be no clear cases of possible movement of intermediate X' projections, and this could hardly be an accident, or a conspiracy of other principles.

- (12) Ik weet echt niet wie of Marie ontmoet heeft
I know really not who if Marie met has

The whole criterial configuration can be moved, e.g. if the clause is topicalized (13), but topicalization cannot involve the clausal constituent headed by *of*, and stranding the *wh*-element *wie*, as in (14):

- (13) [Wie of Marie ontmoet heft] weet ik echt niet
who if Marie met has know I really not
- (14) *[Of Marie ontmoet heft] weet ik echt niet wie ____
If Marie met has know I really not who

Again, the XP – YP elements forming a criterial configuration cannot be moved separately, while the criterial configuration can be moved as a whole, and this follows from maximality and labeling.³

The expression “phrasal movement” in (10) is intended to leave open the possibility of head movement without incurring a maximality violation, an issue which I will not address here.

2. The status of subjects

Under the vP internal subject hypothesis, external merger of a subject with a vP yields the minimal predicative nucleus of the clause, where the subject is assigned the appropriate thematic role:

- (15) [_α DP vP]

If thematic roles are not to be assimilated to morphosyntactic features, this is not a criterial configuration, hence labelling of α is not possible. The standard procedure to solve this problem consists in moving the subject to a higher position, thus allowing *v* to label α . So, in SVO languages the subject typically moves to a higher position in the inflectional field, yielding the observed surface order with the subject preceding the inflectional material (auxiliaries, modals, etc.); but also in VSO languages, in which one could consider the possibility that the subject remains *in situ*, there is evidence for subject movement: the subject typically precedes adverbial elements, hence presumably it has been raised from the thematic nucleus (see Shlonsky 2014 for discussion):

3. Notice that this implies that sluicing (I know that someone left, but I really don't know who) cannot be derived by movement (and subsequent deletion) of the C' constituent.

- (16) Chuala Roise (go minic) an t-amhran sin
 Heard Roise (often) that song (Irish: McCloskey 1997)

So, subject movement appears to be compulsory from the thematic position. But at some point subject movement stops: therefore, there must be (at least) one “high” subject position in the inflectional field acting as the fundamental “halting” position for A-movement; so, if halting sites are criterial positions, the following conclusion seems to be enforced:

- (17) There is a Subject Criterion

If criteria typically go with scope-discourse effects, there should be some identifiable scope-discourse property associated to the subject position. In previous work (Rizzi 2006), I suggested that the subject is the argument that is taken as the starting point in the description of the event, which is presented as “being about” that argument. This aboutness property holds regardless of the presupposed or new character of the selected nominal argument. Aboutness is, e.g. what differentiates active and passive sentences, also in “out of the blue” contexts (and/or in sentences answering the question “what happened?”). When (18)a is uttered, the all new event is presented as being about a truck; when (18)b is uttered, the all new event is presented as being about a bus:

- (18) a. Un camion ha tamponato un autobus
 ‘A truck bumped into a bus’
 b. Un autobus è stato tamponato da un camion
 ‘A bus was bumped into by a truck’

The choice of the aboutness subject affects further discourse structure and anaphoric possibilities. A following occurrence of *pro*, in cases of ambiguity, typically picks out the previous subject of predication (Calabrese 1986; see also Belletti, Bennati & Sorace 2007):

- (19) ... poi *pro* è ripartito
 ‘...then *pro* left’

If (19) is uttered immediately after (18)a, *pro* is understood as referring back to the truck; after (18)b, *pro* refers to the bus.

Subjects have the aboutness property in common with topics: a topic-comment structure also selects an argument and makes a comment about it. But interpretive conditions for topics are more demanding than for subjects. Even in a language with a very commonly used topic-comment configuration such as clitic left dislocation in Italian (and other Romance languages), a clitic left dislocated topic would not be felicitous in an out of the blue (or “what happened?”) environment:

- (20) Q: 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’

There is nothing wrong (in Italian) with an indefinite topic, but indefinite topics must be connected to the previous context; i.e. if buses have been introduced in previous discourse, (20)A’ becomes felicitous:

- (21) Q: Sai perché il traffico degli autobus è così perturbato stamattina?
 ‘Do you know why the bus traffic is so perturbed this morning?’
 A: Mah, io so solo che un autobus, un camion lo ha tamponato mentre usciva dal garage
 ‘Well, I only know that a bus, a truck bumped into it while it was going out from the garage’

So, what goes wrong in (20)A’ is not the indefiniteness of the topic *per se*, but the lack of connection to the previous discourse, a property which is apparently needed for felicitous topics.

