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XXV CYCLE

# SUBJECTS AND ARGUMENTS IN Ā-SYNTAX

by

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*"Ogni mattino dobbiamo penetrare di nuovo*
*attraverso cumuli di pietre morte*
*per arrivare al vivo, caldo nucleo"*

L. Wittgenstein (1929)

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# Chapter 1

# THEORETICAL BACKGROUND

## *1.1 Introductory Comments*

In this essay, I will examine some murky questions concerning the theory of A'-movement in Italian. I will focus on two main empirical problems: the behaviour of Criterial Subjects (Rizzi 2006) and the syntax of multiple *wh*-questions in Italian. Both these domain of inquiry pose some questions about the restrictions that A'-movement has to respect and the consequences that these restrictions have on the superficial form of languages. The aim of this study is to show that many idiosyncratic properties concerning these two empirical domains can be explained by a rather simple theory of syntactic computation.

The general picture that will emerge is that the syntactic computation in many A'-constructions can be described as a quite simple device, which is limited by (rather) independent interface requirements (Chomsky 1995 and subsequent works) and by some structural characteristics of the left periphery (Rizzi 1997, Cinque & Rizzi 2008). Moreover, it will emerge that the syntactic computation can make use of different strategies to circumvent these restrictions.

In Chapter 2, I will go through a long-standing problem concerning the position of subjects in a number of A'-constructions in Romance languages. I will show, that some puzzling restrictions on the position of subjects can be explained adopting two basic elements: a feature-based theory of locality (Starke 2001, Rizzi 2004, Abels 2012) and a quantificational theory of Criterial Subjects (Bianchi & Chesi, *to appear*). I will argue that it is possible to derive a wide empirical range of data in a number of Romance Languages, from these two basic ingredients.

In Chapter 3, I will examine a rather neglected group of Italian constructions, namely Multiple *wh*-questions. I will show that Italian displays a rather complex behaviour with respect to these structures, much more complex than previously thought. The idea is that

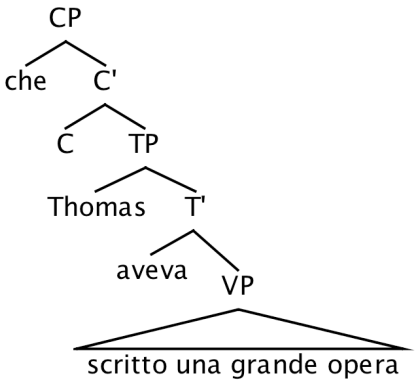
the whole pattern of data can be derived by two simple restrictions on A'-constructions. On the one hand, Italian is restricted to have only one position for *wh*-phrases in the left periphery of the clause (Rizzi 1997); on the other hand, only a sub-class of *wh*-phrases can be interpreted without being moved, namely argumental *wh*-phrases (Reinhardt 1997, 1998). I will argue that these two well-known restrictions force the syntactic computation to employ different circumvention strategies, from which the complex pattern of data emerges. I will argue that coordination turns out to be a flexible tool that syntax employs to build multiple *wh*-questions in compliance with the restrictions mentioned above.

## *1.2 The Left Periphery.*

After the advent of X-bar theory (Chomsky 1970, Jackendoff 1977) it has been commonly assumed that the structure of the sentence consists in three layers, each formed in compliance with the X-bar template. Starting from the most embedded, we have the V-layer projected from the lexical verb (VP); an inflectional layer, headed by the tense phrase (TP); and a complementizer layer (CP), which hosts elements such as *that*. For example, the embedded clause in (1) will roughly have the structure in (2):

(1) Ezra disse [che Thomas aveva scritto una grande opera].
*Ezra said* [*that Thomas had written a great piece of work*].

(2)



Under the early analyses, each layer was described as a single maximal projection, with one head and a corresponding specifier position. In the late eighties, this representation turned out to be too simplistic. The VP layer, for example, was expanded in a number of different layers for multiple arguments (Kayne 1984, Larson 1988). In the same way, the inflectional domain was also fractured into different functional projections, each corresponding to a single feature expressed by the flectional system (e.g. AGR, T, ASP, MOD) (Pollock 1989).

As for the syntax/semantics interface, each of these layers is associated to a specific semantic content: the VP encodes the basic properties of eventualities[1], such as the participants and the role they play (e.g. AGENT, AFFECTEE, THEME); the TP encodes the temporal, aspectual and modal properties of the eventuality (e.g. the time location, the viewpoint aspect, the *realis*/*irrealis* distinction); the CP serves as an interface level between the propositional content, expressed in the TP, and a superordinate structure, which can be a higher propositional content, in the case of embedded clauses or the articulation of discourse, in the case of root-clauses. For example, in embedded clauses, the CP is headed by complementizer elements such as *that* or *whether.* These elements specify the type of sentence that follows (Cheng 1991): *that* requires a declarative clause, while *whether* requires an interrogative clause. At the same time, the complementizer encodes some properties of the TP, since the choice of the complementizer depends on some flectional properties of the sentence below. For example, in Italian we can use the complementizer *che* only with inflected verbal forms, but not with infinitives.

Chomsky (2001) suggested that certain constituents need to be associated with two kinds of semantic properties: argumental and scope/discourse properties. The latter are realized through the movement of the relevant constituents to positions higher than the TP, which traditionally have been called Ā-positions (Chomsky 1981, 1986). A crucial function of the CP is to host those fronted constituents, realizing scope-discourse properties: (4a-b) and

[1] I will follow Bach (1986) using the term 'eventuality' as a neutral term for both events and states (Vendler 1957).

(4c-d) illustrate English negative inversion and *wh*-movement respectively; (5a-b) and (5c-d) illustrate topic and focus fronting in Italian respectively:

(4) a. Not a single poem did he write.

b. [$_{CP}$ Not a single poem$_k$ [$_C$ did$_j$ [$_{TP}$ he t$_j$ [$_{VP}$ write t$_k$]]]]

c. Which poem did he write?

d. [$_{CP}$ Which poem$_k$ [$_C$ did$_j$ [$_{TP}$ he t$_j$ [$_{VP}$ write t$_k$ ?]]]]

(5) a. Questa poesia l'hai letta ieri.
This poem it-CL-have-2SG read yesterday.

b. [$_{CP}$ Questa poesia$_k$, [$_C$ C [$_{TP}$ l [$_T$ hai [$_{VP}$ scritta t$_k$]]]]

c. QUESTA POESIA hai scritto (non quella).
THIS POEM, have-2SG written (not that one).

d. [$_{CP}$ QUESTA POESIA$_k$, [$_C$ C [$_{TP}$ hai [$_{VP}$ scritto t$_k$]]]]

Let's pause for a moment on the examples in (5). (5a) is an example of Topicalization. In Romance, the topic-comment articulation is often expressed by means of the so-called Clitic Left Dislocation (CLLD), which require the fronted constituent (*'Questa poesia'*) to be matched by a clitic pronoun within the TP. From an interpretative point of view, the fronted constituent makes explicit reference to a previously introduced piece of information. Moving the constituent in a higher position makes this piece of information relevant as the starting point of an eventuality description. The eventuality description provided by the sentence, then, expresses new information about the topicalized constituent. (5c), on the other hand, is an example of Focalization. The fronted element in (5c), bearing a focal stress, introduces new information, whereas the remaining sentence express old information, already available or salient in the discourse context (Reinhardt 1981). In accordance with what we said above about the role of the complementizer layer, fronting a constituent to the CP serves to specify the relationship between the moved constituent, the informational structure of the discourse and the propositional content expressed in the TP. As it is clear from the examples in (5), the CP can express different kind of relationships between the discourse context and the propositional content.

In the late nineties, it became clear that a single CP projection was not enough. To account for the distribution of the fronted elements, more layers were needed. To illustrate this point, it is sufficient to embed the example in (4a) as a complement clause:

(6) Ezra said [that not a single poem did he write].

In (6), the complementizer *par excellence*, *that*, occupies the head position of the CP. At the same time, it precedes the fronted negative constituent *not a single poem*. Thus, the question is: where should we put *not a single poem?* Clearly we need some extra space between the TP and the head of the CP:

(7) Ezra said [$_{CP}$ that [$_{XP}$ not a single poem [$_{X'}$ did [$_{TP}$ he [$_{VP}$ write]]]]]

Note that, whatever is the right structure of (6), a whole new maximal projection is required to accommodate both the fronted negative constituent and the raised auxiliary *did*. This suggests that the CP is composed by different maximal projections.
An additional piece of evidence showing the need for more positions in the CP, is the fact that we can move both topics and foci to the CP at the same time:

(8) a. A Thomas, EZRA gli ha dedicato un poesia (non William).
To Thomas, EZRA to-him-CL has dedicated a poem (not William).
*As for Thomas, it was Ezra that dedicated a poem to him (not William).*
b. EZRA, a Thomas, gli ha dedicato un poesia (non William).
EZRA, to Thomas, to-him-CL has dedicated a poem (not William).
*As for Thomas, it was Ezra that dedicated a poem to him (not William).*

Embedding (8) as a complement clause shows that the number of constituents in the left periphery can be even more than two:

(9) Io credo [che, a Thomas, EZRA gli abbia dedicato una poesia].
I believe that, to Thomas, EZRA to-him-3SG has-SUBJ dedicated a poem.
*I believe that, as for Thomas, EZRA dedicated a poem to him.*

To account for data like these, the CP underwent the same makeover of the VP and the TP and got expanded into a number of different positions. In his influential work on the fine

structure of the Complementizer layer, Rizzi (1997) proposed that the CP is actually composed by many different functional projections. Assuming that these projections are built using the blocks provided by X-bar theory, every projection in the CP will have a (possibly null) functional head and (at least) a specifier position. [2]

As we mentioned, constituents are moved to the CP to realize scope/discourse properties at the syntax/semantics interface. These properties are realized by means of a family of syntactic principles, called *Criteria* (Rizzi 1996, 2006). One crucial property of the Criteria is that they require a Spec-Head agreement with respect to the relevant features, such as *Wh*-, Topic, Focus, and so on. The principle governing the Criteria is the following:

(10) **Criterial Requirement**

$XP_F$ and $X_F$ must be in a Spec-Head configuration, where F is a formal feature and F = Wh, Top, Foc.

Going back to our examples in (5), we can now provide a different representation. In (5a), a topic projection is projected from a null functional head. This provides a specifier position which constitutes the landing site of the fronted Topic constituent:

(11) $[_{TopP}$ Questa poesia$_k$, $[_{Top}$ Ø $[_{TP}$ l $[_{T}$ hai $[_{VP}$ scritta $t_k]]]]$

In the same way, the focus construction in (5c) is realized by means of a specific Focus projection, projected from a null-functional head Foc[3]:

(12) $[_{FocP}$ QUESTA POESIA$_k$, $[_{Foc}$ Ø $[_{TP}$ hai $[_{VP}$ scritto $t_k]]]]$

[2] Many scholars proposed to treat the presence of more than one element in the CP as a matter of adjunction (Baltin 1982, Lasnik & Saito 1992, Culicover 1996 a.o.). This approach has a number of both empirical and theoretical problems (see. Kayne 1994, Cinque 1999, Haegeman 2013). Therefore, I will not discuss this hypothesis here, assuming instead a cartographic approach (Rizzi 1997, Cinque & Rizzi 2008).

[3] The presence of functional heads in Topic and Focus constructions is corroborated by the fact that many languages express them overtly. This is the case of Gungbe, a Gun language, mainly spoken in Benin (Aboh 2004):

i) Dàn lc yà Kofì hù-ì
snake the TOPIC Kofi kill3SG
*As for that snake, Kofi killed it.*

ii) Wémà lc we Kofì xia
book the FOC Kofì readPERF
*It is the BOOK that Kofi has read.*

The CP, therefore, can be split into at least two functional projection: TopP and FocP. Assuming that different functional projections can be projected at the same time, as it happens in the inflectional domain, we will derive (13) as a structure of (8): [4]

(13) $[_{TopP}$ A Thomas$_k$, $[_{Top}$ Ø $[_{FocP}$ EZRA$_j$ $[_{Foc}$ Ø $[_{TP}$ t$_j$ $[_{T}$ gli$_k$ ha$[_{VP}$ dedicato una poesia t$_k$]]]]

In addition to the interpretative distinction that we introduced above, there is an important syntactic difference between Topic and Focus. In particular, Topics can be more than one in a single sentence, while Foci cannot:

(14) a. A Thomas, questa poesia gliela dedichiamo.
To Thomas, this poem, to-him-CL-it-CL dedicate-2PL
*As for Thomas, this poem, we dedicate to him.*

b. *A THOMAS, QUESTA POESIA, dedichiamo (non a Ezra e non quella poesia).

To Thomas, this poem, dedicate-2PL
*It is to Thomas that this poem we dedicate (not to Ezra and not that poem).*

For this reason, Rizzi (1997) postulates that Topics are recursive, while Foci are not. We will go back on this fact will in Chapter 3, where we will see how the uniqueness of FocP can be taken to shape the syntactic computation in multiple *wh*-questions.

What about the lexical complementizers? As we said, one of the main function of these elements is to provide the illocutionary force, specifying the sentence type. There are two main types of complementizers. The first type is represented by complementizers like the Italian *che* and the English *that*. These elements always select for a finite clausal complement:

(15) a. Ezra ha detto a Thomas che scrive più concisamente.
Ezra has said to Thomas that writes more concisely.

b. *Ezra ha detto a Thomas che scrivere più concisamente.

[4] For a number of problems about the extension of these conclusions to Germanic languages see Haegeman (2013).

Ezra has said to Thomas that pro write-INF more concisely.

Following Chomsky (1995), Rizzi (1997) assumes that these elements are heads of a dedicated functional projection called Force, whose role is to specify illocutionary force.
The second type of complementizers is represented by elements such as *di*, in Italian. These elements only select for non-finite clausal complements:

(16) a. Ezra ha detto a Thomas di scrivere più concisamente.
Ezra has said to Thomas to write-INF more concisely.

b. *Ezra ha detto a Thomas di scrive più concisamente.
Ezra has said to Thomas to writes more concisely.

The complementizers of the first type always precede Topics. Consequently, ForceP must be higher than TopP and FocP. On the other hand, the complementizers of the second type always follows Topics. Therefore, they must occupy a lower projection. Rizzi calls this projection FinP, arguing that it encodes information about the finiteness of the lower clausal complement:

(17) a. *Ho detto, il tuo libro, che lo avrei riletto.
Have-1SG said your book that it-CL have-COND-1SG reread.
*I said, your book, that I would reread*.

b. Ho detto che, il tuo libro, lo avrei riletto.
Have-1SG said that your book it-CL have-COND-1SG reread.
*I said that, your book, I would reread*.

(18) a. Ho deciso, il tuo libro, di rileggerlo.
Have-1SG decided your book *di* reread-it-CL.
*I decided, your book, to reread.*

b. *Ho deciso di, il tuo libro, rileggerlo.
Have-1SG decided *di* your book reread-it-CL.
*I decided to, your book, reread.*

It appears, then, that the Complementizer layer is a complex structure of functional projections, which contains at least the following elements: ForceP, FocP, TopP, FinP.

Moreover, we saw that the highest projection is Force, while the lowest is Fin. I will refer to this complex structure as the *left periphery*. Given the positional facts discussed above, the structure of the left periphery will be the following (the stars indicate recursion):

(19) Force Top* Foc Top* Fin TP

We now have a suitable structure to accommodate the following examples, where more than two elements appear in the left-periphery:

(20) a. Io credo che a Thomas EZRA gli ha dedicato una poesia.
I believe that to Thomas EZRA to-him-CL has dedicated a poem.
*I believe that, as for Thomas, it is Ezra that dedicated a poem to him.*

b. Io credo [$_{\text{Force}}$ che [$_{\text{TopP}}$ a Thomas$_k$, [$_{\text{Top}}$ Ø [$_{\text{FocP}}$ EZRA$_j$ [$_{\text{Foc}}$ Ø [$_{\text{TP}}$ t$_j$ [$_{\text{T}}$ [$_{\text{TP}}$ gli$_k$ [$_{\text{TP}}$ ha [$_{\text{VP}}$ dedicato una poesia t$_k$]]]

(21) a. Ho deciso, questa poesia, a Thomas, di dedicargliela.
Have-1SG decided this poem *di* dedicate-to-him-CL-it-CL
*As for this poem I decided to dedicate it to Thomas.*

b. Ho deciso [$_{\text{TopP}}$ a Thomas$_k$, [$_{\text{Top}}$ Ø [$_{\text{TopP}}$ questa poesia$_j$ [$_{\text{Top}}$ Ø [$_{\text{Fin}}$ di [$_{\text{vP}}$ dedicar-glie$_k$-la$_j$ ]]]

As showed in (4c), *wh*-movement also involves the fronting of a constituent to some left-periphery position. It is, then, natural to ask what is this position. In the tradition of formal semantics, *wh*-questions have been put together with focus constructions (Hamblin 1979, Root 1985, 1992). Are there good reasons to pursue this analogy also from a syntactic point of view? Consider the following sentences:

(22) a. *A THOMAS, quale poesia dedichiamo?
To Thomas, which poem, dedicate-2PL

b. *A chi QUESTA POESIA dedichiamo?
To whom, this poem, dedicate-2PL?

c. A Thomas, quale poesia, gli dedichiamo?
To Thomas, which poem, to-him-CL dedicate-2PL?

These examples show that *wh*-fronting is not compatible with focus fronting (21a-b), while it is compatible with Topicalization (21c). This situation resembles the situation that we found with Focus: on the one hand, multiple foci are disallowed (14b), on the other hand, they have no problems in occurring with Topics (8).

For these reasons, Rizzi (1997) proposes that *wh*-phrases and Foci target the same position. Since Foc cannot be not recursive, there is only one Focus projection in the left-periphery of the clause. As a consequence, the *wh*-phrases and the focalized phrases in (22a-b) cannot be both accommodated. Following this reasoning the examples in (22a-b) are ruled out for the very same reasons of (14b): both are cases of illicit multiple focalization.

I will follow Rizzi (1997) assuming that SpecFocP is the landing site of both Focus and *wh*-movement. The updated structure of the left periphery is, then, (23):

(23) Force Top* Foc/Wh Top* Fin TP

I will presuppose the template structure of the left periphery in (23) in the next Sections.

## *1.3. Locality.*

The syntactic computation of natural languages is unbounded, but many syntactic processes respect fundamental locality principles. In this Section, I will illustrate some cases of syntactic locality, where the application of movement seems to be restricted because of some intervening element. As we will see, intervention operates selectively. That is to say, some syntactic elements happen to block certain kind of movements, depending on what kind of syntactic elements we are trying to move across them.

Rizzi (1990) proposed to derive intervention locality by means of a general restriction applying on syntactic computation, which captures the intuition that some structural relations must be satisfied in the smallest possible syntactic domain. This restriction is known as *Relativized Minimality*.

The original definition of Relativized Minimality states that a local structural relation between the head of a chain and its tail can be satisfied only if there are no interveners

between the two[5, 6]:

(24) **Relativized Minimality** (1st Version)

Given a syntactic configuration of the type:

...X ...Z ...Y ...

X is in a Minimal Configuration with Y iff X c-commands Y and there is no Z such that:

(i) Z is of the same structural type as X, and

(ii) Z intervenes between X and Y and

(iii) structural types: Heads, A-Spec, Ā-Spec

To use the words of Abels (2012): *"Relativized Minimality is a ban on likes crossing likes*". Given that the core idea of Relativized Minimality is that locality condition must be relativized to different classes of syntactic elements, it is crucial to provide a precise notion of these classes. A exact taxonomy of the intervening elements is essential, since the predictions about what counts as a potential intervener ultimately depend on it.

As it can be seen in (24-iii), the original formulation of Relativized Minimality considered three classes of potential interveners: heads, A-specifiers and Ā-specifiers. This implies, for example, that, to block the binding between an Ā-element and its trace, the intervention of every other Ā-element would be sufficient. Consider, for instance, the local relation linking the *wh*-phrases in (25):

(25) a. Come$_j$ hanno risolto il problema $t_j$?
How have-3PL solved the problem
*How did they solve the problem?*

b. *Come$_j$ ti chiedi [chi [$t_k$ ha risolto il problema $t_j$]]?
How to-you-CL wonder who has solved the problem?

[5] The definition in (24) differs from the original definition given in Rizzi (1990), in that the latter was build on the notion of Government (Chomsky 1981). I decided to dispense with this notion, because its status has been questioned after the development of the Minimalist Program (Chomsky 1995 and subsequent works).

[6] In this work, I will assume Relativized Minimality to be a constraint on syntactic representations, rather than syntactic derivation. For an implementation of Relativized Minimality in a derivational frame-work see Chomsky (1995), Chomsky (2001) and Bowers (2010).

**How do you wonder who solved the problem?*

In (25a) the Ā-chain between *Come* ('How') and its trace is well-formed, while in (25b) the embedded *wh*-phrase *Chi* ('who') works as an intervener between the higher *wh*-phrase and its trace. In (25b), both the matrix and the embedded *wh*-phrases are Ā-specifiers and, consequently, they classify as interveners with respect to each other.

This proposal is particularly relevant with respect to the left periphery. Since all the positions in the left periphery are Ā-position, this version of Relativized Minimality predicts that all the elements moved to the left-periphery will block each other. Crucially, this is not the case. For example, we can cross the paths of Topics and Foci, as showed in (26). In the same way, we can let a *wh*-phrase to intervene between a topic and its trace, as in (27):

(26) Il giornale$_k$, EZRA$_j$ [$_{TP}$ $t_j$ lo$_k$ ha comprato $t_k$]] (non Thomas)
The newspaper EZRA it-CL has bought (not Thomas)
*As for the newspaper, it was Ezra that bough it.*

(27) Questo libro$_k$ chi$_j$ [$_{TP}$ $t_j$ lo$_k$ sta traducendo $t_k$]]?
This book who it-CL is translating?
*As for this book, who is translating it?*

The issue of locality constraints within the left periphery has been first addressed by Rizzi (2004). To account for the fact that Ā-elements selectively block each other, Rizzi (2004) proposes a refinement of the original classification of the intervening categories. Instead of a unified Ā-class, he suggests that Ā-positions should be split into (at least) three different sub-classes: Quantificational, Modifier, and Topic:

(28) **Relativized Minimality Taxonomy**

a. Argumental: *person, number, gender, case…*
b. Quantificational: *Wh*, *Neg*, *Focus*…
c. Modifier: *Evaluative, Epistemic, Neg, measure*, *manner*...
d. Topic

The elements in the left-periphery are, then, expected to interact according to the taxonomy in (28):

(29) **Relativized Minimality** (Refined Version)

Given a syntactic configuration of the type:

...X ...Z ...Y ...

X is in a Minimal Configuration with Y iff X c-commands Y and there is no Z such that:

(i) Z is of the same structural type as X, and

(ii) Z intervenes between X and Y and

(iii) structural types: Heads, Argumental-Spec, Quantificational-Spec, Modifier-Spec, Topic-Spec.

Given the Relativized Minimality definition in (29), the data in (26-27) are no longer a problem. Since both *wh*-phrases and Foci are in a different subclass than Topics, they can cross each other. On the other hand, the ungrammaticality of (25b) is still derived correctly by Relativized Minimality, because both the moved elements are in the quantificational subclass. For the sake of clarity, I will put the issue in terms of Ā-features. I will assume that Ā-elements are different depending on which features they carry and that Relativized Minimality is expected among elements bearing the same features.

An important addition to the logic of Relativized Minimality has been introduced by Starke (2001). Starke (2001) proposes that the classes of syntactic features illustrated in (28) are organized into feature-trees, rather than in unordered sets. The role of feature trees is to provide an hierarchy according to which the syntactic features of a given class are organized. According to this view, a feature tree contains a certain set of features and orders them in super- and sub-classes (see also Bianchi 2004, Boeckx and Jeong 2004).

Furthermore, he proposes that the application of Relativized Minimality follows this logic: a feature α is blocked by another feature β if both α and β belong to the same feature tree and β belongs either to the same class of α or to a sub-class of α. For example, let's say that we have a feature tree X and three feature classes α, β, γ belonging to X. Moreover,

suppose that these feature classes are organized such that α is a superclass of β, and β is a superclass of γ. In this case, a syntactic constituent bearing α, would be blocked by a constituent bearing either α, β or γ; a constituent bearing β would be blocked by a constituent bearing either β or γ; and a constituent bearing γ would be blocked only by a constituent bearing γ. In other words, an element that belongs to a superclass cannot move across an element that belong to a subclass; while an element that belongs to a subclass will be able to cross an element belonging to a superclass.

I will follow Abels (2012), calling this regulating principle of Relativized Minimality *Pānini Principle.* This principle can be formalized in the following way:

(30) **Pānini Principle**

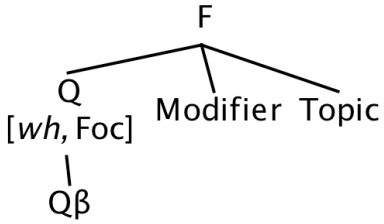
Let X be an ordered feature tree such that X= Q, Topic, Mod; and

let α, β and γ be syntactic features such that α, β, γ ∈ X;

If X = { … α > β > γ... }, then Xγ blocks Xβ and Xα; and Xβ blocks Xα.

Let' us give a concrete example of this mechanism, focusing on the quantificational feature tree (henceforth, labeled with the letter Q). In addition to the customary features belonging to the feature tree Q (e.g. *wh*- and Foc), Starke (2001) proposes that quantificational constituents can be endowed with an additional feature β as long as the speaker has in mind a specific referent of that phrase which is presupposed to exist. A quantificational constituent bearing a feature β constitutes a subclass with respect to the feature tree Q:

(31)




This proposal can explain, among other things, some extraction configurations in which a quantificational element can cross another quantificational element. Take the following

well-known asymmetry between adjuncts and arguments (Huang 1982, Lasik & Saito 1984):

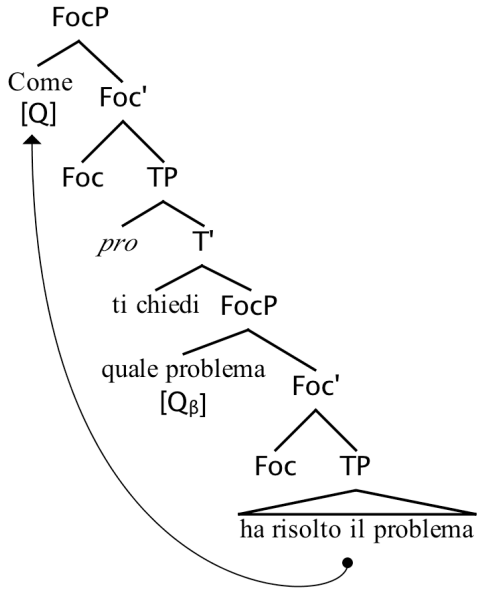
(32) a. *Come ti chiedi quale problema abbiamo risolto?
How to-you-CL which problem have-1PL solved?
**How do you wonder which problem we solved?*

b. ?Quale problema ti chiedi come abbiamo risolto?
Which problem to-you-CL how have-1PL solved?
*Which problem do you wonder how we solved?*

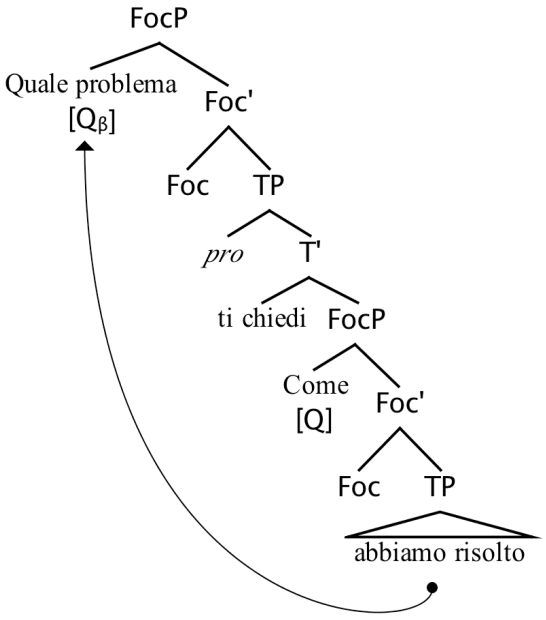
Adopting Starke's proposal, the examples in (32) would receive the following representations:

(33)

a.




b.




In (33a), a quantificational element of the type Q is moved across an element of the type Qβ. This causes a violation of Relativized Minimality, since Qβ is a subclass of Q. On the

other hand, in (33b) a quantificational element of the type Qβ is moved across a quantifier of the type Q, which makes available the circumvention of Relativized Minimality.

In the next Chapters, I will assume that the locality restrictions in the left-periphery are regulated by a revised version of Relativized Minimality (29) which relies on a fine-grained taxonomy of the Ā-positions (28). Moreover, I will assume a feature-based version of Relativized Minimality, in which the different Ā-categories are defined by means of a feature trees, organized in super- and sub-classes. Finally, I will assume that super-classes and sub-classes of features are regulated by the so-called Pānini Principle (30).

# Chapter 2:

# CRITERIAL SUBJECTS AND THE THEORY OF Ā-MOVEMENT

## 2.1 Introduction and overview

In this Chapter, I will examine some restrictions on the position of subjects in Romance, with special focus on Italian. In particular, I will discuss a number of previously unnoticed cases in which the subject cannot appear in pre-verbal position. As it will turn out to be, all these cases are Ā-constructions involving Q-movement. Furthermore, I will address some puzzling data in which adjuncts prepositional phrases seem to behave differently from other constituents on *wh*-questions.

The Chapter is organized as follows: I first introduce the notion of Criterial Subjects (Rizzi 2006), showing that pre-verbal subject in Italian occupy an Ā-position between the inflectional domain and the left periphery (Section 2.2.1). Then, I will illustrate the empirical basis of the investigation, going through different Ā-constructions that impose positional restrictions on Criterial Subjects (Section 2.2.2). In Section 2.3, I will discuss the existing proposals on this issue, showing in details that none of them can easily cover the whole pattern of data. In Section 2.4, I will propose an alternative account for these phenomena in terms of Relativized Minimality. In particular, I will propose that the restrictions on pre-verbal subjects can be accounted for if the Criterial Subject is considered to interact with quantificational Ā-element in the Relativized Minimality taxonomy. In Section 2.5., I will propose that pied-piping can serve as a way to circumvent the locality restrictions imposed by the Criterial Subject. Finally, in Section 2.6. I will go through some remaining issues concerning the adjunct/argument asymmetry, sketching a possible line of inquiry.

## 2.2 The syntax of pre-verbal subjects

### *2.2.1 Pre-verbal subjects as Ā-elements: Criterial Subjects.*

Let us turn next to the syntax of subjects. As it usually happens in null-subject languages, subjects in Italian can appear rather freely in the clause structure. In declarative sentences, with mono-argumental predicates they can appear both in pre and post-verbal position:

(1) a. Ezra è partito.
John is left.
b. Ezra ha scritto.
John has written.

(2) a. Ha scritto Ezra.
Has written Ezra.
b. E' partito Ezra.
Is left John.

In this work, I will take into consideration only pre-verbal subjects. However, it is important to bear in mind the possibility of placing the subject in post-verbal position. As we will see in the next Section, leaving (or moving) the subject in post-verbal position can serve as a strategy to avoid some forbidden configurations involving pre-verbal subjects. For our purposes, it will be sufficient to adopt the classical assumption that post-verbal subjects are related to a null pronoun *pro* which appears in SpecTP (Rizzi 1982), without any further commitment to their specific position. [7]

Going back to pre-verbal subjects, a classic assumption is that theta roles can be assigned under head-complement relation, which is the configuration under which internal arguments are marked. Since Burzio (1981), it has been assumed that subjects of

[7] The actual position of post-verbal subjects in Italian is still an open issue. In particular, in unergative and transitive predicates it has been proposed that post-verbal subjects either occupy a rightward VP-adjoined position (Rizzi 1982, Samek-Lodovici 1994), a rightward specifier of VP (Giorgi & Longobardi 1991) or a focus position (Belletti 2004).

unaccusative predicates are generated in the internal argument position. Therefore, in (3) the head-complement relation is enough to warrant that subject of unaccusative verbs receive their theta roles within the VP. The subject, then, moves high to SpecTP to check ϕ-features and to receive nominative Case (Chomksy 1981):

(3) a. Ezra è partito.

b. $[_{TP}$ Ezra$_j$ $[_T$ è $[_{VP}$ partito $t_j$ ]]

This configuration cannot be extended to the subjects of unergative and transitive predicates, since they are genuine external arguments (Burzio 1981, Hale & Kayser 1993, 2002). Under minimalist assumptions (Chomsky 1995), the only possible configuration to assign theta role to external arguments is Spec-Head. If we assume that all theta roles associated with a verbal head V are assigned within projections of V, then it is reasonable to think that external arguments are generated in the specifier of the lexical head. This means that in transitive and unergative predicates subjects must be generated in the specifier of an extended verbal projection VP. Again, the subject moves further to the TP to check Case and ϕ-features:

(4) a. Ezra ha scritto.

b. $[_{TP}$ Ezra$_j$ $[_T$ ha$_k$ $[_{VP}$ $t_j$ $[_{VP}$ scritto$_k$]]

The fact that SpecVP is an available position for subjects, is showed by the possibility of leaving a (*floating*) quantifier that quantifies over the subject in a position adjacent to the verbal head (Sportiche 1988):

(5) a. Gli studenti hanno tutti letto la *Terra Desolata*.
*The students have all read the Waste Land.*

b. $[_{TP}$ Gli studenti $[_T$ hanno $[_{VP}$ tutti $[_{VP}$ letto *la Terra Desolata*]]]]

We will thus assume that subjects always originate VP-internally, as proposed by the Predicate-Internal Subject Hypothesis (Sportiche 1988, Koopman & Sportiche 1990, Kitagawa 1994, McCloskey 1997).

