

On the Incompatibility of Wh and Focus

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Abstract: A left peripheral focus and a wh-element cannot co-occur in main interrogatives in Italian, whereas they can marginally co-occur in indirect questions. Moreover, the acceptability of the relevant configurations is further modulated by the grammatical function of the focal element, with a focalized indirect object more acceptable than a focalized direct object. In this paper we establish these generalizations experimentally through a controlled acceptability experiment. We discuss the theoretical underpinning of the observed pattern by tracing back this unusual kind of main-embedded asymmetry to plausible principles regulating the interface properties of focus and wh-constructions. We then extend the comparative dimension to Japanese. We propose that certain intervention effects observed in the literature may be amenable to the same explanatory ingredients at work in the incompatibility between focus and wh- in Italian; moreover certain apparent cases of double cleft in Japanese are analyzable as involving a single focus constituent, thus supporting the universality of the uniqueness of focus.¹

Key words: left periphery, focus, uniqueness of focus, wh-phrase, main-embedded asymmetry, intervention effect, syntax-semantics interface

1. Introduction

It was observed in Rizzi (1997) that wh-movement and focus movement to the left periphery cannot co-occur in main interrogatives in Italian, regardless of the order between focus and wh. This is illustrated in the following examples. If we take as a baseline an acceptable left-peripheral focus in a declarative, like (1), the corresponding wh-question is clearly deviant, as in (2):

- (1) A GIANNI dovresti dare questo libro, non a Piero
'TO GIANNI you should give this book, not to Piero'
- (2) *A GIANNI che cosa dovresti dare, non a Piero?
'TO GIANNI what you should give, not to Piero?'

A first level of analysis, developed in the reference quoted, can exploit the map of the clausal structure, along the following lines: wh-elements are focal, the left-

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peripheral focus position is unique, therefore, *wh* and focus compete for the same unique position, whence the observed incompatibility.

In other words, in this approach the incompatibility between *wh* and focus is reduced to the impossibility of more than one left-peripheral focus position, illustrated in the following. In a ditransitive structure, one complement can be focalized, but not two complements at the same time:

- (3) a. A GIANNI dovresti dare il libro, non a Piero
 ‘TO GIANNI you should give the book, not to Piero’
- b. IL LIBRO dovresti dare a Gianni, non il disco
 ‘THE BOOK you should give to Gianni, not the record’
- c. *A GIANNI IL LIBRO dovresti dare, non a Piero il disco
 ‘TO GIANNI THE BOOK you should give, not to Piero the record’

Interestingly, in the same paper, it is observed that the co-occurrence of focus and *wh* in the same clause, excluded in main questions, becomes (at least marginally) possible in embedded questions:²

- (4) Mi domando A GIANNI che cosa dovresti dare, non a Piero
 ‘I wonder TO GIANNI what you should give, not to Piero’

If the positional analysis of (2) is on the right track, (4) seems to indicate that *wh*-elements in embedded domains are not obliged to reach a focus position, so that the co-occurrence between *wh* and focus is (at least marginally) permitted. We thus have here a main-embedded asymmetry of a kind rather different from more familiar ones (e.g., subject-Aux inversion in interrogatives in standard English).

The purpose of this paper is threefold. First, we would like to submit the empirical finding on the main-embedded asymmetry in (2)–(4), based on informal acceptability judgments, to a rigorous scrutiny made possible by current controlled techniques of data gathering. We consider this step important because there is some disagreement in the literature on the impossibility of focus fronting in main *wh*-questions (see, e.g., Samek-Lodovici 2015). An additional element of complexity is that cases like (4) vary in relative acceptability depending on the grammatical function/categorial status of the focalized element: if a direct object is focus-moved across a *wh*-indirect object, the resulting structure is significantly more degraded (Rizzi 2001: 291). This modulation also calls for rigorous experimental testing. Compare (4) with (5) taken from Rizzi (2001: (14b)).

² In Rizzi (1997) this kind of example was marked with diachritic “?” (Rizzi 1997: fn. 18); in Rizzi (2001), no diacritic was associated with it, and the text observed that, in terms of relative acceptability, examples like (4) are “significantly more acceptable” (Rizzi 2001: 291) than the corresponding examples in which the object DP is focalized, a case which we will come back to shortly.

- (5) *?Mi domando QUESTO a chi abbiano detto (non qualcos'altro)
'I wonder THIS to whom they have said (not something else)'

Second, we consider it unlikely that the uniqueness of the left-peripheral focus position may be a primitive principle of UG; so, we will adopt the view that the observed uniqueness may follow from more plausible prime principles, along the lines of Rizzi (1997, 2013), and we will discuss how certain hypotheses proposed for (3c) may extend to (2). We will also address the theoretical underpinning of the two asymmetries between main and embedded questions, and between PP and DP focalization in embedded domains.

Third, we will discuss the generality of the incompatibility between focus and wh by looking at facts from other languages. In particular, we will suggest, on the basis of Tomioka's (2007) analysis, that the intervention effects observed in Japanese and Korean are explained along similar lines as the illicit combination of focus and wh in Italian. We will then go on to introduce Koizumi (2000) and Takano's (2002) analyses of "multiple-foci clefts" in Japanese. They argue that a single constituent occupies the focus position in the relevant examples. If this is correct, the uniqueness of focus in a single clause is also confirmed in Japanese.

2. The experiment

In order to assess the availability of focus fronting in wh-questions, we designed and carried out a web-based acceptability judgment experiment with written stimuli. 44 participants participated in the experiment, hosted on IboxFarm (Drummond 2018). All the participants, recruited via Facebook, were monolingual native speakers of Italian who were residing in Italy. They all voluntarily took part in the experiment.

2.1. Design, materials, and procedure

We tested four conditions obtained by crossing two independent binary factors in a 2*2 factorial design. The first factor we manipulated was the *syntactic context* in which the wh-element and the focus element co-occurred: i. in root wh-questions, or ii. in embedded wh-questions. The second factor we manipulated was the *syntactic function* of the elements in the left periphery: i. the focused constituent was the direct object and the wh-element an indirect object (IO_{FF}-DO_{Wh}); ii. the focused constituent was the indirect object and the wh-element was a direct object (DO_{FF}-IO_{Wh}).