Using the familiar term “D-linking” for this “connection to the discourse context” (but D-linking should be understood in a sufficiently extended sense to include “partitivity”: a set is introduced, e.g. the set of relevant busses in (21), and then a member of this set, the knowledge of which is not necessarily presupposed, is D-linked), we thus have that topics express both aboutness and D-linking, while subjects express pure aboutness:

- (22) Top: a. Interpret the specifier as D-linked;
 b. Interpret the complement as being “about” the specifier.
- (23) Subj: Interpret the complement as being “about” the specifier.⁴

If *pro* is sensitive to aboutness, we expect it to be able to pick out both subjects and topics. In fact, if both a topic and a preverbal subject appear in the initial field, as in (24)b, *pro* can pick out either of them, and the sentence is ambiguous. If there is only a preverbal subject (as in (24)a) or a topic (as in (24)c, in which the subject is

4. There are in fact different kinds of topics, with distinct interpretive properties and dedicated positions in the left periphery: see Beninca’ & Poletto 2004; Frascarelli & Hinterhölzl 2007; Bianchi & Frascarelli 2010; so, (22) will presumably allow for further specifications expressing the required finer typology.

postverbal: on this see below), *pro* only picks out the [+aboutness] argument, and there is no ambiguity:⁵

- (24) a. Gianni ha accompagnato Piero; poi, *pro* ha preso il treno delle 5.
(*pro* = Gianni)
'Gianni accompanied Piero; then *pro* took the 5 o'clock train'
- b. Piero, Gianni lo ha accompagnato; poi *pro* ha preso il treno delle 5.
(*pro* = Gianni, Piero)
'Piero, Gianni accompanied him; then *pro* took the 5 o'clock train'
- c. Piero, lo ha accompagnato Gianni; poi, *pro* ha preso il treno delle 5.
(*pro* = Piero)
'Piero (obj) him accompanied Gianni (subj); then *pro* took the 5 o'clock train'

In the spirit of the criterial approach, I have assumed a functional head, Subj, structurally defining the subject – predicate articulation, following Cardinaletti (2004) (actually, Cardinaletti assumes at least two preverbal subject positions with distinctive structural and interpretive properties, an assumption further developed by Bianchi and Chesi (2012); I will go back to this hypothesis in the next section).

Building on Cardinaletti (2004), Subj may be assumed to be part of the structural spine of the clause, in the high part of the IP zone and immediately under the CP zone, higher than tense and the head carrying Phi features for agreement (which may or may not be identified with T):

- (25) ... Fin ... Subj ... Phi ... T

The other syntactic and interface properties of Subj are:

- (26) a. Subj attracts a nominal element to its Spec (on this see below).
b. Subj triggers the aboutness interpretation at the interface

Languages using a system of subject clitics distinct from the agreement morphology on the tensed V may overtly instantiate the Subj head:

- (27) El fio el mangia l pom (Milanese)
'The boy Subj eats the apple'
(Poletto 2000; Manzini & Savoia 2005, etc.)

5. Denis Delfitto (p.c.) observes that in some environments *pro* can pick out a postverbal subject, e.g. with the unique argument of an unaccusative verb:

- (i) E' arrivato un camion. Poi *pro* è ripartito (*pro* = un camion)
'Arrived a truck. Then ___ left'

Perhaps, the sensitivity to [+aboutness] may be seen as a disambiguating device: if there is no ambiguity, *pro* can refer back to a subject even if it is in postverbal position.

3. Subject-object asymmetries

The following examples instantiate familiar subject object asymmetries in cases of extraction. Objects are extractable from an embedded clause, but subjects are not extractable (in standard English) across an overt complementizer (*that*-trace effect):

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

The phenomenon is not just a quirk of English declaratives. It is manifested in cases of extraction from indirect questions (object extraction is marginal in (29), but subject extraction is detectably more deviant), and such contrasts are typically found across languages:

- (29) a. *Which mechanic do you wonder whether ___ Subj could fix the car?
 b. ?Which car do you wonder whether the mechanic Subj could fix ___?

It was proposed in Rizzi (2006) that such “Fixed Subject” effects (in the terminology of Bresnan (1977)), ascribed to the ECP in classical GB theory (Chomsky 1981) could be derived from Criterial Freezing. In fact, if there is a Subject Criterion and criterial positions freeze the element satisfying the criterion in place, we would expect fixed subject effects: for instance in (28)a *who* moves to Spec-Subj to satisfy the Subject Criterion, and then it is frozen there and becomes unextractable; similarly for *which mechanic* in (29)b (I abstract away here from the varieties of English in which structures like (28)a are acceptable: Sobin (2002); see Rizzi & Shlonsky (2007), Section 9, for discussion).

If criterial freezing is derived from labeling, a further deductive step is now needed: can the freezing effect in Subj position be reduced to labeling and maximality? In cases like (11) the reduction capitalizes on the fact that the feature attracting an element to Spec is the categorial feature of the criterial head, e.g. Q in (11). This feature, shared by Spec and head in the criterial configuration, is the label that projects and makes XP and YP non-maximal in the relevant sense.

In view of extending this reasoning to freezing effects in subject position, it now becomes crucial to look at the nature of the feature involved in attraction to Spec Subj.

In other criteria, the attracting feature and the head defining the criterion are always identical: Top and +Top, Foc and +Foc, etc.. Could one make the parallel assumption for Subj, and assume a +Subj feature in the attracted nominal expression matching Subj? This was not the assumption made in the original formulations because of a locality problem. One salient property of chains terminating in Spec Subj is that they are strictly local, with the closest nominal element systematically attracted to Spec Subj. If one were to assume a [+Subj] feature, parallel to [+Foc], [+Top], etc.,

the strict locality effect found in Subj chains would be lost: e.g. much as an object assigned the +Foc feature can be moved to Spec Foc, in (30)a, jumping across the subject DP (or any other DP not marked +Foc), so an object assigned the +Subj feature should be movable to Spec Subj jumping across the external argument (or any other DP not marked with the same feature), clearly an undesirable results, which would fail to capture the strict locality of this kind of chain:

- (30) a. Foc ... [DP v [V DP_[+Foc]]
 b. Subj ... [DP v [V DP_[+Subj]]

For this reason the attracting feature was dissociated from the criterial feature in the case of Subj, and expressed as [+N] in Rizzi (2006), and subsequent work.

