Clause Structure Folding and the ‘‘Wh-in-Situ Effect’’

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Why must a coordinative head show up before an adverbial wh-phrase in situ in Italian? In this article, I explore this rather neglected fact, showing that it reveals an otherwise hidden structure. More specifically, I propose that the coordinative head does not directly merge with the wh-phrase it precedes; rather, it takes a full clausal complement, inducing remnant movement and stranding of the highest wh-phrase. This configuration yields the observed word order and explains many properties of these constructions by means of independent locality conditions. I argue that it is a rescue strategy languages may adopt to meet a structural property of the left periphery, and I address some questions that the comparative perspective raises.

Keywords: clause structure, wh-in-situ, left periphery, coordination, sluicing, ellipsis

The aim of this article is to explore certain aspects of interrogative sentences in Italian—in particular, the ‘‘wh-in-situ’’ constructions, where at least two distinct wh-phrases cooccur in a clausal structure and only one appears to be overtly dislocated to the left periphery. Descriptively, Universal Grammar (UG) allows three distinct types of strategies for multiple wh-questions: languages like Bulgarian and Polish, where all wh-elements move to the front (1a); languages like Japanese and Chinese, where all wh-elements stay in situ (1b); languages like Italian and English, which combine these two opposite strategies and move only one wh-element to the front while leaving the other in situ (1c). 1

\(1\) a. \([\text{CP wh-phrase} C \text{wh-phrase} C \text{TP} \ldots t \ldots t \ldots]\) (Bulgarian, Polish, . . .)

b. \([\text{CP[TP wh-phrase} . . . \text{wh-phrase}]]\) (Chinese, Japanese, . . .)

c. \([\text{CP wh-phrase} C \text{TP} \ldots t \ldots \text{wh-phrase}]]\) (English, Italian, . . .)

The literature in the field is vast. Among others, see the seminal works by Richards (1993) and Bošković (1999); see also Boeckx and Grohmann 2003 and Cheng and Corver 2006 for papers.
on this issue and related ones, and Bayer 2005 for an updated critical review of the wh-in-situ literature. In this article, I will concentrate on the third class of languages only and limit my observations to Italian syntax. I will propose that this language is actually included in the first class, (1a)—that is to say, all wh-phrases move to the left periphery, although the final linear order is altered by a syntactic mechanism to be illustrated here. It is generally assumed that UG provides the possibility of checking the wh-features of multiple wh-phrases in two ways, thus splitting all languages into three categories: the wh-features of the phrase within the CP field are locally checked by a head endowed with wh-features in the left periphery; those of the phrase within the TP field are instead checked in situ. The three-way partition comes from the fact that there are languages where the two strategies are mixed. The central proposal of this article is that the analysis given for Italian is not correct. Both wh-phrases undergo movement, and wh-feature checking is performed in the same portion of the left periphery. There is no wh-in-situ in this language; rather, the “wh-in-situ effect” (WISE) is due to a movement operation that rearranges the phrases, yielding the observed linear order.

This article is organized as follows. In section 1, I will explore the interaction of multiple adverbial wh-phrases with a coordinative head. In section 2, I will generalize the analysis given in section 1 to a broader class of phenomena involving argumental wh-phrases. Finally, in section 3, I will address the comparative issue, following the lines of reasoning that this analysis leads to when combined with a cartographic approach to the structure of the left periphery.

1 The “Wh-in-Situ Effect” with Adverbial Wh-Phrases: The Role of e ‘and’

There is a sharp and quite neglected contrast in Italian: a causative adverbial like per quale ragione ‘for what reason’ must be immediately preceded by a coordinative head e ‘and’ when it occurs in situ (2a); on the other hand, this coordinative head is banned with the noninterrogative counterpart of the same adverbial, per questa ragione ‘for this reason’ (2b).

(2) a. Mi chiedo dove sono andati *(e) [per quale ragione].
   to.me wonder.1sg where are.3pl gone and for what reason
   ‘I wonder where they have gone and for what reason.’

b. Mi chiedo dove sono andati (*e) [per questa ragione].
   to.me wonder.1sg where are.3pl gone and for this reason
   ‘I wonder where they have gone for this reason.’

Besides this contrast, sentence (2a) raises an immediate and simple question: what are the two phrases that are conjoined by e ‘and’? Let us start with the observation that per quale ragione ‘for what reason’ is a PP and assume that e ‘and’ merges with it: what do we expect to be the other member of the coordination? A well-established property of coordinative heads is that they can only coordinate two (or more) categorically homogeneous phrases. Consider for example the following contrasts:

2 The mechanism of long-distance feature checking will not be discussed here.
(3) a. Gianni legge [DP romanzi] [e DP poesie]].
   Gianni reads novels and poems

b. Gianni legge [PP al mare] [e [PP alla stazione]].
   Gianni reads at the seaside and at the station

c. *Gianni legge [DP romanzi] [e [PP alla stazione]].
   Gianni reads novels and at the station

d. *Gianni legge [PP al mare] [e [DP poesie]].
   Gianni reads at the seaside and poems

In sum, we are facing two conceptually and empirically separate questions: Why is there a contrast between (2a) and (2b)? And what is e ‘and’ coordinating, since there is no obvious candidate to play the role of first member of the coordination in (2a)?

Notice, furthermore, that the appearance of e ‘and’ is not specifically restricted to per quale ragione ‘for what reason’. For example, paralleling the contrast in (2), the minimal pairs in (4) can be devised, using four different single-word wh-adverbials: perché ‘why’, come ‘how’, quando ‘when’, and dove ‘where’.

(4) a. Mi chiedo dove sono andati *(e) perché.
   to.me wonder.1SG where are gone.3PL and why
   ‘I wonder where they have gone and why.’

b. *Mi chiedo perché sono andati (e) dove.
   to.me wonder.1SG why are gone.3PL and why

c. Mi chiedo quando sono partiti *(e) perché.
   to.me wonder.1SG when are left.3PL and why
   ‘I wonder when they have left and why.’

d. *Mi chiedo perché sono partiti (e) quando.
   to.me wonder.1SG why are left.3PL and when

e. Mi chiedo come sono arrivati *(e) perché.
   to.me wonder.1SG how are arrived.3PL and why
   ‘I wonder how they have arrived and why.’

f. *Mi chiedo perché sono arrivati (e) come.
   to.me wonder.1SG why are arrived.3PL and how

These contrasts not only indicate that e ‘and’ must obligatorily precede the postverbal wh-phrase—they also indicate that perché ‘why’ preferentially occurs after the other wh-adverbial in a postverbal position. This is rather unexpected, considering that perché ‘why’ is generated high in the left periphery—in fact, higher than any other wh-phrase—rather than being moved from a lower position, as Rizzi (1996) proved by comparing perché ‘why’ with other interrogative adverbials like come ‘how’. The fact that perché ‘why’—unlike all other wh-adverbials—does

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3 Grammaticality judgments for the sentences in this section were given by a group of 87 native speakers (mean age 22; 77 females, 10 males; college students). On average, only 1.5% gave judgments different from the ones indicated here.
not induce verb-second phenomena could only be explained by assuming that this specific wh-adverbial is generated in the position where it occurs rather than being moved there from a lower one. The following sentences reproduce the basic contrasts:

(5) a. Perché Gianni parla?
   why Gianni speaks
   ‘Why does Gianni speak?’
   
   b. *Come Gianni parla?
   how Gianni speaks
   ‘How does Gianni speak?’
   
   c. Come parla Gianni?
   how speaks Gianni
   ‘How does Gianni speak?’