The experimental materials consisted of a series of fictional dialogues between two speakers (A and B). The target sentence always occurred at the very end of the dialogue. Let us consider some examples (reported without diacritics).³

³ Since (6)–(9) exemplify the materials used in the experiment, the location of main prominence is not indicated in these examples, because the standard device to express focal prominence, capitalization (as illustrated in (1), (3), etc.), is a convention well-established in technical papers, but not immediately transparent for naïve experimental subjects.

(6) **Embedded question, IO_{FF} DO_{Wh}**

- A: Anche tu eri presente alla riunione di ieri sull'organizzazione del prossimo semestre. Mi potresti chiarire un dubbio?
 'You were also at yesterday's meeting concerning the organization for next semester. Could you clear up a doubt I have?'
 Chi hanno assegnato a Paola?
 'Who did they assign to Paola?'
- B: A Marcella, hanno assegnato Emilio.
 'To Marcella, they assigned Emilio'
- A: Ti ho chiesto un'altra cosa!
 'I asked you something else!'
 Ti ho domandato a Paola chi hanno
 to.you.CL AUX.I.SG asked to Paola who AUX.3.PL
 assegnato, non a Marcella!
 assigned not to Marcella
 'I asked you who they assigned to Paola, not to Marcella!'

(7) **Root question, IO_{FF} DO_{Wh}**

- A: Anche tu eri presente alla riunione di ieri sull'organizzazione del prossimo semestre. Mi potresti chiarire un dubbio?
 'You were also at yesterday's meeting concerning the organization for next semester. Could you clear up a doubt I have?'
 Chi hanno assegnato a Paola?
 'Who did they assign to Paola?'
- B: A Marcella, hanno assegnato Emilio.
 'To Marcella, they assigned Emilio'
- A: Ti ho chiesto un'altra cosa!
 'I asked you something else!'
 A Paola chi hanno assegnato, non a Marcella?
 to Paola who AUX.3.PL assigned not to Marcella
 'Who did they assign to Paola, not to Marcella?'

(8) **Embedded question, DO_{FF} IO_{Wh}**

- A: Anche tu eri presente alla riunione di ieri sull'organizzazione del prossimo semestre. Mi potresti chiarire un dubbio?
 'You were also at yesterday's meeting concerning the organization for next semester. Could you clear up a doubt I have?'
 A chi hanno assegnato Paola?
 'Who did they assign Paola to?'
- B: Marcella, l'hanno assegnata ad Emilio.
 'Marcella, they assigned her to Emilio.'
- A: Ti ho chiesto un'altra cosa!
 'I asked you something else!'
 Ti ho domandato Paola a chi hanno
 to.you.CL AUX.I.SG asked Paola to who AUX.3.PL

assegnato, non Marcella!
 assigned, not Marcella
 'I asked you who they assigned Paola to, not Marcella!'

(9) **Root question, DO_{FF} IO_{wh}**

- A: Anche tu eri presente alla riunione di ieri sull'organizzazione del prossimo semestre. Mi potresti chiarire un dubbio?
 'You were also at yesterday's meeting concerning the organization for next semester. Could you clear up a doubt I have?'
 A chi hanno assegnato Paola?
 'Who did they assign Paola to?'
- B: Marcella, l'hanno assegnata ad Emilio.
 'Marcella, they assigned her to Emilio.'
- A: Ti ho chiesto un'altra cosa!
 'I asked you something else!'
 Paola a chi hanno assegnato, non Marcella?
 Paola to who AUX.3.PL assigned not Marcella
 'Who did they assign Paola to, not Marcella?'

The dialogues in (6)–(9) provide an example of an experimental item under the four conditions we tested. All the dialogues start with speaker A asking a wh-question on either the direct object—(6)–(7)—or the indirect argument—(8)–(9). Speaker B partially misunderstands A's question and provides an answer which is only congruent with respect to a question different from what speaker A asked. Speaker A thus replies with the target sentence: a root or an indirect question that 'corrects' the implicit question answered by B. The constituent (either the direct object or the indirect object) that corresponds to the misunderstood part of the original question is focus fronted to the left periphery. A negative tag reinforces the corrective import associated with the focus fronted constituent (in the sense of Bianchi and Bocci 2012, Bianchi et al. 2015, 2016).

Since the stimuli were only presented as written text, the presence of the negative tag was instrumental in favoring a focus over a topic interpretation of the (non-wh) fronted constituent. Indeed, the negative tag is not felicitous if the element in the left periphery is a (clitic left dislocated) topic, while its presence is very natural with a focus element associated with a corrective import. When an indirect object is fronted to the left periphery (and no clitic occurs), the fronted element could in principle be either a fronted focus or a clitic left dislocated topic. This is so because clitic resumption, obligatory for object topics, is optional with indirect objects and other prepositional objects (we abstract away here from the question of whether this is true optionality, or the presence/absence of the clitic signals close but distinct constructions). In written stimuli, in which prosody does not disambiguate the interpretation of the IO, no apparent morphosyntactic clue disambiguates the status of the fronted IO.

Recall that we expect focus fronting not to be possible in root wh-questions. If this hypothesis is correct, the participants might resort to a topic interpretation

of the IO in order to save the sentence. In this sense, the presence of the negative tag was instrumental in favoring a focus interpretation of the fronted IO. Note that in case of fronted direct objects the picture is slightly different. Direct objects that undergo focus fronting to the left periphery cannot be resumed by a clitic element, while object topics clitic left dislocated to the left periphery must (Benincà 1988, Cinque 1990, Rizzi 1997). The presence (or the absence) of the resumptive clitic is thus sufficient to disambiguate the nature of an object in the left periphery, even in written stimuli without the negative tag.