This move solved the locality problem (the closest nominal would be attracted), but created a surprising asymmetry with other criteria, in which the criterial feature and the attracting feature are systematically identified. So, on the one hand, an identification of the attracting feature with the specification of the criterial head Subj seems to be desirable both for keeping a full parallel with other criteria, and for capturing subject freezing through labeling; on the other hand, locality considerations seem to require postulating a different, less selective, feature.

One solution of this conundrum may be based on featural Relativized Minimality (fRM), which assumes that relevant morphosyntactic features triggering movement are organized into feature classes along the following lines:

- (31) Argumental: person, number, gender, case, ...
 Operator: Q, Foc, Neg, Quantificational adverbials, ...
 Modifier:
 Topic:

RM effects are triggered by interveners which carry a featural specification falling within the same feature class, not necessarily carrying the very same featural specification as the target. So, for instance, negation blocks (adjunct) Q movement because Q and Neg, while being distinct morphosyntactic features, belong to the same feature class of operators, etc. (Rizzi 2004, based on ideas in Starke 2001):

Once we assume a +Subj feature, we have to decide about its class membership. Suppose we assume the following:

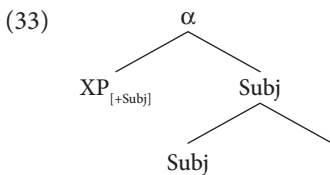
- (32) [+Subj] belongs to the Argumental class.

Under this assumption, in (30)b the object cannot be attracted to Spec/Subj because of the intervention of a DP marked with other argumental features (Case, Phi) which trigger a RM effect. So, the only possible outcome when the Subj head is the attractor is when the closest nominal element is +Subj: any other option would violate RM. The fundamental locality property of movement to Spec-Subj is thus captured. Subj is a

critical feature in the argumental class. As for labeling (hence freezing) and interface properties it is like any other criterial position, while as for locality, it is like any other A-position.

In a sense, with respect to the traditional A/A' distinction, we are claiming that subjects have mixed properties: they are criterial positions, as A' constructions typically are; but the defining criterial feature is part of the argumental class, which determines the observed strict locality conditions (see also Greco 2014 on such mixed properties, and Danckaert & Haegeman 2014 on a marked agreement process parasitic on wh-movement).

Once XP_[+Subj] is attracted to Spec/Subj, we obtain:



Then, in the criterial configuration, [+Subj] would be shared by the criterial probe and the criterial goal, hence it would project to the dominating node α . This would make the subject XP non maximal with respect to the [+Subj] specification, hence unmovable under maximality.

In the XP – YP configuration created here XP undoubtedly possesses other featural specifications not shared by YP. So, in order to derive the freezing effect, we must require maximality to be satisfied for each individual feature involved in the XP-YP configuration. This strict interpretation of maximality is also required by the attempt to derive other freezing effects: for instance, in (8) the XP *which book* presumably also bears other features (D, for instance) not shared by the YP; so, in order to derive freezing from maximality we must assume that the sharing of a single categorial feature (here Q) is sufficient to determine a maximality violation. So, there is nothing special about subject freezing in this respect.

Cardinaletti (2004) had in fact postulated two distinct subject positions, the lower one accessible to expletives and other elements, and the higher one dedicated to referential subjects. This proposal is further developed by Bianchi and Chesi (2012), who assume that this positional distinction correlates with the interpretive distinction between categorial andthetic judgment, a distinction going back to Kuroda (1972) in a modern context of formal linguistics; the distinction was later connected by Ladusaw (1994) to the distinction between individual level and stage level predicates. Without going into the details of the interpretive properties, let us just note that, according to Ladusaw (1994), the crucial difference is the necessarily presupposed nature of the subject in categorial judgments (formally marked by the choice of the *wa* particle in Japanese, according to Kuroda's analysis).

In Rizzi (2006), Rizzi and Shlonsky (2007) Cardinaletti's approach was simplified with the assumption of a simple, obligatory subject position marked by Subj. How could the analysis of freezing effects be made compatible with the hypothesis that there are two subject positions? Suppose that, following and adapting this analytic trend, we revise (25)a to accommodate two subject positions:

(34) ... Fin ... Subj₂ ... Subj₁ ... Phi ... T ...

Subj₁ has weaker interpretive properties (possibly, pure aboutness) and is an obligatory component of the clausal spine; Subj₂ has, on top, whatever featural specification makes the subject presuppositional, in Ladusaw's sense, and is optional, it is selected just in case the sentence is to express a categorical judgment. Both positions are criterial, so both determine freezing effects under our analysis. How can a single nominal expression satisfy the criterial requirements of both Subj₂ and Subj₁ when a categorical judgment is expressed? Clearly a nominal could not transit from Spec of Subj₁ and then move to Spec of Subj₂, a derivational step that is precluded by freezing. I will assume that Subj₁ can head-move to Subj₂, creating the complex head Subj₁ – Subj₂, which can attract a nominal element to its Spec, simultaneously satisfying both subject criteria.⁶

So, as far as I can tell, the results on EPP and ECP derived in a system postulating a single Subj position can be preserved under the view that there are two such positions. The crucial aspect of this analysis for our purposes is the obligatoriness of one Subj position, which captures the EPP in the traditional sense (the obligatoriness of clausal subjects), and the ECP effects through freezing, in a way that is consistent with the possible existence of other subject positions.