Notice that this contrast cannot be traced to any idiosyncratic phonological property of perché ‘why’ as opposed to come ‘why’, because when come ‘how’ is followed by mai ‘ever’ the string come mai is interpreted exactly as ‘why’ and the subject can stay in situ, paralleling the case with perché ‘why’: Come mai Gianni parla? (Lit. how ever Gianni speaks, ‘Why does Gianni speak?’). On the other hand, when two interrogative adverbials other than perché ‘why’ cooccur in the same sentence (e.g., quando ‘when’ and come ‘how’), their relative order is free, as in (6a–b)—paralleling the free ordering of adverbials in the corresponding affirmative sentences, (6c–d)—although the presence of the coordinative head e ‘and’ is still obligatory in the interrogative sentences.

(6) a. Mi chiedo quando sono partiti *(e) come. 
   to.me wonder.1sg when are left.3pl. and how
   ‘I wonder when they have left and how.’
   
   b. Mi chiedo come sono partiti *(e) quando.
   to.me wonder.1sg how are left.3pl. and when
   ‘I wonder how they have left and when.’
   
   c. I ragazzi sono partiti [ieri] [in macchina]. 
   the boys are left yesterday in car
   ‘The boys have left yesterday by car.’
   
   d. I ragazzi sono partiti [in macchina] [ieri]. 
   the boys are left in car yesterday
   ‘The boys have left by car yesterday.’

4 The following contrast, found in the Italian variety Marchigiano spoken in Fano (Marche, Italy), provides further evidence that perché ‘why’ occupies a different position with respect to other interrogative adverbs like come ‘how’ with a special rhetorical effect expressed in the translation:

(i) Sei andato là, perché/*come?
   are gone.2sg there why/how
   ‘Is it because you have gone there?’

Only with perché ‘why’ can the lower portion of the clause be moved to a higher specifier position. For a critical reflection on the order of wh-elements, see also Cinque and Krapova 2008.
The most conservative hypothesis is to admit that ‘and’ is merged with the adverbial wh-phrase it immediately precedes. However, if this were so, it would be very hard to explain both the contrasts in (2) and the presence of the coordinative head itself. What could the interrogative adverbial possibly be coordinated with? Why is one order preferred? Another possible line of reasoning would be to reproduce a sluicing-like analysis following Merchant’s seminal work (see Merchant 2001, 2005 and references cited there; see also Fox 2002 for the interaction of trace theory and the copy theory of movement). In this case, one could admit that ‘and’ coordinates two clauses: the full clause on its left and a clausal structure on its right where everything but the topmost wh-phrase has undergone ellipsis. Unfortunately, this appealing solution is unable to explain the contrasts in (3), since there is no principled reason not to generate a sentence like (7c) along with (7a) and then delete the portion of the clause that is lower than the wh-phrase, yielding the ungrammatical structure (7d) (cf. (7b)).

(7) a. Mi chiedo [dove sono andati] e [perché sono andati].
   to.me wonder.1sg where are gone.3pl and why are gone.3pl.
   ‘I wonder where they have gone and why they have gone.’

b. Mi chiedo [dove sono andati] e [perché sono andati].
   to.me wonder.1sg where are gone.3pl and why are gone.3pl.
   ‘I wonder where they have gone and why they have gone.’

c. Mi chiedo [perché sono andati] e [dove sono andati].
   to.me wonder.1sg why are gone.3pl and where are gone.3pl.
   ‘I wonder why they have gone and where they have gone.’

d. *Mi chiedo [perché sono andati] e [dove sono andati].
   to.me wonder.1sg why are left.3pl and where are gone.3pl.

Other facts also show that a sluicing-like analysis does not seem to be appropriate in the cases we are focusing on here. Consider these contrasts, for example:

(8) a. Mi chiedo [com’è che è partito] e [quand’è che è partito].
   to.me wonder.1sg how is that is left and when is that is left.
   ‘I wonder how it was that he left and when it was that he left.’

b. *Mi chiedo [com’è che è partito] e [quand’è che è partito].
   to.me wonder.1sg how is that is left and when is that is left.

c. So che Gianni è partito un certo giorno ma non so [quand’è
   that is left a certain day but not know.1sg when is
   che è partito].
   that is left
   ‘I know that Gianni left on a certain day but I don’t know when it was.’

In Italian, especially in the northern varieties spoken in Lombardy, wh-movement is normally manifested via a pseudocleft construction (on pseudoclefts, see Den Dikken 2005 and references cited there). For example, a simple sentence like Chi parla? ‘Who speaks?’ would be rendered as Chi è che parla? (Lit. who is that speaks, ‘Who is it that speaks?’). Now, (8a) is a genuine case of coordination of two full clauses, whereas (8c) is a prototypical case of sluicing. Crucially,
deletion of the lower portion of the clausal constituent in the second member of the coordinate structure (8a) yields the sharply ungrammatical sentence (8b). With the genuine sluicing construction, instead, the occurrence of the very same wh-element is perfectly grammatical after ellipsis (8c).

I would like to propose a new analysis that, on the one hand, shares with sluicing the idea that the coordinative head is merged with a clausal constituent rather than the interrogative phrase it precedes but that, on the other hand, does not involve ellipsis. Focusing on the relevant fragment, this proposal can be formally captured with the following derivational steps:

\[ \begin{align*}
(9) & \quad \text{a. } \ldots \text{[dove C [pro sono andati t]]} \\
& \quad \quad \text{where pro are gone.3pl.} \\
& \quad \text{b. } \ldots \text{[perché C [dove C [pro sono andati t]]]} \\
& \quad \quad \text{why where pro are gone.3pl.} \\
& \quad \text{c. } \ldots \text{[[[dove C [pro sono andati t]] [e [perché C t]]]}} \\
& \quad \quad \text{where pro are gone.3pl. and why} \\
& \quad \quad \text{‘... where they have gone and why’}
\end{align*} \]

First, dove ‘where’ is raised from the postverbal position to the specifier of a suitable head in the Comp field (indicated here with a series of C heads), as in (9a). Second, perché ‘why’ is generated in a high portion of the Comp field, as in (9b). Third, the coordinative head is merged to this complex clausal structure, as in (9c). Fourth, the lower portion of the clausal constituent (a segment of the complex CP structure) is raised to the specifier of the coordinative head, yielding the observed word order where the coordinative head precedes the highest wh-element, as in (9d).