We created 16 items analogous to the one reported in (6)–(9). We thus obtained a total number of 64 experimental stimuli (16 items * 4 conditions). In all the target questions, the verb was a ditransitive verb with two +human complements. We tested bare *wh*-elements: either *chi* ('who') or *a chi* ('to whom'). The fronted non-*wh* constituent was always a proper name. The indirect questions were introduced by 4 types of matrix clauses: *voglio/volevo sapere* ('I want/wanted to know', 4 items), *ti ho domandato* ('I have asked you', 4 items), *ti ho chiesto* ('I have asked you', 4 items), *voglio capire* ('I want to understand', 4 items). The indirect questions were presented in the indicative mood.⁴

The two independent factors were manipulated within participants and between items. We adopted a Latin square design and the stimuli were divided in 4 lists so that each participant was presented with an item only under one out of the four conditions. We added 16 fillers in each list. These fillers, which were also presented at the end of short dialogues, included 4 fairly natural sentences, 8 marginal sentences, and 4 strongly deviant sentences. The lists, consisting of 32 trials (16 experimental trials + 16 fillers), were pseudo-randomized.

The task consisted in acceptability judgements. The participants were asked to rate the degree of acceptability of each target sentence taking the relevant context into account and using a 7-point Likert scale, ranging from -3 (*completamente innaturale*, 'totally unacceptable') to +3 (*del tutto naturale*, 'absolutely natural'). The experimental session was preceded by a short familiarization session (3 trials). Participants could not change their answer once submitted. Each trial was presented individually. The entire experiment lasted on average between 10 and 16 minutes.

2.2. Results

The raw answers from each participant were transformed into *z*-scores. We analyzed the *z*-scores using linear mixed effects models. The *z*-scores ratings were specified as dependent variable and *syntactic context* and *syntactic function* as fixed effects. For both independent factors, the contrasts were coded with the deviant coding scheme (-.5, 5). The error structure included by item and by participant random intercepts and slopes for both fixed effects and their interaction. *P*-values were obtained via the package *lmerTest* with Satterthwaite's approximations. The

⁴ The subjunctive is often preferred by native speakers especially in the written language (possibly because of a normative bias), but there is a strong variability across speakers.

estimated values and confidence intervals were extracted via the package *effects* in R and plotted in Figure 1.

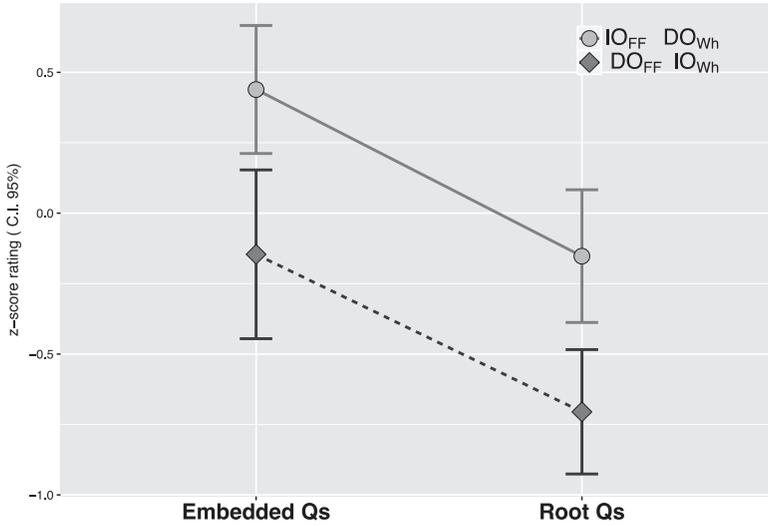


Figure 1. Syntactic experiment results: rating judgments (in z-scores) by type of *syntactic context* (embedded questions vs. root questions) and by type of *syntactic function* (IO_{FF}-DO_{Wh} vs. DO_{FF}-IO_{Wh})

The factor *syntactic context* was extremely significant: root questions were overall rated significantly lower than embedded questions (*Estimate* $-.5752$, *St. Err.* $.1343$, $p < .001$). Also the main effect of syntactic function revealed significant: sentences with the sequence IO_{FF}-DO_{Wh} overall received higher scores than sentences with DO_{FF}-IO_{Wh} (*Estimate* $.5688$, *St. Err.* $.1694$, $p < .01$). The interaction between *syntactic context* and *syntactic function* was not significant (*Estimate* $-.0326$, *St. Err.* $.1895$, $p > .05$).

In conclusion, these findings fully substantiate the description provided in Rizzi (2001). First, the co-occurrence of a focus fronted constituent and a wh-element is significantly less acceptable in matrix than in embedded questions. Second, the acceptability of their co-occurrence is affected by the syntactic nature of the elements in the left periphery: the co-occurrence of a focused direct object and a wh indirect object is less acceptable than the co-occurrence of a focused indirect object and a wh-direct object.

The relevance of these findings should not be underestimated. If we look at these findings from a naïve perspective, we observe that the co-occurrence of focus and wh-elements is acceptable in complex syntactic structures, i.e. in embedded questions, while it is degraded in “simpler” structures, i.e. in root questions. If we look at these data by adopting a syntactic viewpoint, we observe again something surprising: an atypical type of the main/embedded asymmetry. In fact, we observe

here that the left periphery of embedded clauses (i.e. indirect questions) is less constrained than the left periphery of matrix clauses (i.e. root questions). This contrasts with what is typically observed for other discourse-related phenomena targeting the left periphery, e.g. left dislocation in English (Emonds 1976, Haegeman 2004, 2012, Bianchi and Frascarelli 2010, a.o.). The asymmetry between root and embedded questions in licensing the co-occurrence of focus and *wh* is discussed in Section 3.2 and Section 3.3.

3. The (in-)compatibility of *wh* and focus

3.1. No double Foc in main clauses: the role of interface principles

In Rizzi (1997) it was proposed that the impossibility of a double left-peripheral focalization in the same clause follows from the interpretive routine (10), which is triggered by the Foc head; we will now summarize the structure of the argument.