4. Lack of fixed subject effects in Null Subject Languages

An often discussed typological property of Null Subject Languages is that they are typically not sensitive to fixed subject effects (Rizzi 1982, 1990, based on observations originally made by Perlmutter 1971, Chapter 4). Subject extraction across the equivalent of *that* is possible, and indirect questions do not induce any subject object asymmetry:⁷

6. This mechanism is akin to the analysis of D-linked wh movement in Rizzi 2011:17, which involves the creation of a complex criterial head Top – Q via head movement in the left periphery, and then attraction of a D-linked wh-phrase, i.e. a phrase with both topical and interrogative properties) to the Spec of the complex head.

7. If anything, (36)a sounds more natural than (36)b in Italian as the latter involves the weak intervention effect determined by movement of a lexically restricted phrase over another lexically restricted phrase discussed in Friedmann, Belletti and Rizzi (2009). In

- (35) Chi credi che abbia telefonato?
‘Who do you think that has telephoned?’
- (36) a. Che meccanico non sai se potrebbe riparare la macchina?
‘Which mechanic don’t you know if could fix the car?’
b. Che macchina non sai se il meccanico potrebbe riparare?
‘Which car do you wonder if the mechanic could fix?’

An idea explored in the early days of the principles and parameters approach is that the lack of fixed subject effects may be connected to the option of “free subject inversion” (Rizzi 1982) in Romance null subject languages. The subject can occupy a clause-final position (e.g. in Italian cases like (37)a), from where it can be extracted without violating the ECP, the preverbal subject position being filled by a legitimate occurrence of expletive *pro* (as in (37)b):

- (37) a. Credi che *pro* abbia telefonato Gianni
‘You believe that has telephoned Gianni’
b. Chi credi [che [*pro* abbia telefonato ___]]?
‘Who do you believe that has telephoned?’

This analysis can be immediately transposed in terms of the freezing approach: *pro* formally satisfies the Subj Criterion, thus avoiding the freezing of the thematic subject, which can be extracted from the inverted position:⁸

- (38) Chi credi [che [*pro* Subj abbia telefonato ___]]?
‘Who do you think that has telephoned?’ (Rizzi & Shlonsky 2007)

Free subject inversion was originally thought of as a free grammatical option, an assumption hardly compatible with economy guidelines of the minimalist program. In conformity with such guidelines, and with the transparent view of the syntax-information structure interface in cartographic studies, Belletti (2001b, 2004) showed that “free subject inversion” is not a neutral grammatical option in terms of information structure: it is in fact a way to focalize the subject. In her analysis, subject inversion involves local movement of the subject from the thematic position to a Foc

English this weak effect is overridden by the much stronger violation of freezing in the equivalent of (36)a.

8. The very existence of expletives, null or overt, may be thought of as the solution of a problem. Subj is a fixed component of the clausal spine, much as T and other heads of the Cinque (1999) hierarchy; but it may be desirable to have the option of not presenting an event as being about a particular argument. Expletives offer a solution to such conflicting needs, as they formally satisfy the Subject Criterion, but at the same time, not having argumental properties, make aboutness vacuous, and the event is interpreted as not being about a particular argument.

projection in the vP periphery. Direct evidence for the focal properties of inverted subjects is provided, e.g. by the impossibility of backward pronominalization for postverbal subjects (a test for focus based on Chomsky 1976). In such environments, inverted subjects systematically contrast with preverbal subjects:

- (39) a. Quando *pro*_i è annoiato, Gianni_i telefona
 ‘When *pro* is bored, Gianni calls’
 b. *Quando *pro*_i è annoiato, telefona Gianni_i
 ‘When *pro* is bored, calls Gianni (Subj)’
- (40) a. Ai suoi_i amici, Gianni_i telefona sempre
 ‘(To) his friends, Gianni always calls’
 b. *Ai suoi_i amici, telefona sempre Gianni_i
 ‘(to) his friends, always calls Gianni’

While (39)b could be a variant of the “Calabrese effect” with *pro* constrained to pick out the “aboutness” subject as in (18)–(19), (40)b shows that the effect is more general, and extends to all sorts of pronouns. So, under Belletti’s analysis the derivation of postverbal subject focalization proceeds as follows:

- (41) ha [_α Foc [Gianni [telefona-]]
 ↑
 [+Foc]
-

with subsequent movement of the verb (or of a verbal projection) to permit the proper association of V with the verbal morphology.

This has immediate consequences for the analysis of the absence of fixed subject effects. If subject inversion is subject focalization, the inversion position cannot offer an “escape route” to avoid criterial freezing and *that*-trace effects: if anything, one would expect the subject to get frozen in the inverted position, hence not to be extractable from there.

In fact, a direct connection between subject inversion and the violation of *that*-trace is independently made implausible by typological considerations: there are Null Subject languages which do not have subject inversion, and still permit free violations of *that*-trace (Salulesa 2004 on Lingala; Chao 1980 for an early discussion of Brazilian Portuguese along similar lines; and Nicolis 2005 for a general assessment). So, the violability of *that* – trace in NSLs does not seem to be contingent on “free inversion”, now reanalyzed as low subject focalization.