Now that we know that per-verbal subjects originate within the VP and raise in SpecTP, we can ask whether SpecTP is also the end of their route. Many scholars proposed that pre-verbal subjects occupy a higher position than SpecTP (Benincà & Cinque 1995, Contreras 1991, Cardinaletti 1997, 2004, Moro 1993). Let us tentatively assume the following structure of the clause, in which we postulate an additional position for subjects above SpecTP:

(6) $[_{SubjP}\ [_{TP}\ \ldots\ [_{VP}\ldots]]]$

We know that subjects move to SpecTP to check their ϕ-features, so the question is why they have to move further to SubjP. A possible answer to this question is that subjects are required to satisfy two different requirements: one is purely grammatical, the other is semantic. On the one hand, subjects must be the grammatical subjects of syntactic structures, in compliance with the morphosyntactic requirements; on the other hand they are required to be the subjects of a predicative structure at the syntax/semantics interface. The hypothesis is that the familiar position in SpecTP would serve for the first purpose, while the higher position in the SubjP would serve for the latter (see Rizzi 2006, Cardinaletti 2004). A plausible (though still mysterious) motivation for the existence of SubjP is that this functional projection satisfies some interface requirement, according to which the description of an eventuality must be expressed in subject-predicate format (Rothstein 1983, 2001).

Rizzi (2006) describes the interpretative role of the highest subject position as "*the process of selecting an argument as the starting point of the event description, and expressing the event as somehow involving that argument.*" If this thinking is correct, it is perfectly reasonable to hypothesize that SubjP realizes a scope/discourse property. Following Cardinaletti's (2004) terminology, I will call this relation "*subject-of-predication*".

If two different subject position are available in the clausal structure, we should be able to single out the different requirements that subjects must satisfy depending on the position they occupy. In particular, we might expect cases in which it is clearly possible to dissociate elements appearing in SpecTP from elements appearing in SubjP. For example, it is a well known fact that natural languages allow some semantically vacuous elements to

occupy the subject position, as in the case of expletives and pleonastics (Chomsky 1981, Rothstein 1983, 2001). If the higher subject position is available for semantic purposes, such elements are reasonably expected to be forbidden in this position. At the same time, we might also expect the reverse. That is, there should be cases in which a constituent is the subject of the predication, without being the grammatical subject from a morphosyntactic point of view. In such a case, a constituent is expected to be allowed to raise in SubjP, without checking Case and ϕ-features in Spec,TP. Both these predictions are met.

Let's begin with the latter. A good test case is represented by psych verbs (Cardinaletti 2004, Rizzi 2006). Psych verbs are unaccusative verbs which select for a Theme and a dative Experiencer (Belletti & Rizzi 1988). From a morphosyntactic point of view, only the Theme enters a relation of agreement with the verb:

| | | | | | |
|---|---|---|---|---|---|
| (7) | a. | A Ezra | piacciono | gli scultori | vorticisti. |
| | | To Ezra$_{[Exp]}$ | please-3PL | the sculptor-PL$_{[Theme]}$ | vorticist |
| | b. | *A Ezra | piace | gli scultori | vorticisti |
| | | To Ezra$_{[Exp]}$ | please-3SG | the sculptor-PL$_{[Theme]}$ | vorticist |
| | | *Ezra likes the vorticist sculptors.* | | | |

The crucial point is that both the Theme and the Experiencer can be preposed in pre-verbal position:

| | | | | |
|---|---|---|---|---|
| (8) | a. | Gli scultori | vorticisti | piacciono molto a Ezra. |
| | | The sculptor-PL$_{[Theme]}$ | vorticist | please-3PL a lot to Ezra$_{[Exp]}$ |
| | b. | A Ezra | piacciono molto gli scultori | vorticisti. |
| | | To Ezra$_{[Exp]}$ | please-3PL a lot the sculptor-PL$_{[Theme]}$ | vorticist |

The absence of agreement between the pre-verbal Experiencer and the verb in (8b) suggests that the Experiencer does not occupy the SpecTP position. This conclusion is supported by the occurrence of parentheticals between the fronted Experiencer and the inflected verb (Cardinaletti 1997):

| | | | | | |
|---|---|---|---|---|---|
| (9) | A Ezra, | secondo me, | piacciono | molto | gli scultori |
| | To Ezra$_{[Exp]}$ | according to me | please-3PL | a lot | the sculptor-PL$_{[Theme]}$ |

vorticisti.

vorticist.

Parentheticals have been showed to be adjoined only to maximal projections (Cardinaletti 1997). Therefore, elements belonging to the same maximal projection are expected to leave no room for parentheticals to occur between them. The availability of parentheticals between Experiencers and the inflected verb suggests that they are not in a Spec-Head relation. These data suggest that pre-verbal Experiencers occupy a position higher than Spec,TP. Moreover, the lack of morphological agreement between pre-verbal Experiencers and the inflected verb implies that this position is an Ā-position.

The question is, then, what position pre-verbal Experiencers actually occupy. A possible answer is that pre-verbal Experiencers are left-dislocated. For example, they can occupy a low Topic position (Benincà & Cinque 1995). However, there is evidence that pre-verbal Experiencers are not left-dislocated into the left periphery. A first piece of evidence in this direction is that pre-verbal Experiencers can occur in Aux-to-Comp constructions:

(10) Essendo a Ezra piaciuta molto una poesia…
Being to Ezra$_{[Exp]}$ pleased a lot a poem$_{[Theme]}$…

Since Aux-to-Comp constructions usually disallow left dislocation, the example in (10) suggests that the Experiencer is in a position lower than TopP.

A second piece of evidence against the left dislocation of Experiencers, is represented by inverse copular structures. In inverse copular sentences, a predicative constituent can be fronted in a pre-copular position, without triggering any agreement with the verb (Moro 1997, Den Dikken 2006):

(11) La causa della rivolta furono alcune foto del muro.
*The cause of the riot were some picture of the wall.*

Pre-copular predicative constituents display the same behavior than pre-verbal Experiencers. On the one hand, they allow for parentheticals between them (12a). On the other hand, they can occur in Aux-to-Comp constructions (12b):

(12) a. La causa della rivolta, secondo me, furono alcune foto del muro.
*The cause of the riot, according to me, were some picture of the wall.*

b. Essendo la causa della rivolta alcune foto del muro…
*Being the cause of the riot some picture of the wall…*

These data point to the existence of a position higher then Spec,TP, but lower than SpecTopP.

Crucially, the constituents that occupy this position seem to require subject-like properties at the interpretative level. For example, psych-verb Experiencers that can receive agentive readings (see Belletti & Rizzi 1988; see also Grimshaw 1990 and Landau 2010), can appear in pre-verbal position in Aux-to-Comp constructions. On the other hand, dative arguments which do not display subject-like properties, as Goals are forbidden in these constructions:

(13) a. Essendo a Ezra piaciuta molto una poesia…
Being to Ezra$_{[Exp]}$ pleased a lot a poem$_{[Theme]}$…

b. *Avendo a Ezra dedicato una poesia…
Having to Ezra$_{[Goal]}$ dedicated a poem$_{[Theme]}$…

This contrast suggest that only a subject-like constituent can appear in a position higher than SpecTP but lower than SpecTopP. Differently, this position is not available for constituents which have no subject-like properties, as the dative Goal in (13b). Given the unavailability of the projection SubjP for dative Goals, the only way to move them in a pre-verbal position is left-dislocation in a Topic position.

It is, then, reasonable to think that dative Experiencers in psych-verb constructions and predicative constituents in copular structures move to a functional projection SubjP to realize the *subject-of-predication* property.[8]

I now turn to consider some data suggesting that subjects in SubjP must have a referential content. In the Government and Binding framework, the obligatoriness of the subject position is accounted for by means of the Extended Projection Principle (EPP). To satisfy

[8] Another possible conclusion is that the position of these elements is SpecFinP. I believe, however, that the problems highlighted by Cardinaletti (2004, 2007) seriously undermine this conclusion. I refer the reader to Cardinaletti (2004, 2007) for a detailed discussion.

this obligatory requirement, natural languages allow for a range of different elements in subject position. Cardinaletti & Starke (1994), proposed to split the whole range of pronominal elements which can serve as subjects into three categories: expletives, weak pronouns and strong pronouns. Expletives do not have any referential content, as they were claimed to occupy the subject position for purely grammatical purposes (Chomsky 1981, Rothstein 1983, 2001). Weak pronouns are deficient clitic-like elements, which usually do not have independent referential content. Examples of weak pronouns are represented by the English pronoun '*it'*, the French pronoun '*il*' and the null-pronoun *pro* in pro-drop languages. Finally, strong pronouns pattern with full DPs in having independent referential content.

Weak pronouns can be used in impersonal constructions. This is the case of meteorological predicates, which do not specify any clearly understood subject of the predication. Weak pronouns such as the English '*it*', the French '*il*' and the null pronoun *pro* in Italian can be used with the meteorological predicate '*rain*':

(14) a. *pro* piove.
b. Il pleut.
c. It rains.

On the other hand, strong pronouns, such as the Italian '*esso*', the French '*lui*' and the English '*he*', cannot occur with meteorological predicates:

(15) a. *Esso piove.
b. *Lui pleut.
c. *He rains.

I will follow Rothstein (2001) assuming that a constituents must fill a propositional function of the type <e,t> to be the subject of a predication.[9] If the role of SubjP is to provide the subject of the predication at the syntax/semantics interface, deficient elements such as weak pronouns are expected to be unfit for this position. On the other hand, strong

[9] See Section 2.4.1 for a more detailed description of the interpretative role of the *subject-of-predication* feature.

pronouns and full DPs are expected to be in SubjP, without restrictions. In other words, we expect only strong pronouns and full DPs to appear in SpecSubjP. Differently, weak pronouns and expletives are expected to stay in SpecTP.

The first piece of evidence that strong pronouns and full DPs do not occupy the Spec,TP position comes from the distribution of parentheticals. As it is easy to show, parentheticals are allowed to appear between full DPs and the inflected verb in a number of languages. In (16) we can see examples from Italian, French, German and English:

(16) a. Ezra/Lui, secondo me, è un grande poeta.
b. Ezra/Lui, je crois, est un grand poète.
c. Ezra/er, ich glaube, ist ein wichtig Dichter
d. Ezra/He, I think, is a great poet.

As expected, weak pronouns and expletives do not allow for parentheticals[10]:

(17) a. *Il, je crois, a plu tout au long de la journée
b. *Es, ich glaube, hat geregnet den ganzen Tag.
c. *It, I think, rained the whole day.

The examples in (17) shows that weak pronouns must stay in SpecTP, since they are in a Spec-Head relation with the inflected verb.

Finally, consider that pre-verbal strong pronouns and full DPs can appear in Aux-to-Comp constructions:

(18) Essendo Ezra/lui un grande poeta…

As we already saw, this fact is an indication that the pre-verbal position occupied by strong pronouns and full DPs is not TopP, since Aux-to-Comp constructions forbid left dislocation. These data show that only elements with a true referential content can appear in SubjP. This enforce the hypothesis that this position has to do with syntax/semantics

[10] The prediction cannot be directly tested in Italian. Even though Italian has at least one 3rd person weak pronoun (*egli*), this element is obsolete. Since the weak pronoun *egli* is no longer used both in written and spoken language, it is hard for me (and for all the informants I have consulted) to have clear judgments about it. For this reason, I decided not to include the discussion of the examples with *egli*. I refer the reader to Cardinaletti (1997) for a detailed discussion of the issue.

interface requirements. In particular, I will assume that the role of the projection SubjP is to provide a referential individual that can fill a propositional function of the type <e,t>. This operation is carried out through the checking of a *subject-of predication* feature.

In conclusion, there are two different pre-verbal positions for subjects: a lower position, namely SpecTP, where the subject checks Case and ϕ-features; and a higher position, namely SpecSubjP, where the subject qualifies as the subject of predication at the syntax/semantics interface. I will assume that subjects raise to SpecSubjP to check a *subject-of-predication* feature. Moreover, we saw that only referential subject can have a *subject-of-predication* feature to check, while weak pronouns cannot. For this reason, weak pronouns are forced to stay in SpecTP:

(19) $[_{SubjP}$ DP/strong-pronouns $[_{TP}$ weak pronouns $[_{T} \ldots [_{VP} \ldots]]]$

| |

[Subject-of-predication] [ϕ-features/Case]

As for the position of the SubjP in the clausal architecture, the data from the Aux-to-Comp constructions show that this projection is located somewhere below the lowest TopP. We will follow Rizzi (2006) and Rizzi & Schlonsky (2007) who locate the SubjP between the highest projection of the TP domain and the lowest projection of the left periphery:

(20) Force Top* Foc/Wh Top* Fin **SubjP** TP

Since, SubjP realizes a scope/discourse property and it provides the landing site for Ā-movement, we will assume that it conforms to the Criterial Requirement illustrated in the past Section. I will adopt Rizzi's (2006) terminology, referring to pre-verbal subjects in SpecSubjP as *Criterial Subjects.*

### *2.2.2 Restrictions on Criterial Subjects.*

In this section, I will illustrate some constructions that restrict the presence of pre-verbal subjects. As we will see, there is a wide range of Ā-constructions in which subjects are not free to appear in the SubjP projection. In all these constructions, a lexical subject must stay

(or move) to a post-verbal position. In the literature, this phenomenon has usually been referred to as *subject inversion*.

The only case that has been extensively discussed in the literature is root *wh*-questions. The aim of this Section is to show that the phenomenon is actually more widespread that previously thought, in that it can be observed also in Free-relatives, Focus fronting constructions, Topic Resumptive Preposing and Exclamative constructions.

*2.2.2.1* Wh-*Questions.*

It is an old observation that in many Romance languages the position of the subject is constrained in root *wh*-questions. Specifically, it is generally forbidden to have a pre-verbal subject in conjunction with a fronted *wh*-phrase:

(21) a. *Cosa Ezra ha comprato?
What Ezra has bought?

b. *Chi Ezra ha conosciuto?
Who Ezra has met?

c. *Come Ezra ha suonato?
How Ezra has played?

d. *Dove Ezra ha suonato?
Where Ezra has played?

As the data in (21) show, this restriction involves both argument and adjuncts. In Section 2.6, we will see that there are some adjunct/argument asymmetries with respect to this phenomena. However, for the present moment, it is sufficient to note that the pre-verbal subject is not tolerated whenever a simple *wh*-phrase, such as a *wh*-word, is moved to the left periphery.

There are three different strategies to avoid this restriction. The first is *subject inversion*, which consist in leaving or moving the subject in a post-verbal position, as in (22). The second is to use a weak null pronoun *pro*, as in (23). Finally, the third is to dislocate the subject to a higher Topic position, as in (24):

(22) a. Cosa ha comprato Ezra?
What has bought Ezra?
b. Chi ha conosciuto Ezra?
Who has met Ezra?
c. Come ha suonato Ezra?
How has played Ezra?
d. Dove ha suonato Ezra?
Where has played Ezra?

(23) a. Cosa pro ha comprato?
What pro has bought?
b. Chi pro ha conosciuto?
Who pro has met?
c. Come pro ha suonato?
How pro has played?
d. Dove pro ha suonato?
Where pro has played?

(24) a. Ezra, cosa ha comprato?
Ezra, what has bought?
b. Ezra, chi ha conosciuto?
Ezra, who has met?
c. Ezra, come ha suonato?
Ezra, how has played?
d. Ezra, dove ha suonato?
Ezra, where has played?

The very same restriction on pre-verbal subjects is also found in a number of Romance languages, such as French (Poletto & Pollock 2004), Catalan (Sola 1992) Romanian (Rizzi 1996, Dobrovie-Sorin l994) and in a different varieties of Spanish (Castilian Spanish, Torrego 1984; Rio de la Plata Spanish, Salanova 2004, Richards 2010; and Caribbean

Spanish, Ordoñez and Olarrea 2005):

**French**

(25) a. *Où Yves va?
Where Yves goes?

b. *Qui Paul a vu?
Whom Paul has seen?

**Catalan**

(26) a. *Què en Joan farà?
What Joan do-FUT

b. Què farà en Joan?
What do-FUT Joan?

**Romanian**

(27) a. *Unde Ion s'a dus?
Where Ion has gone?

b. Unde s'a dus Ion?
Where has gone Ion?

**Castilian Spanish**

(28) a. *¿Que esos dos querían?
What those two wanted?

b. ¿Que querían esos dos?
What wanted those two?

c. *¿Con quien Juan vendrá hoy?
With whom John will come today?

d. ¿Con quien vendrá Juan hoy?
With whom will come John today?

**Rio de la Plata Spanish**

(29) a. * ¿Qué Juan vio en Buenos Aires?

What did Juan see in Buenos Aires?

b. ¿A quién Juan conoció en Buenos Aires?
Who did Juan meet in Buenos Aires?

c. ¿A quién Juan le envió la encomienda?
Who did Juan send the parcel to?

d. * ¿Quién Juan quiere que le escriba
Who does Juan want writing him?

**Caribbean Spanish**

(30) a. *¿Donde José va?
Where José goes?

b. ¿Donde va José?
Where goes José?

c. *¿Qué José quiere?
What José wants?

d. ¿Qué quiere José?
What wants José?

Although the fine-grained pattern in Spanish is complex, depending of the micro-variation among different varieties, the general pattern is confirmed. We will go through further details about Spanish in Section 2.3.3.

Cross-linguistic considerations seem to support the conclusion that the cause of the ungrammaticality of these examples lies in the presence of a subject in the SubjP. In particular, French and Spanish data show that elements that do not raise to the Criterial position, such as weak pronouns, do not interfere with the *wh*-movement:

(31) a. Où il va?
Where he goes?

b. Qui t'as vu?
Whom you-have seen?

(32) a. ¿Donde tu vas?

Where you go?

b. ¿Que tu quieres?
What you wants?

The restriction on Criterial Subjects in *wh*-questions does not always hold, however. A notable example of *wh*-construction that do not exhibit this constraint is represented by *reason/purpose* questions. As (33) shows, pre-verbal subjects are allowed in conjunction with *reason/purpose wh*-phrases:

(33) a. Perché Ezra ha conosciuto il sindaco?
Why$_{reason}$ Ezra has met the mayor?

b. Perché Ezra ha insultato il sindaco?
Why$_{purpose}$ Ezra has insulted the mayor?

These examples suggest that the restriction on pre-verbal subjects is related with the availability of *wh*-movement. It has been extensively argued in the literature that *reason/purpose wh*-phrases differ from other *wh*-phrases in that they are not moved from a VP-internal position. Rather, they are externally merged directly in the left periphery (Rizzi 2001, Stepanov & Tsai 2007, Schlonsky & Soare 2011, Donati & Cecchetto 2012, a.o.). As a consequence, *reason/purpose wh*-phrases take the whole subsequent proposition as a complement, without forming a Ā-chain.

*Reason/purpose wh*-questions provide further evidence that the restrictions on pre-verbal subjects are related to the availability of *wh*-movement. Let us consider the following examples:

(34) a. Perché Ezra ha detto che Thomas ha accettato l'incarico?
Why Ezra has said that Thomas has accepted the assignment?

b. Perché hai detto che Thomas ha accettato l'incarico?
Why have-2SG that Thomas has accepted the assignment?

In both the example in (34), *why* can, in principle, be interpreted as either modifying the matrix verb or the embedded verb. In the first case, the it is expected to be directly merged

in the matrix left-periphery. However, in the second case, it must have moved from the lower clause. As first noted by Cardinaletti (2006), the second option is only available in (34a). The presence of the pre-verbal subject forces the matrix-scope reading of *why*. In other words, the only available interpretation with pre-verbal subjects is the one that does not involve *wh*-movement.

Finally, a second piece of evidence pointing in this direction is represented by a variety of *wh*-constructions first discussed by Kurafuji (1996) in Japanese. In these constructions the accusative *wh*-phrase *nani*-o ('what-ACC') is used to form a *reason/purpose wh*-questions, with unergative and transitive predicates (35). This possibility is not available with unaccusative predicates and passives constructions (36):

(35) a. Karera-wa nani-o sawai-dei-ru no?
They-Top what-ACC clamor-PROG-PRES Q
*Why are they clamoring?*

b. John-wa nani-o henna uta bakari utat-tei-ru no no?
John-Top what-ACC funny song only sing-PROG-PRES Q
*Why is John singing only funny songs?*

(36) a. *Nani-ga henna uta bakari utaw-are-tei-ru no?
What-NOM funny song only sing-PASS-PROG-PRES Q
*Why have only funny songs been sung?*

b. *Nani-o syottyuu tokee-ga koware-ru no?
what-ACC often watch-Nom break-PRES Q
*Why does the watch get broken so often?*

As Endo (2007) notices, this asymmetry can be easily accommodated in compliance with the Burzio's generalization, which expresses the correlation between the presence of an external argument and Accusative Case marking. According to Burzio (1981), only unergatives and transitives, may assign structural accusative Case. On the other hand, predicates that do not assign subject theta roles, such as unaccusatives and passives, cannot license structural accusative Case. Thus, the presence of accusative morphology and the

unacceptability of the unaccusative and passive examples indicate that the *wh*-phrase *nani*-o has been moved from a VP-internal position. In other words, even though the *wh*-phrase *what* is interpreted as a *reason/purpose* wh-phrase, it differs from ordinary *reason/purpose* *wh*-phrases in that it is not externally merged in the left-periphery: rather, it has been moved from the VP up to the left periphery (reasonably in the position specialized for *reason/purpose* interrogative elements).

The very same phenomenon can be found in the northern variety of spoken Italian. Differently from Japanese, it is not possible to directly observe the accusative morphology on the Italian *wh*-phrase *Cosa* ('what'). However, Italian parallel Japanese with respect the asymmetry between unergative/transitive (37) and unaccusative/passive predicates (38). I will then assume that the *wh*-phrase *Cosa* ('what') moves from a VP internal position in the examples in (37): [11]

(37) a. Cosa gridi?
What shout?
*Why the hell do you shout?*

b. Cosa ordini sempre la birra?
What order always the beer?
*Why the hell do you always order beer?*

(38) a. *Cosa è stato arrestato?
What is been arrested?
*Why the hell has he been arrested?*

b. ??Cosa ti rompi una gamba?
What to-you-CL break a leg?
*Why the hell do you break your leg?*

Crucially, pre-verbal subjects are not allowed in these constructions and subject inversion is required:

[11] The meaning of these constructions has a special pragmatic flavour, in that the *reason/purpose wh*-phrase is understood to have an exclamative force. For these reason, I will translate the *wh*-phrase *Cosa* with the English "*why the hell*".

(39) a. *Cosa Ezra grida?
What Ezra shouts?

b. Cosa grida Ezra?
What shouts Ezra?
*Why the hell does Ezra shout*

(40) a. *Cosa Ezra ordina sempre la birra?
What Ezra order always the beer?

b. Cosa ordina sempre la birra Ezra?
What order always the beer Ezra?
*Why the hell does Ezra always order beer?*

These cases suggest that when a *reason/purpose* is moved from a VP-internal position it imposes the same restriction imposed by other *wh*-phrases. The generalization that seems to emerge is that Criterial Subjects are not allowed whenever *wh*-movement takes place.
Unfortunately, things seem to be more complicated that this. Let us consider some previously unnoticed cases, in which subjects can appear in pre-verbal position in conjunction with genuine *wh*-movement:

(41) a. In quale città Ezra ha conosciuto il sindaco?
*In which city Ezra has met the mayor?*

b. In quale circostanza Ezra ha conosciuto il sindaco?
*In which circumstance Ezra has met the mayor?*

c. In che modo Ezra ha conosciuto il sindaco?
*In which way John has met the mayor?*

The data in (41) show that the constraint on pre-verbal subjects does not always hold. Furthermore, similar cases are also attested in Castilian Spanish:

(42) a. ¿En que ciudad Juan fue proclamado Rey?
In which city Juan was proclaimed King?

b. ¿En que ocasión Juan fue proclamado Rey?
In which occasion Juan was proclaimed King?

c. ¿En que medida Juan ha contribuido a eso?
In what way Juan has contributed to that?

At first glance, the empirical generalization that arises from these data is that adjunct prepositional phrases allow for pre-verbal subjects. As it will turn out to be, this generalization is roughly correct. We will see in Section 2.3 how these examples constitute a crucial challenge for all the current accounts proposed in the literature and call for a new approach. An analysis of these cases will be provided in Section 2.5.

*2.2.2.2 Free Relatives*

Free relatives, also known as headless relatives, get their name from the fact that they do not modify a noun phrase. The distributional properties of free relatives lead to the conclusion that, differently from embedded *wh*-questions, free relatives are noun phrases (namely DPs) containing a CP.[12] This can be seen taking into consideration the selectional behaviour of different matrix verbs. Differently from clausal interrogative complements, free relatives are compatible with verbs that select for nominal complements:

(43) a. Dovresti picchiare Ezra.
Should-COND-2SG beat Ezra.
*You should beat Ezra.*

b. Dovresti picchiare chi hai conosciuto alla festa.
Should-COND-2SG beat who have-2SG met at-the party.
*You should beat who you met at the party.*

c. *Dovresti picchiare se conoscere qualcuno alla festa.
Should-COND-2SG beat whether meet-INF somebody at-the party.
**You should beat whether you met somebody at the party.*

Over the years, a much debated issue has been the position of the *wh*-word, which has been claimed to be base generated as head of its phrase (Bresnan & Grimshaw 1978) or to be moved in the left periphery of the embedded CP (Groos and van Riemsdijk 1979, Harbert

[12] See also Caponigro (2003) for a list of semantic tests pointing to the same conclusion.

1983, Suñer 1983, 1984). We can remain agnostic, for the present moment and wait to see which is the best theory for our purposes. I will take position later, when I will provide an analysis of all these the constructions in Section 2.4.2.

With this much as background, consider the following examples: [13, 14]

(44) a. *?So bene chi Ezra conosce.
I know well who Ezra knows.

b. So bene chi conosce Gianni.
I know well who Ezra knows.

(45) a. *?So bene dove Ezra va.
I know well where Ezra goes.

b. So bene dove va Ezra.
I know well where goes Ezra.

(46) g. *?So bene come Ezra ha suonato.
I know well how Ezra has played

h. So bene come ha suonato Ezra.

---

[13] The examples in (44-46) are totally unacceptable to me and to most of the speakers I have consulted. However, it appears that some speakers are more liberal than me, in perceiving these examples as a little less degraded than *wh*-questions with pre-verbal subjects. Anyway, even with respect to these speakers, subject inversion is preferred.

[14] It is not entirely clear whether Italian admits free relatives with the unanimated *wh*-phrase '*Cosa*'. Even though it is possible to construct examples that closely resemble free relatives (ia), their status is controversial, since they do not exhibit the expected selectional behaviour (ib):

(i) a. So bene cosa hai comprato.
Know-1SG well what have-2SG bought.
b. *Dovresti restituire cosa hai comprato.
Should-2SG return what have-2SG bought.

Since it is not clear whether these sentences do involve a genuine free relative or they rather involve a interrogative clausal complement, I decided not to include them in the discussion about Free Relatives because of their controversial status. Notice, however, that their behaviour with respect to the pre-verbal subjects follows the pattern of interrogative and free relatives:

(ii) a. *?So bene cosa Ezra ha fatto.
*I know well what Ezra has done*
b. So bene cosa ha fatto Ezra.
*I know well what has done Ezra.*

I know well how has played Ezra.

As these examples show, free relatives exhibit the same behaviour that we observed in *wh*-questions and Focus constructions. To the best of my knowledge, this phenomenon has been overlooked in the literature on free relatives.

The pattern in (44-46) found also cross-linguistic confirmation in other Romance languages. The following examples show that per-verbal subjects are forbidden in French free relatives as well:

(47) a. *?Je sais bien qui Ezra connais.
I know well who Ezra knows.
b. Je sais bien qui connais Ezra.
I know well who Ezra knows.

(48) a. * ?Je sais bien ou Ezra va.
I know well where Ezra goes.
b. Je sais bien ou il va Ezra.
I know well where he-CL goes Ezra.

(49) a. * ?Je sais bien quoi Ezra a fait.
I know well what Ezra has done
b. Je sais bien ce qu'il a fait Ezra.
I know well what he-CL has done Ezra.

(50) a. *Je sais bien comment Ezra a joué.
I know well how Ezra has played
b. Je sais bien comment il a joué Ezra
I know well how he-CL has played Ezra.

(51) a. Je sais bien ou il va.
I know well where he-CL goes.
b. Je sais bien ce qu'il a fait
I know well what he-CL has done.

c. Je sais bien comment il a joué.
I know well how he-CL has played.

Moreover, notice that French confirms that the problem arise because of Criterial subjects. As these data show, only strong pronouns and full DPs are forbidden in free relatives. On the other hand, the weak pronoun *il* is perfectly acceptable in pre-verbal position (51), as it is even required in that position in may cases of subject inversion (47b, 48b, 49b, 250b). In conclusion, these data show that Criterial subject in SpecSubjP is forbidden in free relatives, on a par with *wh*-questions.

*2.2.2.3 Focus*

Italian has been claimed to posses two different focal positions: a lower post-verbal position (Calabrese 1987, Belletti & Schlonsky 1995, Belletti 2004) and a higher position in the left-periphery (Rizzi 1997). When the latter option is chosen, pre-verbal subjects are deviant and subject inversion is preferred. Compared to *wh*-questions, pre-verbal subjects with Focus fronting usually show a milder decrease of acceptability. However, all the informants I have consulted found a sharp contrast between pre- and post-verbal subjects when they are contrasted within minimal couples. The following cases illustrate the phenomena with contrastive Focus:

(52) a. ??SOLO BISCOTTI Ezra mangia (non solo patatine fritte).
*Only cookies Ezra eats (not only french fries).*
b. SOLO BISCOTTI mangia Ezra (non solo patatine fritte).
*Only cookies eats Ezra (not only french fries).*

(53) a. ??Il GIORNALE Ezra ha comprato (non il libro).
*THE NEWSPAPER Ezra has bought (not the book).*
b. ??Il GIORNALE ha comprato Ezra (non il libro).
*THE NEWSPAPER has bought Ezra (not the book).*

Recall that Focus and *wh*-movement are likely to target the same projection in the left-periphery (Rizzi 1997; see. Section 1.1). Bearing this in mind, the contrasts in the examples

(52) and (53) and the data on *wh*-questions discussed in the previous Section are likely to point to a common cause.

*2.2.2.4 Topic Resumptive Preposing and CLLD*

Another construction in which the occurrence of pre-verbal subjects is constrained is Topic Resumptive Preposing (Cinque 1990, Benincà 2001, Cardinaletti 2009). In these constructions a constituent that somehow matches a previously mentioned piece of information is moved to the left-periphery. In the example (54) the moved constituent *la stessa poesia* ('the same poem') matches the previous constituent *una poesia* ('a poem') :

(54) Thomas lesse una poesia di fronte agli studenti. **La stessa poesia** lesse poi Ezra
*Thomas read a poem to the students. The same poem read then Ezra*
davanti a noi.
*to us.*

Topic Resumptive Preposing has a controversial status. In particular, it appears to have some properties in common both with Topicalization and Focalization, without being reducible to any of them. From a semantic point of view, the Topic Resumptive Preposing bears a likeness to standard topicalization, namely CLLD. Similarly to CLLD, Topic Resumptive Preposing involves the fronting of a constituent expressing old information, in our case *la stessa poesia* ('the same poem'). However, it looks pragmatically more constrained, since typically the information expressed by Topic Resumptive Preposing must be verbally expressed in the previous discourse. In this kind of constructions, the fronted constituent either resumes an identical constituent in the preceding discourse or it is pragmatically linked with a previous piece of information expressed verbally. This is not what happens with CLLD, which can actually be used to refer to context-implicit information.

For example, let us set a context in which both William and Allen are reading together the poem recited to the students by Thomas and subsequently by Ezra. In this context, the information about the poem are implicit: both William and Allen know about the poem,

even if none of them said anything about it in the previous discourse. In such a context, it is odd for either William or Allen to utter (55). On the other hand, it would be perfectly acceptable to utter (56). Differently from the CLLD, the Topic Resumptive Preposing cannot be used if the discourse participants had not verbally mentioned the poem that constitute the Topic of the sentence:

(55) #La stessa poesia recitò poi Ezra.
The same poem recited-3SG then Ezra.

(56) Questa poesia l'ha recitata anche Ezra.
This poem it-CL has recited also Ezra.

Another crucial difference between CLLD and Topic Resumptive Preposing is that, in the latter case, the moved constituent is not resumed by a clitic pronoun. In this respect Topic Resumptive Preposing resembles Focalization.