In other words, I would like to suggest that there is no wh-in-situ in these cases: the appearance of a wh-phrase in its base-generated position is just the effect of a complex mechanism involving CP-splitting that I will label clause structure folding.\(^5\) Notice that the derivation proposed here

\(^5\) The alternative of raising perché ‘why’ in (9c) as opposed to the CP segment—yielding (i)—is not viable, since it would go against the basic requirement that the two elements to be coordinated belong to the same category. We will come back to this property of the coordinative head in section 2.

(i) \[ [[[PP perché] e [CP t come sono arrivati]]] \]

‘why and how they have arrived’

The fact that sentence (iia) is grammatical is instead due to the fact that perché ‘why’ and come ‘how’ can indeed be coordinated; this simply means that perché ‘why’ can be locally merged with another adverbial, yielding (iib).

(ii) a. perché e v come sono arrivati

‘why and how they have arrived’

b. [[perché [e v come]] pro sono arrivati

‘why and how they have arrived’
requires no stipulation: rather, it could only be blocked by stipulation, since the null hypothesis is that the conjunction *e* ‘and’ can be merged in the relevant position, and if there, it provides a landing site.\(^6\)

This analysis offers several empirical advantages besides the immediate one of indicating the two phrases that are coordinated by *e* ‘and’, namely, CPs. Consider first the following sentences:

(10) a. [DP Chi è arrivato per questa ragione] è stupido.  
   ‘(He) who has arrived for this reason is foolish.’
   b. [CP Chi è arrivato per questa ragione] è ovvio.  
   ‘Who has arrived for this reason is obvious.’

The free relative occurring in subject position can be the subject of semantically different types of predicates: a predicate like *stupido* ‘foolish’ that takes an individual as a subject (10a) and a predicate like *ovvio* ‘obvious’ that instead takes a proposition as a subject (10b). This could be captured by labeling the two preverbal constituents differently (as DP and CP, respectively), assuming that the *wh*-DP projects in the former case and the CP in the latter, along the lines suggested by Donati (2006). The crucial point here is that if the causative adverbial *per questa ragione* ‘for this reason’ is turned into the interrogative adverbial *per quale ragione* ‘for what reason’ obligatorily involving the coordinative head, the following sharp contrast results:

(11) a. *[CP Chi è arrivato e per quale ragione] è stupido.  
   ‘(He) who has arrived and for what reason is foolish.’
   b. [CP Chi è arrivato e per quale ragione] è ovvio.  
   ‘Who has arrived and for what reason is obvious.’

If the causative adverbial *per quale ragione* ‘for what reason’ were in situ, this contrast would remain unexplained. However, it follows straightforwardly from the clause-structure-folding analysis. The occurrence of the conjunction and the (remnant) movement of a clausal constituent are not compatible with assigning a DP label to the clausal structure, for *chi* ‘who’ is too deeply embedded in the first member of the coordinative structure because of the folding process. The only reasonable label for *chi è arrivato e per quale ragione* ‘who has arrived and for what reason’ is CP, yielding the incompatibility of this sentence with a nonpropositional predicate like *stupido* ‘foolish’ in (11a).

The following sentence provides further independent evidence for the clause-structure-folding analysis:

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\(^6\) I am very grateful to an anonymous reviewer for pointing out this important theoretical aspect of the analysis suggested here, which would have otherwise escaped my attention.
(12) Mi chiedo [quando negheranno che i ragazzi sono arrivati e perché].
‘I wonder when they will deny that the boys have arrived and why.’

Potentially, perché ‘why’ can be interpreted as referring to either the denial or the arrival. In fact, the only available interpretation here is the one where perché ‘why’ refers to the denial. The fact that a verb like negare ‘deny’ can restrict the interpretation of a causative interrogative adverbial is not new. Rizzi’s (1990) theory of relativized minimality, for example, accounts for the following contrasts:

(13) a. Mi chiedo perché dicono [t che i ragazzi sono arrivati].
‘I wonder why they say that the boys have arrived.’

b. *Mi chiedo perché non dicono [t che i ragazzi sono arrivati].
‘I wonder why they don’t say that the boys have arrived.’ (why refers to the arrival)

c. *Mi chiedo perché negano [t che i ragazzi sono arrivati].
‘I wonder why they deny that the boys have arrived.’ (why refers to the arrival)

A negative operator (whether it is independently realized as non ‘not’ or inherently licensed by a verb like negare ‘deny’) is able to block the lower reading of perché ‘why’ intervening between the antecedent (perché ‘why’) and its trace. More explicitly, (13a) is ambiguous: it can question either the reason for the arrival or the affirmation. (13b–c) can only be interpreted as questioning the affirmation or the denial, not the arrival. This contrast, however, cannot be immediately exploited to explain the lack of ambiguity in (12): the verb negare ‘deny’ is in fact higher than arrivare ‘arrive’ and thus should not interfere with the antecedent-trace relation. But if negare ‘deny’ stood between perché ‘why’ and arrivare ‘arrive’ at some point in the derivation, we could immediately explain the selected reading for (12) by applying the same principles that explain (13a–c). And in fact this configuration is immediately available if we adopt the clause-structure-folding analysis, as in the following simplified representation:

(14) Mi chiedo [quando negheranno che i ragazzi sono arrivati e perché].
‘I wonder when they will deny that the boys have arrived and why.’

Before the whole constituent quando negheranno che i ragazzi sono arrivati ‘when they will deny that the boys have arrived’ is raised to the specifier position of the coordinative head, negare ‘deny’ would stand between perché ‘why’ and arrivare ‘arrive’, blocking the unwanted reading. In other words, (12) (and its associated structure in (14)) can only question the timing and the reason for the denial because perché ‘why’ can refer only to negare ‘deny’, not to arrivare ‘arrive’. This conclusion can be indirectly supported by analyzing the distribution of the negative variant of the coordinative head e ‘and’, namely, né ‘nor’. This head can occur only if the first
member of the coordination contains a negative word (e.g., non ‘not’). The following contrast thus reinforces the hypothesis that perché ‘why’ cannot be in situ:

(15) a. Gianni non sa quando diranno che hanno telefonato né perché.
   Gianni not knows when say.FUT.3PL that have telephoned nor why
   ‘Gianni doesn’t know when they will say that they have phoned nor why.’

b. *Gianni sa quando non diranno che hanno telefonato né perché.
   Gianni knows when not say.FUT.3PL that have telephoned nor why
   (cf. *Gianni knows when they will not say that they have phoned nor why.)