- (10) [.....] Foc_x [.....]
 “Focus_x” “Presupposition”

In (10), Foc_x refers to the particular kind of focus import (corrective, mirative, etc.: see Bianchi et al. 2015, 2016) that is involved. Let us illustrate the interpretive procedure with corrective focus. An example like (3a), repeated here as (11)B, is felicitous in a context like (11)A:

- (11) A: So che dovrei dare il libro a Piero...
 ‘I know that I should give the book to Piero...’

- B: A GIANNI dovreesti dare il libro, non a Piero (= (3a))
 ‘TO GIANNI you should give the book, not to Piero’

Speaker A makes a statement, and interlocutor B corrects it on one aspect, the referent of the goal of *give*. The fact that A should give a book to somebody is agreed on by both interlocutors, it is the “presupposition” in the classical terminology going back to Jackendoff (1972), Chomsky (1972), which we will continue to adopt here. If the interpretive scheme (10) applies to (11)B (with Foc_x = corrective focus), we obtain:

- (12) [A GIANNI] Foc [dovresti dare il libro __], non a Piero
 ‘TO GIANNI you should give the book __], not to Piero’
 “Focus” “Presupposition”

And the negative tag reiterates the exclusion of the salient alternative to the focalized element.

If FocP was recursive in the same simple clause, e.g., in a case like (3c), we would have something like the following representation:

- (13) *[[A GIANNI] Foc1 [[IL LIBRO] Foc2 [dovresti dare ...]]]
 ‘TO GIANNI THE BOOK you should give...’

Here THE BOOK should be focal, *qua* specifier of Foc2, but it would also be part

of the presupposition of Foc1, and plausibly an element cannot be simultaneously both things. So, Focus recursion is systematically banned by the interpretive clash that it would give rise to.

3.2. No Foc-Wh in main clauses

Does this scheme of explanation extend to the incompatibility between focus and wh, as in (2)? Notice that, if the wh element is necessarily focal in main questions, presumably the interpretive routine (10) is triggered in this case as well. Then the same approach can extend to this case. The structure of (2) would be

- (14) *[[A GIANNI] Foc1 [[che cosa] Foc2 [dovresti dare ___]]]
 'TO GIANNI' what you should give ___'

(where Foc2 now hosts the wh-element in its Spec), and the same interpretive clash assumed for (13) would arise here: *che cosa* is focal *qua* Spec of Foc2, but it is part of the presupposition of Foc1.

The parallel between Foc and wh is further stressed by the fact that both Foc and wh, incompatible with another Foc, are compatible with a topic:

- (15) A Gianni, IL LIBRO gli dovresti dare ___ non il disco
 'To Gianni, THE BOOK you to-him should give ___, not the record'
- (16) A Gianni, che cosa gli dovresti dare?
 'To Gianni, what to-him should you give?'

That here the initial element is a topic is shown by the fact that it is resumed by a clitic (whereas foci typically bind a gap), by its less prominent intonational contour (rudimentarily expressed here by low case spelling: see Bocci 2013, Rizzi and Bocci 2017 for the presentation of the different contours referred to here), and by the fact that it typically refers to an individual already salient in context, or an individual belonging to a set salient in context, as topics do (see Rizzi 2006 for discussion). The interpretive schema associated to a Top head is something like the following:

- (17) [.....] Top [.....]
 'Topic' 'Comment'

And the interpretive conditions on comments are extremely weak: presumably the only requirement is that the comment should contain focal information, just to make the statement informative. The requirement is obviously satisfied when the comment is a focus phrase, as in (15) and (16).

3.3. Embedded questions

As pointed out at the outset, the incompatibility with left peripheral focus observed in main questions tends to disappear in embedded questions, as (4) (reproduced here for convenience) shows:

- (4) Mi domando A GIANNI che cosa dovresti dare, non a Piero
 'I wonder TO GIANNI what you should give, not to Piero'

Although (4) may have a residual character of marginality, the contrast between (2) and (4) is clear-cut, as experimentally shown in Section 2. The comparison between (2) and (4) leads to the conclusion that *wh* elements in embedded clauses do not necessarily target a focus position, so that the interpretive clash observed in main questions does not arise. In fact, it is not unnatural to assume that the necessary association with focus is a specific property of main *wh* questions: main questions invite answers in a well-formed dialogic exchange, and the value of the *wh*-variable will be focal in the answer: natural considerations of question-answer congruency (Bianchi, Bocci, and Cruschina 2017) will lead us to expect that also the *wh*-element is focal (see also Bocci and Cruschina, *forthcoming*; Bocci, Bianchi, and Cruschina *in preparation*).

On the other hand, indirect questions do not invite answers in the same way, i.e., if I say “Mary wonders what Bill saw” I do not expect my interlocutor to provide the value of the variable in “Bill saw *x*”. So, there is no congruency condition to respect, and the *wh*-element can target a distinct “pure Q” position, not necessarily a focus position (Rizzi 1997, Rizzi and Bocci 2017). The representation of (4) could then be something like the following:

- (18) Mi domando [[A GIANNI] Foc1[[che cosa] Q[dovresti
 ‘I wonder TO GIANNI what you should
 dare]]], non a Piero
 give, not to Piero’

Here, the sequence [[*che cosa*] Q [*dovresti dare*]] does not (necessarily) include a focus position, so that the interpretive clash does not (necessarily) arise. The main-embedded asymmetry is thus amenable to a natural explanation.

The possible dissociation of Q and Foc in embedded questions raises the issue of the exact nature of the landing site of *wh*-movement in main questions: is it a simple Foc position, or a featurally complex mixed position, involving both specifications? There are syntactic reasons which seem to indicate that the syntactic landing site of *wh*-elements should be distinguished from a pure L(ef) P(eripheral) focus position. In Italian, a corrective focus is compatible with a preverbal subject, as in (19), whereas a *wh*-element must be adjacent to the inflected verb, and does not tolerate an intervening subject, as in (20a). If the subject is null, or is postverbal, as in (20b), the structure is fine:

- (19) QUESTO Gianni dovrebbe dire, non qualcos’altro
 ‘THIS Gianni should say, not something else’
- (20) a. *Che cosa Gianni dovrebbe dire?
 ‘What Gianni should say?’
 b. Che cosa dovrebbe dire (Gianni)?
 ‘What should say (Gianni)?’

