



On Freezing Effects¹

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Abstract: This paper discusses the nature of Rizzi's (2006, 2007) Criterial Freezing, a mechanism yielding island effects on XPs moving into edge positions within the Left Periphery to satisfy dedicated "criteria". Contrary to Rizzi's (2006) feature checking implementation, it is claimed that *freezing*, as originally outlined in Chomsky (2000, 2001) Probe-Goal framework, is restricted to purely formal features of the Case/agreement systems, criterial formatives (e.g., [topic], [focus], [wh]) being irrelevant for minimality purposes. Consequently, it is argued that *Criterial Freezing* is best regarded as an interface constraint precluding XPs from being assigned multiple interpretations of the same type, for legibility/convergence reasons ultimately related to the *Principle of Full Interpretation*.

Keywords: activity, (criterial) freezing, full interpretation, left periphery, minimality.

Resumen: Este trabajo aborda la naturaleza del proceso de *Inmovilización de Criterio* establecido por Rizzi, un mecanismo que reivindica Efectos de isla por parte de aquellos SSXX que se mueven a una posición de arista dentro de la periferia izquierda para de esta forma satisfacer 'criterios' específicos. A diferencia de la implementación llevada a cabo por Rizzi en su teoría de validación de rasgos, se establece que la operación de *Inmovilización*, tal y como se concibe inicialmente en el marco de trabajo Sonda-Meta de Chomsky (2000, 2001) está limitado a rasgos puramente formales de los sistemas de Caso/concordancia, por lo que los formativos de criterio (por ejemplo, [tópico], [foco], [wh]) son irrelevantes desde un punto de vista minimalista. Por lo tanto, se establece que el proceso de *Inmovilización de Criterio* ha de ser considerado como una limitación propia de la interfaz que evita que los SSXX reciban interpretaciones múltiples del mismo tipo, debiéndose en última instancia a razones de legibilidad/convergencia relacionadas con el Principio de Interpretación Plena.

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Palabras clave: actividad, inmovilización (de criterio), interpretación plena, periferia izquierda, minimalidad.

Resumo: Este artigo discute a natureza do *Congelamento Criterial* de Rizzi (2006, 2007), um mecanismo que produz efeitos de ilha em XPs deslocados para posições periféricas dentro da *Periferia à Esquerda* para satisfação de «critérios» dedicados. Contrariamente à implementação da propriedade de verificação de Rizzi (2006), afirma-se que o *congelamento* (como originalmente concebido em Chomsky (2000, 2001) quadro Sonda-Alvo restringe-se a propriedades puramente formais dos sistemas de Caso/concordância, sendo formativos criteriais (por exemplo, [tópico], [foco], [wh-]) irrelevantes para fins de minimalidade. Consequentemente, é argumentado que o *Congelamento Criterial* é melhor concebido como um *interface* de restrição impedindo a atribuição de múltiplas interpretações do mesmo tipo a XPs, por razões de legitimidade/convergência relacionadas em última instância com o *Princípio da Interpretação Plena*.

Palavras-chave: atividade, congelamento (criterial), interpretação plena, periferia à esquerda, minimalidade.

1. Introduction

Chomsky (2008) builds on the asymmetry in (1) to argue that phase edges give rise to CED effects (I abstract away from the severity of the ungrammaticality in each instance, concentrating instead on the relative judgements Chomsky assumes):

- (1) a. *[_{CP} Of which car_i C did [_{TP} [the driver t_i]_j T [_{v*P} t_j v* cause a scandal]]]?
 b. [_{CP} Of which car_i C was [_{TP} [the driver t_i]_j T [_{vP} v awarded t_j a prize]]]?

(from Chomsky 2008: 147)

In addition, Chomsky argues that the problem in (1) should also be relevant to cases like (2), studied by Lasnik & Saito (1992), where wh-movement targets an already wh-moved phrase.

- (2) a. ??[_{CP} Who_i C do you wonder [_{CP} [which picture of t_i]_j C Mary bought t_j]]?
 b. ??[_{CP} Who_i C do you wonder [_{CP} [which picture of t_i]_j C t_j is on sale]]?

(from Lasnik & Saito 1992: 102)

Chomsky, specifically, refers to unpublished work by Esther Torrego (reported in Chomsky 1986a as Torrego 1985) to reinforce a phase-based analysis of so-called *Condition on Extraction Domains* (CED) effects. The pivotal idea is that the specifiers of v* and C for some reason render syntactic objects

internally frozen: that is, these can be extracted in themselves, but not their subparts.