In conclusion, besides offering an analysis of the structural role of e ‘and’, the clause-structure-folding hypothesis for adverbial wh-phrases explains the fact that perché ‘why’ must follow all other adverbial wh-phrases, the fact that free relatives containing a postverbal adverbial wh-phrase cannot be the subjects of individual predicates, and some surprising selective interpretations of negation. If there were no structure folding, it would be very hard to capture all these data (in a unified theory). On the other hand, structure folding says nothing about why e ‘and’ must occur. I will propose an explanation in section 3. First, though, I will explore the possibility of extending the analysis given here for adverbial wh-phrases to argumental ones.

2 The “Wh-in-Situ Effect” with Argumental Phrases

In this section, I would like to suggest that the analysis given for interrogative adverbials “in situ” can be extended to all other cases involving wh-movement. More specifically, I will suggest that all the apparent instances of wh-in-situ in Italian are just the effect of clause structure folding or, equivalently, that there is no wh-in-situ in Italian.

A problem immediately arises. The distribution of e ‘and’ with argumental wh-phrases is not as sharp as in the case of adverbials. A simple statistical analysis of grammaticality judgments indicates that there are at least three varieties of Italian speakers when it comes to wh-in-situ with argumental phrases: those who do not accept wh-in-situ at all, those who accept it only without the occurrence of the coordinative head, and those who accept it both with and without a coordinative head. However, all the native speakers of Italian that I tested who fall into the latter two groups gave the same judgments concerning the distribution of multiple wh-phrases. The hypothesis I will pursue here, then, is that whether or not it is overtly realized, a coordinative head is involved in apparent wh-in-situ constructions in Italian, paralleling the cases illustrated in section 1. I will show that this proposal explains some crucial facts characterizing these constructions and raises new questions as well. As for why the coordinative head is not always obligatorily overt, the only generalization that emerges is that for all speakers it is obligatory for wh-PPs only, disregarding whether or not the PP is an adverbial, an argument of the verb, or the complement of a nominal head. This implies that the phonological realization of the coordinative head is related to morphological requirements rather than to other structural factors. In a sense, the possibility of having an overt or null coordinative head (e ‘and’ vs. an empty coordinative head [e]) parallels the possibility of having an overt or null complementizer (that vs. an empty C head [e]) in Rizzi’s (1990) analysis of locality restrictions on wh-movement. Rizzi considers the possibility of having an overt complementizer or a phonologically null one as a morphosyntactic phenomenon, relying
on the assumption that the null variant is the one endowed with agreement features. Here, I will not attempt to derive the reasons requiring the coordinative head to be overt or null: whether or not they are amenable to the morphological requirements of PPs versus DPs is a matter that exceeds the goals of this article and my present understanding of this issue. Instead, I will explore the empirical consequences of assuming that a coordinative head always occurs in Italian in cases of *wh*-in-situ yielding clause structure folding; in other words, I will extend the clause-structure-folding analysis proposed for *wh*-adjuncts to *wh*-arguments.

Let us start with a case involving subject and object *wh*-movement. From an abstract point of view, the relevant part of the derivation that involves clause structure folding is shown in (16), where [{(e)}] represents the coordinative head, which may be overt or null.

(16) a. \[wh_2 C[wh_1 C[t_1 \ldots t_2]]\]

b. \[\{(e)}[wh_2 C[wh_1 C[t_1 \ldots t_2]]\]

c. \[\{[wh_1 C[t_1 \ldots t_2]]\}[(e)}[wh_2 C[t_1]]\]

Both *wh*-phrases—the subject (*wh_1*) and the object (*wh_2*)—are moved to the left periphery to reach a local configuration with the proper functional head, as in (16a) (see Richards 1999 for a critical and detailed account of this proposal in a comparative perspective, also the works cited in the introduction to this article). Then the coordinative head is merged, as in (16b). Finally, the lower portion of the clausal constituent is moved to the specifier position of the coordinative head, stranding the highest *wh*-phrase and yielding the WISE as in (16c).

A crucial property is embodied in this derivation. As the abstract representation in (16) indicates, the derivation involves nested rather than crossing movement paths, which would have given \[wh_1 C[wh_2 C[t_1 \ldots t_2]]\]. This restriction is independently found in contrasts like the following—involving either D-linked (17a–b) or non-D-linked (17c–d) phrases—along the lines suggested by the seminal work of Pesetsky (1982) and many subsequent works including in particular Rizzi 1985:

(17) a. ?[Cosa_2 C si chiedono [chi_1 C persuadere [t_1 a comprare t_2]]]?  
   ‘What do they wonder who to persuade to buy?’

b. *[Chi_1 C si chiedono [cosa_2 C persuadere [t_1 a comprare t_2]]]?  
   (cf. *Who do they wonder what to persuade to buy?)

c. ?[Quale libro_2 C si chiedono [quale ragazzo_1 C persuadere [t_1 a comprare t_2]]]?  
   ‘Which book do they wonder which boy to persuade to buy?’

d. *[Quale ragazzo_1 C si chiedono [quale libro_2 C persuadere [t_1 a comprare t_2]]]?  
   to buy
Assuming this condition, one of the immediate predictions of the clause-structure-folding analysis is that only wh-objects can appear after the verb, as opposed to subjects—possibly occurring with the overt coordinative head e ‘and’. This is because, as indicated in (16), before remnant movement takes place the highest wh-phrase must be the object, owing to the nesting condition on chain formation. This can be illustrated by means of several contrasts between the subject and wh-objects as well as between the subject and several types of argumental wh-phrases. Let us start with a subject/object asymmetry involving a transitive verb that obligatorily requires an object, esprimere ‘express’.