As for pre-verbal subjects, Topic Resumptive Preposing resembles *wh*-constructions, free relatives and focus constructions, in that it does not allow pre-verbal subjects:

(57) Thomas lesse un poesia di fronte agli studenti. *La stessa poesia Ezra lesse poi davanti a noi.
*Thomas read a poem to the students. The same poem Ezra read then to us.*

As it is easy to see, CLLD does not pattern in this respect with Topic Resumptive Preposing:

(58) Questa poesia Ezra l'ha letta davanti a noi.
This poem Ezra it-CL has read to us.

Even though Topic Resumptive Preposing constructions share some semantics properties with Topics, they do not pattern with them with respect to pre-verbal subjects. Note that the difference between (57) and (58) cannot be imputed to the mere presence of the operator *stesso* ('same'). We can easily build a CLLD construction using the very same type of constituents that usually are required by Topic Resumptive Preposing and see that, also in

this case, the CLLD allows the subject to stay in pre-verbal position:

(59) La stessa poesia Ezra l'ha lesse poi davanti a noi.
The same poem Ezra it-CL read then to us.

Therefore, Topic Resumptive Preposing display the same restrictions imposed by those movement constructions that do not involve resumptive pronouns, such as *wh*-movement and focus fronting. These examples suggest that the restrictions on the pre-verbal subjects are due to the syntactic machinery implied in building the Ā-dependency.

*2.2.2.5 Exclamative Constructions*

The last type of constructions that we will discuss are Exclamative Constructions. Radford's (2009) proposes to treat these constructions as involving *wh*-movement. According to this analysis, the *wh*-constituent moves to SpecForceP to check an exclamative feature, realizing thus the illocutionary force of the sentence (see also Haegeman 2013).

Similarly to the other *wh*-constructions, these structures disallow completely the occurrence of subjects in pre-verbal position and require subject inversion:

(60) a. *Quanto il tuo libro ha fatto scalpore!
How much your book caused a sensation!

b. Quanto ha fatto scalpore il tuo libro!
How much caused a sensation your book!

c. *Come Ezra è contento di vedervi!
How Ezra is happy to see you!

d. Come è contento di vedervi Ezra!
How is happy to see you Ezra!

Interestingly, in exclamative constructions the restriction on pre-verbal subjects seems to be flexible, as in the case of *wh*-questions. Consider the following cases:

(61) a. Per quanto tempo Ezra è stato un nostro buon amico!
For how-much time Ezra is been a ours good friend!

b. In quante città Ezra ha vissuto in questi anni!
In which cities Ezra has lived in these years!

These sentences closely resemble the cases discussed at the end of Section 2.2.2.1. Also in these cases, adjunct prepositional phrases appears to allow for pre-verbal subjects. Again, we will refer the reader to Section 2.5 for a possible solution.

### *2.2.3. Conclusion*

In this Section, I illustrated a number constructions that disallow subjects to stay in pre-verbal position.

All these constructions seem to involve Ā-movement to the left periphery. I also showed that the restriction is crucially related with the presence of Criterial Subjects, that is subjects in SpecSubjP, since weak pronouns have been showed to behave differently. At the same time, I illustrated some A-'constructions that tolerate subject in pre-verbal position. Specifically, CLLD, reason/purpose *wh*-questions and some cases in which *wh*-prepositional phrases allow for pre-verbal subjects. Table 1 summarize the results of this section.

**Table 1**

| | Pre-verbal subject | Post-verbal subject | Null Subject (weak pronouns) | Left-dislocated subject |
|---|---|---|---|---|
| Root *wh*-questions | * (WhPs)<br>√ (Adjunct-PPs) | √ | √ | √ |
| Focus Fronting | * | √ | √ | √ |
| Free Relatives | * | √ | √ | √ |
| Topic | * | √ | √ | √ |

| | | | | |
|---|---|---|---|---|
| Resumptive Preposing | | | | |
| Exclamative Constructions | * (WhPs)<br>√ (Adjunct-PPs) | √ | √ | √ |
| CLLD | √ | √ | √ | √ |
| *Reason/purpose wh*-questions | √ (with external merge in the left periphery)<br>*(with movement from VP-internal positions) | √ | √ | √ |
| | | | | |

## 2.3 Previous Analyses

### *2.3.1 Verb Movement Approach: Rizzi 1996, Guasti 1996.*

An influential analysis of the restrictions on pre-verbal subjects in *wh*-questions has been provided by Rizzi (1996), which proposed that the ban on pre-verbal subjects should be linked with T-to-C verb movement. In its analysis of verb second phenomena, Rizzi (1996) proposed that the inflected verb must raise to the left periphery to satisfy the *WH*-Criterion, a Criterial Requirement (see Section 1.2) imposed by the interrogative functional projections:

(62) *WH*-Criterion:

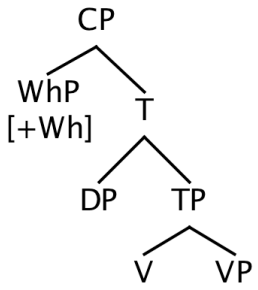
*a.* Every *wh*-operator must be in a Spec-Head relation with a [+*wh*] X.

*b*. Every [+*wh*]X must be in a Spec-Head relation with a *wh*-operator.

The *WH*-Criterion requires a *wh*-phrase and a [+*wh*] head to be in a Spec-Head relation. Assuming that the inflected verb bears a *wh*- feature, the *WH*-Criterion requires the verb to move from T to C. According to Rizzi (1996), this movement would be responsible for familiar verb second phenomena.

Among other things, Rizzi claims that this movement would leave no room for pre-verbal subjects in *wh*-questions. Therefore, pre-verbal subjects would be forbidden because, otherwise, the *WH*-Criterion could not be satisfied:

(63)



The first problem that this proposal have to face is to explain why Italian cannot make use of *aux-to-comp* movement, to satisfy the *WH*-Criterion leaving the subject in pre-verbal position:

(64) *Cosa ha Gianni comprato?
What has John bought?

Building on Rizzi & Roberts (1989), Rizzi suggests an independent explanation in terms of Case theory. He proposes that, in Italian, Nominative Case must be assigned under Government. This move has the effect of imposing adjacency between the assigner (the verb) and the assignee (the lexical subject). As a consequence, T to C movement of the Case assigner would destroy the configuration required for Case assignment. In this perspective, (64) would be ruled out as a violation of the *Case Filter* (Chomsky 1981). Because of this restriction, Italian would rely on two main strategies: leaving or moving the subject in post-verbal, as in (65a) (assuming that Italian has an independent Case assigner for post-verbal subjects) and *null*-subjects, as in (65b) (assuming that *pro* can incorporate into the inflected verb in C; Baker 1988). It is still not clear, however, how this proposal can comprise Topicalization, as a rescuing strategy (65c):

(65) a. Cosa ha *pro* comprato?
What has *pro* bought*?*

b. Cosa ha comprato Gianni?
What has bought John?

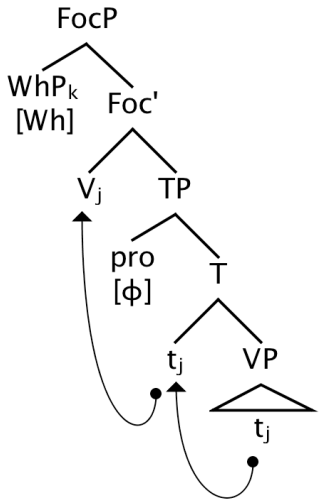
c. Gianni, cosa ha comprato?
John, what has bought?

In conclusion, Rizzi proposes that the ban on pre-verbal subjects in *wh*-questions depends on two separate factors operating at same time: on the one hand, the *WH*-Criterion requires the verb to raise to left-periphery; on the other hand, a restriction on the configuration for Nominative Assignment prevents the lexical subject to stay in SpecTP.

Building on Rizzi (1996), Guasti (1996) provided an refined analysis in the spirit of the minimalist framework. The core idea that the restrictions on pre-verbal subjects ultimately

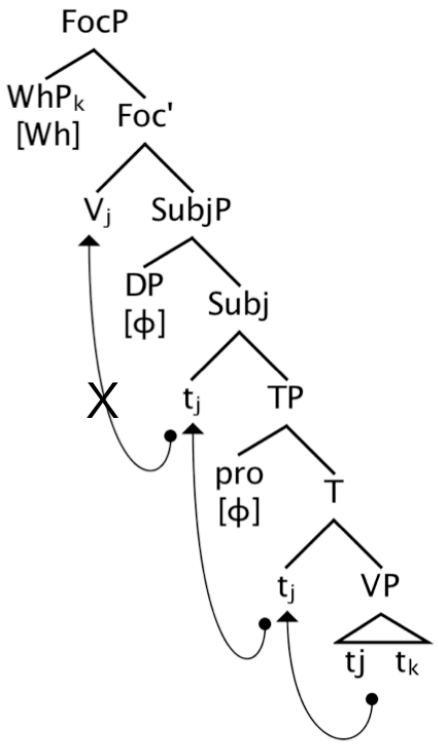
depend on verb movement is maintained. Guasti assumes that in Italian verb movement to C takes place after Spell-out, in compliance with the '*Procrastinate Principle*' proposed by Chomsky (1995). This would explain the lack of Aux-to-Comp constructions in Italian (64). Verb movement proceeds, thus, in two steps: first, the verb moves overtly from V to T and, secondly, it moves covertly to C to satisfy the *WH-Criterion*. Along this derivation the verb checks the ϕ-features of *pro* in TP and the *wh*-features of the *wh*-phrase in CP:

(66)




According to Guasti's proposal, the derivation cannot converge whenever a DP appears in SpecSubjP. In accomplishing the second step of the derivation, the verb must pass through the SubjP, entering a new agreement configuration with the lexical subject. Assuming that it is not possible to check the same features twice (Chomsky 1995), the derivation in (67) cannot converge. Once again, the restrictions on the pre-verbal subject are analysed as related to the movement of the verb to the left periphery:

(67)




Despite the appeal of the verb movement approaches, there are a number of theoretical and empirical problems, suggesting that the whole approach is on the wrong track. Let us begin considering some empirical problems of the verb movement approaches. In confirmation of the fact that *wh*-questions require the verb to be in a Spec-Head relation with the *wh*-phrase, Rizzi (2004) provides the following example:

(68) a. *Che cosa, rapidamente, hanno fatto?
what rapidly [they] have done?

b. *Che cosa di nuovo hanno fatto?
what again [they] have done ?

c. *Che cosa mica ha fatto, Gianni?
what not has done, Gianni?

At first glance, the impossibility of separating the *wh*-phrase and the verb with the adverbs

in (68) enforces the idea that these elements are adjacent. However, as noted by Cardinaletti (2006) adverbs which belong to the high-portion of Cinque's hierarchy can actually separate the *wh*-phrase and the verb:

(69) a. Cosa francamente dovevamo evitare?
What frankly should-1PL avoid?

b. Cosa forse potevamo evitare?
What perhaps could-1PL avoid?

c. Chi necessariamente ha torto?
Who necessarily has wrong

d. Chi saggiamente ha invitato Ezra?
Who wisely has invited Ezra?

Assuming that adverbs occur in designated functional projections and are not adjoined (Pollock 1989, Cinque 1999), the *wh*-phrase and the verb in (69) necessarily occur in two different projections. These data are hardly manageable for Rizzi (1996)'s original proposal, because the *WH*-Criterion requires a Spec-Head configuration between the *wh*-phrase and the verb. At first sight, Guasti (1996) seems to be an advancement with respect to these data. Given the assumption that T-to-C movement in Italian takes place after Spell-Out, the presence of adverbs does not imply a violation of the *WH*-Criterion. The acceptability of the example in (69) can be accounted for, since the verb might have moved covertly across the adverbs, satisfying the *WH*-Criterion after Spell-Out. Unfortunately, even if this solution may account for the acceptability of (69), it could not account for the unacceptability of (68). If the *WH*-Criterion can be satisfied *via* covert movement across the adverbs, the ungrammaticality of (68) will suddenly become puzzling. In conclusion, the asymmetry between high and low adverbs suggests that covert movement cannot accommodate the whole pattern of data.

As proposed by Cardinaletti (2006), the most reasonable way to account for the contrast between (68) and (69) is to assume that the finite verb moves higher in interrogative than in declarative sentences, without however reaching the head position in Foc. In particular, in declarative sentences, the highest position of the verb is between habitual and repetitive

adverbs (70a) (Cinque 1999); while in interrogative sentences this is its lowest position (70b) (Cardinaletti 2006):

(70) a. *francamente, *forse, *saggiamente, *di solito/solitamente |**VERB**| di nuovo**,** spesso/raramente, rapidamente, mica, già…

b. francamente, forse, saggiamente/stupidamente, di solito/solitamente |**VERB**| *di nuovo**,** *spesso/raramente, *rapidamente, *mica, *già…

Furthermore, assuming that verb moves to the interrogative projection fails to account for the distribution of parentheticals and adverbs:

(71) Chi, secondo te, hanno scelto alla fine?
Whom, according to you have-3PL chosen in the end?
*According to you, who did they choose, in the end?*

As we already saw, parentheticals can be used to determine whether two elements are in a Spec-Head relation, since they can only adjoin to maximal projections (Cardinaletti 1997). The example in (71) shows that the *wh*-phrase and the verb are not in such a relation, since parentheticals can safely appear between them.

Another empirical challenge to the verb movement approaches is represented from those cases in which an interrogative prepositional phrase appears with a pre-verbal subjects without leading to unacceptability. Let's repeat the pattern of data for the sake of illustration:

(72) a. In quale città Gianni ha conosciuto il sindaco?
In which city John has met the mayor?

b. In quale circostanza Gianni ha conosciuto il sindaco?
In which circumstance John has met the mayor?

c. In che modo Gianni ha conosciuto il sindaco?
In which way John has met the mayor?

Both Rizzi (1996) and Guasti (1996) cannot account for these data. There is no obvious way to reduce the unexpected grammaticality of (72) to a constraint on verb movement, since the only difference seems to be the structure of the fronted element. These data, along with the

facts in (69) and (71), seriously undermine the hypothesis that the restrictions on the pre-verbal subjects in *wh*-questions is related to verb raising. I will, therefore, abandon this approach, in search of a more promising one.

Before going further, consider an additional problem with the verb movement approach. In Section 2.2 we went through a wide range of constructions that display the same restriction on the position of subjects. Crucially, the verb movement approach has nothing to say about many of them, because most of them do not involve verb movement at all. In particular, Free Relatives, Focus fronting, Topic Resumptive Preposing and Exclamative constructions do not require verb raising. Of course, one can attempt to provide an independent analysis for constructions other than *wh*-questions, but it is at least desirable to provide a unified account for all these fronting constructions since they all involve Ā-movement to the left periphery for scope-discourse purposes. Therefore, besides being empirically inadequate, verb raising approaches appear to be too short-sighted from a conceptual point of view, since they are unable to capture the similarities between all the constructions that disallow pre-verbal subjects.

### *2.3.2 Fin as an Escape Hatch: Cardinaletti (2009).*

In this Section I will discuss an alternative account proposed by Cardinaletti (2009), which ties the restrictions on pre-verbal subjects to the idea that Ā-movement to the left-periphery involves FinP most of the times. This approach represents an actual advancement compared to the verb raising approach, in that, as we will see, it can be generalized to constructions other than *wh*-questions. However, I will show that it cannot account for the new cases that we presented in section 2.2.1.

According to Cardinaletti (2009), Fin can be regarded as the escape hatch for all movements into the left periphery. As I mentioned in Section 1.2., Fin is the interface projection between the TP and the CP layers. On the TP side, Fin can match some properties of the inflected domain, while, on the CP side, it can be taken to encode the features of the projection(s) activated in the left periphery. According to this view, Fin

matches the features with which the XPs are endowed in order to be fronted. Fin, thus, attracts the constituents endowed with the features to be checked in the left periphery. Building on Haegeman (1996), Cardinaletti proposes that A'-constructions that involve the binding of a variable (e.g. *wh*-movement, focus fronting and Topic Resumptive Preposing) always involve Fin. This can happen in two ways: either *via* a null operator in SpecFinP binding the trace of the moved constituent (73) or *via* the movement of the constituent itself through SpecFinP (74):

(73) a. $[_{FocP}$ A chi$_j$ $[_{FinP}$ OP$_j$ $[_{SubjP}$ $[_{TP}$ parlò Ezra t$_j$]]]]?
To whom spoke-3SG Ezra

b. $[_{FocP}$ A THOMAS$_j$ $[_{FinP}$ OP$_j$ $[_{SubjP}$ $[_{TP}$ parlò Ezra t$_j$]]]]?
To Thomas spoke-3SG Ezra

c. $[_{FocP}$ La stessa poesia$_j$ $[_{FinP}$ OP$_j$ $[_{SubjP}$ $[_{TP}$ lesse poi Ezra t$_j$]]]]
The same poem read then Ezra

(74) a. $[_{FocP}$ A chi$_j$ $[_{FinP}$ *t*$_j$ $[_{SubjP}$ $[_{TP}$ parlò Ezra t$_j$]]]]?
To whom spoke-3SG Ezra

b. $[_{FocP}$ A THOMAS$_j$ $[_{FinP}$ *t*$_j$ $[_{SubjP}$ $[_{TP}$ parlò Ezra t$_j$]]]]?
To Thomas spoke-3SG Ezra

c. $[_{FocP}$ La stessa poesia$_j$ $[_{FinP}$ *t*$_j$ $[_{SubjP}$ $[_{TP}$ lesse poi Ezra t$_j$]]]]?
The same poem read then Ezra

On the other hand, Cardinaletti follows Rizzi (1997) in claiming that CLLD does not involve Fin at all. Rizzi (1997) proposed that no variable binding is involved in CLLD, since it does not display the same operator-like properties of Focus (and *wh*-movement). The CLLD, instead, would involve the binding of a null constant by means of a clitic resumptive pronoun (see also Chomsky 1977 and Cinque 1990). This operation would not involve Fin:

(75) $[_{TopicP}$ Ezra$_i$, $[_{FinP}$ $[_{SubjP}$ Dorothy $[_{TP}$ lo$_j$ ha sempre incoraggiato *nc*$_i$]]]
Ezra Dorothy him-CL has always encouraged

In addition, Cardinaletti (2009) follows Rizzi & Schlonsky (2007) assuming that Fin can play a role in the satisfaction of the Subject Criterion. Rizzi and Shlonsky's (2006)

proposed that Fin can work as an expletive-like element for the licensing of Subj. [15] In particular, they propose that the Subject Criterion can be satisfied by Fin, when Fin is enriched with the feature of the left-peripheral constituent it attracts. Otherwise, Fin would not be able to license Subj and satisfy the Subject Criterion. A consequence of this proposal, is that the pre-verbal subject is not possible whenever the Subject Criterion is satisfied *via* Fin: in these cases the subject constituent would have no reason to raise to SpecSubjP, being the Subject Criterion already satisfied.

Building on this proposal, Cardinaletti (2009) introduces the following principle:

(76) In the presence of an operator in SpecFinP, Fin cannot satisfy the Subject Criterion and a pre-verbal subject is possible.

This principle would be precisely what prevents the pre-verbal subject to appear in some configuration in Italian. Assume, for example, that in *wh*-questions the *wh*-phrase moves through Fin to reach SpecFocP, as in (74a). According to the generalization in (76), when Subj is licensed by Fin, the subject constituent have no reasons to move in SpecSubjP. This would prevent the subject to appear in pre-verbal position.

The same thing would happen in Focus fronting and Topic Resumptive Preposing. As long as they receive a representation like those in (74b) and (74c), the pre-verbal subject is predicted to be forbidden. In principle, this analysis could be extended also to Free Relatives (Section 2.2.2.3) and Exclamative Constructions (Section 2.2.2.5).

There are some additional considerations to make. By assumption, movement through Fin is not the only strategy available. As we mentioned, Cardinaletti (2009) admit a second possible way to derive these structures. In particular, we can put a null operator in SpecFinP to bind the trace of the moved constituent, as in (73). Cardinaletti (2009) claims that this option is available only with Focus fronting, but not with interrogative *wh*-movement. She

[15] The Subject Criterion has been claimed to be realizable also by means of dummy elements, such as expletives or weak pronouns (Rizzi & Schlonsky 2007). The availability of a purely formal satisfaction of the Subject Criterion seems to constitute an exception among the set of the Criteria. Rizzi (2004) argues that such an exception would not be completely unexpected. It is a typical feature of natural languages to introduce interpretively motivated devices, turning them into purely formal elements. For example, the extension of the grammatical gender beyond natural genders can be considered as a case of features with semantic content, operating in a purely formal way.

argues that a quantificational operator in SpecFinP would violate the principle of Full Interpretation (Chomsky 1981). If a null operator is inserted in SpecFinP, it will bind the variable in object position, leaving the *wh*-operator in SpecFocP with no variable to bind. Cardinaletti (2009) argues that this dual analysis offers an explanation for the fact that grammaticality judgments are fuzzier when it comes to focus fronting, compared to *wh*-questions.

On the other hand, things are different in CLLD. Given the representation in (75), Fin is not involved at all. As a consequence, Fin cannot license Subj, because it cannot match any feature of the attracted constituent. Thus, the subject constituent can move in SpecSubjP in order to satisfy the Subject Criterion. For this reason, pre-verbal subjects would be allowed in CLLD constructions.

Differently from the verb raising approaches, this proposal has the undeniable advantage of providing a unified account for all the constructions that we discussed in Section 2.2. However, some there still are some cases that cannot be handled by this analysis. Again, the relevant cases are those in which interrogative prepositional phrases tolerate pre-verbal subjects (repeated here as (77)):

(77) a. In quale città Gianni ha conosciuto il sindaco?
In which city John has met the mayor?

b. In quale circostanza Gianni ha conosciuto il sindaco?
In which circumstance John has met the mayor?

c. In che modo Gianni ha conosciuto il sindaco?
In which way John has met the mayor?

These cases cannot be naturally managed by Cardinaletti (2009). As a matter of fact, in the examples in (77), nothing indicates a different behavior of Fin. The only way to account for these examples would be to put a null operator in Fin, giving the following representation for the sentences in (77):

(78) a. $[_{FocP}$ In quale città$_j$ $[_{FinP}$ OP$_j$ $[_{SubjP}$ Gianni $[_{TP}$ ha conosciuto il sindaco $t_j]]]]$?

b. $[_{FocP}$ Di quale città$_j$ $[_{FinP}$ OP$_j$ $[_{SubjP}$ Gianni $[_{TP}$ ha conosciuto il sindaco $t_j]]]]$?

c. [$_{FocP}$ In quale circostanza$_j$ [$_{FinP}$ OP$_j$ [$_{SubjP}$ Gianni [$_{TP}$ ha conosciuto il sindaco $t_j$]]]]?

d. [$_{FocP}$ In che modo$_j$ [$_{FinP}$ OP$_j$ [$_{SubjP}$ Gianni [$_{TP}$ ha conosciuto il sindaco $t_j$]]]]

In principle, this representation would make the right prediction. However, once we adopted (78), it is not clear how we can muddle through the fact that this representation is expected to violate the principle of Full Interpretation. In conclusion, the examples in (77) constitute a serious challenge also for Cardinaletti's (2009) proposal.

### *2.3.3 Distinctness: Salanova (2004), Richards (2010).*

A completely different approach to these issues has been adopted by Richards (2010) and Salanova (2004), who propose that the restrictions on pre-verbal subjects should be traced back to a general constraint on the syntactic output for the sake of linearization, called *Distinctness.*

Let's first introduce briefly how Distinctness works. Building on Chomsky (1995, 2000, 2001), Richards argues that the structures built by the syntactic computation are underspecified with respect to the information about linearization. The linear order is actually obtained by the operation Spell-Out which sends the syntactic structure to the phonological interface (henceforth PF).

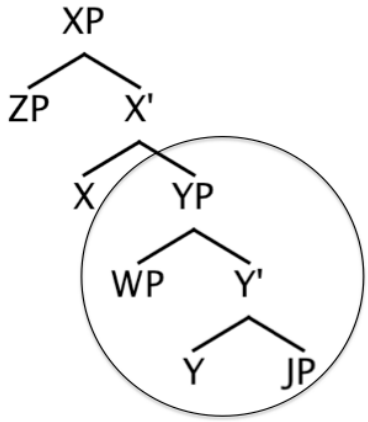
Given a syntactic tree, Spell-Out takes the set of pairs of asymmetrically c-commanding phrases (and their heads) and generates from this a set of instructions for linearization. The instructions about linearization are obtained by means of a version of the Linear Correspondence Axiom (LCA) proposed by Kayne (1994).

Richards also adopts a multiple Spell-Out model couched in the Phase Theory proposed by Chomsky (2000, 2001, 2008). According to this model, the syntactic output is sent to PF every time a strong phase is constructed. Richards assumes that the familiar constituents CP, (transitive) *v*P and PP are strong phases. Additionally, the constituents headed by prepositional Case assigners (henceforth, KPs) are also assumed to be strong phases.

When Spell-Out sends the syntactic material from a strong phase to PF, it makes all of it inaccessible to further syntactic operations, apart from its edge, which is taken to be the highest head of the phase along with its specifiers. Crucially, the edge of a phase is linearized with the material in the higher phase (Nissenbaum 2000). The portion of the tree that is sent to PF by an application of Spell-Out is called "*Spell-Out domain*".

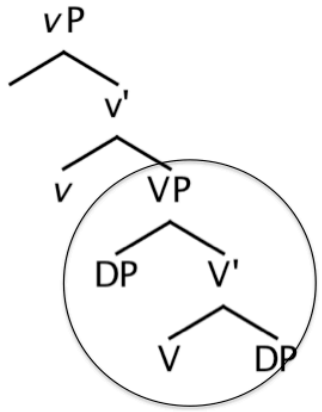
For example, suppose XP is a strong phase. Then, YP, WP, Y and JP will be linearized when Spell-Out applies at the end of the phase. While XP, ZP and X will be linearized (along with the material belonging to the higher phase) at the next application of Spell-Out:

(79)




The core proposal of Richards is that Spell-Out cannot specify the specific linear order, if two elements with the same syntactic label are within the same Spell-Out domain. For example, if two DPs are both in the VP, it will be impossible for Spell-Out to decide how they must be ordered and the derivation will crash:

(80)




Distinctness is essentially the requirement for the elements in the Spell-Out domain to be distinct with respect to their label. Richards (2010) claims that syntax can make use of different strategies to avoid Distinctness violations. One of these strategies is to suppress movement operations that, otherwise, would create unlinearizable structures.

According to Salanova (2004), the restrictions on pre-verbal subjects in *wh*-questions can be analyzed as cases of movement suppression to comply Distinctness. Focusing on Rio de La Plata Spanish, Salanova observes that pre-verbal subjects are not allowed in two cases: when a bare DP is *wh*-moved past a subject DP and when a dative *wh*-phrase is moved past a dative subject. The cases are represented in (81) and (82) respectively:

(81) a. *Quién Juan quiere que le escriba?
Who Juan wants that to-him-CL writes

b. ¿Quién quiere Juan que le escriba?
Who wants Juan that to-him-CL writes
*Who does John want writing him?*

(82) a. *A quién a Juan le pareció que le habían dado
to whom to Juan to-him-CL seemed that to-him-CL had-3PL given
el premio?
the prize

b. ¿A quien le pareció a Juan que le habían dado el premio?
to whom to-him-CL seemed to Juan that to-him-CL had-3PL given the prize
*To whom did it seem to John that they had given the prize?*

Moreover, the pre-verbal subject is allowed, for example, when the subject is a nominative DP and the *wh*-fronted phrase is marked with dative:

(83) a. ¿A quien Juan conoció en Buenos Aires?
to whom Juan met in Buenos Aires
*Who did John meet in Buenos Aires?*

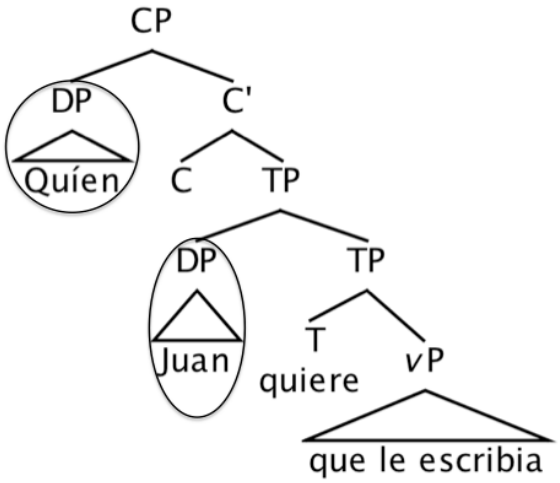
b. ¿A quien Juan le mandó el paquete?
To whom Juan to-him-CL sent the packet
*To whom did Juan send the packet?*

Salanova (2004) proposes an account of these facts in terms of Distinctness. In this cases, the relevant phrases with respect to Distinctness are the fronted *wh*-phrase and the subject. Let us take the example (81a) and give it the representation in (84): [16]

(81) a. *Quién Juan quiere que le escriba?
Who Juan wants that to-him-CL writes

[16] Since nothing depends on whether the pre-verbal subject appears in SubjP or in SpecTP, we will keep the formalization provided by Richards (2010), which places the subject in the canonical SpecTP position.

(84)

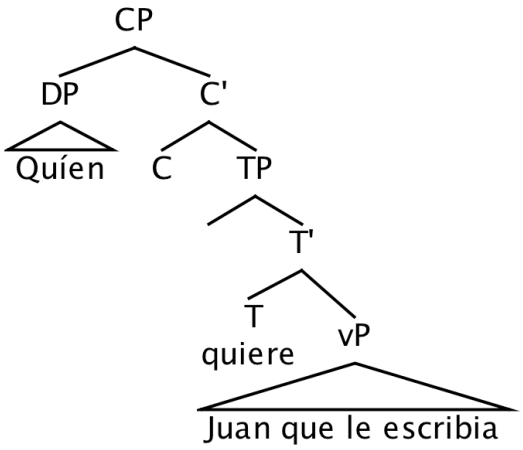



As it can be seen, two DPs appear in the same Spell-Out domain, since the phase boundary is placed below the edge of the *v*P.[17] The representation in (84) violates Distinctness and the sentence is correctly ruled out.

Salanova provides arguments that *wh*-questions in Rio de la Plata Spanish do not involve head movement of the verb in a higher position than T. As a consequence, the Verb-Subject order in *wh*-questions can be obtained simply leaving the subject in-situ while moving the verb into a higher position. This would turn out to be a successful strategy to avoid Distinctness violations. According to this view, the acceptable sentence in (81b) receives the representation in (85), where the subject stays in a VP-internal position, below the Spell-Out boundary of *v*P:

[17] Note that to obtain the representation in (84), the interrogative phrase must be labelled as a DP. We do not share the assumption of Richards and Salanova. Later in this work, I will assume a representation of interrogative phrases that involves a functional projection WhP high up in the nominal constituent.

(85)




There are a number of remarks that we can make about this account. Firs of all, it far from clear where the subject should be located within the *v*P to avoid Distinctness violation in (85). Given the phase-based Spell-Out model adopted by Richards (2010), the structure in (85) would not violate Distinctness, only if the subject appears somewhere below the highest head of the *v*P. Neither Salanova (2004) nor Richards (2010) provide any evidence supporting this implicit assumption, even though, at first glance, there is no reason to think that the subject of a transitive predicate does not occupy the highest specifier position of *v*P (Kratzer 1994, 1996, Chomsky 1995, 2000, 2001).

A second consideration arises considering the precise architecture of the CP phase. As Salanova points out, this account crucially requires that no Spell-Out boundary can be placed between the *wh*-phrase and the pre-verbal subject. This means that the specifier of the CP must be linearized with the specifier of the TP, even though CP is assumed to be a strong phase. To achieve this, Salanova (2004) postulates that the specifier of the matrix CP has a peculiar status in phase theory, in that it is spelled out with the rest of its phase, unlike other phase edges. This assumption is taken to account for a contrast between matrix and embedded questions in Rio de La Plata Spanish:

(86) a. *Que Juan quería hacer?
what Juan wanted do-INF
*What did Juan want to do?*

b. Preguntó que Juan quería hacer
Asked-3SG what Juan wanted do-INF
*He asked what Juan wanted to do.*

The lack of inversion in (86b) is predicted by Salanova, because the embedded CP undergo Spell-Out in the ordinary way, spelling out its specifier with the higher Spell-Out domain. As a result, *qué* and *Juan* are not spelled out in the same Spell-Out domain in (86b) and the subject can stay in pre-verbal position.

Finally, it is worth highlighting some consequences of this theory, when we assume a fine-grained representation of the left periphery (see. Section 1.1). Once we adopt a cartographic view of the left periphery, the expectation that the *wh*-phrase and the subject in (86a) are linearized within the same Spell-Out domain follows without further stipulations. *Wh*-phrases occupy SpecFocP, which is unlikely to be the highest head of the left-periphery (which reasonably is ForceP). Since, by assumption, only the phase's highest head and its specifier belong to the higher Spell-Out domain, the *wh*-phrase is expected to be linearized with the subject in SpecTP. This means that nothing special must be assumed about the matrix CP phase. The trouble is that, if we erase the difference between the matrix and the embedded CP, the cases in (86b) can no longer be derived. Given that *wh*-phrases do not occupy the highest specifier position of the left periphery, the *wh*-phrase in (86b) is expected to be linearized with the material in the embedded TP, parallel to the *wh*-phrase in (86a).