However, and contrary to the expectations raised by Chomsky, Torrego's (1985) data were actually judged as grammatical by her (other speakers find the examples somewhat marginal, but never severely ungrammatical, and bilingual speakers often report the English examples in (2) as somewhat worse than the Spanish counterparts):

- (3) [_{CP} De qué autor_i C no sabes [_{CP} [qué traducciones t_i] C [_{TP} t_j han ganado ...
 of what author not know-2SG what translations have-3PL won
 ... premios internacionales]]]? (Spanish)
 awards international

'Which author don't you know what translated books by have won international awards?'

(from Torrego 1985: 31)

The same facts carry over to Italian, and apparently with rather similar judgements, as recently shown by Rizzi (2006, 2007):

- (4) ?[_{CP} Di quale autore_z C ti domandi [_{CP} [quanti libri t_z] C [_{TP} siano stati ...
 of which author CL-you wonder-2SG how-many books be-3PL been
 ... censurati t_i]]] (Italian)
 censored

'Which author do you wonder how many books by have been censored?'

(from Rizzi 2006: 114)

Apart from being topical to the present discussion, the examples in (3) and (4) are interesting inasmuch as they challenge what Rizzi (2006, 2007) –from a different (not phase-based) perspective– refers to as *Criterion Freezing*, which involves a constraint against multiple A-bar checking.

- (5) Criterion Freezing (first version)

A phrase meeting a criterion is frozen in place

(from Rizzi 2006: 112)

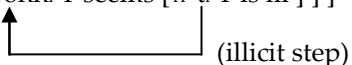
According to Rizzi (2006, 2007), (5) accounts for facts like those in (6), taken from Bošković (2008) and Rizzi (2006) (for related data and additional discussion, see Collins 1997, Epstein 1992, Müller & Sternefeld 1996, and references therein):



- (6) a. *_{[CP Who thinks [_{CP that, which problem}_i, Mary hates _{t_i}]]?}
 b. *_{[CP Which book}_i C does Bill wonder [_{CP t_i C she read t_i]]?}

Descriptively, (6a) and (6b) are ruled out because the very same wh-phrase participates in two operations of the A-bar checking sort (or ‘criterial’, *as per* Rizzi’s analysis). In other words, the examples yield an illicit output because the wh-phrases *who* and *which book* essentially undergo ‘too much (A-bar) checking’.

Similar, though apparently unrelated, facts have received much attention within Case/agreement systems, under the rubric of *Hyperraising* (see Lasnik & Boeckx 2006 for discussion). Data like (7) were provided by Chomsky (1986b) to claim that DPs cannot move to a Case checking position from another Case checking position, a fact that Chomsky (2000, 2001) analyzes, precisely, in terms of freezing: a DP moved to a Case checking position is “frozen in place”.²

- (7) *<sub>[CP C [_{TP John}_i T seems [_{TP t_i T is ill]]]}
</sub>

In a similar vein as above, note that (7) is ruled out because *John* undergoes, in a concrete sense, ‘too much (A) checking’.

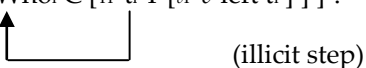
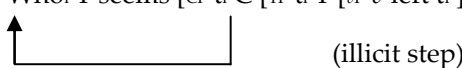
At this point, it is worth considering the scenarios where movement for checking purposes yields an illicit output:³

- (8) a. A → A
 b. A → A-bar
 c. A-bar → A
 d. A-bar → A-bar

²Chomsky (2000, 2001) introduces the notion of ‘activity’ when discussing freezing effects. An XP is ‘frozen in place’ when it is inactive –assuming structural Case is the feature rendering XPs active. See Boeckx (2008a) and Lasnik (2001) for discussion on how freezing requires the relevant XPs to move to the SPEC of some inflectional head (a requirement related to person checking, according to Boeckx).

³I am ignoring intermediate steps created by successive cyclic movement, since, with Takahashi (1994) (and *contra* Rizzi 2006), I take those to be created not for feature checking, but in order to make movement steps as short as possible; such a view is not incompatible with the *Extension Condition* under Chomsky’s (2001, 2007, 2008) phase-based conception of the cycle. See Boeckx (2007) for ample discussion of alternative views to cyclicity.

We have already seen the scenario depicted in (8a) –so-called *Hyperraising*. Typically, (8b) and (8c) are subsumed under violations of Chomsky & Lasnik’s (1993) *Condition on Chain Uniformity*,⁴ some cases of which are illustrated in (9):^{5 6}

- (9) a. $[_{CP} \text{Who}_i \text{C} [_{TP} \text{t}_i \text{T} [_{vP} v \text{left t}_i]]] ?$ (A → A-bar)

 b. $*[_{CP} \text{C} [_{TP} \text{Who}_i \text{T} \text{seems} [_{CP} \text{t}_i \text{C} [_{TP} \text{t}_i \text{T} [_{vP} v \text{left t}_i]]]]] ?$ (A-bar → A)


Finally, consider (8d), the movement pattern I want to concentrate on in this paper. There, an element moves from an A-bar position to another A-bar position, as shown in (6), therefore falling under Rizzi’s *Criterionial Freezing* situation.