(18) a. Mi chiedo chi ha espresso (e) cosa.
    to.me wonder.1sg who has expressed and what
    ‘I wonder who has expressed and what.’

b. *Mi chiedo cosa ha espresso (e) chi.
    to.me wonder.1sg what has expressed and who

c. Gianni ha espresso (un’opinione).
    Gianni has expressed an opinion

In this example, only the wh-object can appear postverbally; the subject is always banned from this position. The fact that D-linked expressions are used here is irrelevant; witness the following contrast, where non-D-linked expressions occur:

(19) a. Mi chiedo quale uomo ha espresso (e) quale opinione.
    to.me wonder.1sg which man has expressed and which opinion
    ‘I wonder which man has expressed and which opinion.’

b. *Mi chiedo quale opinione ha espresso (e) quale uomo.
    to.me wonder.1sg which opinion has expressed and which man

The very fact that the subject cannot appear in a postverbal position is particularly surprising in a pro-drop language like Italian. Although both (20a) and (20b) are acceptable, these two examples have only one interrogative counterpart—namely, one where the subject is preverbal, (20c). In other words, although in Italian a subject can normally be postverbal, if the subject is endowed with a wh-feature it can only precede the verb—hence the ungrammaticality of (20d). Notice that (20d) is ungrammatical even though the complementizer se ‘if’ is endowed with a wh-feature (cf. Mi chiedo se pro è arrivato qualcuno; Lit. to.me wonder.1sg if pro is arrived anyone, ‘I wonder if anyone has arrived’).

(20) a. Mi chiedo se Gianni è arrivato.
    to.me wonder.1sg if Gianni is arrived
    ‘I wonder if Gianni has arrived.’

b. Mi chiedo se pro è arrivato Gianni.
    to.me wonder.1sg if pro is arrived Gianni
    ‘I wonder if Gianni has arrived.’

c. Mi chiedo chi è arrivato.
    to.me wonder.1sg who is arrived
    ‘I wonder who has arrived.’
d. *Mi chiedo (se) pro è arrivato chi.
   to.me wonder.1sg if pro is arrived who

This contrast immediately suggests that in Italian there is no long-distance wh-feature checking (possibly via Agree; see Chomsky 2008): checking can only be performed in a local configuration, by activating the proper head in the Comp field via movement.

Similar contrasts can be detected by testing the occurrence of a wh-subject with a predicative noun phrase such as cosa ‘what’ using a verb like diventare ‘become’, which requires an obligatory predicative element.

(21) a. Mi chiedo chi è diventato (e) cosa.
   to.me wonder.1sg who is become and what
   ‘I wonder who has become what.’
b. *Mi chiedo cosa è diventato (e) chi.
   to.me wonder.1sg what is become and who
c. Gianni è diventato *(un professore).
   Gianni is become a professor
   ‘Gianni has become a professor.’

Another similar contrast is provided by testing subject wh-movement with wh-movement of an interrogative adverbial using a verb such as comportarsi ‘behave’, which requires a manner adverbial expression.

(22) a. Mi chiedo chi si è comportato (e) come.
   to.me wonder.1sg who himself is behaved and how
   ‘I wonder who has behaved how.’
b. *Mi chiedo come si è comportato (e) chi.
   to.me wonder.1sg how himself is behaved and who
c. Gianni si è comportato *(bene).
   Gianni himself is behaved well
   ‘Gianni behaved himself.’

All these cases, mutatis mutandis, can be explained by the derivation in (16). Both the wh-subject and the other wh-phrase first move to the left periphery, creating a nested dependency. The lower segment of the clausal constituent then moves to the specifier position of the (abstract) coordinative head, stranding the wh-phrase that has been raised to the highest position and yielding the WISE.7

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7 Marcel den Dikken (pers. comm.) points out that this analysis based on the impossibility of crossing paths in fact competes with another one that does not refer to crossing. The alternative analysis is based on a long-standing principle originally observed by George (1980) and elaborated by Chomsky (1986), the Vacuous Movement Hypothesis (VMH). According to this principle—whose nature and consequences are not yet entirely clear (see for example the discussion in Moro 2000 and references cited there)—movement does not take place if it is so local that it cannot be detected by an overt change in word order. Thus, assuming the VMH amounts to saying that wh-subjects never move in languages like English. For example, in a simple sentence like (I wonder) who left, who would never reach the left periphery (unless
Before proceeding, I would like to address a potential objection to the complex analysis given in (16). Consider a simple sentence like (23), where, for the sake of the argument, I will first give the gloss only.

(23) Mi chiedo cosa e chi adori.
    to.me wonder.1SG what and who adores

This sentence has two potential meanings (related to the fact that the subject in Italian can be expressed by *pro*): ‘I wonder who adores what’ or ‘I wonder what and who he or she adores’. These two potential interpretations correspond to two different structures. In one structure, *chi* ‘who’ is a DP object coordinated with another DP object, *cosa* ‘what’—*pro* being the subject of *adori* ‘adores’ as in (24a). In the other, the DP object *cosa* ‘what’ is coordinated with the CP *chi adori* (Lit. who *pro* adores, ‘who he or she adores’), as in (24b).

(24) a. Mi chiedo [cosa e chi] pro adori t.
    to.me wonder.1SG what and who pro adores
    ‘I wonder what and who he or she adores.’

b. *Mi chiedo [cosa e [chi t adori t]].
    to.me wonder.1SG what and who adores

The question is, what rules out the structure in (24b) and the corresponding interpretation (i.e., ‘I wonder who adored what’)? This puzzling case is explained by taking seriously the property of the conjunction *e* ‘and’ that it must coordinate items of the same category. The basic contrast in (3) is reproduced here for convenience:

It does so at LF, an issue that cannot be approached here). Now, suppose that the VMH holds: the ungrammaticality of a sentence like (18b), repeated (details apart) in (i), could be derived without referring to the crossing condition.

(i) *Mi chiedo cosa pro ha espresso chi.
    to.me wonder.1SG what pro has expressed who

After the *wh*-object has moved to the left periphery and the conjunction has been merged, the only option would be to move the full TP, yielding the correct word order, shown in (ii).

(ii) Mi chiedo chi pro ha espresso cosa.
    to.me wonder.1SG who pro has expressed what
    ‘I wonder who has expressed what.’

But this alternative analysis based on the VMH would predict that the impossibility of having a postverbal *wh*-subject would hold only for the highest subject. In other words, if there were no constraints on crossing paths—that is, if multiple *wh*-dependencies could form freely—then in the case of the nonhighest subject we should be able to produce (iii) at the relevant stage of derivation.

(iii) . . . e [chi [cosa [pro credi che [t ha espresso t]]]]
    and who what pro think.2sg that has expressed

Nothing would then prevent the subject from stranding, yielding (iv).

(iv) *Cosa credi che pro ha espresso chi?
    what think.2sg pro has expressed who

The ungrammaticality of this sentence reinforces the analysis based on the prohibition against crossing *wh*-paths and rules out the alternative based on the VMH.
Thus, (24b) is not the proper structure for (23) because of the independent, well-established property of conjunctions requiring that the items they coordinate belong to the same category. The only possible structure is the one where cosa ‘what’ and chi ‘who’ are both objects; the structure where e ‘and’ coordinates a DP and a CP does not meet this requirement. Equivalently, chi ‘who’ cannot be the subject of adori ‘adores’ in (23).