There is also a more general problem, related to this point. Broadly speaking, it seems that the theory of phases adopted by Richards (2010) cannot be maintained as it is, if we take seriously the fine structure of the left-periphery. Consider, for example, multiple topics constructions and constructions in which Topic and Focus occur together. In all these cases, more than one DP can be placed in the CP phase:

(87) a. Gianni il libro lo ha comprato.
John the book it-CL has bought
b. Gianni IL LIBRO ha comprato (non il giornale).
John THE BOOK has bought (not the newspaper)

These examples are expected to be Distinctness violations, assuming Richards phase theory.

Going back to the treatment of the restrictions on pre-verbal subjects in terms of Distinctness, it is important to bear in mind that we need a precise definition of what counts as identical in a given language, to address the correct predictions. As we already saw, in the examples in (81-83), nominative and dative case marking seem to be enough to ensure that two phrases count as different. This suggests that Case marking can have consequences on the syntactic label of a constituent in Rio de La Plata Spanish.

As for the dative-marked phrases in (82) and (83), Salanova proposes that the highest projection in the functional structure of these nominal constituent is functional projection KP, assigning inherent case. As a consequence, a dative-marked constituent receives the label KP, instead of DP or PP. On the other hand, nominative-marked phrases lack the KP projection, because they receive structural Case in a Spec-Head configuration with some dedicated functional head. Therefore, they are labeled as DPs. Finally, Salanova distinguish a third relevant label, assuming that adjunct PPs fall in a separate category with respect to KPs:

(88) a. ¿Con quién a Juan le pareció que María se había ido?
with whom to Juan to-him-CL seemed that María herself-CL had gone
*Who did it seem to John that Mary had left with?*

b. ¿Con quién Juan pensó que María se había ido?
with whom Juan thought that María herself-CL had left
*Who did John think that Mary had left with?*

The sentence in (88a) shows that adjunct PPs can appear with pre-verbal dative subject. Salanova interprets these data as showing that prepositional phrases are labeled differently

than dative-marked phrases. Wrapping up, we have three distinct syntactic labels (DP, KP and PP) and the following predicted patterns (assuming that there are no subject PPs):

(89) a. *[$_{CP}$ DP [$_{TP}$ DP [$_{vP}$…]]]

b. *[$_{CP}$ KP [$_{TP}$ KP [$_{vP}$…]]]

c. [$_{CP}$ KP [$_{TP}$ DP [$_{vP}$…]]]

d. [$_{CP}$ DP [$_{TP}$ KP [$_{vP}$…]]]

e. [$_{CP}$ PP [$_{TP}$ KP [$_{vP}$…]]]

f. [$_{CP}$ PP [$_{TP}$ DP [$_{vP}$…]]]

Promising as it might look at first sight, this account turn out to be untenable. Even sticking to *wh*-questions, this account makes the wrong predictions in Italian, in at least three cases. The first argument is that a KP and a DP cannot appear in the same Spell-Out domain. Let's take into consideration the case of experiencers and possessors:

(90) a. *A chi Ezra piace?
To whom Ezra pleases

b. A chi piace Ezra?
To whom pleases Ezra
*Who likes Ezra?*

(91) a. *Chi a Ezra piace?
Who to Ezra pleases

b. Chi piace a Ezra?
Who pleases to Ezra
*Whom does Ezra like?*

(92) a. *A chi Ezra appartiene?
To who Ezra belongs?
*To whom does Ezra belong?*

b. Chi appartiene a Ezra?
To who belongs Ezra?
*To whom does Ezra belong?*

These examples suggest that the distinction between KP and DP is not relevant in Italian, contradicting the prediction made in (89c-d). This asymmetry between Rio de la Plata Spanish and Italian might be accounted for by easing the burden of cross-linguistic variation on how specific languages encode Distinctness. Richards (2010) proposes that languages may differ with respect to which features determine the "sameness" of syntactic constituents. Since turning a DP in a KP is taken to be one of the most extensive strategy to avoid Distinctness Violation across languages, we need a good reason to introduce such an exception. The insignificance of the KP/DP distinction should be confirmed also in other constructions in Italian. I will leave this issue open here, limiting myself to note that the data in (90-92) cannot be accommodated under a Distinctness account, unless we assume that Italian does not distinguish between KP and DP at PF. [18]

[18] According to Richards (2010, ch. 2.4.1.1.), a good test case to check the significance of dative case marking is differential case marking (Richards 2010). Unfortunately, Italian has no optional case marking on object DPs. However, many dialects from southern Italy can provide the right environment. For example, Termolese a Molisan dialect, has dative case marking for animate objects, parallel to Spanish:

(i) a. Ej vasat *(a) sorət
I kissed to sister-you-CL
*I kissed you sister*
b. Ej vasat (*a) a statuä du Sand'
I kissed to the statue of the Saint
*I kissed the statue of the Saint*

In this variety, the dative marker *a* is obligatory when inside complex nominal structures, independently from the animacy:

(ii) a. U' vas' *(a) sortət
the kiss to sister-you-CL
b. U' vas' *(a) 'na statuä du Sand'
the kiss to the statue of the Saint.

The fact that DPs must be embedded in a KP in (ia) but need not be in (ib) might be made to follow from this. The idea is that Termolese DPs (like Spanish, Croatian and Japanese DPs) may be associated with either animate or inanimate features relevant for Distinctness. As a result, sentences like (ib) can be linearized *via* a linearization statement of the type ([DP, animate], [DP, inanimate]), which do not cause a Distinctness violation. In (iib), according to the representation provided by Richards (2010) the DP *a satuä du Sand* is c-commanded by a functional projection FP as well as by the DP *u vas*. Thus, even if the D is safe from a Distinctness violation by virtue of the animacy features, as long as there is some head in FP in common with *a satuä du Sand* and the embedding DP *u vas*, Distinctness will be violated. Richards, hypothesize that in such structures there is an *n*P projection, shared by all DPs and that two instances of *n* violates Distinctness. The repairing strategy would be to embed the lower DP within a KP. If this reasoning is on the right track, the data from Termolese will, then, indirectly suggest that the distinction between KP and DP is a real one in Italian.

A second empirical argument against a Distinctness account is provided by configurations in which two DPs can appear in the same Spell-Out domain. This is the case of *reason/purpose wh*-phrases:

(93) a. Perché Ezra piace a Dorothy?
why John pleases to Dorothy
b. Perché a Ezra piace Dorothy?
why to Ezra pleases Dorothy
*Why does Ezra like Dorothy?*

The absence of contrast between (93a) and (93b) is unexpected assuming Salanova's proposal, since they respectively correspond to the configuration in (89a) and (89d). Notice that not even assuming that *why* is actually a PP (instead of a DP) can provide an escape hatch. Even if *why* was a PP, the example in (93b) would be expected to be ruled out as a Distinctness violation. The examples in (93), thus, seem to constitute a genuine counterexample to a Distinctness account.

Lastly, we have cases in which PPs and DPs cannot always stay in the same Spell-Out domains. In the case of Locative and Source Goal PPs, the pre-verbal subject give rise to deviance and subject inversion is preferred (see Section 2.6):

(98) a. ??Da dove Ezra è arrivato?
From where Ezra is arrived?
b. Da dove è arrivato Ezra?
From where is arrived Ezra?

(99) a. ??In quale città Ezra è andato?
In which city Ezra is gone?
b. In quale città è andato Ezra?
In which city is gone Ezra?

These cases are unexpected given the combination in (89f). Since in (98) the fronted *wh*-phrase is a true PP it is hard to claim that the distinction between the *wh*-phrase and the pre-verbal subject is invisible with respect to Distinctness. Moreover, these facts become even

more puzzling, if we take again the examples in (100), where a fronted PP does not interfere with the pre-verbal subject:

(100) a. In quale città Ezra ha conosciuto il sindaco?
In which city Ezra has met the mayor?

b. In quale circostanza Ezra ha conosciuto il sindaco?
In which circumstance Ezra has met the mayor?

c. In che modo Ezra ha conosciuto il sindaco?
In which way John has met the mayor?

These examples blatantly contradicts the predictions made by Distinctness in Italian. The fact illustrated cannot be captured by the account proposed by Salanova and Richards, without a number of unwelcome stipulations that would undermine the explanatory potential of Distinctness. I will conclude, therefore, that Distinctness cannot explain the Italian data. In the next Section, I will propose a different account based on locality restrictions.

## 2.4 Subject Intervention

### *2.4.1. Criterial Subjects as Quantificational Elements*

Since Criterial Subjects are Ā-elements realizing a scope/discourse property, we may ask which kind of Ā-elements they are and what kind of property they realize. In Section 2.2.1, I assumed that Criterial Subjects checks a *subject-of-predication* feature, required by the syntax-semantics interface. In this Section I will go further in the discussion of the nature of this feature, proposing that it should be classified as a quantificational feature in the Relativized Minimality taxonomy.

The idea that pre-verbal subjects are involved in some form of quantification is by no means new. For example, in her work on indefinites, Diesing (1992) distinguishes between VP-internal and VP-external subjects. Starting from Carlson's (1977) distinction between *individual-level* and *stage-level* predicates, Diesing argues that individual-level predicates only allow for presuppositional subjects that involve the presence of an operator. On the other hand stage-level predicates are compatible with both presuppositional and non-presuppositional subjects. Take for example the sentence (101a), where the individual-level predicate *altruistic* induces a presuppositional interpretation of the subject bare plural. This roughly means that, in (101a), the set of poets is presupposed to be non-empty. That is, a quantification over the set of poets is presupposed. On the other hand, in (101b) the stage level predicate *available* does not require a non-empty set of poets. The existence of poets is rather asserted and no quantification over the set of poets is presupposed:

(101) a. Poets are altruistic. (individual-level)
b. Poets are available. (stage-level)

According to Diesing (1992), this asymmetry is encoded in the syntax/semantics interface. In particular, she proposes that individual-level predicates are control predicates, whose subject is generated outside the VP, while in stage-level predicates the subject is generated

within the VP. [19] She argues that there is a direct correlation between the position in which subjects are interpreted and the interpretation that they shall receive. The relationship between syntax and interpretation is captured by means of the so-called *mapping hypothesis*:

(102) a. VP-external indefinites receive a presuppositional interpretation;
b. VP-internal indefinites are non-presuppositional and get bound by default Existential Closure applying at the VP-level.

The different interpretative properties of subjects with respect to the syntactic computation can be directly observed in Italian, where subjects are free to occupy two different positions: a VP-internal and a Criterial position.

As we already mentioned in Section 2.2.1, the actual position of post-verbal subjects have been debated (see Rizzi 1982, Samek-Lodovici 1994, Giorgi & Longobardi 1991, Belletti 2004, a.o.). However, unaccusative predicates can provide the suitable syntactic environment to our purposes. Assuming the standard syntactic representation provided by Burzio (1981), unaccusative post-verbal subjects are in a VP-internal position. Assume, then, the following representation for pre and post-verbal subjects with unaccusative predicates:

(103) a. $[_{SubjP}\ DP_j\ [_{TP}\ t_j\ [_{VP}\ V\ t_j]]]$

b. $[_{TP}\ pro_j\ [_{VP}\ V\ DP_j]]$

We can observe that pre-verbal subjects behave differently from post-verbal subjects at the interpretative level. First of all, pre-verbal indefinite subjects only allow for Strong Reading (Milsark 1974, Carlson 1977). If we take an indefinite DP like *alcuni student* ('*some* students'), we can see that it receives an ambiguous interpretation between a strong and weak reading only in post-verbal position. While in pre-verbal position only the strong reading is available:

[19] In languages with obligatory EPP raising such as English, the raised subject may undergo reconstruction with stage-level predicates.

(104) a. Alcuni studenti sono arrivati.
Some student are-3PL arrived.

b. Sono arrivati alcuni studenti
are-3PL arrived some students

Thus, (104b) can mean either than an indefinite number of students arrived or that some of the students arrived but others, presumably, did not. Crucially, the sentence in (104a) can only receive the latter interpretation.

Secondly, pre-verbal subjects seem to be disallowed with the plain presentation of an eventuality. Let's take into consideration Context 1 and Context 2:

**Context 1:**

Ezra and Thomas share the office. Neither Ezra nor Thomas are expecting somebody to come in their office, this morning. Ezra arrives a little late and utters (105), while entering the room:

(105) **Ezra:**
Ehy, how was the morning?

(106) **Thomas**:

a. E' arrivato un ragazzo.
*Is arrived a boy.*

b. #Un ragazzo è arrivato.
*A boy is arrived.*

In such a context, it is completely appropriate for Thomas to answer (106a), but not (106b). The pre-verbal subject seem to require a presuppositional context in which somebody is expected to arrive. This can be showed by the following Context:

**Context 2:**

Ezra and Thomas share the office. Both are expecting an unspecified number of students to come during the office hour. Ezra arrives a little late and utters (105) while entering the room:

(105) **Ezra:**

Ehy, how was the morning?

(106) **Thomas**:

a. E' arrivato un ragazzo.
*Is arrived a boy*

b. Un ragazzo è arrivato.
*A boy is arrived*

In the second context, where both the speakers are expecting an unspecified number of people to come, the sentence in (106b) becomes fully acceptable. These examples suggest that only post-verbal subjects are compatible with the plain presentation of an eventuality, while pre-verbal subjects presuppose (at least) an existing individual.

Building on Kuroda (1979, 1999) (see also Kuroda 2003), Ladusaw (1994) proposed a reinterpretation of this facts in terms of *categorical* vs. *thetic judgments* (Brentano 1874). Brentano introduced categorical and thetic judgments in its classification of cognitive acts, in order to distinguish between different ways of dealing with what we could call, using the current terminology, different predicative structures. Using the words of Kuroda:

> *"This theory assumes, unlike either traditional or modern logic, that there are two different fundamental types of judgments, the categorical and the thetic. Of these, only the former conforms to the traditional paradigm of subject-predicate, while the latter represents simply the recognition or rejection of material of a judgment. Moreover, the categorical judgment is assumed to consist of two separate acts, one the act of recognition of that which is to be made the subject, and the other, the act of affirming or denying what is expressed by the predicate about the subject."*
>
> (Kuroda 1979, p.154)

Ladusaw (1994) shows that that the thetic/categorical distinction can be used to shed some light on some interpretative properties of quantificational structures. As far as we are concerned, we can use Ladusaw's proposal to distinguish between the two subject positions at the syntax/semantics interface.

Let us assume that subjects can be interpreted either as part of a thetic or a categorical structure. In thetic structures**,** the subject is interpreted as part of the description of an eventuality. I will consider a "*description of an eventuality*" a saturated representation of an eventuality. For example, a description of an eventuality might be the following (Parson 1990):

(107) [Arrive(e) & agent(e, Ezra)]

That is, a description is a representation in which it is specified the kind of the eventuality and the participants required by the thematic grid of the predicate. In other words, a description contains all the information that are specified by a predicate at the lexical level. Assuming that basic lexical information are represented in the verbal projection, eventuality descriptions are built at the VP-level and are bound by default existential closure at the edge of the VP (Heim 1982, Diesing 1992). Therefore, the subject of an eventuality description is interpreted within the predicative nucleus of the clause, where it falls in the scope of an unselective operation of existential closure.

On the other hand, in Categorical structures, the subject is meant to be an individual with a specific reference. This individual is then combined with a property of the type ⟨e,t⟩ , to yield a complete predicative structure. [20] As a consequence, the Categorical subject is understood as a quantificational element, whose role is to provide the relevant individual. The presuppositional flavour of Categorical subjects derives from this operation.

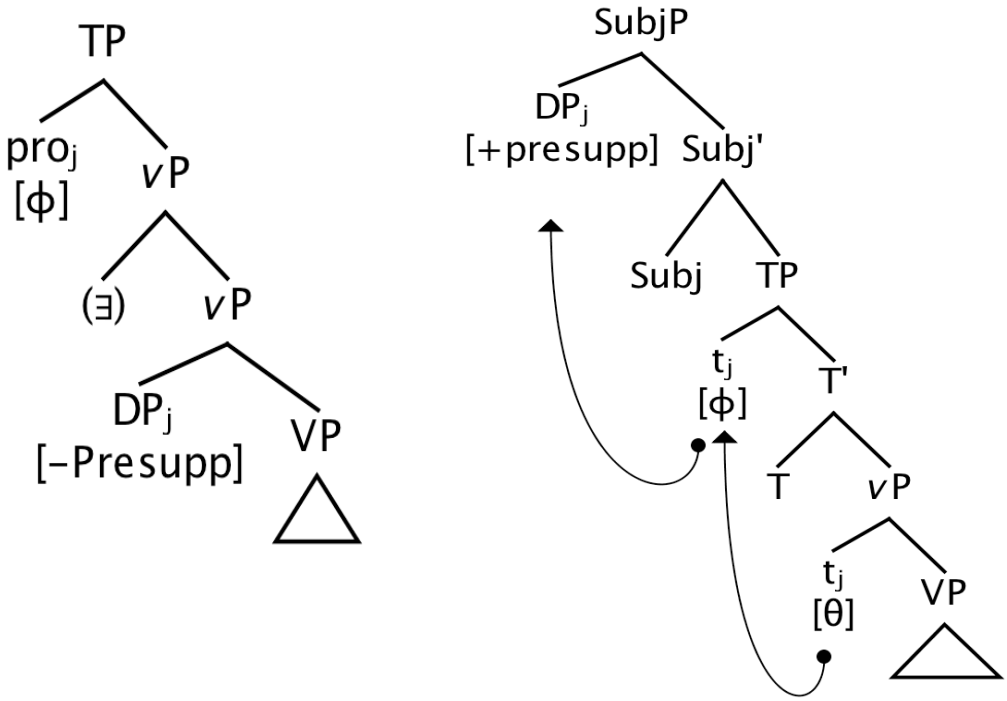
Recently, Bianchi & Chesi (*to appear*) suggested that the subject of a categorical structure must occupy the highest syntactic position available at the interface, that is its Criterial position (Rizzi 2006). They propose that Criterial Subjects are the syntactic counterpart of Ladusaw's categorical judgments.

Recall that we assumed that all subjects originate within the extended VP projection (Section 2.2.1), where the argument structure is determined; then, they are required to raise to SpecTP to check Case and ϕ-features; finally, they raise to the Criterial Position in which they check the *subject-of-predication* feature. Therefore, I will assume that VP-internal

[20] I will not go into the problems related to those cases in which the subject is a property instead of an individual. On this issue, I refer the reader to Chierchia (1985) and Rothstein (2001).

subjects implement the structure in (108a), where a default operation of existential closure is applied at the edge of the VP; on the contrary, Criterial Subject implements the structure in (108b), where the subject is finally attracted to the SpecSubjP to check the *subject-of-predication* feature:

(108) a. Thetic structure b. Categorical structure

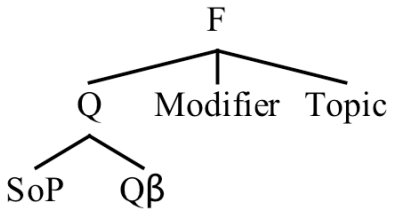



The *subject-of-predication* feature that the subject DP checks in SpecSubjP qualifies the subject as the constituent introducing the individual to be combined with a property of type 〈e,t〉 in the Categorical structure. I will, therefore, assume that the *subject-of-predication* feature must be classified as quantificational at the syntax/semantics interface.

As illustrated in Section 1.3, Starke (2001) argues that that Q-elements can be enriched by features that link them to the context (e.g. specificity, D-linking, etc..). Remember the case in which a specific feature (β) was added to a Q, creating thus a sub-class in the feature tree of

quantificational elements (Qβ). Given the presuppositional flavor of Criterial Subjects, we will propose that the Criterial Subject's feature, *Subject of Predication* (SoP), also constitutes a specification of Q. In terms of features organization, we will have the *subject-of-predication* feature as a sub-class of the feature tree Q:

(109)




Going back to the taxonomy of Ā-positions proposed in Section 1.3, Criterial Subjects are now be listed as quantificational elements within the Relativized Minimality taxonomy:

(110)
a. Argumental: *person, number, gender, case, theta roles, …*
b. Quantificational: *Wh*, *Neg*, *Focus,* ***Criterial Subjects***…
c. Modifier: *Evaluative, Epistemic, Neg, measure*, *manner*...
d. Topic

### *2.4.2 Q-intervention*

In this Section, I will propose a different account of the restrictions on the pre-verbal subjects. The main claim is that pre-verbal subjects cannot co-occur with a number of fronted elements, because of Relativized Minimality. I propose that Criterial Subjects cause an intervention effect with quantificational Ā-chains.

Before proceeding further, we will make some syntactic assumptions explicit. First of all, we will make clear what is the structure of *wh*-phrases. I will assume that interrogative phrases are labeled as *Wh*Ps. This label applies to both *wh*-words and *which*-phrases. In the case of "*which*-NP-phrases, I will assume a functional projection *Wh*P dominating a nominal constituent NP (111). In these structures the *wh*-head is a null functional head and the *which*-

word occupies the position of Spec*Wh*P. As a consequence, the *wh*-features are always represented at the *Wh*P level, but not on the NP:

(111) $[_{WHP}$ Which [Wh $[_{NP}$ N]]]

Let's go back to the simple examples in which pre-verbal subjects are not allowed in *wh*-questions:

(112) a. *Cosa Ezra ha comprato?
What Ezra has bought?

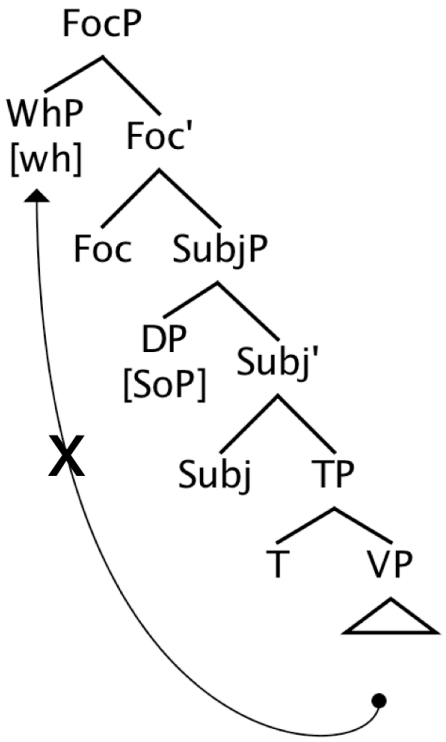
b. *Chi Ezra ha conosciuto?
Who Ezra has met?

c. *Come Ezra ha suonato?
How Ezra has played?

d. *Dove Ezra ha suonato?
Where Ezra has played?

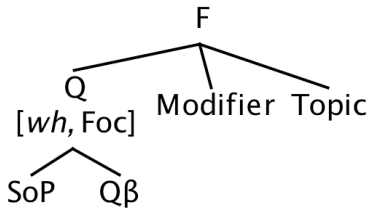
Given the syntactic derivation outlined in the previous sections, all the sentences in (112) will have the following general structure:

(113)




The representation in (113) represents a violation of Relativized Minimality. Both the Criterial Subject and *wh*-phrase bear features belonging to the quantificational class of the Relativized Minimality taxonomy, namely [*wh*] and [*subject-of-predication*]. Recall that, according to our theory of locality, the *wh*-feature belongs to the superclass of the feature tree Q. At the same time, the *subject-of-predication* feature belongs to a sub-class of the same feature tree Q:

(114)



The representation in (113) is, then, ruled out because the *Wh*P is not in a minimal configuration with its trace, violating the principle of Full Interpretation. In other words, the ungrammaticality of the examples in (112) follows from a Relativized Minimality violation, induced by the Criterial Subject. Note that it is irrelevant whether the interrogative phrases are extracted from an argument (112a-b) or an adjunct position (112c-d). The crucial point is that interrogative phrases always bear a quantificational feature, as long as they project as *Wh*Ps. The Criterial Subject will, then, block the *wh*-movement in every representation like (113). We will go back to the distinction between arguments and adjuncts in Section 2.6.

This proposal correctly predicts the contrast between the examples in (115) and (116) and their counterparts in which overt weak pronouns appears pre-verbally, (117) and (118):

(115) a. *Où Yves va?
*Where Yves goes?*

b. *Qui Paul a vu?
*Whom Paul has seen?*

(116) a. *¿Donde José va?
*Where José goes?*

b. *¿Qué José quiere?
*What José wants?*

(117) a. Où il va?
*Where he goes?*

b. Qui t'as vu?
*Whom you have seen?*

(118) a. ¿Donde tu vas?
*Where you go?*

b. ¿Que tu quieres?
*What you wants?*

Since weak pronouns are not allowed in SpecSubjP, there is no Criterial Subject in (117)

and (118). As a consequence, there is no element with a quantificational feature intervening between the *Wh*P and its trace.

A second welcome result of this proposal is that it correctly predicts the whole pattern of *reason*/*purpose* questions, where pre-verbal subjects are normally allowed:

(119) a. Perché Ezra ha conosciuto il sindaco?
*Why$_{reason}$ Ezra has met the mayor?*

b. Perché Ezra ha insultato il sindaco?
*Why$_{purpose}$ Ezra has insulted the mayor?*

Given that *reason/purpose* interrogative phrases are generated directly in the left periphery (Rizzi 2001, Stepanov & Tsai 2007, Schlonsky & Soare 2011, Donati & Cecchetto 2012), the acceptability of (119) follows naturally. Since these sentences do not require any *wh*-movement, no Relativized Minimality violation can take place. On the other hand, consider again the cases in which *why* is moved from a lower position, as in multi-clausal *why*-questions:

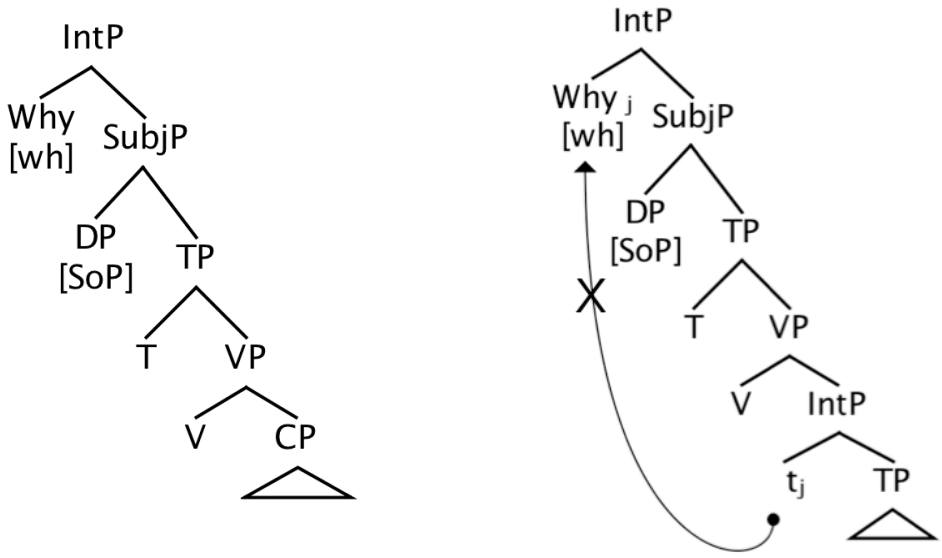
(120) a. Perché Ezra ha detto che Thomas ha accettato l'incarico?
*Why Ezra has said that Thomas has accepted the assignment?*

b. Perché hai detto che Thomas ha accettato l'incarico?
*Why have-2SG that Thomas has accepted the assignment?*

As we already showed in Section 2.2.1, there is a sharp contrast between (120a) and (120b), in that only the latter allows for a narrow scope reading of *why*. This reading can only be obtained moving the *wh*-phrase *perché* ('why') from the embedded clause to the left periphery of the matrix clause. According to the present proposal, however, this movement is blocked by the intervention of the Criterial Subject. This derivation, therefore, is ruled out because it generates the Relativized Minimality violating representation in (121b). On the other hand, the matrix-scope reading of *perché* ('why') can be safely obtained generating the *wh*-phrase directly in the matrix left periphery (121a), without violating Relativized Minimality, on a par with the examples in (119):

(121)

a. b.




The very same logic applies also to the cases in which an accusative *wh*-phrase ('what') is used to form a *reason/purpose wh*-questions (Kurafuji 1996, Endo 2007, 2013). In these constructions the *reason/purpose*-what is moved from a VP-internal position. Unsurprisingly, these constructions are found to forbid Criterial subjects, differently from ordinary *reason/purpose*-questions. Since the *wh*-phrase moves from the VP to the left periphery, it induce a Relativized Minimality violation:

(122) a. *Cosa Ezra grida?
What Ezra shouts?
b. Cosa grida Ezra?
What shouts Ezra?
*Why the hell does Ezra shout?*

(123) a. *Cosa Ezra ordina sempre la birra?
What Ezra order always the beer?
b. Cosa ordina sempre la birra Ezra?
What order always the beer Ezra?

*Why the hell does Ezra always order beer?*

The intervention effect of the Criterial Subject with elements bearing a Q feature naturally extends to all the cases in which subject inversion is preferred with fronted Foci:

(124) a. ??SOLO BISCOTTI Ezra mangia.
*Only cookies Ezra eats*

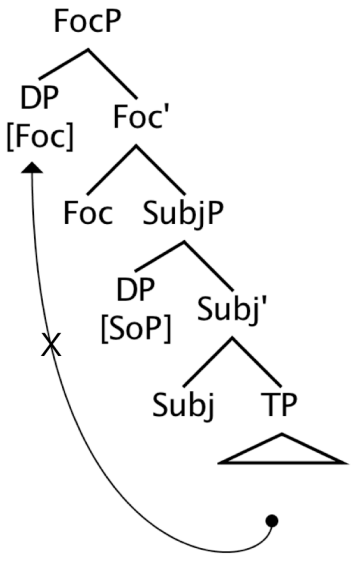
b. SOLO BISCOTTI mangia Ezra.
*Only cookies eats Ezra.*

(125) a. ??Il GIORNALE Ezra ha comprato (non il libro).
*THE NEWSPAPER Ezra has bought (not the book).*

b. ??Il GIORNALE ha comprato Ezra (non il libro).
*THE NEWSPAPER has bought Ezra (not the book).*

Since the feature tree Q contains also the feature *Foc*, the fronted elements in (124-125) are expected to interfere with the *Subject-of-Predication* feature on the Criterial subject:

(126)




The idea that the restrictions on pre-verbal subjects ultimately depend on the constraint imposed by Relativized Minimality can be extended also to the Topic Resumptive

Preposing constructions. As Cinque (1990) showed, these constructions involves genuine *wh*-movement, although the resulting scope-discourse articulation can neither be assimilated to ordinary Topic-Comment articulation nor to Focus.

The landing position in this fronting constructions has been debated. Following Benincà (2001), Benincà & Poletto (2004) proposed that this kind of structures involves the activation of a Focus projection. This proposal would pool Topic Resumptive Preposing together with the examples in (124-125) in that both the constructions would involve the targeting of a focus position as the landing site of the fronted constituent. On the contrary, Cardinaletti (2009) argued that Topic Resumptive Preposing should be considered an instance of Aboutness-shift Topic. Therefore, according to Cardinaletti (2009), Topic Resumptive Preposing would not involve the activation of a true focus position.

Irrespective on which theory of Topic Resumptive Preposing we are willing to adopt, there is independent evidence that these constructions involve the fronting of a quantificational element. The most obvious one is that they require the presence of an operator-like elements such as *stesso* ('same'), which is likely to bind a true variable, instead of a null constant, as in ordinary Topicalization (Chomsky 1977, Cinque 1990, Rizzi 1997). Furthermore, a stronger piece of evidence comes from the behaviour of Topic Resumptive Preposing with respect to Weak Cross-Over. It is a well-known fact that weak cross-over effects can be used as a diagnostics to single out operator-variable structures (see. Wasow 1972, Chomsky 1981, Lasnik and Stowell 1991). If we apply this test, we can see that Topic Resumptive Preposing patterns with Focus and *wh*-questions, rather than with ordinary Topicalization (e.g. CLLD):

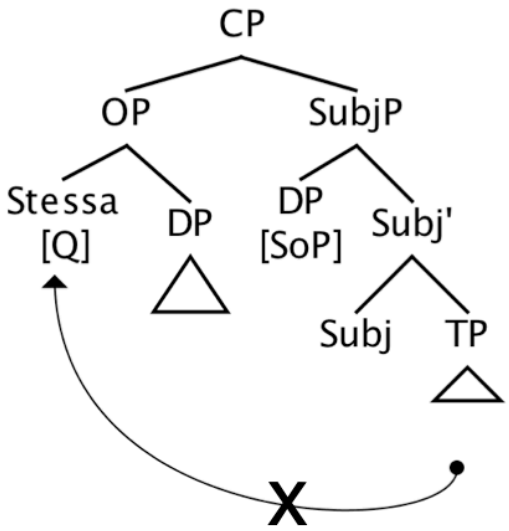
(127) a. $\text{Ezra}_j$ $\text{sua}_j$ madre $\text{lo}_j$ ha sempre difeso.
Ezra his-3SGfem mother him-CL has always defended .
*Ezra, his mother always defended.*

b. *$\text{EZRA}_j$ $\text{sua}_j$ madre ha sempre difeso.
EZRA his-3SGfem mother has always defended.
**EZRA his mother always defended.*

c. *La stessa persona$_j$ difesero anche i suoi$_j$ amici.
The same person defended also the his-3PL friends.
*The same person have been defended by his friends.*

As Cinque (1990) pointed out, Topic Resumptive Preposing shares many other properties with *wh*-constructions (e.g. parasitic gaps, successive cyclic movement, reconstruction effects). All these properties are expected if Topic Resumptive Preposing is analyzed as involving *wh*-movement of a null operator. In the spirit of Cinque (1990), I will assume that the fronted constituents in such constructions bear a Q-feature, which triggers the movement to the left periphery. Thus, the resulting derivation would lead to the representation in (128), violating Relativized Minimality:

(128)




Let's turn now to Free Relatives and see how this proposal can be extended also to them. As we already showed, free relatives are nominal constituents containing a CP. There has been a long standing debate about the internal structure of Free Relatives, particularly with respect to the exact position of the *wh*-word. The view that the *wh*-element is the head of the free relative, known as the *Head Hypothesis*, has been proposed by Bresnan and

Grimshaw (1978). The claim is that the *wh*-word is base-generated as the head of its phrase. Then, pronoun deletion (in Bresnan & Grimshaw's terminology, *Controlled pro Deletion*) in the remaining part of the free relative leaves a gap, whose category is the same as that of the *wh*-word:

(129) a. Dove va Ezra.
Where goes Ezra.
b. $[_{DP}\ [_{DP}\ dove_i]\ [_{CP}$ va Ezra $[e]_i]]$

The structure in (129) implies no movement of the *wh*-element. As a consequence, given the representation in (129b), the restrictions on pre-verbal subjects cannot be treated as a Relativized Minimality violation in Free Relatives.