In this paper, I argue against feature-based accounts of (6), like the one pursued by Rizzi. Instead of blaming it on feature-checking, I attribute the relevant degradation to an interface constraint *barring chain occurrences from being assigned more than one interpretation*. Such an output constraint –I claim– can be seen as a consequence of Chomsky’s (1986b) *Principle of Full Interpretation* (PFI). In present terms, the PFI can be understood as requiring derivations to provide unambiguous instructions to the external systems.

Discussion is divided into three sections. In section 2 I focus on the Torrego/Rizzi facts, for which I propose an analysis in terms of an aboutness

⁴ For general discussion on *Chain Uniformity*, see Lasnik & Uriagereka (2005: ch.4).

⁵ As Boeckx (2003) and Rizzi & Slonshky (2007) argue, the unexpected grammaticality of (9a) follows from different strategies that allow *wh*-phrases to move to SPEC-C without ever going through SPEC-T, circumventing freezing. See Chomsky (2008) for an implementation of the same idea where A and A-bar movements occur in parallel (in a locally non-Markovian derivation) so that SPEC-T and SPEC-C are never connected, thus creating independent (and uniform) chains.

⁶ For recent discussion about (9b), so-called “improper movement”, see Abels (2007), and Chomsky (2007: 17), where such phenomenon is treated in ‘activity’ terms (see fn. 2): the *wh*-copy is already inactive because its Case feature has been deleted in SPEC-T (Noam Chomsky, p.c.). See Epstein & Obata (2008) for a more articulated analysis of “improper movement” within Chomsky’s (2007, 2008) φ -feature inheritance theory.



base-generation, instead of a genuine subextraction. Section 3 in turn criticizes the nature of Rizzi's (2006, 2007) *Criterial Freezing*, and consequently, the idea that semantic features play an active role within the computation. Main conclusions are summarized in section 4.

2. Subextraction or aboutness base-generation

As pointed out at the outset, the goal of Chomsky's (2008) analysis is to argue that phase edges (SPEC- v^* / SPEC-C) induce island effects. The facts, though, are far from clear, and moreover recent work has questioned such a hypothesis, particularly with respect to the SPEC- v^* instance (see Boeckx 2008b and Broekhuis 2007).

In this section I want to argue that Torrego's (1985) data have been misanalyzed, proposing that the alleged subextracted *wh*-phrase is generated as an aboutness dependent in the matrix clause (for related discussion, see Barbiers 2002, Cinque 1990, Koster 1987, and Müller 1995). Obviously, if this is correct the consequences extend to the evidence brought up by Rizzi (2006), and the approach then explains away one of the possible inconsistencies with Chomsky's (2008) analysis, concretely for the SPEC-C subcase. Recall Torrego's (1985) original example:

- (10) [_{CP} De qué autora_i C no sabes [_{CP} [qué traducciones t_i]_j C [_{TP} t_j han ganado ...
of what author not know-2SG what translations have-3PL won
... premios internacionales]]? (Spanish)
awards international
'Which author don't you know what translated books have won international awards?'

In this structural interpretation of the facts, (10) is clearly at odds with any strict interpretation of *Criterial Freezing*. This is so because the buried *wh*-phrase *de qué autora* (Eng. *of which author*) is subextracted out of *qué traducciones de qué autora* (Eng. *which translations by which author*), after the latter has reached a criterial (thus, island-inducing) position. In order to track the fact in (10), Rizzi (2007) weakens the original formulation of his *Criterial Freezing*, as follows:

- (11) Criterial Freezing (final version)

In a criterial configuration, the Criterial Goal is frozen in place.

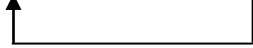
(from Rizzi 2007: 149)

Given (11), only the higher *wh*-chunk *qué traducciones* (Eng. *what translations*) dubbed 'criterial Goal' by Rizzi, is frozen, the buried remnant still being capable of moving out. Although certainly designed to be consistent with the facts, the analysis raises some doubts –the most pressing one being how

come the internal part of an XP doesn't freeze if the latter does. It is of course possible that a moving object (e.g. a trailer) becomes frozen in place (reaching a trailer park and turning into a trailer home); and moreover that its parts (doors and windows) continue to be movable. But the scenario is far-fetched and presupposes a curious underlying architecture.