Nevertheless, the evidence that in NSLs like Italian the subject is extracted from a lower position is robust and diversified (*ne* cliticisation in Italian; Rizzi 1982, agreement patterns in Northern Italian Dialects; Brandi & Cordin 1989, case patterns in Arabic dialects; Kenstowicz 1989, quantifier floating properties in Brazilian Portuguese; Menuzzi 2000, etc.). The correct typological connection seems to be with the availability of expletive *pro* (Nicolis 2005). If expletive *pro* is available (also in

partial pro-drop languages like Brazilian Portuguese: Menuzzi 2000), it can be used to formally satisfy the subject criterion, thus permitting extraction of the thematic subject from a lower position (possibly the thematic position, or any other lower position distinct from the lower focalization position). The availability of the low focus position for subjects is an independent property, possibly linked to the Null Subject Parameter (maybe the fact of being a NSL is a necessary condition for it: see the discussion in Belletti 2001b, 2004), but not an automatic consequence of the Null Subject Parameter, nor a necessary prerequisite for subject extraction from a lower position, and lack of fixed subject effects.⁹

5. Freezing effects in the low focus position

Given this set of assumptions, we may now ask the question if we can find independent evidence detecting a freezing effect in the low focus position discovered by Belletti (2001b, 2004). Normally, the use of the low focus position is optional, so in order to test freezing effects we need a construction which, for independent reasons, forces the use of the low focus.

9. Chomsky (This volume) has also addressed the freezing effects in terms of labeling theory. His approach to freezing in subject position does not rely on a Subject Criterion, but on the interaction between labeling and the spell-out mechanism. In a nutshell: the T head, too weak to label its projection in his system, needs a specifier with matching Phi features for proper labeling of the projection; the subject cannot move within the C phase, because otherwise labeling of TP would be impossible, nor in a later phase because the subject has been already sent to spell-out (the Phase Impenetrability Condition). In Chomsky's approach, in Null Subject Languages, the rich agreement specification on T does not require to be "reinforced" by a Specifier with matching features, hence a *wh*-subject can move directly from a lower position to its destination in the left periphery (as in Rizzi 1982 and subsequent work), so that *that*-trace effects do not arise.

I will not attempt here a systematic comparison between the two approaches, which obviously have much in common. I will just identify, for further discussion, three differences which seem to me to be significant:

1. The Subject Criterion, which is assumed by my approach, but not by Chomsky's.
2. The timing of labeling. In Chomsky's approach, labeling must take place at the end of the phase: otherwise, if it could take place whenever conditions are met, labeling on T could be ensured by the subject "in passing", with movement of the subject to Spec T, labeling, and further movement of the subject to the left periphery. The approach based on the Subject Criterion has no such timing requirement: it only requires that labeling must be complete when the structure is transferred to the interfaces.
3. Chomsky's approach does not assume expletive *pro* in NSLs; while the approach based on the Subject Criterion does (assuming that expletive *pro* is given for free in a language in which referential *pro* is licensed).

One such case may be provided by inverse copular constructions, in the sense of Moro (1997, 2000), illustrated by (43) in pairs like

- (42) Gianni è il direttore
'Gianni is the director'
- (43) Il direttore è Gianni
'The director is Gianni'

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

- (44) 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'

This holds both in cases in which the pronominal element is in a clause-initial "scene setting" adjunct, as in (44), and when the pronoun is part of the other nominal of the copular construction. As Ruwet (1975) noticed for French (the same contrast holds in Italian), in a direct copular construction like (45) both forward and backward pronominalization are possible, while in an inverse construction like (46) only forward pronominalization is possible. Therefore, we have in this case a very clear minimal pair distinguishing direct and inverse copular constructions:

- (45) a. Gli occhi azzurri di Cristina_i sono la sua_i caratteristica più saliente
'Cristina's blue eyes are her most salient feature'
- b. I suoi_i occhi azzurri sono la caratteristica più saliente di Cristina_i
'Her blue eyes are Cristina's most salient feature'
- (46) a. La caratteristica più saliente di Cristina_i sono i suoi_i occhi azzurri
'Cristina's most salient feature are her blue eyes'
- b. *La sua_i caratteristica più saliente sono gli occhi azzurri di Cristina_i
'Her most salient feature are Cristina's blue eyes'

The conjecture I would like to put forth is that the necessarily focal character of the subject in inverse copular constructions can be made to follow from locality (Relativized Minimality) as a necessary prerequisite to obtain the special order of the inversion construction.

For concreteness, I will assume here that both inverse and direct constructions are derived from the following representation, omitting several details:¹⁰

10. I borrow Bowers' (2010) assumption that the small clause is a PredP. The configuration DP – PredP requires movement within the labeling approach adopted here: it is an instance of the XP – YP configuration which is not criterial, hence it cannot be labeled, unless movement

- (47) Subj è [_α [Gianni] [Pred [il direttore]]]
is Gianni the director

After *Gianni* is raised to Spec Subj (presumably through intermediate steps, omitted here), α can be correctly labeled as Pred (PredP, in informal X-bar notation):

- (48) Gianni Subj è [___ [Pred [il direttore]]]
Gianni is the director

Both the subject and the predicative DP are extractable from direct copular constructions:

- (49) a. Chi (hai detto che) *pro* Subj è [___ [Pred [il direttore]]]?
'Who (did you say that) is the director'
b. Il direttore, ciò che (ho detto che) Gianni è [___ [Pred ___]] e sarà
sempre....
'The director, which (I said that) Gianni is and will always be...