Despite its advantages, this proposal has been criticized both from the empirical and theoretical point of view by many scholars. A influential alternative approach advanced in the literature is the *COMP Hypothesis*, according to which the *wh*-word occupies the Specifier position of the CP (Groos and van Riemsdijk 1979, Harbert 1983, Suñer 1984, 1985, a.o.). The head is either phonologically null or altogether absent. According to this approach the *wh*-word is placed in SpecCP through *wh*-movement, just like in headed relative clauses:

(130) a. Dove va Ezra…
b. $[_{DP}\ [_{DP}\ \emptyset][_{CP}$ Dove$_j$ $[_{C'}\ [_{TP}$ va Ezra $t_j]]]$

Let us assuming that the *wh*-word in (130) projects in the same way that we assumed for *wh*-questions. Since the *COMP Hypothesis* involves Ā-movement of a quantificational element, I propose that the internal representation of Free Relatives mirrors the representation of *wh*-questions with respect to the locality restrictions imposed by the Criterial Subject. Remember that Free Relatives pattern together with *wh*-questions in that they allow weak pronouns to appear between the *wh*-phrase and the verb:

(131) a. *?Je sais bien qui Ezra connais.
I know well who Ezra knows.
b. Je sais bien qui connais Ezra.

I know well who Ezra knows.

(132) a. * ?Je sais bien ou Ezra va.
I know well where Ezra goes.
b. Je sais bien ou il va Ezra.
I know well where goes Ezra.

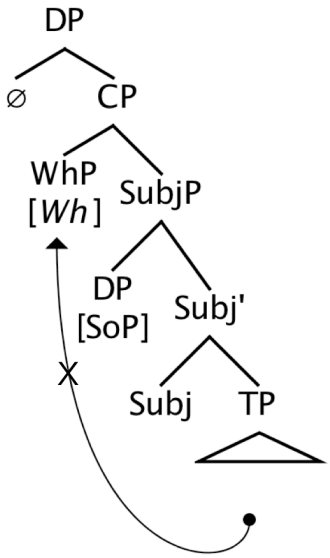
(133) a. * ?Je sais bien quoi Ezra a fait.
I know well what Ezra has done
b. Je sais bien ce qu'il a fait Ezra.
I know well what has done Ezra.

(134) a. Je sais bien comment Ezra a joué.
I know well how Ezra has played
b. Je sais bien comment il a joué Ezra
I know well how has played Ezra.

(135) a. Je sais bien ou il va.
I know well where he-CL goes.
b. Je sais bien ce qu'il a fait
I know well what he-CL has done.
c. Je sais bien comment il a joué.
I know well how he-CL has played.

These data strongly suggests that the problem is induced by the Criterial Subject. Therefore, assuming the *COMP-Hypothesis*, the ban on pre-verbal subjects in Free Relatives can be treated as a Relativized Minimality violation:

(136)




In conclusion, a Relativized Minimality approach to pre-verbal subjects can cover the different constructions in which pre-verbal subjects are not allowed, without *ad-hoc* stipulations about the syntactic computation. The whole pattern of data follows from the interaction of Criterial Subjects and some well-known locality constraints. The only minimal assumption to be made is that Criterial Subjects are Q-elements. This follows from the idea that Criterial Subjects are the syntactic counterpart of Categorical structures *à la* Ladusaw (1992).

### *2.4.3. A note on Relativization*

The behaviour of pre-verbal subjects in relativization structures is not uniform. We already saw that free relatives do exhibit a ban on Criterial Subjects. This constraint, however, does not extend to other relativization structures. For example, Criterial Subjects are allowed in object relatives:

(137) *Conosco bene chi Ezra ha conosciuto.

*I know well who Ezra met.*

(138) Quello è il poeta che Ezra ha conosciuto.
*That is the poet that Ezra met.*

In (138) the relative pronoun can be moved across the pre-verbal subjects without triggering a violation. In this section, I will show that this contrast can be captured by the theory of locality adopted here.

Rizzi (1997) assumed that relative operators occupy the highest position in the left periphery, namely Force. This claim is motivated by the fact that relative pronouns precede all other elements in the left periphery:

(139) a. un uomo a cui, il premio Nobel, lo daranno senz'altro…
*a man to whom the Nobel Prize it-CL give-FUT-3PL undoubtedly*

b. *Un uomo, il premio Nobel, a cui lo daranno senz'altro…
*A man the Nobel Prize to whom it-CL give-FUT-3PL undoubtedly*

(140) a. Ecco un uomo a cui IL PREMIO NOBEL dovrebbero dare
*Here is a man to whom THE NOBEL PRIZE they should give.*

b. *Ecco un uomo IL PREMIO NOBEL a cui dovrebbero dare
*Here is a man THE NOBEL PRIZE to whom they should give.*

Abels (2012) shows that these positional facts are attested also in non-local configurations (see also Cinque 1990), for example when the fronted elements origin in an embedded complement clause:

(141) a. Questo é l'uomo, a cui tu pensi che, il premio Nobel, lo daranno
this is the man to whom you think that the Nobel Prize it-CL give-FUT-3PL
senz'altro
undoubtedly

b. *Il Premio Nobel, ho visto l'uomo, a cui tu pensi che, lo daranno
The Nobel Prize, have-1SG seen the man to whom think-2SG that it-CL give
senz'altro
undoubtedly

(142) a. tuo fratello, a cui crediamo che MARIA abbiano presentato
your brother to whom we believe that MARIA they have introduced
b. *MARIA abbiamo incontrato tuo fratello, a cui avevano presentato.
MARIA have-3PL met your brother to whom they had introduced

If the asymmetries between relative pronouns and the other left-peripheral elements, such as Topic and Focus, depend on the fact that relative pronouns target Force, the examples in (141-142) come as unexpected. In these examples, there are two clauses and the fronted elements never target the same clausal left-periphery. As a consequence, the relative pronouns in (141b) and (142b) cannot occupy a position higher than the other fronted elements. [21]

Abels (2012) argues that it is possible to dispense with the assumption that relative pronouns target the highest position of the left periphery. He claims, instead, that the asymmetry in (141-142) can be accounted for by a feature-based theory of locality, like the one that we assumed in this essay.

Abels treats relative operators as hybrid elements between two different feature trees. Since relative pronouns asymmetrically block movement of both Foci and Topics, as showed by the examples in (139-142), they represent a subclass of both Op and Topic at the same time. Remember that the general idea of a Relativized Minimality taxonomy in which features are organized in super-classes and sub-classes is that the richer an element the deeper it is in the feature tree. Relative pronouns seem to have a more complex feature array than *wh*-elements. For example, while relative pronouns block both Foci and Topics, *wh*-pronouns only block Foci in Free Relatives:

(143) a. Queste poesie, chi le scrive è un cretino.
These poems who them-CL write is an idiot

[21] The interaction between relative pronouns and other left-peripheral elements across different clauses was first addressed by Cinque (1990). The solution provided there was island-based. Cinque (1990) assumes that both Topicalization and Relativization are sensitive to strong-island but not to weak islands. Since relative clauses (but crucially not Topics) are strong islands, Topics cannot escape from them (as in 140b). On the other hand, since Foci are weak islands relative pronouns can cross foci (141a). In this work, I will follow Abels' (2012) proposal, since it derives the whole pattern in (139-142) in a more principled way.

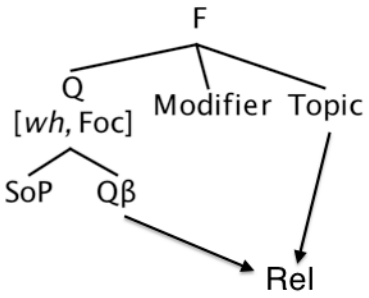
b. *QUESTE POESIE, chi scrive è un cretino.
THESE POEMS who write is an idiot

Moreover, presuppositionality and D-linking does not ameliorate the asymmetric blocking of Foci, differently from what happens when two *wh*-operators cross each other (see. Section 1.3):

(144) *QUESTO RAGAZZO QUI abbiamo incontrato tuo fratello, a cui avevano
MARIA have-3PL met your brotherto whom they had
presentato
introduced

This suggests that relative pronouns bear a quantificational feature that qualifies as a subclass also with respect to Qβ. The updated classification of the intervening categories is then the following: [22]

(145)




This classification of intervening categories can account for the asymmetry between Free Relatives and Object Relatives illustrated in (137-138). Given that Rel constitute a sub-class with respect to presuppositional quantificational elements (e.g. Criterial Subjects and D-Linked *wh*-phrases), the Pānini Principle, repeated in (146), predicts that Rel can cross every other quantificational elements, but not *viceversa*:

[22] The classification provided by Abels (2012) is different from the one in (142) in that the quantificational feature tree is considered a sub-tree of Modifier. Although there is evidence that some elements may be hybrid between the Modifier and the Quantificational feature tree (Rizzi 2004), we will follow Starke (2001) in keeping distinct these two feature trees.

(146) **Pānini Principle**

Let X be an ordered feature tree such that X= Q, Topic, Mod; and

let α, β and γ be syntactic features such that α, β, γ ∈ X;

If X = { … α > β > γ... }, then Xγ blocks Xβ and Xα; and Xβ blocks Xα.

Given the Pānini Principle and the feature classification in (145), relative pronouns are expected to cross Criterial Subjects, since they constitute a more specific sub-class of Q. On the other hand, Free Relatives display the fronting of a simpler quantificational element, which cannot move beyond other quantificational elements, such as Criterial Subjects.

## 2.5 Pied Piping as a Skipping Strategy

In section 2.2.1, we presented some cases in which a prepositional *wh*-phrase can appear with pre-verbal subjects without leading to ungrammaticality:

(147) a. In quale città Ezra ha conosciuto il sindaco?
In which city Ezra has met the mayor?

b. In che anno Ezra ha conosciuto il sindaco?
In which year Ezra has met the mayor?

c. In che modo Ezra ha conosciuto il sindaco?
In which way Ezra has met the mayor?

The phenomenon were also illustrated in Castilian Spanish:

(148) a. ¿En que ciudad Juan fue proclamado Rey?
In which city Juan was proclaimed King?

b. ¿En que ocasión Juan fue proclamado Rey?
In which occasion Juan was proclaimed King?

c. ¿En que medida Juan ha contribuido a eso?
In what way Juan has contributed to that?

These examples have been showed not to be manageable by previous proposals on pre-verbal subjects (Section 2.3). At first glance, they represent a challenge also for the present proposal, since they seem to escape the Relativized Minimality effect induced by the Criterial Subject. To understand the nature of these data it is crucial to single out which factor make these examples acceptable compared to other *wh*-questions. The minimal examples that seem to shed some light on the phenomenon are represented in (149):

(149) a. *Dove Ezra ha conosciuto il sindaco?
Where Ezra has met the mayor?
b. *Quando Ezra ha conosciuto il sindaco?
When Ezra has met the mayor?
c. *Come Ezra ha conosciuto il sindaco?
How Ezra has met the mayor?

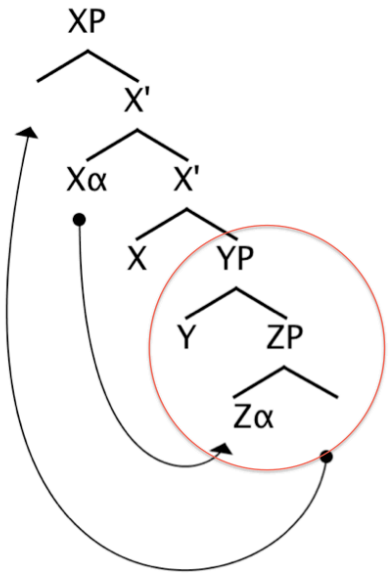
The sentences in (149) are identical to the sentences in (147), except for one aspect: the fronted elements in (147) are PPs, while in (149) they are *Wh*Ps. Therefore, it seems that the crucial factor determining the difference between (147) and (149) is the nature of the interrogative phrase. In particular, all the fronted elements in (147) involve the pied-piping (Ross 1967) of a preposition on top of the interrogative phrases.

Pied-piping constitutes a thorny issue for a theory of movement based on feature attraction (Chomsky 1995, 2000, 2001), since it involves the movement of apparently superfluous material. In principle, the relevant features triggering interrogative movement are minimally represented only on the *Wh*P embedded under the preposition. Still, the whole PP must move to the left periphery for a correct syntactic derivation. Different syntactic machineries have been proposed, in order to make the relevant features visible also on the dominating projections (e.g. *feature-percolation*, Koopman & Szabolcsi 2000; *PP-internal head movement*, Koopman 1997). A different perspective has been proposed by Chomsky (1995), who suggested that pied-piping should be reduced to interface requirements imposed by the phonological interface (PF). In the spirit of minimalism, this hypothesis unloads the syntactic

computation from the responsibility of causing pied piping and regulating its nuances. I will adopt this general perspective, assuming that pied piping is not due to the core syntax, but rather to the need of satisfying some PF interface request.

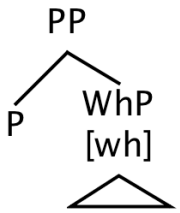
The general picture is represented in (149). Assume a formal feature α on ZP needs to be checked by the head X. To this purpose, X will attract the constituent bearing α to SpecXP; YP is, then, pied-piped along with ZP because of some requirement at PF:

(150)




What about interrogative phrases? Since we assumed that an interrogative phrase is projected from a functional head *Wh,* it reasonable to expect the features triggering *wh*-movement to be represented only at the *Wh*P level. On the other hand, *wh*-features are not directly represented at the PP level, since PPs are projected from prepositions, that are unlikely to bear any interrogative feature. Therefore, differently from ordinary interrogative phrases, interrogative PPs do not bear a *wh*-feature on the highest maximal projection of the moved constituent. To make our terminology clearer, let's say that the *wh*-feature is represented on the syntactic label *Wh*P, but not on the syntactic label PP:

(151)




The representation in (151) can have consequences with respect to the Relativized Minimality taxonomy: the quantificational features are not directly represented on the label of the fronted constituent, because of pied piping. In this section, I will propose that pied piping can represent a strategy to circumvent Relativized Minimality. I will propose that Relativized Minimality is sensitive only to the features represented on the label of moved constituents:

(152) **Relativized Minimality visibility condition**

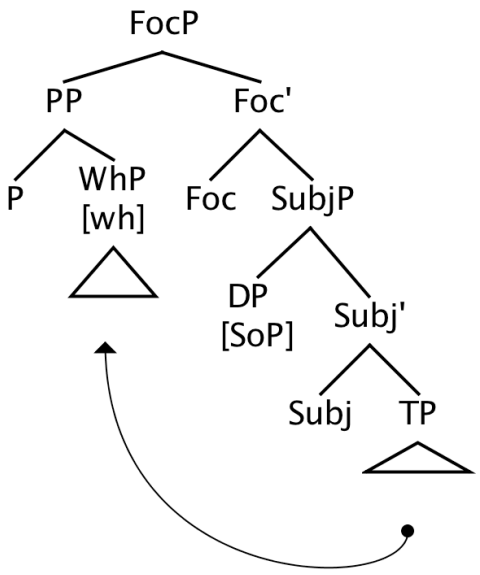
A features is visible to Relativized Minimality if it is represented on the label of a moved constituent.

This condition is reminiscent of recent proposals based on *smuggling* (Collins 2005, 2007). In its work on passive constructions, Collins (2005) hypothesizes that potential Relativized Minimality violations can be avoided if an offending constituent is moved across an intervener within a larger constituent that contains it. In a similar way, assuming the condition in (152) can account for the behaviour of the examples in (147).

In the example in (147), the interrogative prepositional phrases have the structure illustrated in (151). Given the visibility condition in (152), Relativized Minimality can be circumvented thanks to the fact that PPs do not bear any quantificational feature on their syntactic label. Let's take in consideration the example in (147a), for the sake of illustration. The derivation of (147a) goes as illustrated in (153):

(147) a. In quale città Gianni ha conosciuto il sindaco?
In which city John has met the mayor?

(153)




The prepositional phrase does not bear quantificational features on the label, since it is ultimately projected from a preposition. Consequently, it can cross the Criterial Subject without leading to a violation of Relativized Minimality, because of the visibility condition in (152).

There are other constructions in which pied-piping seems to circumvent the restriction on pre-verbal subjects in *wh*-questions. For example, let's consider a case where a sub-constituent of a complex DP in object position bear some quantificational feature. The structure of the sentence before movement takes place will be the following:

(154) Ezra ha conosciuto [$_{DP}$ il sindaco [$_{PP}$ di [$_{WhP}$ quale città]]]
*Ezra has met* [$_{DP}$ *the mayor* [$_{PP}$ *of* [$_{WhP}$ *which city*]]]

Now, Italian provides two ways to perform the *wh*-movement starting from (154). The first is sub-extraction of the *Wh*P. Since Italian does not allow preposition stranding, pied-piping of the preposition *di* ('of') is obligatory. This move would yield the sentence in (155a). The second way to perform *wh*-movement is 'heavy' pied-piping of the whole object DP, which would yield the sentence in (155b):

(155) a. Di quale città Ezra ha conosciuto il sindaco?
Of which city Ezra has met the mayor?
b. Il sindaco di quale città Ezra ha conosciuto?
The mayor of which city Ezra has met?

Crucially, both these sentences tolerate the pre-verbal subject. Under the present account this follows from the visibility condition of in (152): in both cases the *wh*-features are not represented on the label of the fronted constituent. Note that these examples are completely unexpected under all the proposals that discussed in Section 2.3, as the reader can easily verify.

A similar phenomenon can be observed in some weak-island cases, that can be on a parallel with the pre-verbal subject configurations. In these cases, pied-piping of an interrogative locative adjunct can improve the acceptability of extraction out of a weak island. As it is well known, weak islands do not allow extraction of adjuncts out of them. Since Rizzi (1990) (see also Cinque 1990) they have been claimed to involve some form of Relativized Minimality (see Szabolcsi & Zwarts 1993, for a semantic implementation of Relativized Minimality). It has gone almost unnoticed (with the notable exception of Rizzi 1990) that in some cases a locative adjunct can be extracted from a weak island without inducing strong unacceptability, depending on the presence of pied-piping. The examples in (156) show a similar pattern to the one observed with pre-verbal subject in *wh*-questions. The sentence (156a) shows that extracting a locative adjunct from a *wh*-island leads to ungrammaticality. On the other hand, extracting an interrogative prepositional phrase improves the acceptability of the sentence:

(156) a. *Dove$_j$ ti chiedi se ci siamo nascosti $t_j$?
Where you-CL wonder if loc-CL be-3PL hidden
*Where do you wonder whether we hid?*
b. ?Dietro quale muro$_j$ ti chiedi se ci siamo nascosti $t_j$?
Behind which wall you-CL wonder if loc-CL be-3PL hidden
*Which wall do you wonder whether we hid behind?*

The same contrast is found with negative affective operators, such as the verb *deny*, which

also have been claimed to be weak island (Rizzi 1990):

(157) a. * Dove$_j$ neghi di esserti nascosto $t_j$?
Where deny-2SG to be-3PL hidden
*Where do you deny to have been hidden?*

b. Dietro quale muro neghi di essere nascosto?
Behind which wall deny-2SG to be-3PL hidden
*Behind which wall do you deny to have been hidden?*

In principle, the contrast between (156a/157a) and (156b/157b) can also be analyzed as a standard application of the Pānini Principle. In particular, one can claim that the adjunct *wh*-phrases in (156b) and (157b) are enriched with context-related features, which would allow them to cross the intervening interrogative elements (in the spirit of Starke 2001). However, the examples in (158) suggest that the syntactic label plays its own role in these constructions:

(158) a. *Dove ti chiedi se siamo caduti?
Where you-CL wonder if be-3PL fallen
*Where do you wonder whether we fell?*

b. ?Da dove ti chiedi se siamo caduti?
Behind which wall you-CL wonder if be-3PL fallen
*Where do you wonder whether we fell from?*

(159) a. *Dove neghi di essere caduto?
Where deny-2SG to be-3PL fallen
*Where do you deny to be fallen?*

b. ?Da dove neghi di essere caduto?
From where deny-2SG to be-3PL fallen
*Where do you deny to be fallen?*

Although the locative *wh*-phrases in (158-159) have the same degree of context-linking, the prepositional *wh*-phrases are easier to extract across an intervener. This contrast can be easily explained assuming the visibility condition proposed in (152).

A final additional piece of evidence that pied piping can provide a way to skip Relativized Minimality is found in some multiple *wh*-questions. [23] Some multiple *wh*-questions in Italian seem to mirror the behaviour of languages like English, in that they require only one *wh*-phrase to be fronted. Crucially, Italian seems to obey the Superiority Condition (Pesetsky 1987, Richards 1993), which requires the fronted *wh*-phrase to be the highest interrogative element in the structure:

(160) a. Voglio sapere chi ha fatto cosa.
I want to know who has done what
*I want to know who did what.*

b. *Voglio sapere cosa ha fatto chi.
I want to know what has done who
*I want to know what did who.*

Moreover, Italian seems not to be sensitive to context related factors, which have been claimed to aid the violation of Superiority in other languages, such as D-linking (Pesetsky 1987, 2000):

(161) a. Voglio sapere quale ragazzo ha fatto quale relazione.
I want to know which boy has done which relation
*I want to know which boy did which relation.*

b. *Voglio sapere quale relazione ha fatto quale ragazzo.
I want to know which relation has done which boy
*I want to know which relation did which boy?*

Interestingly, with ditransitive predicates two options are available: either the object is moved leaving the dative prepositional phrase in situ (162) or the embedded prepositional phrase is moved leaving the object in-situ (163):

(162) a. Voglio sapere cosa hai dato a chi.

[23] Multiple *wh*-questions in Italian have never been deeply examined in the literature, since they have been traditionally considered to be rather marginal constructions (Rizzi 1979, Calabrese 1985). For a detailed discussion on these constructions and their alleged marginality see Moro 2011 and Chapter 3 of this essay.

I want to know what have-2SG given to whom

b. Voglio sapere cosa hai detto a chi.

I want to know to whom have-2SG said what

(163) a. Voglio sapere a chi hai dato cosa.

I want to know to whom have-2SG given what

b. Voglio sapere a chi hai detto cosa.

I want to know to whom have-2SG said what

The examples in (163) appear to involve the movement of a *wh*-prepositional phrase over the object *wh*-in-situ. The only difference between the object and the dative argument in (162-163) is their syntactic label.

Locative goals with verb of movement exhibit the same pattern, when they are represented as prepositional phrases. Although the judgments about these examples are quite subtle, most of the informants I have consulted perceive a severe decrease of the acceptability when a *Wh*P is fronted, instead of a PP:

(164) a. ?Voglio sapere in quale città hai spedito cosa

I want to know in which city have-2SG sent what.

b. ?Voglio sapere cosa hai spedito in quale città.

I want to know what have-2SG sent in which city.

(165) a. ?Voglio sapere dietro quale muro si è nascosto quale ragazzo.

I want to know behind which wall himself-CL is hidden which boy.

b. ?Voglio sapere quale ragazzo si è nascosto dietro quale muro.

I want to know which boy himself-CL is hidden behind which wall.

(166) a. *Voglio sapere dove hai spedito cosa?

I want to know where have-2SG sent what.

b. ?Voglio sapere cosa hai spedito dove.

I want to know what have-2SG sent in which city.

(167) a. *Voglio sapere dove si è nascosto quale ragazzo.

I want to know behind which wall himself-CL is hidden which boy.

b. ?Voglio sapere quale ragazzo si è nascosto dove.
I want to know which boy himself-CL is hidden behind which wall.

Given the fact that Superiority in Italian does not appear to be vulnerable to mere D-Linking, these examples can be analysed as suggesting a contrast between PP fronting and *Wh*P fronting.

## 2.6 Remarks on Argumentality.

*2.6.1 Argument fronting and pre-verbal subjects*

In this section, we will go into some further problems involving the distinction between argument and adjuncts.

TO the best of my knowledge, Torrego (1984) was the first work to notice that in Castilian Spanish argumental interrogative PPs cannot be safely fronted leaving the subject in pre-verbal position (see also Suñer 1994):

(168) a. Con quien vendrá Juan hoy?
*With whom will John come today?*
b. *Con quien Juan vendrá hoy?
*With whom John will come today?*

Similar phenomena can be observed also in Italian. Let's begin with some core arguments that surface as PPs. In passive constructions, interrogative agentive PPs, are perceived as rather marginal with pre-verbal subjects. In these cases, subject inversion is preferred, as showed by the following minimal couples:

(169) a. ??Da chi Ezra è stato arrestato?
By whom Ezra is been arrested?
b. Da chi è stato arrestato Ezra?
By whom is been arrested Ezra?

(170) a. ??Da chi Ezra è stato insultato?

By whom Ezra is been insulted?

b. Da chi è stato insultato Ezra?
By whom is been insulted Ezra?

(171) a. ??Da chi Ezra è stato chiamato?
By whom Ezra is been called?

b. Da chi è stato chiamato Ezra?
By whom is been called Ezra?

Similarly, dative Affectees[24] in ditransitive constructions lead to deviance if fronted over pre-verbal subjects:

(172) a. ??A chi Ezra ha dato un libro?
To whom Ezra has given a book?

b. A chi ha dato un libro Ezra?
To whom has given a book Ezra?

(173) a. ??A chi Ezra ha raccontato una storia?
To whom Ezra has told a story?

b. A chi ha raccontato una storia Ezra?
To whom has told a story Ezra?

(174) a. ??A chi Ezra ha parlato di me?
To whom Ezra has spoken of me?

b. A chi ha parlato di me Ezra?
To whom has spoken of me Ezra?

The phenomenon can be observed also with Experiencer Affectees in psych-verb constructions:

[24] I will adopt the terminology provided in Bowers (2010). 'Affectee' is a cover term for different kind of dative animate arguments, such as Goal, Source, Possessive, Experiencers (and, possibly, high Benefactive). This choice has been made just for the sake of terminological clarity. Nothing crucial depends on it.

(175) a. *A chi Ezra piace?
To whom Ezra pleases
b. A chi piace Ezra?
To whom pleases Ezra?

The phenomenon seems to hold also with non-core arguments. I will use this term for those elements which are less rigidly required by the verb. These elements may comprise optional arguments such as (high and low) *Benefactives* (Pylkkänen 2008) or sub-categorized elements which do not refer to animate participants, such as *Locative Goal* and *Source* with verb of movement (Chomsky 1981, Bowers 2010):

**Benefactive**

(176) a. ??Per chi Ezra ha scritto una poesia?
For whom Ezra has written a poem?
b. Per chi ha scritto una poesia Ezra?
For whom has written a poem Ezra?
c. ??A chi Ezra ha preparato una torta?
To whom Ezra has baked a cake?
d. A chi ha preparato una torta Ezra?
To whom has baked a cake Ezra?

**Locative Goal**

(177) a. ??In quale città Ezra è andato?
In which city Ezra is gone?
b. In quale città è andato Ezra?
In which city is gone Ezra?
c. ??In quale città Ezra si è recato?
In which city Ezra himself-CL is gone?
d. In quale città si è recato Ezra?
In which city himself-CL is gone Ezra?

**Locative Source**

(178) a. ??Da dove Ezra è arrivato?
From where Ezra is arrived?
b. Da dove è arrivato Ezra?
From where is arrived Ezra?

Non-core arguments, such as Locative Goal and Source, are particularly interesting, since they provide the possibility of identifying argumentality as the main factor contributing to the deviance of these examples. In particular, the very same prepositional phrases that appear in (177-178) can appear with different predicates, receiving a different status with respect to argumentality. Either they can be selected non-core arguments or they can be completely optional locative adjuncts. In the examples (179) we can see that these prepositional phrases behave differently when they appear as locative adjuncts:

(179) a. In quale città Ezra ha conosciuto il sindaco?
In which city Ezra has met the mayor
b. Da dove Ezra ha visto la partita?
From where Ezra has watched the match

Furthermore, *manner* prepositional phrases appear to behave differently depending on whether they are selected by the verb as arguments. We can use as a test case the pronominal verb *comportarsi* ('behave') which obligatorily requires a manner complement:

(180) Ezra si è comportato *(bene/male/stranamente).
Ezra himself-CL is behaved (well/badly/strangely)

(181) a. ??In che modo Ezra si è comportato?
In which way Ezra himself-CL is behaved
b. In che modo Ezra si è liberato?
In which way Ezra himself-CL is freed
c. In che modo Ezra ha conosciuto il sindaco
In which way Ezra has met the mayor

These data are a problem for the Relativized Minimality approach that we advocated in the previous sections, since the fronted element is always an interrogative PP. Given the Visibility Condition on Relativized Minimality they are expected to be acceptable.

Moreover, they are not easy to be handled within a theory of theory of locality. Argumentality is a rather fuzzy notion and, even though some notable efforts in order to clarify it has been made (most notably Marantz 1984, Hale & Keyser 1993, 2002, Pylkännen 2008, Bowers 2010), none of the current theories of syntax represent some version of this notion in the theory of locality restrictions. As a matter of cat, there are no strong indications suggesting that argumentality should play an independent role in the theory of locality, especially in a minimalist framework[25]. I believe that a theory of locality explicitly representing argumentality, as an independent notion, would be undesirable, since it would introduce a big enrichment of the formal machinery, to account for a rather small pool of data.

In the next Sections, I will propose that the syntactic computation might be unloaded from the burden of these phenomena. I will sketch a line of thought according to which the asymmetry between adjunct and argumental PPs with respect to pre-verbal subject might be traced back to conflicting conditions imposed at the syntax/semantics interface. In particular, I propose that the perception of ungrammaticality arises from a conflict between the interpretation of argumental *wh*-questions and the categorical structures realized by Criterial Subjects at the interface. According to this proposal, the sentences discussed in the present Section are actually well-formed structures, as far as the core syntactic computation is concerned. The problem is meant to arise after the syntactic structure is built, at the syntax/semantics interface. The following two Sections do not aim to be a full-fledged proposal, being instead an indication about a possible direction.

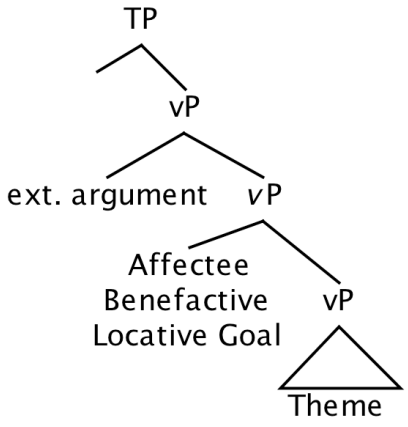
[25] The only systematic attempt in this direction that I am aware of is Starke (2001), Chapters 3-5.

### *2.6.2 On the thetic/categorical opposition.*

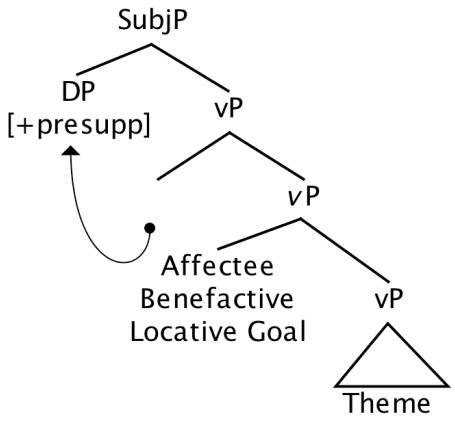
Let us go back to we said in Section 2.4.1 about the opposition between thetic and categorical judgments at the syntax/semantic interface. Ladusaw (1994) argues that thetic and categorical structures implement different modes of saturation in different predicative structures.