To add indirect pieces of evidence in favor of this hypothesis, notice that in fact the order of cosa ‘what’ and chi ‘who’ can be permuted in (23), yielding a perfectly well-formed sentence.

(26) Mi chiedo [chi e cosa] adori.

‘I wonder who and what he or she adores.’

Notice that the analysis of this case has a nontrivial effect on the theory presented here. Consider (18a) again, details apart.

(27) Mi chiedo chi ha espresso cosa.

‘I wonder who has expressed what.’

By adopting the idea that a silent coordinative head intervenes in the derivation, one could justify why that head could not coordinate the DP chi ‘who’ with the TP abbia espresso cosa ‘has expressed what’ or, equivalently, claim that cosa ‘what’ is after all really in situ while only the wh-subject has been raised to the specifier position made available by the phonologically null coordinative head. Now, if that were so, the structure would violate the basic property of conjunction we just examined and the sentence would not be grammatical.

Summarizing, when a wh-subject cooccurs with another wh-element—be it an object, a predicative noun phrase, or an obligatory adverbial—the derivation involves clause structure folding, where two segments (CPs) of the same clause structure are coordinated by a conjunction.

The obvious question that arises now is why this process is required. I will propose an explanation in section 3. Before concluding this section, I would like to show some more complex cases involving three or more wh-elements. Offering a comprehensive analysis involving all types of wh-phrases is not feasible since for combinatorial reasons the number of cases immediately becomes too large. Nevertheless, I am confident that the crucial cases are included here.

In fact, contrasts similar to those observed in (18)–(22) can be devised relatively easily to the extent that wh-movement builds up an ordered, fixed hierarchy in the left periphery. Again,
I will focus here on some prototypical cases, leaving a full taxonomy for future research. One such contrast occurs when a wh-element like *di chi ‘of who’ is extracted out of an object noun phrase like *alcune foto di chi ‘some pictures of who’ in a sentence that contains a wh-subject.

(28) a. Mi chiedo chi ha acquistato alcune foto (e) di chi.
   to.me wonder.1sg who has purchased some pictures and of who
   ‘I wonder who has purchased some pictures of who.’
   b. *Mi chiedo di chi ha acquistato alcune foto (e) chi.
      to.me wonder.1sg of who has purchased some pictures and who

Instead, if the sentence contains a wh-object such as quali foto ‘which pictures’, which in turn contains a wh-complement such as di chi ‘of who’, the following contrast results:

(29) a. Mi chiedo quali foto ha acquistato (e) di chi.
   to.me wonder.1sg which pictures has purchased and of who
   ‘I wonder which pictures he or she has purchased from who.’
   b. *Mi chiedo di chi ha acquistato (e) quali foto.
      to.me wonder.1sg of who has purchased and which pictures

Notice that this contrast can be explained only if one assumes that movement of the object as a whole takes place before extraction from the object, as follows:

(30) a. . . . [[quali foto di chi] C . . . t . . .
   which pictures of who
   b. . . . [[di chi] C [[quali foto t] C . . . t . . .
   of who which pictures

If extraction from the object could take place before movement of the object, the contrast in (29) would be reversed.8 Again, we could take it to be the consequence of the requirement that wh-chains do not intersect but instead proceed by nested dependencies.

Now, what happens when three rather than two wh-elements occur in the same sentence? For example, let us take the case where a wh-subject and a wh-object containing a wh-complement cooccur. This gives rise to the following contrast (for the sake of simplicity, I will omit the case with a postverbal wh-subject, which is unexpectedly ungrammatical as in the other cases):

(31) a. Mi chiedo chi ha acquistato quali foto (e) di chi.
   to.me wonder.1sg who has purchased which photos and of whom
   ‘I wonder who has purchased which photos of whom.’
   b. *Mi chiedo chi ha acquistato di chi (e) quali foto.
      to.me wonder.1sg who has purchased of whom and which photos

8 Example (30b) shows that there is no freezing effect on the first wh-phrase (Clemens Mayr, pers. comm.); that is, this doesn’t count as a crossing violation. If this effect is related to phases, though, one could argue that it is the highest phasal head that counts.
The contrast in (31) is consistent with (and in fact predicted by) the clause-structure-folding analysis. The derivation proceeds as follows:

(32) a. . . . [[quali foto di chi] C [chi C t abbia acquistato t]]
which photos of whom who has purchased
b. . . . [[di chi] C [[quali foto t] C [chi C t abbia acquistato t]]]
of whom which photos who has purchased
c. . . . [[quali foto t] C [chi C t abbia acquistato t] [e] [di chi t . . .
which photos who has purchased and of whom
d. . . [chi C abbia acquistato] [(e)] [[quali foto t] C t [e] [di chi . . .
who has purchased which photos and of whom

First, the wh-subject and the wh-object are moved to the left periphery (32a); then, di chi ‘of whom’ is extracted from the object (32b); as a last step, the inner clausal constituent is moved to the specifier of a second coordinative head (32d) (exactly as in the simple case involving a wh-subject and a wh-object only). Notice also that merging of a coordinative head in (32a) with successive movement of di chi ‘of whom’ to the specifier position of that coordinative head is correctly excluded, for it would amount to coordinating two categorially different constituents (a PP and a CP).

Another case involving three wh-elements is provided by verbs that take three arguments, such as consegnare ‘deliver’.

(33) a. Gianni consegno` un libro a Maria.
     Gianni delivered a book to Maria
b. Gianni consegno` a Maria un libro.
     Gianni delivered to Maria a book
     ‘Gianni delivered Maria a book.’

In this case, the subject can never be postverbal, as expected (34a–d). By contrast, there seems to be no relative ordering preference for the other two wh-arguments (either when they cooccur with a wh-subject or when they do not), as a consequence of the fact that virtually all speakers have no ordering preference in the affirmative case either (34e–h), with no strong ordering preference for stranding of the PP argument.

(34) a. Mi chiedo chi ha consegnato a Gianni (e) cosa.
     to.me wonder.1SG who has delivered to Gianni and what
     ‘I wonder who has delivered Gianni what.’
b. *Mi chiedo cosa ha consegnato a Gianni (e) chi.
     to.me wonder.1SG what has delivered to Gianni and who
c. Mi chiedo chi abbia consegnato un libro (e) a chi.
     to.me wonder.1SG who has delivered a book to whom
     ‘I wonder who delivered a book to whom.’
d. *Mi chiedo a chi ha consegnato un libro (e) chi.
     to.me wonder.1SG to whom has delivered a book and who
e. Mi chiedo chi ha consegnato cosa (e) a chi.
   to.me wonder.1sg who has delivered what and to whom
   ‘I wonder who has delivered what to whom.’

f. Mi chiedo chi ha consegnato a chi (e) cosa.
   to.me wonder.1sg who has delivered to whom and what
   ‘I wonder who delivered whom what.’

g. Mi chiedo cosa pro ha consegnato (e) a chi.
   to.me wonder.1sg what pro has delivered and to whom
   ‘I wonder what he or she has delivered to whom.’

h. (?)Mi chiedo a chi pro ha consegnato (e) cosa.
   to.me wonder.1sg to whom pro has delivered and what
   ‘I wonder to whom he or she has delivered what.’