Given an underlying representation like (47), the inverse copular construction cannot be directly derived from it because movement of *il direttore* to Spec Subj crossing *Gianni* would violate RM.

So, first the subject of the small clause α must be moved to the low focus position; then, the small clause can be “smuggled” (à la Collins 2005) past it, and then the predicative DP can be moved to Spec Subj (Cardinaletti 2004):

- (50) a. Subj è [Gianni Foc [_α ___ [Pred [il direttore]]]]
 ↑
b. Subj è [_α ___ [Pred [il direttore]]] [Gianni Foc ___]
 ↑
c. Il direttore è [_α ___ [Pred ___]] [Gianni Foc ___]
 ↑

The smuggling step assumed here can be seen as a particular case of a family of movements of verbal chunks in the low IP structure including passive under Collins' analysis, but also psych-verb constructions (Belletti & Rizzi 2012, building on Belletti & Rizzi 1988), and rearrangements leading to special orders of adverbials (Cinque 1999).

Focalization of the subject is obligatory here (as shown by (46)), as a necessary step to permit the derivation of the inverse construction without violating locality.

The trace of *Gianni* presumably is still present in the smuggled constituent in (50)b under the copy theory of traces, but no violation of locality would be produced

occurs (whether the structure assumed here would enforce movement under Moro's 2000 anti-symmetric approach would depend on the labeling assumptions coupled with that approach). The fact that DP, rather than PredP, must move out may follow from the necessity of assigning the category a label consistent with its interpretive properties as a clausal domain, properties presumably consistent with the label Pred, but not with the label D.

by movement of the predicative DP in (50)c under Krapova and Cinque's (2008) interpretation of Relativized Minimality, according to which an element counts as an intervener only if all of its occurrences actually intervene between the terms of the local relation. Consider the representation of (50)c under the copy theory of traces (only the elements in bold are spelled out):

- (50) c'. **Il direttore** è [_{SC} ⟨Gianni⟩ [Pred ⟨il direttore⟩]] [**Gianni** Foc
 ⟨[_{SC} Gianni [Pred il direttore]]⟩]

in (50)c' the focalized occurrence of *Gianni* does not intervene between *il direttore* and its trace in the small clause smuggled past the focus phrase, so that no intervention effect arises under Krapova and Cinque's interpretation of RM.

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:

- (51) a. Chi credi che sia il direttore?
 'Who do you think that is the director?'
 b. *Chi credi che il direttore sia ___?
 'Who do you think that the director is?'
 (52) a. Ecco l'uomo che credo che sia il direttore
 'Here is the man who I believe that is the director'
 b. *Ecco l'uomo che credo che il direttore sia ___
 'Here is the man who I believe that the director is'
 (53) 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 (ultimately, maximality under labeling), in conjunction with the hypothesis that the subject locally moves to the low focus position in inverse copular structures. For instance, we would have a representation like:

- (54) Il direttore Subj è [___ [Pred ___]] [_β Gianni_{+Foc} Foc ___]

Phrase β would be labeled as Foc, under the assumed algorithm, hence *Gianni* would not be maximal with respect to the Foc feature: therefore, it would be unmovable under Maximality.¹¹

11. Belletti (2001b, 2004) argues that the low periphery involves both a Foc and a Top position, so that a postverbal subject can be focal or topical (in the latter case, with the subject

6. An apparent violation of freezing: “Extraction” from the focus of clefts

Many languages can build questions parasitically from clefts. This seems to imply a violation of criterial freezing, as the focalized element of the cleft can be further wh-extracted:

- (55) a. E’ Gianni che hai visto ____
 ‘It is Gianni that you saw’
 b. Chi è ____ che hai visto ____?
 ‘Who is it ____ that you saw ____?’

separated from the rest of the clause by an intonational break, in what is traditionally called a right dislocated construction):

- (i) a. Ha telefonato Gianni_{+Foc}
 ‘Telephoned Gianni_{+Foc}’
 b. Ha telefonato, Gianni_{+Top}
 ‘Telephoned, Gianni_{+Top}’

But the inverse copular construction requires low focalization of the subject: low topicalization makes the construction impossible:

- (ii) a. Il direttore è Gianni_{+Foc}
 ‘The director is Gianni_{+Foc}’
 b. *Il direttore è, Gianni_{+Top}
 ‘The director is, Gianni_{+Top}’

So, the question arises of why movement of the subject to the low focus position creates the conditions for the inverse copular construction, whereas movement to the low topic position does not. One possible answer may come from an independent inherent difference between focalization and topicalization, as the former involves movement of the whole focalized phrase, while the latter typically strands a pronominal copy (audible as a clitic, in case of object clitic left dislocation, but presumably always present). The equivalent of (50)a with low topic movement of the subject would then be something like the following:

- (iii) Subj è [Gianni Top [_α [__pro] [Pred [il direttore]]]]

Putting aside other possible problems, after the smuggling of α , the stranded *pro* would continue to intervene between the predicative DP *il direttore* and Spec Subj, so that movement of the predicative DP would still violate RM. The difference between focalization and topicalization may thus follow from the fact that the former, but not the latter, completely vacates the position from which movement takes place.