In the case of thetic structures, the predication is about a description of an eventuality. The saturation in thetic judgments is meant to provide a full description of the eventuality, fulfilling the information requested at the lexical level. Once that these information are correctly provided, the thetic structure predicates the existence of an eventuality of the relevant type, *via* existential closure. This level of saturation is represented in syntax. The saturation of the eventuality takes place in the *v*P layer, where the arguments are generated (and receive their θ-roles). Without going into the details on the exact positions in which non-core arguments are generated, we will assume that all these elements are generated within the functional extension of the verbal phrase *v*P (Marantz 1984, Pylkkänen 2008, Bowers 2010):

(182)



In the case of categorical structure, on the other hand, the predication is about a specific individual and a property. As argued by Ladusaw (1994), the base for a categorical structure is a compound made by a specific individual and a property. As we showed in Section 2.4.1, categorical structures seem to presuppose the existence of such a property. From the syntactic point of view, the specification of the categorical subject happens in the inflectional layer (namely, in SubjP). In other words, in categorical structures the burden is on the presentation of the subject of the predication, rather than on the presentation of an eventuality. Departing slightly from Ladusaw (1994), I will assume that a categorical structure introduces a specific individual and asserts that this individual stands in a specific relation with the full description of an eventuality which has already been presented.
To achieve this interpretation, the subject is raised to its Criterial position in SubjP in the syntactic computation:
(183)




Assuming that the syntactic computation proceeds cyclically, we can hypothesize that at when it comes to the categorical structure, the saturation of the arguments in the *v*P has already been completed. Consequently, a full description of the eventuality is already achieved when it comes to the Criterial Subject. As a result, in categorical structures the existence of an eventuality description is presupposed. Of course, the sentence can still be

false, whenever the subject of the predication is not in the right relation with the eventuality in the actual world. However, the crucial point is that categorical structures presuppose a full description of an eventuality.

### *2.6.3. Some asymmetries in the interpretation of* wh*-questions.*

Many traditional accounts of the semantics of *wh*-questions (Karttunen 1977, Hamblin 1979) analyze questions as denoting (in each possible world) the set of propositions which in that situation jointly constitute a complete and true answer to the question. For example, the denotation of a *yes/no* questions like '*Does Ezra smoke?'* is a set whose only member is either the proposition "*Ezra smokes*" or the proposition "*Ezra doesn't smoke*", depending on which of these happens to be the true in a given situation:

(184) [[Does Ezra smoke]] = {Ezra smokes, Ezra doesn't smoke}

The denotation of a *wh*-question is defined along the same lines. For example, given a *wh*-questions such as "*Who wrote The Cantos?*", its denotation is the set of true propositions expressed by sentences of the form "*x* wrote *The Cantos*". The role of the fronted *wh*-phrase is, then, to provide the variable *x* that feeds the propositions which are possible answers to the question. This process yields the right answers set. In this particular case, the set is a singleton containing only the proposition "Ezra Pound wrote *The Cantos*":

(185) [[*Who wrote The Cantos?*]] = {Ezra Pound wrote *The Cantos*}

When one ask a genuine *wh*-question, the corresponding answer can be represented by an empty set. For example, given the question such as *"What did Ezra buy?"*, the answer can be "*He didn't buy anything*":

(186) [[*What did Ezra buy?*]] = {∅}

Tearing apart every factor that has to do with the context of utterance and the previous knowledge of the speaker and the hearer about the world, I assume that a *wh*-question is a genuine question about a set of proposition and do not carry any lexical presupposition about the existence of some (set of) propositions which can answer the question

(Groenendijk & Stokhof 1984, Fitzpatrick 2005, Abusch 2012; *pace* Horn 1972 and Gawron 2001).

Now, what is crucial is that this characteristic seem to be idiosyncratic of argumental questions. As we will see, questions on adjuncts do not behave in the same way. Let's begin taking into consideration *wh*-questions that involve core-arguments of the eventuality, such as Affectee in ditransitive constructions and Experiencer in psych verb constructions:

(187) A chi ha dato un libro Ezra?
To whom has given a book Ezra?

(188) A chi piace Ezra?
To whom pleased Ezra?

The denotation of (4) is the set of true propositions expressed by sentences of the form "Ezra gave a book to x", while the denotation of (5) is the set of true propositions expressed by sentences of the form "Ezra pleases to x". As in the case of (3), in both these cases, the denotation of the questions can be an empty set:

(189) Q: A chi ha dato un libro Ezra?
To whom has given a book Ezra?

A: A nessuno.
To no one.

(190) Q: A chi piace Ezra?
To whom pleased Ezra?

A: A nessuno.
To no one.

These possible answers indicate that the speaker does not make any assumption on the existence of a proposition that can answer the question. A licit answer to these question is that there is no individual *x* that saturates the preposition(s) of the appropriate form, yielding a truthful answer to the question.

The same thing happens with many of the non-core arguments discussed in the previous Section:

**Benefactive**

(191) Q: Per chi ha scritto una poesia Ezra?
For whom has written a poem Ezra?
A: Per nessuno.
For no one.

(192) Q: A chi ha preparato una torta Ezra?
To whom has baked a cake Ezra?
A: A nessuno.
To no one.

**Locative Goal**

(193) Q: Dove è andato Ezra?
Where did Ezra go?
A: Da nessuna parte.
Nowhere.

In conclusion, the semantics of argumental (and possibly *quasi*-argumental) questions does not carry a strong presupposition about the existence of at least one proposition that can constitute a truthful answer.

This fact can be interpreted as pointing to a semantic problem arising with categorical structures. Let's take again into consideration the case in (189):

(194) Q: A chi ha dato un libro Ezra?
To whom has given a book Ezra?
A: A nessuno.
To no one.

In this case, the answer indicates that there is no individual *x* such that "*Ezra gave a book to x*" is true. Opening an unsatured position in an argument position, makes the existence of

an eventuality description dependent on the actual value of the variable *x.* For example, the fact that in (194) there is no *x* such that *Ezra gave a book to x* , entails that there is no full description of the eventuality of Ezra giving a book to *x*. However, the categorical structure implemented by the Criterial Subject requires such an eventuality to exists.

Since the syntactic counterpart of a categorical judgment is the Criterial Subject position, a subject DP cannot stay in this position to ask a question that admits the possibility that no eventuality description fulfill the categorical structure. On the other hand, if the subject is left (or moved) in a lower position within the *v*P it can be reconstructed as part of the eventuality description (Diesing 1992, Bianchi & Chesi *to appear*).

Things seem to be different when we turn to *wh*-questions on adjuncts. If the semantics of argumental *wh*-questions can be understood along the lines of Kartunnen (1977), it is less clear what the denotation of adjunct questions should be. Adjuncts involve in very different categories with respect to their semantic denotation, varying from more concrete entities to fuzzy concepts. Locative adjuncts, for example, ranges over places and portion of space, which can be easily represented in model-theoretic semantics as individuals. Temporal adjuncts can also be represented as ranging over clear entities, once a good referential model for time is provided (Partee 1973, Bennett and Partee 1972). On the other hand, it not clear over what kind of entities manner and reason adjuncts range. [26] Intuitively, these adjunct range over more abstract kind of entities, which are not easy to trace back to specific individuals.

Therefore, it might be wise to limit our attention to the first kind of adjuncts for the present purposes. Given that locative and temporal adjuncts ranges over some kind of individuals, we can ask what is the denotation of *wh*-questions on these kind of adjuncts. These questions then seem to require an additional step, that is the relativization of a proposition to some spatial or temporal index.

Now, a main difference between argumental questions and questions on adjuncts seems to be that the latter somehow carry a stronger presupposition that the denotation set cannot be the empty set:

[26] See for example Szabolcsi & Zwarts 1993 for the denotation of manner.

(195) Q: Dove hai conosciuto Ezra?

Where did you meet Ezra?

A: #Da nessuna parte.

#Nowhere

(196) Q: Quando hai conosciuto Ezra?

When did you meet Ezra?

A: #Mai.

#Never.

Bearing in mind the problems raised by manner adjuncts, it still can be noticed that questions on manner adjuncts behave in the same way:

(197) Q: Come hai conosciuto Ezra?

How did you meet Ezra?

A: #In nessun modo.

#In no way.

These facts suggests that adjuncts and arguments might be different when it comes to the presupposition about the existence of eventuality descriptions carried by categorical structures. In particular, if adjunct questions do presupposes that a full eventuality description exists, they might not incur in the problem that we saw about argument questions, when it comes to categorical structures.

If this reasoning is on the right track, the ungrammaticality of argumental questions with pre-verbal subjects can be attributed to the syntax/semantics interface, rather than to the syntactic computation (as for example assumed by Torrego 1985 and Suñer 1994). In this perspective, no asymmetry between adjunct and argumental PPs with respect to pre-verbal subject is visible to core-syntax. The sentences in which an argumental PP is fronted

across a Criterial Subject are actually well-formed structures as far as the pure syntactic computation is concerned.

# Chapter 3:

# MULTIPLE *WH*-QUESTIONS IN ITALIAN

## 3.1 Introduction and overview

In this Chapter, I will discuss multiple *wh*-questions in Italian. These structures have been often considered rather marginal in the literature. In particular, early works by Rizzi (1979) and Calabrese (1985) considered multiple *wh*-questions as unproductive structures in Italian. As a consequence, Italian multiple interrogatives have been a quite neglected topic in the literature.

However, a recent paper by Moro (2011) spotlighted the fact that the conclusions draw in the classical works were too hurried and renewed some interest in this topic. I share Moro's opinion. As we will see, there are good reasons to discharge the widespread idea that Italian does not allow for multiple *wh*-questions. As a matter of fact, most of the speakers that I have consulted found multiple *wh*-questions quite natural, showing a good capacity of parsing and judging even the more complex patterns. Moreover, multiple *wh*-questions seem to be naturally used in the journalistic jargon, possibly as a borrowing from English. As far as the informants I consulted are concerned, I found a lower capacity of accepting multiple *wh*-questions in the older speakers. I consulted 26 speakers between 25 and 49 years old and 8 speakers between 57 and 69. The latter group of speakers found multiple *wh*-questions generally deviant and showed a lower capacity to parse the more complex examples. This suggests two things: that, if a syntactic transfer is taking place, it is still on-going and that Rizzi (1979) and Calabrese (1985) were not completely wrong after all.

At the present time, the distribution of different *wh*-in-situ phrases in Italian displays a rather complex and interesting pattern. The aim of this Chapter is to explore this pattern in details and to draw some conclusions about the syntactic computation that generates it. In conclusion, I will start from the assumption that multiple *wh*-questions are productive structures in current Italian (*pace* Rizzi 1979 and Calabrese 1985).

Before going further, a small additional *caveat* must be made. The reader may notice that most of the multiple *wh*-questions that will be discussed throughout this Chapter are embedded questions, instead of root questions. The reason for this, is that embedded multiple *wh*-questions are more natural in Italian for some reason. Specifically, it is easier to assign to multiple questions a pair-interpretation (e.g. multiple pairs and single pair interpretation) when they appear in complement position. On the other hand, root multiple questions are easier to interpret as echo-questions. Since echo-questions are only orthogonal to the issues discussed in this Chapter, I decided to discuss only embedded multiple questions, except where explicitly mentioned (the same logic was behind the set of examples chosen by Moro 2011, p.c.).

The Chapter is organized as follows. In the first part of the Chapter (3.2–3.4) I will introduce the general background on *wh*-in-situ. In Section 3.2 I will introduce a three-way distinction between languages with respect to multiple *wh*-questions. In Section 3.3. I will summarize some classical problems about the interpretation of *wh*-in-situ, introducing the accounts based on covert movement, on the one hand, and unselective binding/choice function, on the other hand. In Section 3.4 I will illustrate some well-known argument/adjunct asymmetries with respect to *wh*-in-situ.

In the remaining part of the Chapter, I will discuss the theory advanced by Moro (2011) (Section 3.5) and claim that this proposal is untenable in its strongest version (Section 3.6). In particular, I will argue that the behaviour of argumental *wh*-phrases cannot be correctly described by Moro (2011). In Section 3.7 I will discuss some overlooked cases, that might constitute a challenge for Moro (2011). I will argue that these cases do not actually pose threat to Moro's proposal and they can be accommodated assuming a syntactic mechanism called "*wh*-clustering". In Section 3.8, conclusions are drawn.

## 3.2 Three types of languages

In the previous Chapter, we saw that natural languages may employ *wh*-movement to the left periphery to form *wh*-questions. Furthermore, we saw that *wh*-phrases are interpreted as operators at the syntax/semantics interface. In particular, they behave as existential

quantifiers binding their traces, which in turn are interpreted as logical variables (Karttunen 1977). Once the operator is in the left-periphery, it has scope over the proposition expressed by the whole inflectional layer. The proposition, in turn, is interpreted as an 'open' proposition because it contains an open variable, namely the trace.

As a matter of fact, this is not the only way in which *wh*-questions can be generated. Natural languages employ different syntactic mechanisms to form *wh*-interrogative structures. Specifically, languages such as Chinese, Japanese and Korean do not require the fronting of a *wh*-phrase to derive a well-formed question (Huang 1982, Watanabe 1992, 1993, Nishigauchi 1999). In these languages, *wh*-phrases can be left where they are generated (or, at least, they can be dispensed to move to the left-periphery): this phenomenon is known as *wh*-in-situ. In (1), we can see an example from Mandarin Chinese:

(1) Hufei mai-le shenme (Mandarin Chinese)
Hufei buy-PERF what
*What did Hufei buy?*

Interestingly, the phenomenon of *wh*-in-situ can be observed also in languages that normally require *wh*-fronting. The best test case is represented by multiple *wh*-questions, where the syntactic computation involves more than one *wh*-phrase at once. In these cases, *wh*-phrases can be left in-situ in a number of *wh*-fronting languages. The following example illustrates the phenomenon in English:

(2) Who bought **what** for **whom**?

In (2), the subject *wh*-phrase is the only constituent that moves to the left-periphery, while the object and the affectee *wh*-phrases can stay in-situ.

Simplifying somewhat, we can say that natural languages split into three distinct types from a descriptive point of view. The first type is represented by languages that do not require overt *wh*-fronting at all. As we already showed, Chinese is such a language. I will refer to these languages as *wh-in-situ* languages. The second type is represented by languages that always require overt *wh*-fronting. Many Slavic languages, such as Bulgarian, Serbo-

Croatian and Polish, behave in this way (Pesetsky 1987, Richards 1993, Boškovic 1999). I will refer to these languages as *multiple wh-fronting* languages. The following example is from Bulgarian:

(3) Koj kakvo na kogo dade? (Bulgarian)
who what to whom gave
*Who gave what to whom?*

The third type includes languages like English, where the general requirement is that only one *wh*-element must move to the left periphery, while the others can stay in situ:

(4) a. Who bought **what** for **whom**?
b. *Who what for whom bought?

These languages seem to behave as hybrids between the former two types. We will refer to them as *partial wh-in situ* languages.
At first blush, Italian seems to fall among *partial wh-in-situ* languages:

(5) a. Vorrei sapere chi ha fatto cosa.
Want-1SG.COND know-INF who has done what.
*I would like to know who did what.*
b. Vorrei sapere chi ha dato cosa a chi.
Want-1SG.COND know-INF who has given what to whom.
*I would like to know who gave what to whom.*

As in the English cases, in (5) the subject *wh*-phrase is the only constituent moving to the left periphery, while the other *wh*-phrases seem to stay in-situ. However, Moro (2011) has recently proposed that, despite the superficial properties, Italian is actually a *multiple wh*-fronting language. In Section 3.6. I will argue against this claim and showing that the examples in (5) involve actual *wh*-in-situ.

## 3.3 *Wh*-in-situ at the syntax/semantics interface

### *3.3.1 The interpretation of wh-in-situ.*

A crucial property of *whs*-in-situ is that they are generally interpreted as *wh*-phrases that undergo movement. Therefore, once we accept the idea that there are languages allowing *wh*-phrases to stay in-situ, the main question is how to derive their logical form:

(6) Cosa ha comprato Ezra?
What has bought Ezra
*What did Ezra buy?*

(7) Hufei mai-le shenme
Hufei buy-PERF what
*What did Hufei buy?*

In (7) for example, the *wh*-in-situ *Shenme* ('what') receives the same interpretation as the fronted *wh*-phrase *Cosa* ('what'): they both behave as operators taking scope over the whole proposition. However, while in Italian the *wh*-phrase is moved outside the syntactic domain that specifies the proposition (namely, the inflectional layer), in Mandarin Chinese the *wh*-phrase occupies a 'proposition-internal' position. Clearly, we need a way to interpret the *wh*-in-situ as taking wide scope over the proposition.

The same problem arises also in multiple *wh*-questions. Also in these cases, *wh*-phrases appear to stay in-situ receiving a wide-scope interpretation. We can illustrate this phenomenon using possible answers as a diagnostic tool for scope relations. Consider the example in (8). A possible good answer to the question in (8a) is a list of people paired with a list of things, such that each individual bought one thing (8b):

(8) a. Q: Who bought what?
b. A: Well, Ezra bough a book, Thomas bought a cigar and William bough a bottle of whiskey

Adopting the classical view of Karttunen (1977), the denotation of such a question can be considered the set of propositions obtained substituting the variables bound by the two *wh*-operators that can answer the question (see. also Higginbotham & May 1981):

(9) $\exists x.\exists y.\lambda p$ [person(x) & thing(y) & p= bought(x)(y)]

I will refer to this interpretation as *multiple pairs* answer. To obtain this interpretation, the *wh*-in-situ *what* must be interpreted as having scope outside the proposition. As in the case of Mandarin Chinese, we need a way to derive the interpretation of the *wh*-in-situ, as taking wide-scope.

The fact that this interpretation can be obtained without overt movement to a proposition-external position must be accounted for by a good theory of movement, whose aim is to trace back cross-linguistic variation to a common pool of computational operations generally available to the human cognitive system.

In the following Sections, I will take into consideration three solutions that have been proposed to this problem: Covert Movement at LF (Huang 1982), Unselective Binding (Pesetsky 1987) and Choice Functions (Reinhardt 1997, 1998).

### *3.3.2 Covert Movement at LF*

The classical account of multiple interrogatives in the Government and Binding framework relies on the assumption of a syntactic level, named *logical form* (LF), serving as the input to the semantic interpretation. LF represents a structurally disambiguated syntactic form in which operators may realize different scope relations via covert movement.[27] Since LF is independent from PF, it can be derived through the application of covert movement. Thus, the operators appearing at LF can be interpreted as occupying different positions from where they appear in the phonological form (May 1985).

This mechanism can be applied to *wh*s-in-situ to derive the proper interpretation. In particular, a sentence like (8a) can be analyzed as having the Logical Form in (10). According to this representation, the subject *wh*-phrase moves to the left periphery overtly, while the object *wh*-phrase moves covertly, although it stays in-situ in the phonological form:[28]

[27] Following the terminology adopted throughout Chapter 2, covert movement is defined as movement taking place after Spell-Out (Chomsky 1995, 2000, 2001).

[28] It is not important for our purposes where exactly the object *wh*-phrase ends up in the left periphery. Different solutions have been proposed in the literature. According to Aoun et al. (1981), *what* adjoins to the

(3a) Who bought what?

(10) [CP What$_k$ Who$_j$ [TP $t_j$ bought $t_k$]

In (10), the *wh*-in-situ has been moved to the left-periphery and can, thus, bind the trace left by LF-movement as a logical variable.

This account of multiple interrogatives led to posit some peculiar properties of the operation at LF. In particular, LF movement has been claimed to be less constrained than overt movement. It is a well-known fact that overt movement is constrained in certain syntactic environments, known as *islands* (Ross 1967). Since Huang (1982), it has been observed that covert movement at LF appears to be more liberal with respect to these restrictions. To give an example, we can take cases in which where the first-merge position of a *wh*-phrase is located inside an island and contrast overt *wh*-movement with *wh*-in-situ. The example (11-13) illustrate the cases of Complex-NP islands, *Wh*-islands and Adjunct Islands, respectively:

(11) a. ??What$_j$ did you find evidence that Jim has bought $t_j$?

b. Who$_j$ $t_j$ found evidence that Jim has bought what?

(12) a. ?? What$_j$ do you know where we bought $t_j$?

b. Who$_j$ $t_j$ knows where we bought what?

(13) a. ??Who$_j$ did you get jealous after I had spoken to $t_j$?

b. Who$_j$ $t_j$ got jealous after I had spoken to who?

Similar cases can be observed also in Italian. The sentence in (14a), where a *wh*-phrase is moved out of a Complex-NP, is completely unacceptable. On the other hand, the sentence in (14b), where a *wh*-in situ appears inside the same Complex-NP, appears to be quite acceptable:

(14) a. *Vorrei sapere cosa$_j$ ti sei posto il problema di comprare $t_j$?

Want-1SG-COND know what you-CL are-2SG posed the problem of buy-INF

---

phrase which is in scope position in overt syntax. Pesetsky (2000) assumes that *wh*-phrases moved covertly occupy additional specifier positions in a complex interrogative projection (as an instance of the '*tucking-in*' mechanism, proposed by Richards 1993). Higginbotham & May (1981) propose a mechanism of adjunction that generates an "absorbed" NP at LF.

*I would like to know what did you pose the problem of we should buy?*

b. ?Vorrei sapere chi si è posto il problema di comprare
Want-1SG-COND know who him-CL is-3SG posed the problem of buy-INF
cosa?
what
*Who poses the problem of what we should buy?*

While the examples in which *wh*-phrases are moved out of island constructions show a severe decrease of the acceptability, the corresponding examples with *wh*s-in-situ do not. If we think about *wh*-in-situ as an instance of covert movement at LF, we are pushed to the conclusion that covert movement is less constrained than overt movement. The main advantage of this approach is that it derives both *wh*-in-situ and *wh*-fronting employing a minimal syntactic machinery: in both cases the interrogative structures are built by means of an application of a movement operation. The difference between these two syntactic phenomena would be the fact that, in the first case, movement takes place only at LF, while in the second it takes place also at PF. The only additional assumption needed to cover the data is that PF movement is island-sensitive, while LF movement is not.

This approach is undoubtedly appealing and it has been pursued by most of work in the context of the Government and Binding theory. However, the idea that LF movement is island-free faces serious problems when we take into consideration other constructions that usually involve LF movement, such as Quantifier Raising (QR) (May 1985). In particular, quantifiers such as *every*-phrases can undergo QR, but still have to observe island constraints. Reinhart (1997) argues that a universally quantified DP can be moved covertly out of its CP, but not out of a complex nominal constituent:

(15) a. A doctor will examine [the possibility [that we give every new patient a tranquilizer]].

b. $\exists$x [doctor(x) & $\forall$y[new-patient(y) $\rightarrow$ x will examine the possibility that we give y a tranquilizer]]

c. *$\forall$y [new-patient(y) $\rightarrow$ $\exists$x[doctor(x) & x will examine the possibility that we give y a tranquilizer]]

Moreover, Reinhardt (1998) further points out that making covert movement an island-free operation makes the wrong predictions in the case of comparatives and other elliptic constructions. In the examples in (16), the correlate phrases (here in boldface) must move at LF and adjoin to the *than*- and *except*-phrases. This covert movement must obey island constraints, as showed by (17), where the correlate phrases are buried inside an island. In this case, LF movement cannot take place:

(16) a. More people said that they will vote for **Bush** in the last poll than for Dukakis.
b. Lucie did not admit that she stole **anything** when we pressed her, except for the little red book.

(17) a. *More people who love **Bach** arrived, than Mozart.
b. *The people who love **every composer** arrived, except Mozart.

These cases suggest that the idea that covert movement at LF is immune to island constraints is too strong to deal with the data. If it is true that *whs*-in-situ do not show island sensitivity, this cannot be imputed to special properties of covert LF movement. For this reason, many scholars tried to develop different mechanisms to derive the right interpretation of *wh*-in-situ, dispensing with movement. In the next Section, we will see two of these mechanisms, namely *Unselective Binding* and *Choice Function*.

### *3.3.3 Interpretation without movement: unselective binding and choice functions.*

A different approach, first proposed by in Baker (1970), is to bind *whs*-in-situ directly in their base position. In Baker (1970) this result was achieved *via* an interrogative operator Q which was placed in a proposition-external position. In this way, *wh*-phrases can be interpreted in-situ without being raised to C:

(18) a. Who bought what?
b. $[_{CP}\ Q_{i,\,j}\ [_{CP}$ who $[_{TP}\ t_i$ bought what $_j]]]$

This perspective has been adopted by Pesetsky (1987) and Nishigauchi (1999), who argued

that at least in certain cases *whs*-in-situ can be directly bound by Q. Having an interrogative operator in the left periphery ensures that the scope of *whs*-in-situ can be the same of that of moved *wh*-phrases. However, the restriction of the quantification stays in situ, rather than occurring as a restriction on the question operator. This is particularly easy to see if we take into consideration interrogative phrases of the form *which*-NP:

(19) a. Who bought which book?

b. $[_{CP}\ Q_{i,\,j}\ [_{CP}$ who $[_{TP}\ t_i$ bought which book $_j]]]$

In (19) the interrogative existential operator is restricted by the denotation of the nominal complement of the interrogative phrase: that is, it can quantify only over the set of books. Similarly, in (118) the *wh*-situ *what* restricts the denotation of the variable to non-human individuals, possibly by means of its morphosyntactic feature composition. If the restriction on the denotation is specified by the semantics of the *wh*-phrase that stays in-situ, the interrogative operator in the left-periphery must be an abstract operator, whose only role is to bind a variable introduced somewhere else. Whatever semantic operation we choose to describe the role of the operator in the left periphery, we should naturally derive this fact.

USELECTIVE BINDING - To this extent, the mechanism employed was unselective quantification, as it was developed by Heim (1982) to deal with the semantic properties of indefinites. Pesetsky (1987) (see also Engdhal 1986) proposed to treat the *wh*-phrases appearing in-situ as indefinites. According to this perspective *wh*-phrases merely introduce open variables, providing in addition some restriction on their possible denotations. The restriction on the variable denotation is provided either by a nominal complement of the *Wh*Ps (e.g. in *which*-phrases) or by the morphosyntactic features of the *WhPs* (e.g. with *wh*-words). The abstract operator in the left-periphery introduces a default operation of existential closure that binds all the open variables. This mechanism is called *Unselective Binding*. From the syntactic point of view, the *wh*-phrase that stays in-situ is simply co-indexed with the Q-operator (or with a *+wh* marked position in the left periphery that c-commands it). Let's say, for example, that the sentence in (18) (repeated below as 20a), has

the logical form in (20b), the application of Unselective Binding to this syntactic structure yields the Karttunean semantic structure in (20c):

(20) a. Who bought what?

b. $[_{CP}\ Q_{i,j}\ [_{CP}\ who_j^{+person}\ [_{TP}\ t_i\ bought\ what_i^{-person}]]]$

c. $\exists xy.\lambda p.\ [person\ (x)\ \&\ thing\ (y)\ \&\ p = bought(x)(y)]$

Here the existential operator Q is associated with the feature structure of the initial (overtly moved) *wh*-item and may have as many indices (x, y, z, . . . ) as the number of *wh*-phrases in the clause.

The crucial point is that Unselective Binding can give us semantic structures that are identical to those obtained by means of covert movement at LF, without any movement operation. Consider again multiple questions. As we already saw in the previous Section, multiple questions can be formed such that the *wh*s-in-situ can appear inside syntactic islands:

(21) a. ??**What** did you find evidence that Jim has bought?

b. Who found evidence that Jim has bought **what**?

(22) a. ??**What** did you know where we bought?

b. Who knows where we bought **what**?

(23) a. ??**Who** did you get jealous after I had spoken to?

b. Who got jealous after I had spoken to **who**?

Since Unselective Binding is not sensitive to syntactic islands, this account gives the possibility of interpreting the *wh*-in-situ, without admitting the undesirable property that LF movement is somehow less constrained than overt movement.

CHOICE FUNCTION - Although attractive from a syntactic point of view, Reinhart (1992, 1997, 1998; see also 2006) argued Unselective Binding faces severe problems in deriving the right entailments. In particular, she discusses some cases in which Unselective Binding derives a logical form different from the one created by covert movement at LF. Let's take into consideration the multiple *wh*-question in (24) discussed first in Reinhart (1997). In

this case Unselective Binding and covert movement derive respectively the two different LF representations in (25) and (26):

(24) Who will be offended if we invite which philosopher?

(25) ∃xy.λp [p = ^[(we invite y & philosopher (y)) → (x will be offended)] & p=1]

(26) ∃xy. λp [(philosopher (y) & p = ^[(we invite y) → (x will be offended)) & p=1]

The application of Unselective Binding to the *wh*-in-situ gives a representation in which the restrictive clause ('y is a philosopher') appears inside the antecedent of the conditional, because the *wh*-phrase does not move from its surface position (25). Differently, covert movement at LF gives a representation in which the restrictive clause appears outside the antecedent of the conditional (26). In other words, (25) says something like: "*For which <x,y>, if we invite y and y is a philosopher, then x will be offended?"*. On the other hand, (26) says something like: *"For which <x,y>, y is a philosopher, and if we invite y, then x will be offended"*.

Reinhardt shows that the first representation is too permissive and derives the wrong entailment that we can invite people other than philosophers and still make the conditional true. Reinhart argues that, if we adopt the Unselective Binding representation in (25), we should expect a sentence like '*Lucie will be offended*, *if we invite Donald Duck'* to be an appropriate answer to the question in (24). Of course, this is not the case, since we all understand that Donald Duck is not a philosopher. This follows from the fact that whatever truth-value is ascribed to the restrictive clause, the conditional will come out as true, if the antecedent is false. Assume that the conditional's antecedent is composed of the conjunction of the true proposition that we invite Donald Duck and the false proposition that Donald Duck is a philosopher. This would make the antecedent false by the conjunction rule of Boolean algebra. The problem is that this move is enough to ensure that the whole conditional will turn out to be true: as we all know, the only case in which a conditional is false is represented by the one in which the antecedent is true and the consequent is false.

The representation in (26), on the other hand, does not incur into these problems. Since the

*wh*-in-situ moves at LF, the restrictive clause appears outside the antecedent clause of the conditional.

In order to account for this kind of wrong entailments, Reinhardt (1997, 1998) proposes a different mechanism to interpret the *wh*-in-situ, called Choice Function. Choice functions were first proposed by Zermelo (1904). They are defined as functions applying to a non-empty set and yielding an individual member of the set. The idea is that the existential closure operation that has been suggested by Heim (1982) can bind a choice function that selects an entity from a non-empty set.

Therefore, the existential quantification binds only a function that selects an individual such and such. In this way, the restriction of the variable can be provided without moving the entire *wh*-phrase in a proposition-external position, as covert movement would require. According to Reinhart's analysis, the logical form of (24) will be (27):

(24) Who will be offended if we invite which philosopher?

(27) $\exists xf.\lambda p$ [CH(f) & p = ^[(we invite f(philosopher)) → (x will be offended)) & p = 1]]

(27) says something like "*for which <x,f>, where x is a human individual and f is a choice function applying to the set of philosophers, if we invite an individual picked up by f, x will be offended.* Adopting Choice Functions, we can obtain the proper scope of the existential operator (that is outside the antecedent of the conditional), without assuming actual movement of the *wh*-phrase outside the adjunct island.

Let's go back to simple multiple *wh*-questions. Intuitively, the semantics of (18) – repeated here as (28) - expresses the existence of a human individual *x* and a choice function *f* which selects only non-human entities *e*, such that for every argument selected by *f*, *x* bought it:

(28) a. Who bought what?

b. $\exists xf.\lambda p$ [CH(f) & human(x) & p = ^[x buy (f(e)) & p=1]

Formally, (28a) denotes the set of true propositions P, each stating for some human *x* and for some choice function *f* that *x* did the non-human entity selected by f. Syntactically, in (28a) we can apply a choice function to the *wh*-in-situ *what*, obtaining *f*(*e*), while the *wh*-

phrase *who* cannot serve as an argument of the form *f*(*x*), because it has been moved in a higher scope position.

## 3.4 Argument/adjunct asymmetries in multiple wh-questions

In this Section, we will see some argument/adjunct asymmetries in multiple *wh*-questions and how they can be captured in the framework introduced in the previous sections.
The starting observation is that adverbial adjunct *wh*-phrases cannot be left in-situ, unlike arguments (Chomsky 1973, Huang 1982). Consider the following examples:

(29) a. *Who played how?
b. *Who played when?
c. Who played what?

The examples in (29) show that, while arguments can be left in-situ in multiple *wh*-questions (29c), adverbial *wh*-phrases are more constrained (29a-b). The question of course is how we can (if we can at all) account for this contrast.
In the Government and Binding framework, these cases were traced back to the Empty Category Principle (ECP), which required a non-pronominal empty category (e.g. a trace) to be either lexically governed or antecedent-governed. The idea was that covert movement was ruled by the ECP principle (on a par with overt movement). This would prevent the structures in (29a-b) to be acceptable, since the adjunct traces cannot be properly governed, if covert movement is applied:

(30) a. $[_{CP}\ How_k\ Who_j\ [_{TP}\ t_j\ played\ t_k]]$
b. $[_{CP}\ When_k\ Who_j\ [_{TP}\ t_j\ played\ t_k]]$

This account apparently captures the cases with adverbial *wh*-phrases, since adjuncts always require to be antecedent governed. The problem with this solution is that it requires the same special assumptions about covert movement that we discussed in Section 3.2.2. For example, let's take two classical examples discussed by Huang (1982):

(31) a. Who fainted when you attacked whom?

b. *Who fainted when you behaved how?