This state of affairs is naturally amenable to the following structural hypothesis: the Foc head, *per se*, does not require adjacency with the inflected verb in Italian,

whereas a Q head (in main clauses) does, much as it does in English. Whatever exact mechanism is responsible for the adjacency requirement (I to C movement, as in Rizzi 1996, movement of a verbal projection, as in Rizzi 2006, or the non-movement mechanism postulated by Cardinaletti 2007), the pattern seems to require a complex specification of the attracting head.

How does the complex attracting head *Foc – Q* arise in syntax? If UG permits complex featural conglomerates to be formed in the lexicon, it may enter syntax already formed with a composite nature. If UG is more restrictive and disallows such conglomerates to arise pre-syntactically, main questions may involve simple *Foc* and *Q* heads generated in the functional sequence, and then combined through head movement. A complex head *Foc – Q* formed syntactically may then attract a *wh*-element, matching both its specifications. In embedded clauses, as the question – answer congruency requirement is not operative, *Foc* and *Q* heads may remain separate, each one attracting an attractee with matching features, and this gives rise to cases like (18).

Why is it that (18) remains somewhat marginal?⁵ It should be noticed that (2) (with representation (14)), in addition to giving rise to the observed interpretive clash, also involves a violation of intervention locality: a focal element, a member of the operator class in the featural typology in the system of Relativized Minimality (Rizzi 2004; building on Rizzi 1990, Starke 2001) moves across the *wh*-operator, in violation of the principle. So, (2) violates both the interface requirements and locality. On the contrary, (18) could be looked at as involving a “pure” violation of Relativized Minimality, which is known to give rise to weak violation effects in some cases up to virtually full acceptability, as in the cases of extraction of a relative pronoun from a *wh*-island in Italian discussed in Rizzi (1982). (2)–(13) would involve both a (weak) violation of Relativized Minimality and the interpretive clash discussed, giving rise to a much sharper perception of deviance.

3.4. DO vs IO focus movement

Our experimental results confirm that focus movement of a DO across a *wh*-IO is significantly more degraded than focus movement of an IO across a *wh*-DO. The contrast is illustrated by (4) vs (5) in embedded environments, but it also holds in main environments (Figure 1) at a relatively lower level of acceptability:

- (4) *Mi domando A GIANNI che cosa dovresti dare, non a Piero*
 ‘I wonder TO GIANNI what you should give, not to Piero’

⁵ The residual marginality of (18) is detectable in comparative terms, by comparing (18) with a case of focus movement in an embedded declarative like the following:

- (i) *Ti ho detto che A GIANNI dovresti dare il libro, non a Piero!*
 ‘I told you that TO GIANNI you should give the book, not to Piero!’

Example (18) sounds slightly degraded compared to (i), a contrast plausibly to be attributed to the fact that (18) involves an intervention configuration, whereas (i) does not.

- (5)*?Mi domando QUESTO a chi abbiano detto (non qualcos'altro)
 'I wonder THIS to whom they have said (not something else)'

In Rizzi (2001), it was proposed that the extra degradation of the latter case over the former relates to the crossed vs nested configuration that arises in such cases:

- (21) Better case – Chain nesting: ... IO_{FF} wh-DO <wh-DO> <IO_{FF}>

- (22) Worse case – Chain crossing: ... DO_{FF} wh-IO <DO_{FF}> < wh-IO>

That crossed configurations tend to be degraded, compared to nested configurations is a traditional observation: it may have its roots in processing, but grammar-based analyses have been proposed at least ever since Pesetsky (1982).

Whatever the ultimate origin of the effect illustrated by (4) vs (5) is, the hypothesis that the relevant factor is crossing vs nesting should be sharpened in view of much later evidence suggesting the opposite pattern in cases of multiple wh-questions: in languages allowing for overt multiple wh-movement, the acceptable structure clearly is the one involving crossed, not nested chains (see Richards 1997, Bošković 2002 for derivational approaches, Krapova and Cinque 2008 for a representational approach). Whatever exact analytical line is adopted for the case of multiple questions, it can be observed that it differs from our cases in that two at least partially distinct attractors are involved in (4)–(5), (21)–(22): Focus for focus fronting, vs Q for wh-movement (or a composite specification Q plus Focus for wh-movement in main clauses), whereas in core cases of multiple wh-movement the same kind of attractor is involved.

One possibility to reconcile these apparently conflicting strands may therefore be the following: the mechanism favoring crossed over nested chains (the appropriate version of “tucking in”, or of the interpretation of Relativized Minimality: see the references just quoted) is restricted to cases in which the attractor is identical; if attractors are distinct, as in (4)–(5), (21)–(22), a more general mechanism (possibly processing-based) is operative favoring nested over crossing chains.

3.5. Main yes-no questions and *why* questions

Contrary to main wh-questions, main yes-no questions are consistent with focus fronting (Bianchi and Cruschina 2016):

- (23) A GIANNI hai dato il libro, e non a Piero?
 'TO GIANNI you gave the book, and not to Piero?'

Here the left-peripheral focus does not have a corrective import, but rather a confirmative value: it requires confirmation of a piece of information which is considered unlikely compared to alternatives. For instance, I could utter (23) if I had expected that my interlocutor would give the book to Piero, and not to Gianni.

It has been proposed that yes-no questions involve a yes-no operator which is externally merged in the Int(errogative) position (Rizzi 2001), a position higher than Foc in the map of the left periphery. If the yes-no operator does not involve a

Foc head, nothing prevents the occurrence of a lower LP focus, as no interpretive clash is triggered here. The representation of (23) would then be the following:

- (24) Op_{yes/no}Int A GIANNI Foc hai dato il libro, e non a Piero?
 ‘TO GIANNI you gave the book, and not to Piero?’