Finally, having tested multiple adverbial wh-phrases in section 1 and multiple argumental ones here, we are left with the case of an adverbial wh-phrase cooccurring with an argumental one—that is, with a subject, as in (35a–d), or an object, as in (35e–h).

(35) a. Mi chiedo chi sia partito *(e) perché.
   to.me wonder.1sg who is left and why
   ‘I wonder who has left and why.’

b. Mi chiedo chi sia partito *(e) come.
   to.me wonder.1sg who is left and how
   ‘I wonder who has left and how.’

c. *Mi chiedo perché sia partito (e) chi.
   to.me wonder.1sg why is left and who

d. *Mi chiedo come sia partito (e) chi.
   to.me wonder.1sg how is left and who

e. Mi chiedo cosa ha espresso *(e) perché.
   to.me wonder.1sg what has expressed and why
   ‘I wonder what has expressed and why.’

f. Mi chiedo cosa ha espresso *(e) come.
   to.me wonder.1sg what has expressed and how
   ‘I wonder what he or she has expressed and how.’

g. *Mi chiedo perché ha espresso (e) cosa.
   to.me wonder.1sg why has expressed and what

h. *Mi chiedo come abbia espresso (e) cosa.
   to.me wonder.1sg how has expressed and what

These mixed cases do not present any surprising fact: the occurrence of an overt coordinative head is still required for stranded adverbials, and the relative order of the wh-phrases is the one predicted by assuming clause structure folding (i.e., the adverbial must follow).

Summarizing, in this section I have taken the analysis of the ‘‘wh-in-situ effect’’ adopted for interrogative adverbials and extended it to interrogative argumental phrases, including direct
and indirect objects and subextraction from (interrogative) noun phrases, showing that those wh-phrases that appear to be in situ are in fact stranded after having been moved to the left periphery.

In this case, the WISE is also due to remnant movement of a subpart of the clausal constituent to the specifier position of a coordinative head, which can be silent or overtly realized as e ‘and’ for some speakers.

In section 3, I will address two conceptually related issues quite synthetically. First, I will explain why a coordinative head must show up when two wh-phrases occur in the same sentence (or more than one coordinative head when more than two wh-phrases occur). Then, I will suggest some predictions that this theory leads to on the comparative side.

3 Clause Structure Folding and the Structure of the Left Periphery: Prolegomenon to a Case Study in Comparative Syntax

The analysis illustrated in the previous sections for Italian multiple wh-phrases—arguing that there is no wh-in-situ in this language—is based on the idea that when more than one wh-phrase occurs in a sentence, a coordinative head intervenes in the left periphery, inducing clause structure folding and providing a landing site for a subpart of the clausal constituent. Assuming that this analysis of how lexical items are composed proves correct, it is still natural to ask why UG requires coordination. For the sake of clarity, let us recall the core steps of the derivation by considering two wh-phrases—say, a subject cooccurring with an object or any adverbial other than perché ‘why’.

(36) a. . . . [TP wh-phrase1 . . . wh-phrase2]
   b. . . . [wh-phrase2 C [wh-phrase1 C [TP . . . t1 . . . t2 . . .]]]
   c. . . . [____ [e] [wh-phrase2 C [wh-phrase1 C [TP . . . t1 . . . t2 . . .]]]]
   d. . . . [[wh-phrase1 C [TP . . . t1 . . . t2 . . .]], [[e] [wh-phrase2 C t1]]]

To understand why this mechanism is required, let us consider it from the point of view of feature checking. First, the two wh-phrases move for checking reasons to the specifier position of a proper head (36b). Then, a coordinative head, overt or null, is inserted in the derivation (36c). Finally, the recursive CP structure undergoes a splitting process and the lower CP segment is raised to the specifier position made available by the coordinative head, stranding the higher wh-phrase (36d).

Why isn’t (36b) sufficient for the derivation to converge? That is, why is a coordinative head required to allow the folding process to take place? The explanation relies on the fact that in a language like Italian, the left periphery of the clause structure contains only one position for wh-elements; this conflicts with the presence of two wh-phrases. Formally, following Rizzi’s (1997) seminal analysis of the left periphery, the Comp field in Italian has the following abstract representation.9

9 This is orthogonal with respect to the idea that there may be focal positions in other portions of the clause structure lower than the left periphery (see Belletti 2001, Longobardi 2000). Regarding the existence of further clausal heads in Italian higher than Force, such as those pertaining to vocative, see Moro 2003.
(37) . . . Force > (Top) > Foc > (Top) > Fin > TP

Crucially, the head that is endowed with \( \text{wh} \)-features is Foc, which, unlike Top, cannot occur more than once in the structure.

(38) * . . . Force > (Top) > Foc > Foc > (Top) > Fin > TP

This makes (36b) an impossible structure for Italian without further assumptions: a sequence of two heads endowed with \( \text{wh} \)-features in the split-Comp field is simply not an option in this language. The intuition I would like to pursue here is that CP-splitting and coordination—that is, clause structure folding—is a strategy for rescuing a single sentence containing two \( \text{wh} \)-phrases to avoid the language-specific restriction in (38) requiring that there be just one Foc head in the left periphery.\(^{10}\)

(39) . . . Force > \([\text{wh} C \ldots]_j [[(e)]_+ \text{Foc} [\text{wh} C t_j] \]

The role of the coordinative head here is to “absorb” the \( \text{wh} \)-features of the two Foc heads into whose specifier position either \( \text{wh} \)-phrase has been moved by providing the left periphery with a proper structure to allow folding.\(^{11}\)

\(^{10}\) Of course, the residual part of the left periphery will be contained in the segment of the CP that has been moved. The following representation gives the full structure in a more detailed fashion:

(i) . . . Force > (Top) > \([\text{wh} C > (\text{Top}) > \text{Fin} > \text{TP}]_j [[(e)]_+ \text{Foc} [\text{wh} C t_j]

In other words, the portion of the split-Comp field containing Top and Fin heads does not follow the last \( \text{wh} \)-phrase.

\(^{11}\) A natural question arises here: why is \( e \) ‘and’ exploited in this operation of clause structure folding—rather than, say, \( o \) ‘or’?

(i) *Mi chiedo chi arriva o perché.

to.me wonder.1SG who arrives or why

‘I wonder who arrives or why.’