In these cases, the account based on the ECP makes the right predictions. As in (29a) and (29b), the trace of the adverbial *wh*-phrases *how* in (31b) is not properly governed:

(32) a. [$_{CP}$ Whom$_j$ Who$_k$ [$_{TP}$ t$_k$ fainted when you attacked t$_j$]]

b. [$_{CP}$ How$_j$ Who$_k$ [$_{TP}$ t$_k$ fainted when you behaved t$_j$]]

The examples in (32) gives us the possibility of drawing a direct connection between overt and covert movement. Under the ECP analysis, the ungrammaticality of the example in (31b) can be considered akin to the ECP violation in case of overt movement such as (33):

(33) *How$_j$ did you fainted when$_k$ you behaved $t_j$ $t_k$?

As we already saw, however, this perspective still has to assume that LF movement is not constrained by island constructions, since the overt counterpart of (31a) appears to be unacceptable:

(34) *Whom$_j$ do you fainted when$_j$ you attacked $t_j$ $t_k$?

In conclusion, the idea that the adjunct/arguments asymmetries depends on ECP violation, would incur in the same problem that we illustrated in Section 3.2.2.

Moreover, Reinhardt (1998) noticed that the restriction of the adverbial *wh*-in situ depends also on the form of the *Wh*P. In particular, she provided the following contrast:

(35) a. *Who fainted when you behaved how?

b. Who fainted when you behaved what way?

The contrast in (35) cannot be explained in terms of ECP, since neither the trace of *how* nor the trace of *what way* are properly governed. If the ECP had been the relevant principle here, (35b) should have been unacceptable.

As we discussed in Section 3.2.3, covert movement at LF is not the only way to derive the interpretation of *wh*s-in-situ. A different way of thinking is represented by those analyses that do not require movement at all. Reinhardt (1997, 1998, 2006) proposed that the asymmetry between argument and adverbial *wh*-phrases depends on the nature of Choice

Functions. She adopts the semantic distinction between *Wh*-NPs (e.g. *who* and *what*) and *wh*-adverbials (e.g. *how* and *why*) proposed by Szabolcsi & Zwarts (1993). In their work on Weak Islands, Szabolcsi & Zwarts (1993) argued that *wh*-NPs and *wh*-adverbials denote different kinds of entities: the first denote functions ranging over discrete individuals, the second denote functions ranging over higher order entities. In the second case, the *wh*-phrases do not range over discrete individuals. This distinction is relevant, according to Reinhardt (1998), for the felicitous application of the mechanism of Choice Function, since this crucially depends on the possibility of introducing a variable that can be bound by the Choice Function. Recall that Choice Functions are defined as functions that pick up individual members of the sets they are applied to. If *wh*-adverbials do not range over sets of discrete individuals, they cannot be interpreted *via* choice function. Since, in the example (35a), there is not a variable that can be bound, the Choice Function cannot do the job.

Reinhardt (1998) further argues that the possibility of introducing a variable depends also on the syntactic form of *wh*-constituents. In particular, she suggests that *which*-phrases are always able to introduce a variable, because they explicitly represent a restriction on the variable denotation thanks to a referential nominal component (namely, the NP). Therefore, *wh*-phrases containing a nominal element can introduce a variable available to choice function binding, whereas *wh*-adverbs are operators and cannot be unselectively bound. In this perspective, the example (35b) is different from (35a), since the *wh*-in-situ *in what way* contains a nominal component that provides a restriction on the denotation of the variables.[29] This would make Choice Function able to apply in order to derive the interpretation of the *wh*-in-situ.

Similar phenomena have been attested also in *wh*-situ languages, such as Mandarin Chinese. For instance, Tsai (1994) noticed that Chinese *Reason* and *Purpose* items behave differently depending on whether they contain an aspectual marker (*–le*) separating the prepositional component *wei* and the nominal component *shenme*. These two items behave differently with respect to the possibility of occurring inside a strong island:

[29] See also Starke (2001), ch.2 on the possibility of turning the denotation of adverbial *wh*-phrases into a set of discrete individuals by means of the extra-sentential context.

(36) a. ni zui xinshang [[wei(-le)shenme gongzuo] de ren]?
you most appreciate for(-LE)what work DE people

b. What is the purpose x such that you appreciate most people who work for x?

c. *ni zui xinshang [[weishenme gongzuo] de ren]?
you most appreciate why work DE people

d. What is the reason x such that you appreciate most people who work for x?

Tsai's explanation of this contrast relies on the assumption that the constituent *wei(le)shenme* is divided into a nominal part (*shenme*) and a preposition (*wei*), while the reason *weishenme* is a unique item that has no nominal part. Tsai (1994) concludes that the relevant factor for *wh*-adverbials in-situ is the presence of a nominal component in their structure (see. also Tsai 2008 and Stepanov & Tsai 2007). I will come back to these issues in Section 3.5, where I will discuss some new data from Italian, which seem to suggest that argumentality plays its own role in determining the possibility of interpreting *wh*-adverbials in-situ. I will argue that, despite the appearances, argumentality cannot be claimed to enhance the application of Choice Function.

For now, it is sufficient to bear in mind that the empirical generalization which emerges is that *wh*-adverbials are generally uninterpretable in-situ and usually require to be moved to the left-periphery.

## 3.5 Italian as a wh-fronting language.

### *3.5.1. Clause structure folding.*

In Section 3.2 we introduced the distinction between three language types: *wh-in-situ* languages*, multiple wh-fronting* languages and *partial wh-in-situ* languages. Moreover, we saw that Italian seems to fall among *partial wh-in-situ* languages at first sight. Although this is descriptively plausible, Moro (2011) recently argued that Italian is rather to be considered a multiple *wh*-fronting language. According to Moro's proposal, Italian would

not allow for *wh*-in-situ at all.

Moro's starting observation is that Italian requires that a coordinative head '*e'* precedes adverbial *wh*-phrases in multiple *wh*-questions. For example, in (37), where we have two adverbial *wh*-phrases, the in-situ *wh*-phrase mandatorily requires coordination:

(37) a. Vorrei sapere dove hanno suonato *(e) perché.
Want-1SG.COND know-INF where *pro* have-3PL played and why.
*I wonder where did they play and why*.

b. Vorrei sapere dove hanno suonato *(e) come.
Want-1SG.COND know-INF where have-3PL played and how.
*I wonder where did they play and how.*

c. Vorrei sapere come hanno suonato *(e) perché.
Want-1SG.COND know-INF how have-3PL played and why.
*I wonder how did they play and why.*

d. Vorrei sapere come hanno suonato *(e) dove.
Want-1SG.COND know-INF how have-3PL played and where.
*I wonder how did they play and where.*

The presence of a coordination particle in these kind of structures raises an immediate problem: what does the conjunction coordinate, in (37)? A well-established property of coordinative heads is that they can only coordinate two (or more) phrases that belong to the same category. As Moro shows, coordination is never allowed between inconsistent phrases (see also Munn 1993):

(38) a. Gianni legge [[$_{DP}$ romanzi][e [$_{DP}$ poesie]]]
*John reads novels and poems.*

b. Gianni legge [[$_{PP}$ al mare][e [$_{PP}$ alla stazione]]]
*John reads at the seaside and at the station.*

(39) a. *Gianni legge [[$_{DP}$ romanzi][e [$_{PP}$ alla stazione]]]
*John reads novels and at the station.*

b. *Gianni legge [[$_{PP}$ al mare][e [$_{DP}$ poesie]]]

*John reads at the seaside and poems.*

Therefore, the first problem is to spot the right candidate for coordination in the examples in (37), since apparently there is no obvious candidate that can play the role of the first member of the coordination.

Moro proposes a derivation in which all the *wh*-phrases must overtly move to the left periphery (here indicated with the shorthand 'CP'). After the movement of the *wh*-phrases, a coordinative head is merged to the whole clausal constituent CP. The final order is derived through remnant movement of the lower portion of the CP to a specifier position created by the merging of the coordinative head. Apparent *wh*-in-situ is just the effect of this mechanism which Moro names *Clause Structure Folding*. The derivation of the examples in (37) goes as follows:

(40) a. [*wh*1 C [ TP … t1... *wh*2 …]]

b. [*wh*2 C [*wh*1 C [TP …t1…t2…]]]

c. [ **e** [*wh*2 C [*wh*1 C [TP …t1…t2…]]]]

d. [[*wh*1 C [TP…t1…t2…]] [**e** [*wh*2 C *t* ]]]

First, the highest *wh*-phrase is raised to the specifier of a suitable head in the CP - (40a). Second, the lower *wh*-phrase is raised to an higher portion of the CP - (40b). Third, a coordinative head is merged to the whole clausal structure - (40c). Fourth, the lower portion of the clausal constituent is moved to the specifier of the coordinative head. This proposal explains why a coordinative head must appear in Italian multiple *wh*-questions, as illustrated by (37).

According to this analysis, the coordination in examples like (37) coordinates two clausal constituents. Moro argues that one of the empirical advantages of the proposal is the fact that it sheds some light on a puzzling fact about free relatives. Consider first the following sentences:

(41) a. [$_{DP}$ Chi è arrivato per questa ragione] è stupido.
who is arrived for this reason is foolish

*Who has arrived for this reason is foolish.*

b. [$_{CP}$ Chi è arrivato per questa ragione] è ovvio.
who is arrived for this reason is obvious
*Who has arrived for this reason is obvious.*

(42) a. *[$_{CP}$ Chi è arrivato e per quale ragione] è stupido.
who is arrived and for what reason is foolish
*Who has arrived and for what reason is foolish.*

b. [$_{CP}$ Chi è arrivato e per quale ragione] è ovvio.
who is arrived and for what reason is obvious
*Who has arrived and for what reason is obvious.*

Let's first consider (41). Here, the free relatives occurring in subject position can be the subject of semantically different types of predicates. In (41a) the adjectival predicate *stupido* 'foolish' can take an individual as a subject, while in (41b) the adjectival predicate *ovvio* 'obvious' can take a propositional subject. Following Donati (2006) and Cecchetto & Donati (2011), these facts can be analyzed in terms of Labeling. Assuming that the two pre-verbal constituents can be labeled differently, namely either as DP as CP, the examples in (41) follow. In (41a) the *wh*-word projects as nominal category (e.g. a DP), while in (41b) the clausal constituent projects providing a clausal category (e.g. CP). If the causative adverbial *per questa ragione* ('for this reason') is turned into the interrogative adverbial *per quale ragione* 'for what reason' we observe two facts. The first is that a coordinative head is obligatorily required. The second is that the sentence with the adjectival predicate *stupido* ('foolish') becomes unacceptable. Moro argues that, if the adverbial *wh*-phrase in (42b) is taken to be in-situ, the unacceptability of the sentence remains unexplained. However, if the occurrence of the conjunction is tied up to the presence of a clausal (remnant) movement the ungrammaticality follows. The remnant movement of a clausal constituent is not compatible with assigning a DP label to the pre-verbal constituent in (42b), for *chi* 'who' is too deeply embedded in the first member of the coordinative structure. The only reasonable label for the constituent *chi è arrivato e per quale ragione* ('who has arrived and for what reason') is CP, yielding the incompatibility of this sentence with a non-propositional

predicate like *stupido* ('foolish') in (42a).[30]

One crucial prediction that this theory makes is that, whenever a multiple *wh*-question is formed, the *wh*-phrase generated in the lower position will always be stranded. This follows from the derivational steps in (40c-d), which require that everything that is on the right of the *wh*2 must be raised on the left after the merging of the coordinative head. This prediction is met in multiple *wh*-questions with non-argumental *wh*-phrases. For example, if we built a sentence with three different adjunct modifiers (e.g. time, place and manner) we can see that an overt adjunct can appear between the two *wh*-phrases, while it cannot appear on the right of the stranded *wh*-phrase:

(43) a. Vorrei sapere dove hanno suonato sabato sera *(e) come.
Want-1SG.COND know-INF where have-3PL played Saturday night and how.
*I would like to know where did they play Saturday night and how*.

b. Vorrei sapere dove hanno suonato meravigliosamente *(e) quando.
Want-1SG.COND know-INF where have-3PL played beautifully and when.
*I would like to know where did they play beautifully and when.*

c. Vorrei sapere quando hanno suonato allo Stone *(e) come.
Want-1SG.COND know-INF when have-3PL played at the Stone and how.
*I would like to know when did they play at the Stone and how*.

(44) a. *Vorrei sapere dove hanno suonato e come sabato sera.
Want-1SG.COND know-INF where have-3PL played and how Saturday night.
*I would like to know where did they played and how Saturday night.*

b. *Vorrei sapere dove hanno suonato e quando meravigliosamente.
Want-1SG.COND know-INF where have-3PL played and when beautifully.

[30] It is maybe worth noting that this analysis appears to rely too strongly on the assumption that the adjectival predicate *stupido* ('foolish') cannot select for a clausal complement:

(i) ?Che Gianni sia arrivato qui è stupido, me ne rendo conto.
*That John is arrived here is foolish, I am aware of that.*

If the unacceptability of (42b) ultimately depends on the incompatibility of *stupido* with a CP complement, it is unclear why (42b) is significantly less acceptable (i).

*I would like to know where did they played and when beautifully.*

c. *Vorrei sapere quando hanno suonato e come allo Stone.
Want-1SG.COND know-INF when have played and how at the Stone.
*I would like to know when did they played and how at the Stone.*

Moreover, the Clause Structure Folding can capture a peculiar phenomenon in multiple *wh*-questions involving *perché* ('why'):

(45) a. Vorrei sapere dove sono andati e perché.
Want-1SG.COND know-INF where are-3PL gone and why.
*I would like to know where did they go and why.*

b. ??Vorrei sapere perché sono andati e dove.
Want-1SG.COND know-INF why are-3PL gone and where
*I would like to know why did they go and where.*

c. Vorrei sapere quando sono partiti e perché.
Want-1SG.COND know-INF when are-3PL left and why.
*I would like to know when did they leave and why.*

d. ??Vorrei sapere perché sono partiti e quando.
Want-1SG.COND know-INF why are-3PL left and when.
*I would like to know why did they leave and when.*

The preference for the sentences in which *perché* ('why') is stranded can be accounted for by the idiosyncratic properties of *reason/purpose wh*-phrases. Remember that these *wh*-phrases are externally merged directly in the left-periphery, in a position higher than the one usually occupied by fronted *wh*-phrases. Since *perché* ('why') is externally merged directly in the CP, it is expected to be always stranded in the final order:

(46) a. [*wh*1 C [ TP … t1...]]

b. [*why* C [*wh*1 C [TP …t1…]]]

c. [ **e** [*why* C [*wh*1 C [TP …t1…]]]]

d. [[*wh*1 C [TP…t1…]] [**e** [*why* C *t* ]]]

These facts support Moro's claim that adverbial *wh*-phrases in Italian are not interpreted in-situ, although they do seem to stay in-situ. If Moro is on the right track, overt *wh*-movement is always required at least with adverbial *wh*-phrases.

Assuming that this analysis of *how* lexical multiple *wh*-questions are formed proves correct, it is natural to ask *why* the syntactic computation requires coordination and subsequent remnant movement. In other words, why is not multiple *wh*-fronting sufficient for the derivation to converge? To this extent, Moro argues that the reason for the application of Clause Structure Folding relies on the fact that, in Italian, the left periphery of the clause can contain *one and only one* position for *wh*-elements at once (Rizzi 1997). Recall that in Section 1.2., we saw how FocP lack recursion:

(47) a. A Thomas, quale poesia gli dedichiamo?
To Thomas, which poem, to-him-CL dedicate-2PL
*As for Thomas, this poem, we dedicate to him.*

b. *A THOMAS, quale poesia dedichiamo? (non ad Ezra).
To Thomas, which poem, dedicate-2PL
*TO THOMAS which poem do we dedicate? (not to Ezra).*

Given this structural constraint, the request of multiple *wh*-fronting would lead the derivation to crash, unless some further operation is performed to save the derivation. According to Moro, an escape hatch is provided by the possibility of splitting the two interrogative projections into two different CP segments and subsequent movement of them out of the clause. This last step is allowed by the merging of the Coordinative Head.

Moreover, the requirement that coordinative projections only allow for elements of the same category, might also explain why this strategy cannot rescue a sentence like (47b), where a Focus and a *wh*-phrase are fronted. Suppose that Foci and *wh-phrases* do not share the same set of morpho-syntactic features, then the Clause Structure Folding would not be allowed, since it would yield only two possible structures, both violating the requirement imposed by the coordination:

(48) a. *A THOMAS dedichiamo e quale poesia? (non ad Ezra).

To Thomas, dedicate-2PL and which poem

b. *Quale poesia dedichiamo e A THOMAS? (non ad Ezra).
Which poem dedicate-2PL and to Thomas?

In other words, according to Moro, Clause Structure Folding can be considered as a strategy for rescuing derivations from crashing.

### *3.5.2. Generalized Clause Structure Folding*

One of the advantages of Moro's proposal is that it explains the presence of a coordinative head in Italian multiple *wh*-questions. A puzzling fact, however, is that the requirement for a coordinative head is sensitive to the adjunct/argument distinction. In particular, multiple *wh*-questions with argumental phrases do not require the presence of a coordinative head: [31]

(49) Vorrei sapere chi ha fatto cosa.
Want-COND-1SG know who has done what
*I would like to know who did what*.

In principle, there are two ways to approach the example (49): one can either provide a different derivation for argumental multiple questions or try to reduce them to the same machinery that derives adjunct multiple questions. Moro goes for the latter.

He proposes that the phonological realization of the coordinative head is related to morphological requirements, rather than to other structural factors. He then assumes that multiple *wh*-questions are always derived according to (40), no matter what the

[31] Moro claims that the overt coordinative head with arguments is optional. He gives to sentences like (49) the following status:

(i) Vorrei sapere chi ha fatto (e) cosa?
Want-COND-1SG know who has done (and) what?
*I would like to know who did what?*

I must disagree on that. To my own perception the presence of an overt coordinative head causes a decrease in the acceptability of multiple *wh*-questions with arguments. Most of the Italian speakers I have consulted agree with my intuitions on that, with the significant exception of 8 speakers whose age is comprised between 55 and 69 years old. As I already said in the introduction to this Chapter these speakers generally find argumental multiple *wh*-questions quite odd. They, however, tend to find the coordination in sentences like (49) somehow ameliorative.

phonological status of the coordination is. According to this view, argumental *wh*-phrases require overt movement to the left periphery and consequent Clause Structure Folding, on a par with adjuncts. The derivation of the interrogative clause in (49) would be the following:

(50) a. …[[$_{CP}$ chi$_j$ [$_{TP}$ $t_j$[TP ha fatto cosa]]]

b. …[$_{CP}$ cosa$_i$ [$_{CP}$ chi$_j$ [$_{TP}$ $t_j$[TP ha fatto $t_i$]]]

c. …[$_{COORD}$ ø [$_{CP}$ cosa$_i$ [$_{CP}$ chi$_j$ [$_{TP}$ $t_j$[TP ha fatto $t_i$]]]]

d. …[$_{COORDP}$ [[$_{CP}$ chi$_j$ [$_{TP}$ $t_j$[TP ha fatto $t_i$]]]$_k$ [$_{COORD}$ ø [$_{CP}$ cosa$_l$ $t_k$ ]]]]]

The only difference between the examples in (37) and the one in (49) is that in the latter case the coordinative head is phonologically null. I will refer to this hypothesis as *Generalized Clause Structure Folding*.

This proposal have some advantages. First of all, it derives correctly the fact that Italian *wh*-questions obey the common constraint of Superiority (Chomsky 1977, Pesetsky 1987):

(51) *Mi chiedo cosa ha comprato chi.
Wonder-1SG what has-3SG done who
*I wonder what did who buy.*

According to this proposal, Superiority follows from the fact that the derivation in (50) involves only nested rather than crossing dependencies. As a consequence only (52a) is derivable, while (52b) is not:

(52) a. [*wh*2 C [*wh*1 C [t1 . . . t2]]]

b. [*wh*1 C [*wh*2 C [t1 . . . t2]]]

This theory also predicts the fact that, in Italian, D-linking do not alter the order of the *wh*-phrases, since Superiority is derived by means of independent factors, such as the preference for nested rather than crossing movement paths:

(53) *Mi chiedo quale libro ha comprato quale studente
I wonder which book has-3SG done which student
*I wonder which book did which student buy.*

In the next Section, I will argue that, despite the advantages, there are good reasons to think that the *Generalized Clause Structure Folding* cannot be maintained.

## 3.6 Against the Generalized Clause Structure Folding: the Status of Argumental *whs*-in-situ.

### *3.6.1 Triple questions.*

The first problem for the idea that argumental and adjunct multiple questions are formed in the same way, is represented by questions with more than two *wh*-phrases. Let us take predicates selecting for more than two arguments. In the resulting surface structures, two *wh*-phrases look like they have been left in-situ. (54) and (55) illustrate the phenomenon with in ditransitive and benefactive constructions, respectively:

(54) a. So che Ezra ha dato un libro a Thomas.
Know.1SG that Ezra has given a book to Thomas.
*I know that Ezra gave a book to Thomas.*

b. Vorrei sapere chi ha dato cosa a chi
Want-COND-1SG know who has given what to whom
*I would like to know who gave what to whom.*

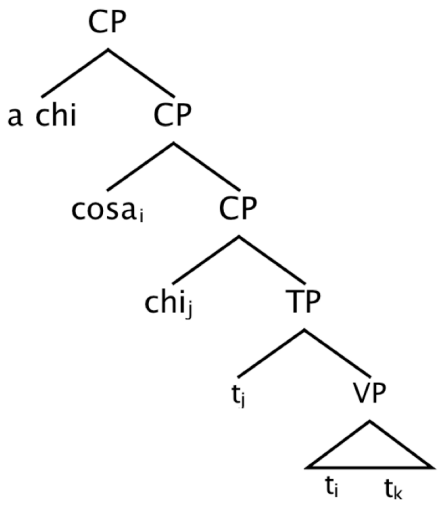
(55) a. So che Ezra ha scritto una poesia per Thomas.
Know.1SG that Ezra has written a poem for Thomas.
*I know that Ezra wrote a poem for Thomas.*

b. Vorrei sapere chi ha scritto cosa per chi
Want-COND-1SG know who has written what for whom
*I would like to know who wrote what for whom.*

The question is: how can these sentences be derived, assuming Clause Structure Folding? First of all, recall the Clause Structure Folding is supposed to follow from the fact that

Italian has no *wh*-in-situ. Therefore, all *wh*-phrases must move overtly to the left periphery. Applying this logic to the examples in (55-56), we should expect all the argumental *wh*-phrases to move to the left periphery. Thus, the first step of the derivation would be moving all the *wh*-phrases to the left periphery according to the general principle that nested dependencies are preferred:

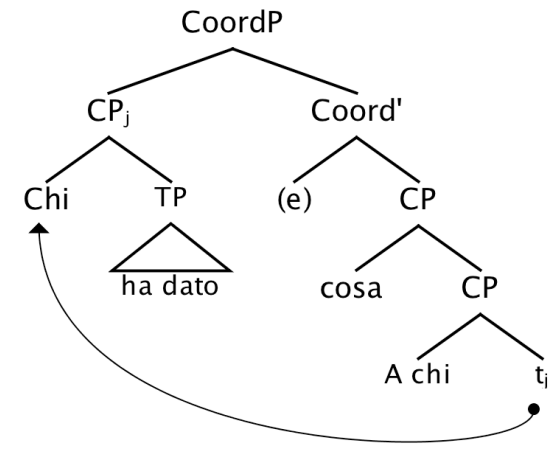
(56)



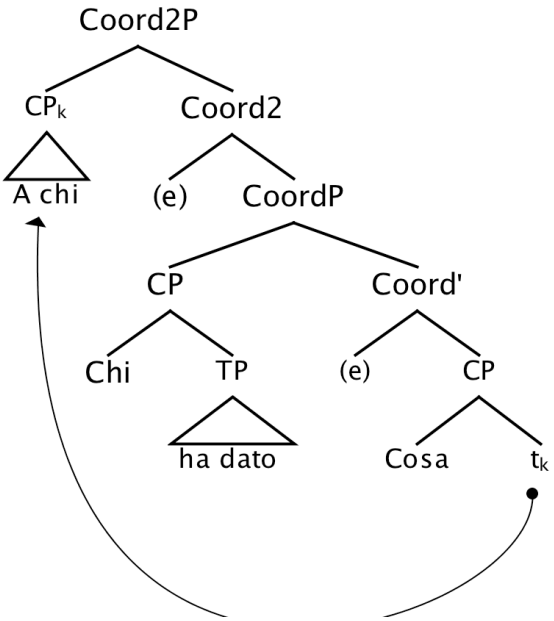

The next step would be the merging a coordinative head and performing clausal remnant movement. Since in (56) we have three CP projections hosting three different *wh*-phrases, it is natural to ask how many times Clause Structure Folding should take place. In principle, we have two possibilities: the first is to apply Clause Structure Folding whenever we have more than one interrogative projection in the left periphery of a clause, the second is to limit the number of applications of Clause Structure Folding to one.

The first option seems to be the natural consequence of the idea the Clause Structure folding is rescues strategy. However, it cannot be pursued. If we apply twice Clause Structure Folding to (56), we will obtain the following derivation:

(57) a. **Merge Coord and attract the first remnant**




b. **Merge Coord2 and attract the second remnant**




The final representation in (57b) cannot be well-formed. Assuming that linearization holds under the control of some version of the LCA (Kayne 1994), the surface order obtainable from this structure will never be the right one.

What about applying Clause Structure Folding only once? This option would yield the structure in (57a), which derives the desired order. However, this option would necessarily admit the possibility of building a clausal constituent with more than one *wh*-projection in its left-periphery, which, as we already saw, seems to be forbidden in Italian:

(58) a. *Cosa a chi hai dato?
What to whom have-2SG given?
b. Chi cosa ti ha dato?
Who what to-you-CL has given?

In conclusion, it is hard to find a natural way to derive triple *wh*-questions by means of the Clause Structure Folding proposed by Moro (2011). These facts suggest that there is no silent coordination in the examples (54-55) and that the *wh*-phrases that appears to be in-situ actually *are* in in-situ.

A supporting argument in this direction is the fact that questions with more than two *wh*-phrases cannot be built with adjuncts. Consider the following sentences:

(59) a. Avete suonato meravigliosamente allo Stone sabato sera.
Have-2PL played beautifully at-the Stone Saturday night.
*You played beautifully, at the Stone, Saturday night.*
b. *Vorrei sapere come avete suonato e dove e quando.
Want-COND-1SG know how have-2PL played and where and when.
*I would like to know how did you play and where and when.*

The contrast between (54-55) and (59) follows straightforwardly if we assume that only the latter is derived through the application of Clause Structure Folding. Let us assume that adjunct *wh*-phrases do require Clause Structure Folding, as indicated by the presence of an obligatory overt coordinative head '*e*'. If Clause Structure Folding is the only strategy available to derive these kind of questions, the unacceptability of (59b) follows from the same reasons that rule out the representations in (57a-b).

### *3.6.2 Unexpected order in argumental multiple* wh*-questions.*

Let's take into consideration the position of Affectee and Benefactive PPs in constructions where subject and object are *wh*-phrases. The following order is perfectly grammatical in Italian:

(60) a. Mi chiedo chi ha regalato cosa a Ezra.
I wonder who has-3SG given what to Ezra
*I wonder who gave what to Ezra*.

b. Mi chiedo chi ha ricevuto cosa da Ezra.
I wonder who has-3SG received what from Ezra.
*I wonder who received what from Ezra.*

The same order is found with non-core arguments such as *Locative Goal* and *Source*:

(61) a. Mi chiedo chi ha spedito cosa a New York.
I wonder who have-3SG sent what to New York.
*I wonder who sent what to New York.*

b. Mi chiedo chi ha preso cosa dallo scaffale
I wonder who have-3SG taken what from the shelf.
*I wonder who took what from the shelf.*

These examples constitute a challenge for the Generalized Clause Structure. As we already mentioned, the application of Clause Structure Folding predicts that the lower *wh*-phrase *Cosa* ('what') must always be stranded. Everything that appears on the right of the lower *wh*-phrases is expected to be raised to after the merging of the (alleged) silent coordinative above the CP:

(62) a. …[$_{CP}$ *chi*$_j$ [$_{TP}$ t$_j$ [$_{TP}$ ha regalato *cosa* a Ezra]]]

b. …[$_{CP}$ *cosa*$_i$ [$_{CP}$ *chi*$_j$ [$_{TP}$ t$_j$ [$_{TP}$ ha regalato t$_i$ a Ezra]]]]

c. …[$_{COORD}$ Ø [$_{CP}$ *cosa*$_i$ [$_{CP}$ *chi*$_j$ [$_{TP}$ t$_j$ [$_{TP}$ ha regalato t$_j$ a Ezra]]]]]

d. …[$_{COORDP}$ [$_{CP}$ *chi*$_j$ [$_{TP}$ t$_j$ [$_{TP}$ ha regalato t$_j$ a Ezra]]]]$_k$ [Ø [$_{CP}$ *cosa*$_i$ t$_k$]]

The only predicted orders are those where the Affectee and the Benefactive PPs appears between the two *wh*-phrases. However, this order is found to be quite unacceptable by all the speakers I have consulted:

(63) a. *Mi chiedo chi ha regalato a Ezra cosa.
I wonder who has-3SG given to Ezra what
*I wonder who gave what to Ezra*.

b. *Mi chiedo chi ha ricevuto da Ezra cosa.
I wonder who has-3SG received from Ezra what
*I wonder who received from Ezra what*.

Before going further, it is worth spending some words on the status of the sentences in (63). Under certain circumstances, the sentences in (63) are admitted. In particular, in echo questions, this order is available, provided that the object *wh*-phrase must receive focal stress:

(64) Q: Aspetta un attimo! Chi ha regalato a Gianni COSA?
Wait a minute! Who has-3SG given to John WHAT?
*Wait a minute! Who gave to John WHAT?*

A: Una macchina nuova!
*A new car!!*

However, all the informants that I have consulted (including myself) found the sentences in (63) totally incompatible with a standard pair-list interpretation:

(65) a. Q: ?*Mi chiedo chi ha regalato a Gianni cosa.
I wonder who has-3SG given to John what
*I wonder who gave what to Gianni*'

b. A: Maria gli ha regalato una macchina nuova, Ezra gli ha regalato un cappello nuovo e Frida gli ha regalato un biglietto per la partita
*Mary gave him a new car*, *Ezra* gave *him a new hat and Frida gave him a ticket for the football match*.

This difference in the interpretation of the sentences in (63) suggests that a different informational structure, possibly involving some post verbal focus position (Belletti 2004). I will not go into the details of these cases. I will only note that these facts suggest a different derivation than the standard cases in which the pair-list interpretation is typically available. Moreover, consider that, even if one were willing to admit that (64) is derived through the Clause Structure Folding, the crucial problem would still be there: the Clause Structure Folding cannot derive the licit orders in (60-61).

Further evidences supporting the idea that Clause Structure Folding is not involved in the derivation of multiple questions with arguments come from those constructions in which adverbial *wh*-phrases have the status of arguments. Take, for example, a verb such as *comportarsi* ('behave'), which require a non-optional Manner argument and a motion verb such as *andare* ('go') which takes a non-core Locative argument. In these cases, we can add a temporal adjunct on the right of the adverbial *wh*-phrases, obtaining a grammatical sentence:

(66) Mi chiedo chi si è comportato come, lo scorso sabato.
I wonder who himself is behaved how last Saturday.
*I wonder who behaved how, last Saturday.*

(67) Mi chiedo chi è andato dove lo scorso sabato.
I wonder who is gone where last Saturday.
*I wonder who went where last Saturday*.

Again, this order is unexpected under a Clause Structure Folding account. Notice that, even if one could provide independent arguments in favor of the stranding of the temporal adjunct, it would still be hard to see how to account for the fact that the very same configuration is not allowed when the adverbial *wh*-phrases are not selected as arguments:

(68) ??Mi chiedo dove hanno suonato *(e) come, lo scorso sabato
I wonder where have-3PL played and how last Saturday.
*I wonder where did they play and how, last Saturday.*

(69) ??Mi chiedo come hanno suonato *(e) dove lo scorso sabato

I wonder how have-3PL played and where last Saturday.
*I wonder how did they play and where last Saturday.*

Note that in (66-67), where the adverbial *wh*-phrases are selected as arguments, the overt coordinative head is no longer required as opposed to what happens with optional adjuncts. On the other hand, in (68) and (69) the overt coordinative head cannot be omitted. These facts support the conclusion that the absence of an overt coordinative head in argumental multiple *wh*-questions indicates the absence of a Clause Structure Folding derivation.