Why questions are also consistent with a LP focus (in a fixed order):

- (25) Perché A GIANNI hai dato il libro, e non a Piero?
 ‘Why TO GIANNI you gave the book, not to Piero?’

In terms of the analysis in Rizzi (2001), *perché* differs from other wh-elements in that it is externally merged in the Spec of Int, much as the yes-no operator (see Shlonsky and Soare 2011 for a variant of this analysis involving movement, but still identifying the final landing site of *why* in the Spec of Int). If Foc is not involved here, no clash arises, much as in yes-no questions, and *perché* is compatible with a lower focus in the LP.⁶

4. Comparative considerations

Several general claims were made on the restrictions on double foci and the co-occurrence of wh and focus. The discussion was based on Italian, a language in which both focus and wh move to the left periphery. It would therefore help sharpen the analysis to look into comparable phenomena in a wh-in-situ language like Japanese. In this section, we will consider how the interpretive structure in (10), which serves to account for illicit double foci in Italian, is observed in Japanese.

- (10) [.....] Foc_x [.....]
 “Focus_x” “Presupposition”

For this purpose, we will briefly discuss two well-known phenomena in the language, the intervention effects on wh-questions and multiple-foci clefts.

4.1. Tomioka (2007) on the intervention effects

It was observed by Hoji (1985) that certain quantificational elements make wh-questions degraded when they c-command the wh-phrases. This is illustrated in (26).⁷

- (26) a.??Daremo-ga dono eiga-o suisensita no
 everyone-NOM which movie-ACC recommended PARTICLE
 ‘Which movie did everyone recommend?’

⁶ As for the fact that main *why* questions can be consistent with an independent focus without violating question-answer congruency, see Bianchi, Bocci, and Cruschina (2017), where the analysis capitalizes on the assumption that *why*, as opposed to other wh-operators, is externally merged in Int and does not leave a TP-internal variable (Rizzi 2001).

⁷ (26a) is not only marginal but invites only single and functional answers. A pair-list answer is not an option for the reply. See Saito (1999) for discussion.

- b.??Dareka-ga nani-o kowasita no
 someone-NOM what-Acc broke Particle
 ‘What did someone break?’

The quantified DP subjects in these examples are called interveners because they structurally intervene between *wh*-phrases and their associate interrogative Cs. As Tomioka (2007) emphasizes, there is much variation with the judgments of examples of this kind, both among speakers and for different interveners, but there is also a consensus that (26a–b) are worse than their scrambled counterparts in (27a–b), where the quantified DP does not c-command the *wh*.

- (27) a. *Dono eiga-o daremo-ga suisensita no*
 which movie-Acc everyone-NOM recommended PARTICLE
 ‘Which movie did everyone recommend?’
- b. *Nani-o dareka-ga kowasita no*
 what-Acc someone-NOM broke PARTICLE
 ‘What did someone break?’

This phenomenon, also observed in Korean, has received much attention since Beck (1996) and Beck and Kim (1997), and more recent works such as Kim (2002), Beck (2006), and Tomioka (2007) agree that what constitutes an “intervener” is focus. Thus, the marginality of (26a–b) is amendable to the same kind of analysis as the *wh*-focus co-occurrence restriction in Italian. We will illustrate this by briefly introducing Tomioka’s (2007) analysis.

Tomioka first demonstrates that the class of interveners can be characterized by their “anti-topic” nature. The class includes disjunctions and negative polarity items but excludes quantifiers such as *minna* ‘all people’, which can accompany the topic marker *-wa*. The common property of the interveners is that they resist *-wa* marking. Then, he maintains, following Krifka (2001), that in an ordinary *wh*-question, the *wh* is focused and the rest of the sentence belongs to the background, basically the same idea as that expressed in (10) from Rizzi (1997). This leads to the following interpretive scheme for a *wh*-in-situ language:

- (28) [..... *wh*-phrase]
 background focus background
 (presupposition) (presupposition)

This means that the non-*wh* material in (26) and (27) must be interpreted as part of the background. And there are two typical ways, Tomioka argues, to help accommodate this interpretation. One is to construe the element in question as a topic. But this is unavailable for the interveners in (26) as they resist the topic construal. The other is to place the element after the focus. It is shown by Pierrehumbert and Beckman (1988) and Ishihara (2003), among others, that a high pitch accent is placed on the focus and that the pitch range is dramatically reduced on the material that follows it. The idea is that an element can be read-

ily interpreted as part of the background if it is part of this post-focus reduction. Then, the subjects in (27) can be construed as belonging to the background of the wh-focus. On the other hand, those in (26) are not accommodated in this way, and as a result, tend to be interpreted as focus.

Tomioka maintains that his analysis is pragmatic in nature. He shows that whether and how strongly the focus interpretation is imposed on the intervener depends on other factors as well. For example, it seems that a nominative matrix subject in the sentence-initial position is most likely to be construed as a focus, and the intervention effect is much weaker (or not observed) when the intervener is an embedded subject. This is illustrated below.

- (29) a.(?)Taroo-wa [daremo-ga dono eiga-o suisensuru to]
 Taroo-TOP everyone-NOM which movie-Acc recommend COMP
 omotteru no
 think PARTICLE
 ‘Which movie does Taroo think that everyone will recommend?’

- b.(?)Taroo-wa [dareka-ga nani-o kowasu to] omotteru
 Taroo-TOP someone-NOM what-Acc break COMP think
 no
 PARTICLE
 ‘What does Taroo think that someone will break?’

Thus, various factors conspire to yield the focus interpretation of the intervener, and the example is degraded to the extent that the interpretation is forced. It is then not surprising that the effect is variable among the speakers and depends on the lexical nature of the intervener as well as the context.