I do not have clear answers at the moment, although the ungrammaticality of \( o \) ‘or’ in (i) is a reflex of a much broader incompatibility of \( o \) ‘or’ with interrogative sentence coordination, as illustrated in (ii).

(ii) *Mi chiedo chi arriva o perché arriva.

to.me wonder.1SG who arrives or why arrives

‘I wonder who arrives or why he or she arrives.’

Interestingly, though, (ii) is nearly fully acceptable if we choose a matrix verb that does not have an inherent interrogative meaning, such as \( \text{dire} \) ‘tell’.

(iii) Ditemi chi arriva o perché arriva.

tell.IMPER to.me who arrives or why arrives

‘Tell me who arrives or why he or she arrives.’

Another way to explain why a sequence of two \( \text{wh} \)-phrases in the left periphery leads to clause structure folding in Italian is to consider a fragment of (38) to be too symmetrical in the sense of Moro 2000, 2009. That is, (38) is ruled out because it contains a structure of type \([\text{XP } \text{YP}]\). This structure is unstable for the computation since both X and Y are potential goals for the same probe, which makes the process of labeling impossible (for the existence of such structures in other domains besides \( \text{wh} \)-phrases, see Moro 1997). Such an alternative would imply that the two \( \text{wh} \)-phrases symmetrically c-command each other in the sense of Kayne 1994, or equivalently that \( \text{wh} \)-movement creates a multiple adjunct structure, much in the sense that Quantifier Raising was assumed to create multiple IPs in the standard models. I will not pursue this line of reasoning here.
Synthetically, clause structure folding in Italian results from the conspiracy of these two independent facts:

(40) a. Wh- phrases occupy the specifier of a Foc head.
b. There is only one Foc head per CP field.

The hypothesis that the functional head that checks the feature of wh-phrases in Italian is unique is not ad hoc, in the sense that (40b) is not stipulated by observing the distribution of wh-phrases only. In fact, it is also indirectly supported by sentences like the following, first observed by Rizzi (1997):

(41) a. Mi chiedo [a chi Foc [pro abbiano detto questo]].
to.me wonder.1sg to whom pro have said.3pl this
‘I wonder to whom they have said this.’
b. Mi chiedo se [QUESTO Foc [pro abbiano detto to.me wonder.1sg if THIS pro have said.3pl
(not qualcosa’altro)].]
‘I wonder if they have said THIS (not something else).’
c. *Mi chiedo [a chi Foc [QUESTO Foc [abbiano detto to.me wonder.1sg to whom THIS have said.3pl
(not qualcosa’altro)].].
‘I wonder if they have said THIS and to whom THIS have said and to whom’ is not allowed.

The ungrammaticality of (41c) shows that both wh-phrases (like a chi ‘to whom’) and Foc phrases (like QUESTO ‘THIS’) compete for the same functional head within the Comp field and, obviously, that there is only one such head.

Of course, this way of rescuing the sentence by folding the clause structure is not unrestricted; in particular, it must meet the morphological requirements related to the coordinative head. For example, as we saw in section 1 (see in particular the comment regarding (17)), the category of the two elements that the coordinative head is merged with must be the same; in the case under discussion here, the coordinative head takes two CP segments of the same clause structure, producing folding. This is what makes CP-splitting the only way to rescue the structure: given the lexical elements available, it is the only way the coordinative head can have two items of the same category as specifier and complement, namely, two CPs. It also explains why the same strategy cannot rescue a sentence like (41c): since the Foc phrase does not contain the same set of morphological features as a wh-phrase—arguably, it contains only a subset of them—a rescue strategy based on the clause-structure-folding process yielding something like *Mi domando se QUESTO abbiano detto e a chi (Lit. to.me wonder.1sg if THIS have said and to whom) is not allowed.

Obviously, a language-specific assumption plays a crucial role in this explanation—namely, that there is only one Foc head in the left periphery. If this is true for languages like Italian, and possibly others, it is also true that things may well differ in other languages. In fact, as far as I can see, there is no principled reason why this state of affairs should be universal. In languages
like Bulgarian, Romanian, Serbo-Croatian, and Polish, for example, it is reasonable to assume that this restriction does not hold: all wh-words are free to move to the left periphery in the specifier position of C heads endowed with wh-features and stay there without further modifications of the structure. The prototypical case in (42a), taken from Bošković 1999:165 and cited in Richards 1993 (see also Cinque and Krapova 2008 for a detailed analysis of the order of wh-phrases in multiple fronting in Bulgarian) implements the sequence in (42b).12

(42) a. . . . [kogo C [kakvo C e pital Ivan]]?
    whom what AUX asked Ivan
    ‘Whom did Ivan ask what?’

b. . . . Force > (Top) > Foc > Foc > (Top) > Fin > TP

Thus, one of the empirical advantages of the current proposal is that it predicts that languages will vary in whether the presence of multiple wh-phrases in the same clausal structure forces clause structure folding, yielding the WISE. More explicitly, if the inventory of clausal heads in the left periphery of a given language is richer than in Italian in that it allows the occurrence of multiple Foc heads, then the complex phenomena of clause structure folding observed in sections 1 and 2 (the WISE) should not exist in that language. Notice also that since clause structure folding is a rescue strategy, it could well be the case that other languages implement different mechanisms to save a structure if the left periphery is not rich enough to host more than one wh-phrase. This amounts to saying that wh-in-situ could still be an option for other languages, provided that long-distance feature checking is available via Agree, or that LF movement of wh-phrases is allowed (see footnote 1). Certainly, the empirical data analyzed here show that this is not an option in Italian.

4 Conclusion

In this article, I proposed that there is no such thing as wh-in situ in Italian. Rather, all wh-elements move to the left periphery; the resulting word order at the final stage of derivation is due to a rearrangement of the structure that I call clause structure folding, involving a coordinative (abstract) head and CP-splitting. Furthermore, I argued that this case of clause structure folding is due to a language-specific restriction on the architecture of the left periphery requiring the syntactic locus for wh-movement feature checking to be unique. Clause structure folding and the WISE in Italian ultimately turn out to be the result of a rescue strategy allowed by UG. Italian, then, belongs to the same (1a) class as Bulgarian and Polish, in that there is no mixed strategy for multiple wh-phrases: they all move to the left periphery. Whether or not the taxonomy can be entirely reduced to two—the first two classes in (2) only—is an intriguing issue but one that must be left for future research.

12 Coordination can of course be exploited in languages without necessarily involving clause structure folding. For an interesting analysis of conjunction in Russian multiple wh-phrase constructions, potentially extendable to cover other Slavic languages such as Bulgarian, see Chaves and Paperno 2007 (David Pesetsky, pers. comm.).
References


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