### *3.6.3 Conclusion.*

The data discussed in Sections 3.6.1 and 3.6.2 show that the *Generalized Clause Structure Folding* is not tenable. Multiple *wh*-questions with arguments and non core arguments behave quite differently from adjunct multiple questions, providing good evidence that no Clause Structure Folding takes place with argumental *whs*-in-situ. Therefore, the fact that they do not require overt coordination should be taken seriously as evidence for the fact that argumental *whs*-in-situ are actually interpreted in-situ. The null hypothesis is that the interpretation of argumental *wh*-in-situ takes place through the usual tools made available by natural languages (e.g. covert movement, choice function).

The evidence discussed in this Section do not confirm the claim that Italian is a multiple *wh*-fronting language. Differently, Italian appears to be a partial *wh*-in-situ language, as illustrated at the beginning of Section 3.2. In particular, it allows genuine *wh*-in-situ with argumental *wh*-phrases, while it requires multiple *wh*-fronting with adjunct *wh*-phrases.

Before going further, it is worth lingering on the cases in which an adverbial *wh*-phrase is selected by the verb. In these cases, the adverbial *wh*-phrases have been found to pattern with argumental *wh*-phrases in that they admit a full adjunct PP to appear on the right of the *wh*-in-situ (66-67). As we mentioned, this similarity with argumental *wh*-phrases does not come alone. Non-core adverbial arguments further pattern with core arguments in that they do not require coordination:

(70) a. Vorrei sapere chi si è comportato come.
*I would like to know who behaved how.*
b. Vorrei sapere chi è andato dove.
*I would like to know who went where.*

Given our hypothesis about the non-existence of null coordinative heads in multiple questions, these example can be interpreted as evidence that adverbial *wh*-phrases can be interpreted as genuine *wh*-in-situ, depending on their argumental status. This fact would come quite unexpected, given the current proposals on the interpretation of adverbial *wh*-in-situ. The possibility of interpreting the *wh*-adverbials in-situ has been commonly considered to depend on semantic (Reinhardt 1998) or categorical (Tsai 1994, Stepanov & Tsai 2007) factors. As we saw in Section 3.3, this possibility has been usually tied to the presence of a variable that can be bound by Choice Function. It is not clear how argumentality can play a role in facilitating variable-binding.

To understand what is going on here, the first point that we must clarify is how selected *wh*-adverbial are interpreted when they appear in-situ. There are a number of ways to distinguish between different procedures of interpreting *wh*s-in-situ. In particular, Dayal (1996, 2002) proposed that islands constitute a reliable test case to distinguish between the application of covert movement and Choice Function. According to Dayal (1996, 2002) the presence of covert movement can be detected by the availability of multiple-pairs answers, as opposed to single pair-answers. Additionally, she shows that covert movement does not apply across islands. As a consequence, the only way to interpret a *wh*-in-situ within an island is without movement, for example through Choice Function. The resulting structure is expected to allow only for a single-pair answer.

With this in mind, let's see what happens when selected adverbial *wh*-phrases appear within a Complex NP island. Adjunct *wh*-in-situ appears to be quite odd when appearing inside an island (71), differently from argumental *wh*-phrases (72):

(71) a. ??Vorrei sapere chi si è posto il problema di andare dove.
Want-COND-1SG know who posed the problem of go-INF where
b. *Vorrei sapere chi si è posto il problema di comportarsi come.

Want-COND-1SG know who posed the problem of behave-INF how

(72) a. Vorrei sapere chi si è posto il problema di mangiare cosa.
Want-COND-1SG know who posed the problem of eat-INF what.

b. Vorrei sapere chi si è posto il problema di licenziare chi.
Want-COND-1SG know who posed the problem of fire- INF who

c. Vorrei sapere chi si è posto il problema di parlare a chi.
Want-COND-1SG know who posed the problem of talk-INF to whom

This contrast suggest that interpretation via Choice Function is not operating with selected adjunct *wh*-phrases. This might be taken as indicating that the adverbial *wh*-phrases are not introducing a variable that can be bound *via* Choice Function. If this conclusion turns out to correct, argumentality cannot be considered enough to let adverbial *wh*-phrases introduce variables.

## 3.7 Additional Strategies in multiple *wh*-question formation: the *Wh*-clustering.

### *3.7.1 High coordination questions.*

In this Section, I will discuss some structures that constitute a *prima facie* problem for the idea that multiple *wh*-questions with adjuncts are generated *via* Clause Structure Folding. I will show that, despite the appearances, these structures are not directly tied to those generated with the Clause Structure Folding. I will argue that these structures reveal the existence of a third way of constructing multiple *wh*-questions.

In Italian, there is an alternative, and quite neglected, way to express multiple *wh*-questions with adjuncts. Consider the following examples:

(73) a. Vorrei sapere come *(e) dove avete mangiato.
Want-COND-1SG know how and where have-3PL eaten.

b. Vorrei sapere quando *(e) dove avete mangiato.
Want-COND-1SG know when and where have-3PL eaten

c. Vorrei sapere quando *(e) come avete mangiato.
Want-COND-1SG know when and how have-3PL eaten.

d. Vorrei sapere dove *(e) come avete mangiato.
Want-COND-1SG know where and how have-3PL eaten

e. Vorrei sapere dove *(e) quando dove avete mangiato.
Want-COND-1SG know where and when have-3PL eaten

f. Vorrei sapere come *(e) quando avete mangiato.
Want-COND-1SG know how and when have-3PL eaten

These cases seem to share several properties with the structures generated by Clause Structure Folding. In particular, they obligatorily require the coordinative head *'e'*, as the structures generated *via* Clause Structure Folding. In fact, each example in (73) can have an apparent counterpart in which one of the *wh*-phrases is stranded:

(74) a. Vorrei sapere come avete mangiato *(e) dove?
Want-COND-1SG know how have-3PL eaten and where

b. Vorrei sapere quando avete mangiato *(e) dove?
Want-COND-1SG know when have-3PL eaten and where

c. Vorrei sapere quando avete mangiato *(e) come?
Want-COND-1SG know when have-3PL eaten and how

d. Vorrei sapere dove avete mangiato *(e) come?
Want-COND-1SG know where have-3PL eaten and how

e. Vorrei sapere dove avete mangiato *(e) quando?
Want-COND-1SG know where have-3PL eaten and when

f. Vorrei sapere come avete mangiato*(e) quando?
Want-COND-1SG know how have-3PL eaten and when

Another similarity between the sentences in (73) and the Clause Structure Folding sentences in (74) is that both are restricted to adjunct *wh*-questions:

(75) a. *Vorrei sapere chi e cosa ha comprato.
Want-COND-1SG know who and what has bought
b. *Vorrei sapere cosa e a chi hai dato.
Want-COND-1SG know what and to whom have-2SG given

There are cases in which these kind of structures with arguments seem to be acceptable. However, there is no way to draw a correspondence between the interpretation of these examples and the wh-in-situ cases:

(76) a. Vorrei sapere chi e cosa detesta.
Want-COND-1SG know who and what hates
b. Vorrei sapere chi detesta cosa.
Want-COND-1SG know who hates what.

While (76b) requires the usual type of answers, namely multiple or single pair answers, the sentence in (76a) appears to have the same semantics of a simple *wh*-question. On the other hand, there is no obvious difference between the answers that can serve to the questions in (73), from the answers to the questions in (74). They look akin to each other. Of course, the structure in (73) cannot be naturally derived through the Clause Structure Folding, since no remnant movement of a clausal constituent can derive the desired order. In what follows, I will refer to the structures in (73) as *high coordination questions* and to the already familiar kind of questions in (74) as *low coordination questions*. I will also adopt Moro's (2011) proposal, assuming that low coordination questions are derived by means of Clause Structure Folding.

### *3.7.2 Differences between high and low coordination questions.*

High coordination questions show some significant differences from the cases analysed by Moro (2011), strongly suggesting that they constitute a different kind of multiple *wh*-question.

Restrictions on Reasons/Purpose wh-phrases - Low coordination questions show a complex pattern with respect to *reason/purpose wh*-phrases. In particular, *reason/purpose wh*-phrases are only allowed to appear in stranded position:

(77) a. ??Vorrei sapere perché avete mangiato e dove.
Want-COND-1SG know why have-3PL eaten and where

b. ??Vorrei sapere perché avete mangiato e quando.
Want-COND-1SG know why have-3PL eaten and when

c. ??Vorrei sapere perché avete mangiato e come.
Want-COND-1SG know why have-3PL eaten and how

d. Vorrei sapere dove avete mangiato e perché.
Want-COND-1SG know where have-3PL eaten and why

e. Vorrei sapere dove avete mangiato e perché.
Want-COND-1SG know where have-3PL eaten and why

f. Vorrei sapere come avete mangiato e perché.
Want-COND-1SG know how have-3PL eaten and why

We already showed that the distribution of the *reason/purpose wh*-phrases in (78) can be predicted assuming a Clause Structure Folding derivation. Since *perché* ('why') is externally merged higher in the left periphery, it is always expected to be stranded in the surface order.

On the other hand, high coordination questions show a simpler pattern, in that they do not display any asymmetry between the two possible orders. They simply do not allow *reason/purpose wh*-phrases, no matter which order we choose:

(78) a. ??Vorrei sapere perché e dove avete mangiato.
Want-COND-1SG know why and where have-3PL eaten

b. ?? Vorrei sapere perché e dove avete mangiato.
Want-COND-1SG know why and where have-3PL eaten

c. ?? Vorrei sapere perché e come avete mangiato.
Want-COND-1SG know why and how have-3PL eaten

d. ?? Vorrei sapere dove e perché avete mangiato.
Want-COND-1SG know where and why have-3PL eaten

e. ?? Vorrei sapere dove e perché dove avete mangiato.
Want-COND-1SG know where and why have-3PL eaten

f. ?? Vorrei sapere come e perché avete mangiato.
Want-COND-1SG know how and why have-3PL eaten

Argument-adjunct questions – A second striking difference between low and high coordination questions has to do with the possibility of forming mixed questions, with both arguments and adjunct *wh*-phrases at the same time. Low coordination questions allow for this possibility:

(79) a. Vorrei sapere chi ha mangiato e dove.
Want-COND-1SG know who have-3PL eaten and where

b. Vorrei sapere cosa hai mangiato e dove.
Want-COND-1SG know what have-3PL eaten and where

c. Vorrei sapere chi ha mangiato e come.
Want-COND-1SG know who have-3PL eaten and how

d. Vorrei sapere cosa hai mangiato e come.
Want-COND-1SG know what have-3PL eaten and how

e. Vorrei sapere chi ha mangiato e quando.
Want-COND-1SG know who have-3PL eaten and when

f. Vorrei sapere cosa hai mangiato e quando.
Want-COND-1SG know what have-3PL eaten and when

On the contrary, high coordination questions does not admit the possibility of forming mixed questions:

(80) a. *Vorrei sapere chi e dove ha mangiato?
Want-COND-1SG know who and where have-3PL eaten

b. ??Vorrei sapere cosa e dove hai mangiato?

Want-COND-1SG know what and where have-3PL eaten

c. ??Vorrei sapere chi e come ha mangiato?
Want-COND-1SG know who and how have-3PL eaten

d. ??Vorrei sapere cosa e come hai mangiato.
Want-COND-1SG know what and how have-3PL eaten

e. ??Vorrei sapere chi e quando ha mangiato.
Want-COND-1SG know who and when have-3PL eaten

f. ??Vorrei sapere cosa e quando hai mangiato.
Want-COND-1SG know what and when have-3PL eaten

(81) a. ??Vorrei sapere dove e chi ha mangiato.
Want-COND-1SG know where and who have-3PL eaten

b. ??Vorrei sapere dove e cosa hai mangiato.
Want-COND-1SG know where and what have-3PL eaten

c. ??Vorrei sapere come e chi ha mangiato.
Want-COND-1SG know how and who have-3PL eaten

d. ??Vorrei sapere come e cosa hai mangiato.
Want-COND-1SG know how and what have-3PL eaten

e. ??Vorrei sapere quando e chi ha mangiato.
Want-COND-1SG know when and who have-3PL eaten

f. ??Vorrei sapere quando e cosa hai mangiato.
Want-COND-1SG know when and what have-3PL eaten

Triple questions – Finally, while, as we already saw, low coordination questions do not allow for triple questions on adjuncts (81), high coordination questions do not show the same restriction (82):

(81) a. *Vorrei sapere come avete mangiato quando e dove.
Want-COND-1SG know how have-3PL eaten when and where

b. *Vorrei sapere come avete mangiato dove e quando.
Want-COND-1SG know how have-3PL eaten where and when

c. *Vorrei sapere quando avete mangiato come e dove.
Want-COND-1SG know when have-3PL eaten how and where

d. * Vorrei sapere quando avete mangiato dove e come.
Want-COND-1SG know when have-3PL eaten where and how

e. * Vorrei sapere dove avete mangiato quando e come.
Want-COND-1SG know where have-3PL eaten when and how

f. * Vorrei sapere dove avete mangiato come e quando.
Want-COND-1SG know where have-3PL eaten how and when

(82) a. Vorrei sapere come, quando e dove avete mangiato.
Want-COND-1SG know how, when and where have-3PL eaten

b. Vorrei sapere come, dove e quando avete mangiato.
Want-COND-1SG know how, where and when have-3PL eaten

c. Vorrei sapere quando, come e dove avete mangiato.
Want-COND-1SG know when, how, and where have-3PL eaten

d. Vorrei sapere quando, dove e come avete mangiato.
Want-COND-1SG know when, where and how have-3PL eaten

e. Vorrei sapere dove, quando e come avete mangiato.
Want-COND-1SG know where, when and how have-3PL eaten

f. Vorrei sapere dove, come e quando avete mangiato.
Want-COND-1SG know where, how and when have-3PL eaten

### *3.7.3 High coordinative questions are not sluicing constructions.*

A natural way of thinking about high coordinative questions might be to adopt a sluicing-like analysis, according to which the coordinative head '*e'* coordinates two clauses: a full clause on the right and a clausal structure on the left where everything, but the fronted *wh*-phrase, has undergone ellipsis (Merchant 2001, 2005):

(83) a. Vorrei sapere come ~~avete mangiato~~ *(e) dove avete mangiato.

Want-COND-1SG know how ~~have-3PL eaten~~ and where have-3PL eaten.

b. Vorrei sapere quando ~~avete mangiato~~ *(e) dove avete mangiato.
Want-COND-1SG know when ~~have-3PL eaten~~ and where have-3PL eaten

c. Vorrei sapere quando ~~avete mangiato~~ *(e) come avete mangiato.
Want-COND-1SG know when ~~have-3PL eaten~~ and how have-3PL eaten.

d. Vorrei sapere dove ~~avete mangiato~~ *(e) come avete mangiato.
Want-COND-1SG know where ~~have-3PL eaten~~ and how have-3PL eaten

e. Vorrei sapere dove ~~avete mangiato~~ *(e) quando dove avete mangiato.
Want-COND-1SG know where ~~have-3PL eaten~~ and when have-3PL eaten

f. Vorrei sapere come ~~avete mangiato~~ *(e) quando avete mangiato.
Want-COND-1SG know how ~~have-3PL eaten~~ and when have-3PL eaten

However, I believe that there are good reasons to reject this line of thinking. As already noted by Moro (2011), relatively to low coordination questions, this solution is unable to explain the idiosyncrasies of the *reason/purpose* questions. As for high coordination questions, a sluicing-like analysis does not provide any principled reason not to generate sentences like those in (78), along the lines of (83). To account for the data in (78), a sluicing-like analysis would require a mysterious ban on coordinating *reason/purpose* questions. Furthermore, consider that even if one was willing to admit such a stipulation, the whole pattern of data would still require an additional stipulation. Recall that the low coordination questions do not exhibit the same strict restriction on *reason/purpose wh*-phrases, since they admit them in stranded position. The data in (77), for example, show that it is, in principle, possible to coordinate a *reason/purpose* question with another *wh*-questions. Therefore, the alleged ban on the coordination of *reason/purpose* questions, would be oddly required to hold in high coordination questions, but not in low coordination questions.

The same problem arises also with respect to the argument-adjunct questions. As we saw in the previous Section, high coordinative questions do not allow for the possibility of forming mixed questions, with both arguments and adjunct *wh*-phrases, (80-81). Again, a sluicing-like analysis cannot account for this restriction. It is not clear why the sentences in

(80-81) could not be formed through the coordination of two clauses and the subsequent elision one of them, as in (83).

A possible line of solution for this problem is to impose some strict condition on the identity of the elided constituents. This move would not come unexpected, since a well established property of ellipsis is that it generally obeys to some syntactic requirement of isomorphism with respect to the constituents involved (Fiengo & May 1994, Fox 2000, Chung 2006; but see Merchant 2001 for a different approach). In this perspective, one can hypothesize that argument-adjunct questions cannot satisfy some isomorphism requirement. However, also this line of thought this would have a stipulative flavour, since sluicing usually does not require the isomorphism of the constituents relatively to the distinction between argument and adjunct *wh*-phrases:

(84) a. Mi ricordo cosa ho comprato, ma non mi ricordo quando.
I remember what I bought, but I don't remember when.

b. Mi ricordo cosa ho comprato, ma non mi ricordo dove.
I remember what I bought, but I don't remember where.

c. Mi ricordo cosa ho comprato, ma non mi ricordo come.
I remember what I bought, but I don't remember how.

d. Mi ricordo cosa ho comprato, ma non mi ricordo perché.
I remember what I bought, but I don't remember why.

Finally, other facts also show that a sluicing-like analysis does not seem to be appropriate to derive high coordination questions. As noted by Moro (2011), a sluicing approach would make wrong predictions about the behaviour of interrogative constructions involving pseudo-clefts. In Italian, especially in the northern varieties, *wh*-movement can be expressed through pseudo-cleft constructions (Den Dikken 2005). With this in mind, consider the following examples (adapted from Moro 2011):

(85) a. Vorrei sapere [com'è che deve partire] e
Want-COND-1SG know how is that should-3SG leave-INF and
[quand'è che deve partire]

when is that should leave-INF

*I would like to know how it was that he should leave and when it was that he should leave.*

b. *Vorrei sapere [com'è ~~che deve partire~~] e
Want-COND-1SG know how is that should-3SG leave-INF and
[quand'è che deve partire].
when is that is left

c. So che Ezra deve partire un certo giorno, ma non so
Know-1SG that Ezra should-3SG leave-INF a certain day, but not know-1SG
[quand'è ~~che deve partire~~].
When is that should-3SG leave-INF

The sentence in (85a) is a case of coordination of two full clauses. In the sluicing construction in (85c), ellipsis of part of the pseudo-cleft is possible and the occurrence of the *wh*-element with the copula is perfectly grammatical. On the other hand, deletion of the lower portion of one of the clausal constituents high coordinative question in (85b) is forbidden. If high coordination questions were derived in the same way of sluicing constrictions, the sentences in (85b) and (85c) would be predicted to behave in the same way. In the light of these facts, I will conclude that a sluicing-like analysis is not appropriate for high coordination questions.

### *3.7.4 Wh-clustering.*

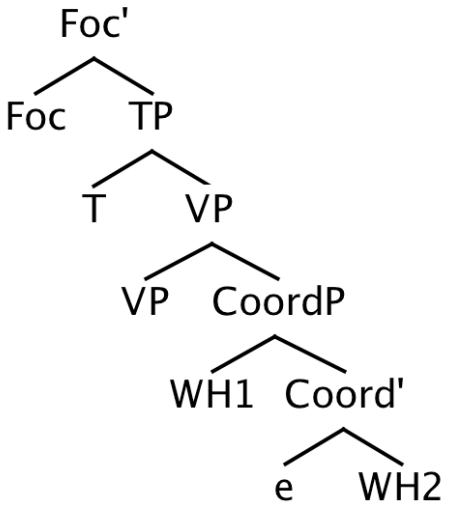
Assume again that, in Italian, there is only a single projection for interrogative phrases for each clause (Rizzi 1997). Given this assumption, multiple *wh*-phrases cannot be fronted all together, because the left periphery would not have a suitable structure to accommodate them. A possible way to derive multiple *wh*-questions under this requirement is to find a way to place more than one *wh*-phrase in a single projection. I propose that coordination can serve for this purpose.

Suppose that coordination can be used to form complex interrogative projections, in which more than one *wh*-phrase can be put together in compliance with the requirement that coordination needs two (or more) phrases of the same kind. In particular, assume a coordinative structure in which two *Wh*Ps occupy the complement and the specifier position of a CoordP. I will refer to such a structure as a *wh-cluster*.

(86) $[_{\text{COORDP}}\,[_{\text{WHP}}\,wh1][_{\text{COORD}}\,e\,[_{\text{WHP}}\,wh2]]]$

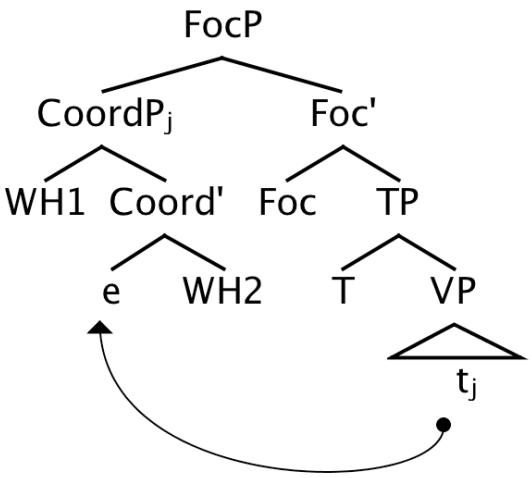
Assume, further, that *wh*-clusters can be formed separately and, then, externally merged into the derivation. The instructions about the first-merge position of the *Wh*-Cluster are determined by the selectional properties of the elements contained in the *Wh*-Cluster. For example, we can make the rather standard assumption that circumstantial modifiers such as Manner, Time and Place they are merged below the VP (Chomsky 1995, Cinque 1999; see also Bowers 2010). If we assume that the first-merge position of a *wh*-cluster containing Manner, Time and Place *wh*-phrases is determined by the selectional properties of its components, we will obtain a base-structure like the following for an interrogative sentence:

(87)



Finally, assume that to check the interrogative features on the *Wh*Ps the whole CoordP is pied-piped to the left periphery to the only available position, namely SpecFocP:

(88)




Since in the structure (88) the two *Wh*P are moved as one complex coordinative phrase, they occupy a single position. As a consequence, no further arrangement must be done to satisfy the well-formedness requirements imposed by the left-periphery. In particular, no CP-splitting and, consequently, no Clause Structure Folding are required. If this proposal is on the right track, high coordination questions do not pose an actual threat to Clause Structure Folding, since they are involve a different derivation.

Let us turn for a moment to the contrast between high coordination and low coordination questions with respect to triple questions. As we illustrated in Section 3.7.2, low coordination questions do not allow for triple adjunct questions, while high coordination questions actually do:

(89) a. *Vorrei sapere come avete mangiato quando e dove.
Want-COND-1SG know how have-3PL eaten when and where

b. *Vorrei sapere come avete mangiato dove e quando.
Want-COND-1SG know how have-3PL eaten where and when

c. *Vorrei sapere quando avete mangiato come e dove.
Want-COND-1SG know when have-3PL eaten how and where

d. * Vorrei sapere quando avete mangiato dove e come.
Want-COND-1SG know when have-3PL eaten where and how

e. * Vorrei sapere dove avete mangiato quando e come.
Want-COND-1SG know where have-3PL eaten when and how

f. * Vorrei sapere dove avete mangiato come e quando.
Want-COND-1SG know where have-3PL eaten how and when

(90) a. Vorrei sapere come, quando e dove avete mangiato.
Want-COND-1SG know how, when and where have-3PL eaten

b. Vorrei sapere come, dove e quando avete mangiato.
Want-COND-1SG know how, where and when have-3PL eaten

c. Vorrei sapere quando, come e dove avete mangiato.
Want-COND-1SG know when, how, and where have-3PL eaten

d. Vorrei sapere quando, dove e come avete mangiato.
Want-COND-1SG know when, where and how have-3PL eaten

e. Vorrei sapere dove, quando e come avete mangiato.
Want-COND-1SG know where, when and how have-3PL eaten

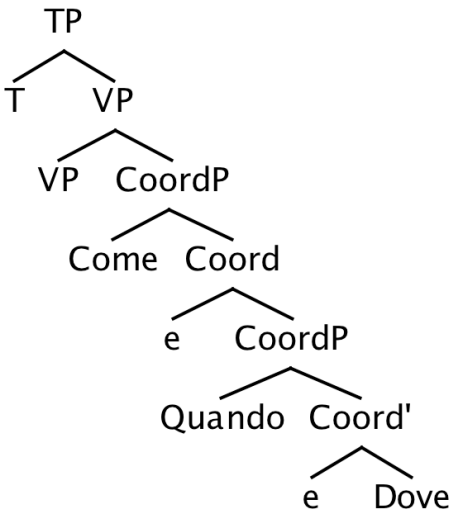
f. Vorrei sapere dove, come e quando avete mangiato.
Want-COND-1SG know where, how and when have-3PL eaten

This mysterious asymmetry between low and high coordination questions can be accounted for by *wh*-clustering. Let us assume that the sentences in (89) are derived through Clause Structure Folding, whereas those in (90) through *wh*-clustering. It is a well established fact that coordinative structures can contain more than two conjuncts (Munn 1993, Zhang 2009). Therefore, nothing forbids to built a cluster containing more than two *wh*-phrases. Given this option, it is possible to build a triple *wh*-cluster, letting it enter the derivation along the lines described above. The resulting derivation for a sentence like (90a) will then

be the following: first a triple *wh*-cluster is merged in the base position (91a) and, then, the whole constituent is pied-piped to the left periphery (91b): [32]

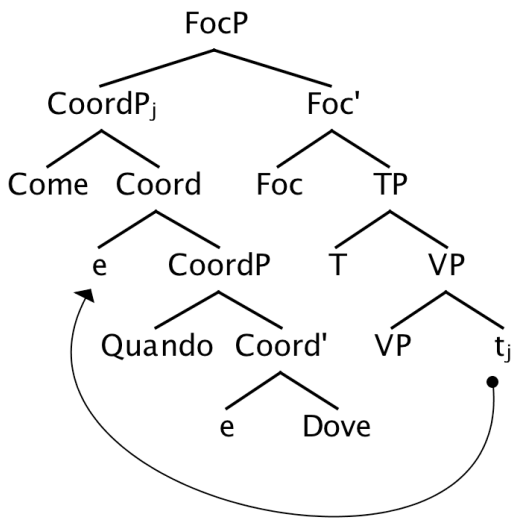
(91)

a.




b.

[32] I am assuming here that coordinative structures obey to binary branching (Kayne 1994, Zhang 2010).



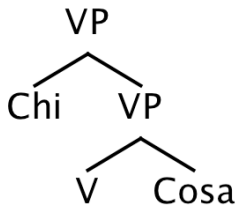

Differently, for the reasons that we already discussed in Section 3.5.1 there is no converging derivation based on Clause Structure Folding for triple questions. As a result the sentences in (89) are correctly ruled out.

I believe that this proposal can account also for the other idiosyncrasies of high coordination questions and for their differences with respect to low coordination questions. However, to this purpose, some minimal restriction on the mechanism of *wh*-clustering are required. Let us see in details, what *wh*-clustering needs to account for the whole pattern of data.

Suppose that *wh*-clusters must respect some restrictions, to enter the derivation of the sentence. The crucial assumption is that the instructions about the first-merge position of a *wh*-Cluster are determined by the selectional properties of the elements it contains.

Suppose that a *wh*-cluster is built merging together two *wh*-phrases which require to be first merged in different positions. For example, let's say that we have two different *wh*-phrases, such as *Chi* ('who') and *Cosa* ('what'). In a transitive sentence, these constituents clearly require to enter the derivation in two different positions (reasonably, because of different requirements imposed by θ-marking):

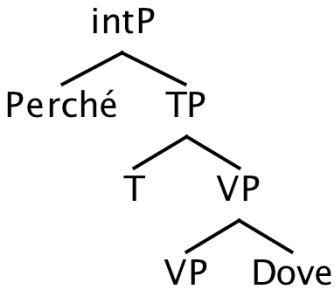
(92)




Since the instruction about the first-merge position of a *wh*-cluster depends on the selectional properties of its components, these *wh*-phrases specify an ambiguous instruction: *Chi* ('who') will required first-merge in the external-argument position, while *Cosa* ('what') in VP-internal object position. Since, by assumption, *wh*-clusters occupy a single position, we will assume that the instruction about its first-merge position will be uninterpretable. Assuming such a restriction on *wh*-clustering, we now can explain the peculiar properties of the high coordinative questions (Section 3.7.2).

Let us begin with the restrictions on *reason*/*purposes wh*-phrases. Assume two different *wh*-phrases: one is the *reason/purpose wh*-phrase *perché* ('why'), the other is an adjunct *wh*-phrase, such as *dove* ('where'). These constituents must enter the derivation in two different positions. In particular, the *reason/purpose wh*-phrase requires merge into the left periphery, while the adjunct *wh*-phrase requires merge below the VP:

(94)




The two *wh*-phrases cannot be clustered together, because they must be introduced in the derivation in two different positions. Furthermore, consider also that the *wh*-phrases in (94) do not even share the landing site, since the adjunct *wh*-phrase, *Dove,* is attracted to a Focus projection, below the *reason/purpose* projection (Rizzi 2001, Schlonksy & Soare 2011). As a consequence, a high coordination question cannot be formed:

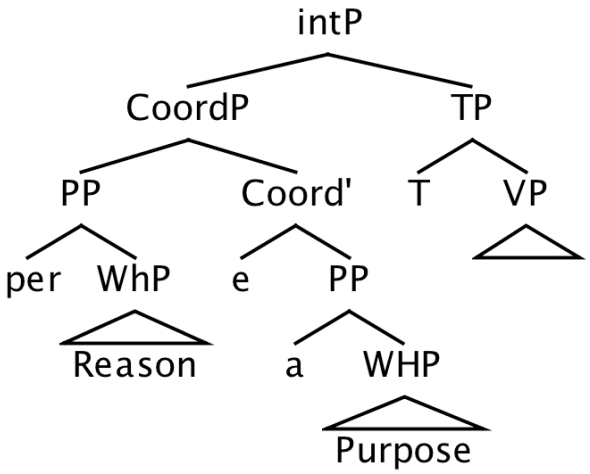
(95) ??Vorrei sapere perché e dove avete mangiato.
Want-COND-1SG know why and where have-3PL eaten

If this reasoning is on the right track, we should expect to be able to cluster a *Reason* and a *Purpose wh*-phrases together. This prediction is actually borne out:

(96) Vorrei sapere per quale motivo e a che scopo avete mangiato.
Want-COND-1SG know for which reason and to what purpose have-3PL eaten

Since both the *wh*-phrases in (96) require to be merged directly in the *reason/purpose* projection, they can also be clustered together before entering the derivation. The sentence in (96) will have, then the following structure:

(97)

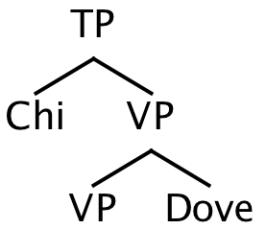



The very same logic can be extended to explain why high coordination mixed-questions are not possible, like in the case in (98):

(98) *Vorrei sapere chi e dove ha mangiato.
Want-COND-1SG know who and where have-3PL eaten

Assume that we start with the two *wh*-phrases: the subject *wh*-phrase *Chi* ('who') and an adjunct *wh*-phrase such as *Dove* ('where'). Again, these constituents must enter the derivation in two different positions:

(99)



The problem is the same observed above with *reason/purpose wh*-phrases: it is forbidden to cluster different *wh*-phrases, if they require to be introduced in different positions along the derivation.

To sum up, high and low coordination questions are not build by the same syntactic machinery. In the latter case, the surface order is obtained through Clause Structure Folding, while in the latter the surface order is brought about by *wh*-clustering.

Clause Structure folding implies the overt fronting of multiple *wh*-phrases one by one. This move is not allowed in Italian, since the multiple *wh*-phrases cannot be accommodated in the left periphery of the clause. As a consequence, CP-splitting and subsequent remnant movement are applied as a repair strategy.

On the other hand, *wh*-clustering requires the fronting of multiple *wh*-phrases all at once. Multiple *wh*-phrases are first assembled to from a complex coordinative structure and then the latter is pied piped in the left periphery to check the *wh*-features on the interrogative phrases. Crucially, the complex coordinative constituent can be accommodate in a single interrogative projection, meeting the requirements imposed by the Italian left periphery. If this logic is the right one, both Clause Structure Folding and *wh*-clustering can be seen as ways of circumventing a structural restriction imposed by the form of the left periphery in Italian.

## *3.8 Conclusion*

In this Chapter, I discussed a number of previously overlooked phenomena in Italian multiple *wh*-questions. The conclusion that can be draw is that there are (at least) three ways of forming multiple *wh*-questions: (actual) *wh*-in-situ, Clause Structure Folding and *wh*-clustering. Unsurprisingly, the first strategy can only be applied in the case of argumental *wh*-phrases, while adjuncts are forced to move in the left-periphery (Reinhardt 1997, 1998). As for the classification of Italian among different types of languages, the claim that Italian is a multiple *wh*-fronting language (Moro 2011) seems to be incorrect.

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