The analysis illustrated above is important in the present context in two ways. First, the intervention effect in Japanese is not as clear-cut as the ban on the co-occurrence of focus and wh in Italian matrix sentences. The reason is that the intervener does not occupy a focus position, but tends to be interpreted as focus because it has an anti-topic property and precedes the wh. Then, the difference reflects the fact that the offending focus in Italian is in the left-peripheral focus position whereas the intervener in Japanese is in-situ. Secondly and more importantly, the illicit intervention cases in Japanese are excluded precisely in the same way as the illicit focus-wh combinations in Italian. As noted above, Tomioka (2007) states that his analysis is pragmatic in nature. But this concerns the way in which the intervener obtains the focus interpretation. Once it is interpreted as a focus, the sentence is excluded because it contains double foci. The wh is a focus. The rest of the sentence expresses the background or presupposition for the focus, but contains another focus. Thus, the source of the ban on focus-wh combination in Italian and that of intervention effect in Japanese/Korean are identical.

4.2. “Multiple-foci clefts” in Japanese

So far we discussed examples in Japanese where a phrase receives focus inter-

pretation without being in a designated focus position. However, there are cases in which focus interpretation is syntactically encoded, as in clefts. And it is well known that Japanese allows “multiple-foci clefts” at least on the surface. This appears to be in conflict with the ban on double-foci discussed so far. In this section, we will introduce two analyses of “multiple-foci clefts,” one by Koizumi (2000) and the other by Takano (2002), and show that the uniqueness of focus is maintained in Japanese clefts despite the appearance to the contrary.

The examples in (30) seem to indicate that double-foci cleft is possible in Japanese.⁸

- (30) a. Sono toki Taroo-ni Hanako-ga hon-o san-satu
 that time Taroo-DAT Hanako-NOM book-ACC three-CLASSIFIER
 watasita
 handed
 ‘Hanako handed three books to Taroo then.’
- b. [Sono toki Taroo-ni watasita no]-wa Hanako-ga
 that time Taroo-DAT handed COMP-TOP Hanako-NOM
 hon-o san-satu da
 book-ACC three-CLASSIFIER is
 ‘Lit. It is Hanako three books that *e* handed *e* to Taroo then.’

In the cleft sentence (30b), both the subject and the direct object occupy the focus position.

However, Koizumi (2000) argues that what is focused in (30b) is a single constituent. He proposes that V raises to C via T, and the temporal adverb and the indirect object scramble out of the shaded TP as in (31). After this, the remnant TP is placed into the focus position in (30b).

- (31) [CP [[[TP Hanako-ga sono toki Taroo-ni hon-o san-satu watasita]]] C]
-

According to this analysis, a “multiple-foci cleft” always has a remnant VP or TP in the focus position.

A piece of evidence for this analysis is that the “double foci” must be clause-mates in examples of this kind. The contrast between (32b) and (32c) instantiates this generalization.

- (32) a. Hanako-ga Taroo-ni [(sono mise-de) karera-ga hon-o
 Hanako-NOM Taroo-DAT that shop-at they-NOM book-ACC

⁸ See Hoji (1990), Murasugi (1991), and Hiraiwa and Ishihara (2002) for detailed discussion on clefts in Japanese. The first two assume null operator movement. According to Hiraiwa and Ishihara’s analysis, the focused phrase is in the focus position in the left-periphery and the CP expressing the presupposition is moved to a higher topic position, further to the left. On clefts in Japanese and Italian see also Belletti (2013).

- san-satu katta to] itta
 three-CLASSIFIER bought COMP said
 ‘Hanako said to Taroo that they bought three books (at that shop).’
- b. [Hanako-ga Taroo-ni [(sono mise-de) katta to] itta
 Hanako-NOM Taroo-DAT that shop-at bought COMP said
 no]-wa karera-ga hon-o san-satu da
 COMP-Top they-NOM book-ACC three-CLASSIFIER is
 ‘Lit. It is they three books that Hanako said to Taroo that *e* bought *e* (at that shop).’
- c. *[Hanako-ga [(sono mise-de) karera-ga katta to] itta
 Hanako-NOM that shop-at they-NOM bought COMP said
 no]-wa Taroo-ni hon-o san-satu da
 COMP-Top Taroo-DAT book-ACC three-CLASSIFIER is
 ‘Lit. It is to Taroo three books that Hanako said *e* that they bought *e* (at that shop).’

If there are two foci in (30b) and each of them moves independently to focus position, (32b) and (32c) are both expected to be grammatical. On the other hand, Koizumi’s analysis correctly predicts the contrast. (32b) can be analyzed straightforwardly with the remnant embedded TP in the focus position. What is focalized in (32c), on the other hand, should be the matrix VP/*v*P and massive movement out of this constituent is required, as shown in (33).

- (33) [CP[TPHanako-ga [[VPTaroo-ni [CPkarera-ga hon-o san-satu katta to] itta]] T]]
-

The movement of the embedded verb *katta* ‘bought’ to the embedded C and further into the matrix clause, for example, should be illicit, as head movement is known to be clause-bound.

Although Koizumi’s analysis is quite elegant, Takano (2002) raises questions on the analysis and proposes an alternative. One of his objections is based on observations on remnant VP movement in Dutch. An example is shown in (34b).

- (34) a. [_{VP}Het boek aan Marie gegeven] heeft Jan waarschijnlijk
 the book to Marie given has Jan probably
 ‘Jan has probably given the book to Marie.’
- b. [_{VP}Het boek gegeven] heeft Jan waarschijnlijk aan Marie
 the book given has Jan probably to Marie

In (34a), the auxiliary verb *heeft* raises to C for the verb second requirement, and the VP headed by the main verb *gegeven* is moved to the sentence-initial position. In (34b), on the other hand, the complement PP, *aan Marie*, is moved out of the VP. As a result, what appears sentence-initially is the remnant VP. Takano points out, however, that a remnant VP movement is illicit when the verb moves out of the VP. One of his examples is shown in (35a).