The “big DP” analysis of topicalisation (Belletti 2009, ch. 8) advocated here should be phrased in a way consistent with the maximality principle (informally, a smaller DP is extracted from a larger DP). A similar issue is raised for maximality by Sportiche’s (1988) analysis of quantifier float as quantifier stranding. I will not address these problems here.

Nevertheless, there is some indication that this movement is “special”. For instance, as observed in Rizzi (1993), it is strongly sensitive to negative (and other weak) islands, as in ((56)b), which would not be expected for an argument *wh*. On the contrary, a negation occurring between the variable in thematic position and the focus position of the cleft does not adversely affect the acceptability, as is expected for an argument *wh* (see (57)b):

- (56) a. **Non** è Gianni che ho incontrato ____
 ‘It is not Gianni that I met ____’
 b. *Chi **non** è ____ che hai incontrato ____?
 ‘Who is it not ____ that you met ____?’ (Rizzi 1993)
- (57) a. E’ Gianni che **non** ho incontrato ____
 ‘It is Gianni that I didn’t meet ____’
 b. Chi è ____ che **non** hai incontrato ____?
 ‘Who is it ____ that you didn’t meet ____?’


So, negation (and other weak island creating elements) intervening in movement II in the following scheme severely affects acceptability, whereas it does not when intervening in movement I:

- (58) Foc_Q Foc_{Cleft} Theta pos. ...


 II I

The analysis of this contrast proposed in Rizzi (2014) capitalizes on criterial freezing. If we take freezing effects at face value, movement II cannot just be a further step of movement I: movement I places the affected element in a criterial position, from where further movement is banned. So, movement II must be movement of a syntactic object distinct from the object moved in I. The proposal in Rizzi (2014) (following a suggestion due to Klaus Abels, p.c.) is that what moves to the initial left periphery in II is not simply the *wh*-argument, but the whole focus phrase of the cleft sentence. The derivation can proceed as follows.


Adopting the analysis of clefts in Belletti (2009, to appear), I will assume a dedicated focus position, Foc_{Cleft} occurring in the left periphery of the cleft sentence, with the special interpretive properties of this strategy of focalization (the other possible derivation of clefts assumed by Belletti, op. cit., restricted to local subjects, is not immediately relevant in the present context). After the element to be focused has been moved to Spec of Foc_{Cleft}, the cleft can be extraposed, e.g. past a temporal adverbial (extraposition here is expressed in traditional terms of rightward movement, but the analysis can be expressed in antisymmetric terms (Kayne 1994) without adverse consequences):

- (59) a. E' [_{FocPCleft} Gianni Foc_{Cleft} [che devo incontrare]] oggi
 'It is Gianni that I must meet today
 → Extraposition →
- b. E' [_{FocPCleft} Gianni Foc_{Cleft} —clause] oggi [che devo incontrare]
 'It is Gianni today that I must meet
- 

This raises the possibility that what moves in case of further wh-movement in (55)b is not just the wh-phrase *chi*, but the whole Foc_{Cleft}, after the cleft sentence has been extraposed:

- (60) a. Foc_Q è [_{FocPCleft} chi Foc_{Cleft} —clause] [che devi incontrare]
 'It is who that you must meet'
- b. [_{FocPCleft} chi Foc_{Cleft} —clause] Foc_Q è [_{FocPCleft} —] [che devi incontrare]?
 'who is it that you must meet?'
- 

Consider now this kind of “further movement” across negation (or other weak island creating elements):

- (61) * [_{FocPCleft} chi Foc_{Cleft} —clause] Foc_Q non è [_{FocPCleft} —] [che devi incontrare]?
 'who isn't it that you must meet?'
- X Z Y
- 

In (61) what is extracted is not just the argumental wh-element *chi* (this option being banned as a violation of Criterion Freezing, ultimately labeling and maximality requirements) but the whole FocP of the cleft. If a fundamental distinction between what is extractable and what is not extractable from negative islands is offered by the argument/non-argument divide, what is moved in (61) is more than the sole wh-argument *chi*: the moved element is the FocP properly including the argument. Clearly not an argumental syntactic object. So, the strong sensitivity to weak island creating environments is expected.

Movement I in (58), on the other hand, is a normal movement of a wh-argument, hence the fact that it can be extracted from a weak island environment (as in (57)b) is expected.

If we now put together the analysis summarized here and the proposal on the freezing of the subject in inverse copular constructions (Section 5), we have to face an additional problem. If pied-piping of a whole FocP is an option which permits apparent violations of criterial freezing in cases like (55)b, why is this device not available

in inverse copular constructions like (51)b, etc.? Evidently, such a derivational option must be banned in a case like (51)b. Why are the two cases of clefts and inverted copular constructions different in this respect?

One possible solution may capitalize on the fact that the low focus position (vP peripheral) and the high focus position (left peripheral) are clearly different in interpretive properties. The low focus position typically permits the interpretation of new information focus, e.g. it can be used in question-answer pairs to provide the value of the *wh*-variable (Belletti 2001b, 2004):

- (62) Q: Chi è arrivato?
 ‘Who arrived?’
 A: E’ arrivato Gianni
 ‘Arrived Gianni’

The left peripheral focus only permits a contrastive (or perhaps corrective, or “mirative”: Bianchi, Bocci, Cruschina (Forthcoming)) interpretation, one which may be characterized as “falling outside the natural expectations of the interlocutor” (Rizzi 2013), so that its use is not felicitous in a simple question – answer pair like (63), but it is fine, e.g. in a corrective environment like (64):

- (63) Q: Che cosa hai comprato?
 ‘What did you buy?’
 A: † UN LIBRO ho comprato
 ‘A BOOK I bought’
- (64) S1: So che hai comprato un disco...
 ‘I know that you bought a record...’
 S2: Ti sbagli! UN LIBRO ho comprato...
 ‘You are wrong! A BOOK I bought...’