In many ways, the formulation in (11) is reminiscent of Boeckx's (2003) analysis of resumption, whereby a DP is split into two units: an A (or agreeing) part and an A-bar part.

(12) [CP WH_i C ... [DP RP [t_i]] ...]



The *wh*-material in (12) moves to SPEC-C leaving the resumptive pronoun (RP) behind. Much as in Rizzi (2006, 2007), the stranded element occupies a complement position within a larger unit. However, unlike Rizzi (2006, 2007), Boeckx (2003) takes the DP to have undergone no checking whatsoever upon splitting –that is, stranding cannot take place if the DP has already occupied a (Case-)checking position. So generalized, the logic of Boeckx's (2003) predicts that all DPs in (A or A-bar) checking positions should become islands, blocking subextraction. Of course, this is not what the Torrego/Rizzi data show.

As already mentioned, there is substantial evidence indicating that an analysis along these lines is essentially correct in the case of (1): subjects become islands in SPEC-T, where maximal φ -checking occurs. Here I want to push the same claim for the Torrego/Rizzi paradigm, which forces me to suggest that the *wh*-extracted DP is best analyzed as an aboutness dependent of the matrix verb.⁷ In fact, it is telling to notice that the verbs used to illustrate the phenomenon (*saber* and *domandarsi*) easily adopt an aboutness structure (order and structural details aside):

(13) [VP [V [V V XP] about ZP]]

The key aspect of (13) for my purposes is of course this: *XP* and *about ZP* do not form a constituent. If correct, this plainly means that *ZP* cannot be extracted out of *XP*'s projection, since they (or their ancestors, in obvious ways) never entered relevant merging dependencies in the first place.

With these observations in mind, let us go back to (10). First of all, note that the Spanish verb *saber* (Eng. *know*) can readily instantiate two selectional

⁷ The literature shows scepticism with respect to whether *of*-phrases are subextracted or base-generated as adjunct/adverbial phrases (see Broekhuis 2007 and Kayne 2002). With Chomsky (2008), I take *of*-phrases to form a constituent within the DPs targeted for subextraction.



frames: (14a) and (14b). The interesting case is (14b), where the verb selects for the aboutness dependent *de María* (Eng. *of María*):

(14) a. Juan sabe [_{CP} que María fuma] (Spanish)

Juan know-3SG that María smoke-3SG

'Juan knows that María smokes.'

b. Juan sabe [_{PP} de María] [_{CP} que fuma] (Spanish)

Juan know-3SG of María that smoke-3SG

'Juan knows about María that she smokes.'

In order to make sure that the Torrego/Rizzi facts involve subextraction, we must exclude the possibility that (14b) be the base configuration underlying (10). This can easily be ensured by introducing an additional aboutness phrase, as in (15a). As predicted by Boeckx's (2003) analysis and shown by (15b), that makes subextraction of subextraction of *de qué escritor* (Eng. *of which writer*) totally impossible:⁸

(15) a. Juan sabe [de María] [_{CP} [qué novelas de Cortázar]; C ha leído ti] (Spanish)

Juan know-3SG of María what novels by Cortázar have-3SG read

'About María, Juan knows which novels by Cortázar she has read.'

b. *[_{CP} De qué escritor; C sabe Juan [de María] ... [_{CP} [qué novelas ti]; C ...

of what writer know-3SG Juan of María what novels

... ha leído ti]] ?

(Spanish)

have-3SG read

'Which writer does Juan know about Ana which novels by she has read?'

⁸ For ill-understood reasons, aboutness phrases appear to create mild intervention effects on their own, even in simple instances of *wh*-movement. This can be seen in (i) below, where the aboutness dependent *de María* (Eng. *of María*) somehow makes subextraction worse:

(i) ??[_{CP} Qué fotografías; C dijo Juan de María [_{CP} que ...
what pictures said-3SG Juan of María that

... quería vender ti]]?

(Spanish)

wanted-3SG sell-INF

'As for María, which pictures did Juan say that she wanted to sell?'

(ii) ??[_{CP} A quién; C dijo Juan de María [_{CP} que ...
to who said-3SG Juan of María that

... le había dado libros ti]]?

(Spanish)

CL-to him had-3SG given books

'As for María, who did Juan say that she had given books to?'

To my ear, though, these examples sound better than (15b) –but of course the issue has to be investigated further in more carefully controlled environments.