- (35) a. *_{[VP} Het boek aan Marie] gaf Jan waarschijnlijk
 the book to Marie gave Jan probably
 ‘Jan probably gave the book to Marie.’
 b. *_{[TP} Jan het boek aan Marie] gaf waarschijnlijk
 Jan the book to Marie gave probably

The main verb *gaf* raises to C and the remnant VP is moved to the sentence-initial position in this example. (35b) shows that the movement of remnant TP is also illicit. The ungrammaticality of these examples raises doubts on Koizumi’s analysis as it indicates that remnant VP/TP movement is not allowed when the verb moves out of the phrase.

Takano argues that in a “double-foci cleft”, one focus adjoins to the other and then the formed complex constituent is placed in the focus position. Sohn (1994) shows on independent grounds that the operation to form a constituent of two clause-mate phrases as in (36) is available in Japanese and Korean.

- (36) [_{TP} α β ]
 ↑ └───┘

Among the evidence are the examples in (37) and (38).

- (37) a. *_{[Hanako-wa [sono mise-de hon-o naze katta hito]-o}
 Hanako-TOP that shop-at book-Acc why bought person-Acc
 sagasiteru no
 looking-for PARTICLE
 ‘Lit. Why is Hanako looking for the person [that bought a book at the shop *e*]?’
 b. *_{Naze [Hanako-wa [sono mise-de hon-o e katta hito]-o}
 why Hanako-TOP that shop-at book-Acc bought person-Acc
 sagasiteru no
 looking-for PARTICLE
- (38) a. _{??Nani-o [Hanako-wa [sono mise-de e katta hito]-o}
 what-Acc Hanako-TOP that shop-at bought person-Acc
 sagasiteru no
 looking-for Particle
 ‘Lit. What is Hanako looking for the person [that bought *e* at the shop]?’
 b. _{??Nani-o naze [Hanako-wa [sono mise-de e katta}
 what-Acc why Hanako-TOP that shop-at bought
 hito]-o sagasiteru no
 person-Acc looking-for Particle
 ‘Lit. Why is Hanako looking for the person [that bought what at the shop *e*]?’

Huang (1982) discovered that the adjunct *wh*, *naze* ‘why’, is disallowed in a relative clause, as indicated in (37a). (37b) shows that scrambling of this *wh* out

of a relative clause is strictly prohibited. (38a), on the other hand, is only marginal because scrambling targets an argument wh, *nani* ‘what’, in this example. Sohn (1994) points out that (38b) is also only marginal and surprisingly can be properly interpreted as the two wh-phrases originating within the relative clause. His analysis is that *naze* adjoins to *nani* and gets a “free ride” to the sentence-initial position. Takano (2002) proposes that “double-foci clefts” are possible in Japanese because two foci can be combined just like the two wh-phrases in (38b) before being placed in the focus position. He shows that the properties of “double-foci clefts”, including the clause-mate condition, follow from this analysis.

The two analyses of multiple-foci clefts introduced above are both viable possibilities. But whichever turns out to be correct, the conclusion is that only a single constituent is focalized in “multiple-foci clefts” in Japanese. This implies that Japanese does not allow two independent foci in a single clause, just as in Italian. There are many kinds of “focus” as noted in Section 3, and “focus” is encoded in syntax-phonology in various ways. An important issue then is to find out which ones are represented as focus in the interpretive structure. If the ban on double foci is due to an interpretive clash and is universal, it should provide important evidence that bears on this issue.

5. Conclusion

A double left-peripheral focus is banned in Italian, a property which has been traced back to the interpretive procedure operating on focus structures at the interface with semantics and pragmatics: if the complement of the Foc head is interpreted as the “presupposition”, it cannot contain another focus position, or an interpretive clash would arise (Rizzi 1997). This incompatibility naturally extends to the incompatibility between focus and wh in main wh-interrogatives, under the assumption that the wh-element is focal. In this article, through a controlled acceptability experiment conducted on Italian, we have established that the co-occurrence of focus and wh, deviant in main interrogative clauses, is significantly more acceptable in embedded questions; we have also established that the acceptability of these structures is modulated by the grammatical function of the focalized element, with a focalized indirect object significantly more acceptable than a focalized direct object.

Much as the incompatibility in main clauses, the asymmetry between main and embedded interrogatives is naturally amenable to an explanation in terms of interface requirements. Whereas in main clauses question-answer congruency requirements determine the obligatory focal nature of the wh-element, in embedded clauses such requirements are not operative, hence an embedded wh-element is not necessarily interpreted as focal, and can co-occur with an independent left peripheral focus position. The asymmetry between DO and IO focus is in turn amenable to an analysis in terms of the crossed or nested character of the chains created by movement to the left periphery.

In the final cross-linguistic section we have tried to relate the pattern observed in Italian with classical observations in Japanese syntax and interface

studies. On the one hand, intervention effects induced by certain quantificational DP's on wh-constructions may be amenable, through Tomioka's (2007) interface analysis, to the same explanatory ingredients involved in the incompatibility between focus and wh- in main Italian questions. On the other hand, apparent cases of multiple clefts in Japanese are amenable to analyses (Koizumi 2000, Takano 2002) in which a single complex constituent is clefted, thus reducing an apparent counterexample to the expected universal pattern enforcing uniqueness of focus.

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【要 旨】

Wh句と焦点句の共起制限について

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イタリア語左方周縁部における焦点句と wh 句の共起は、主文では文法的に不適合であるが、補文内では許容度が向上する。また、焦点句と wh 句の共起制限は、焦点句の文法機能によっても左右される。例えば、焦点句が間接目的語であれば、直接目的語の場合に比べて許容度が高い。本論文では、まず、これらの一般化を、文法性判断に関する実験研究により裏付ける。次に分析を提示して、特に、主文と補文の非対称性を、統語と意味のインターフェイスにおける焦点文、wh 疑問文の構造から導く提案を行う。この分析は、一般的に二重焦点が排除されることを含意するが、最後に日本語の関連する現象を取り上げて、その普遍性を検証する。具体的には、wh 疑問文において観察される介在効果が、同様の分析により説明されること、また、いわゆる多重焦点分裂文がこの分析と矛盾するものではないことを示す。