Plausibly the interpretive difference corresponds to a formal difference, so in fact we have (at least) two formally distinct *Foc* heads, call them *Foc_v* and *Foc_C*. According to Belletti’s (2009, To appear) analysis, the *Foc* of clefts (in the cases relevant here) is a kind of left peripheral focus, hence *Foc_C*.

In conclusion, the difference between the two cases may be that when a question is derived from clefts (55)b the left peripheral focus, *Foc_C* attracts the focus of clefts, another instance of *Foc_C*. The extension of this device to circumvent freezing in inverse copular constructions would require *Foc_C* to attract the low focus phrase *Foc_v* in cases like (51)b and (53)b, but the categorial mismatch between the attractor and the attractee plausibly prevents such an attraction. The contrast between clefts and inverse copular constructions can then be understood in terms of the distinct nature of the focus positions involved.

7. Halting, complements, and specifiers

Can a nominal expression ever halt and be spelled out in a non-criterial position? On the basis of the labeling approach the expression can surface in a complement position (say, an object position), because there X-YP Merge straightforwardly permits labeling of the new category as XP. Similarly, the subjects of unaccusative verbs can remain *in situ* in their thematic position (if other constraints are met) because they are merged in complement position.

Specifiers, on the other hand, give rise to a [XP YP] configuration, hence they are halting positions, or positions from which further movement is compulsory, depending on whether they determine a criterial configuration or not (I omit here the discussion of the position of adverbials and adverbial clauses: Cinque 1999; Haegeman 2012).

A potential problem for this simple view of the halting problem is raised by the subject position of small clauses: in the complement of some verbs, small clause subjects can remain in subject position, or move, hence no complementarity seems to hold here:

- (65) a. I consider [_{α} John intelligent]
 b. John is considered [_{β} ___ intelligent]
 c. A man who I consider [_{β} ___ intelligent]

One possibility is to maintain the standard view that the category of the small clause with an overt subject in (65)a is the same as the category of the small clause with a moved subject as in (65)b–c, hence $\alpha = \beta$. This would require some revision of the system so as to permit Spec positions which are consistent both with halting and continuation of movement.

Another possibility is to explore the hypothesis that $\alpha \neq \beta$, and continue to assume a rigid complementarity between “halting” Specs and Specs requiring further movement. Then, the categorial status of the small clause would be different in (65)a with respect to (65)b–c, and the subject of the small clause would be criterial in (65)a, but not in (65)b–c.

A hint that the assumption that $\alpha \neq \beta$ may be on the right track is offered by the fact that some verbs exclude a small clause with an overt subject, while they admit a small clause whose subject is moved further. I.e., in some varieties of English (Ian Roberts, p. c.) *think* differs from *consider* in this respect, in being incompatible with a small clause with an overt subject:

- (66) a. *I think [_{α} John intelligent]
 b. John is thought [_{β} ___ intelligent]
 c. A man who I think [_{β} ___ intelligent]

So, *think* presumably selects category β but not α , the one which allows the subject of the small clause to remain in small clause-internal position, while *consider* selects both α and β .

What is category α ? Perhaps α involves some kind of defective Subj head, while β may just be of category A(djjective), or the projection of the functional head responsible for agreement in Phi features (Belletti 2001a). So β would disallow the small clause subject to remain *in situ* because in that case β could not be properly labeled. Category α allows (and requires) its subject to remain in subject position.

Analogous facts were signaled by Postal (1974) for different classes of what was later called ECM verbs (see also Bošković 1997):

- (67) a. John believed/*alleged [Bill to be a liar]
 b. Bill was believed/alleged [___ to be a liar]
 c. Who did Bill believe/allege [___ to be a liar]

If a criterion is satisfied in small clauses like (67)a, one would expect to observe interpretive consequences of the kind that typically go with criterial satisfaction.

A possible indication that this expectation may be correct comes from an observation in Belletti (1988): bare plurals in Italian are possible in object position, as in (68)a, but not as subjects of small clauses, as in (68)b; but bare plural subjects can apparently be moved from the subject position of the small clause (68)c, and become the head of a relative:

- (68) a. Gianni frequenta amici
 'Gianni sees friends'
 b. *Gianni considera [[amici] [simpatici]]
 'Gianni considers friends nice'
 c. Gianni frequenta amici [che considera [___ [simpatici]]]
 'Gianni sees friends that he considers nice'

So, it may be the case that the small clause optionally allows a criterial position in its Spec, whose interpretive import is incompatible with bare plurals. In conclusion, (68)b is excluded by the interpretive incompatibility, while (68)c does not involve a criterial position, hence no semantic incompatibility emerges, but movement must proceed to a higher criterial destination (the head of the relative clause, in this case).

If something along these lines is tenable, we can stick to a simple picture on the "halting problem" for nominal expressions, as far as labeling is concerned:

- complements can stay where they are, or move;
- specifiers can (and must) stay if they are in a criterial configuration, otherwise they must move.

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