A second way of excluding the base structure in (14b) as relevant to the condition being tested involves binding. Relevant instances exhibit a variable within a question phrase, which is to be interpreted in the scope of a quantifier in the embedded clause. If true extraction were taking place, it should be possible for the variable to be bound by the quantifier, after reconstruction, as is the case in the viable (16a) involving *wh*-in-situ. As (16b) shows, the bound-variable reading is lost in the sorts of instances that interest us here, suggesting that reconstruction into the scope of the quantifier *todo padre* (Eng. *every father*) does not take place. A natural interpretation of this fact is that, rather than mysteriously affecting the reconstruction process in these instances, the quantifier simply never c-commands (any copy of) the variable. That in turn is what we expect if subextraction is never at issue here.⁹

- (16) a. [_{CP} [De qué hijo suyo]_i C sabes que ha oído [_{CP} todo padre ...
of what son his know-2SG that have-3SG heard every father
... [qué rumores t_i]]]? (Spanish)
what rumors
‘Which son of his do you know which rumors about has every father heard?’
- b. (*) [_{CP} [De qué hijo suyo]_i C sabes [_{CP} [qué rumores t_i] C ha oído ...
of what son his know-2SG what rumors have-3SG heard
... todo padre]]]? (Spanish)
every father
‘Which son of his do you know which rumors about has every father heard?’

In a nutshell, ungrammaticality obtains the minute genuine subextraction is carefully controlled for. The result is expected if the *wh*-phrase in matrix SPEC-C in Torrego (1985) and Rizzi (2006, 2007) was never subextracted to begin with.

⁹ I would like to emphasize that variable binding in (16b) is not barred because of the subject occupying a postverbal position – a possibility that must be excluded for the argument to go through. As (i) shows, postverbal subjects can indeed bind a variable.

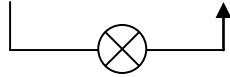
- (i) [_{CP} [De qué hijo suyo]_i C ha oído (todo padre) ...
of what son his have-3SG heard every father
... [muchos rumores t_i] (todo padre)]]? (Spanish)
many rumors every father
‘Which son of his has every father heard many rumors about?’

I take this evidence to reinforce an analysis in terms of aboutness base-generation of the *wh*-moved PP.



Certainly, the Torrego/Rizzi data conform to the A-over-A schema in (17), where β cannot be extracted out of γ if these are ‘of the same type’ (relevant ‘types’ being specified, as customary, through features like [wh], [topic], etc.).¹⁰

(17) ... X ... [α ... [γ ... β ...]]



More generally, the configuration in (17) raises the question of whether Rizzi’s (1990) minimality or Chomsky’s (2000, 2001) *Activity Condition* hold for A-bar features. The literature has devoted much attention to so-called *Superiority effects*, to argue for the conclusion that such conditions do hold in the broad A-bar domain. Here, following Chomsky (2008), I want to argue otherwise.¹¹

To address that issue, consider (18), where topicalization affects a subpart of an already topicalized DP:

(18) a. ??[_{CP} De Javier Marías_i, C me parece [_{CP} C que, [las novelas t_i] las han ...
of Javier Marías, CL-me seem-3SG that the novels CL-them have-3PL
... sobrevalorado t_j]] (Spanish)
overrated

‘Javier Marías, it seems to me that, the novels by, people have overrated them.’

b. *[_{CP} De Scorsese_i, C me parece [_{CP} C que, [muchas películas t_i] aún no ...
of Scorsese CL-me seem-3SG that, many movies, yet not
... he visto t_j]] (Spanish)
have-1SG seen

‘Scorsese, it seems to me that, many movies (by him), I have not seen (any) yet.’

¹⁰ More complex scenarios (say, a wh-phrase within a topic-fronted phrase) presumably make the A-over-A concern go away, as long as the system is sensitive to fine grained distinctions within the A-bar realm. Be that as it may, examples like (i), where wh-movement targets a focus-fronted DP, cast doubt on such a possibility too:

(i) *[_{CP} [De qué escritor]_i C te parece [_{CP} que [MUCHAS NOVELAS t_i] ...
of what writer CL-you seem-3SG that MANY NOVELS
... he leído t_j]]]? (... y no artículos de opinión) (Spanish)
have-1SG read and not papers of opinion

‘Which writer does it seem to you that MANY NOVELS by I read (...and not editorials)?’

See Boeckx & Jeong (2004), Fitzpatrick (2002), Kitahara (1997), Starke (2001) for much relevant discussion about implementation of complex intervention scenarios.

¹¹ Conceptually, criterial features should be minimality/activity-proof, since, being purely semantic, they cannot be taken from the Lexicon unvalued.

The examples (18) are clearly degraded. But this is puzzling, as it is well-known that topicalized elements do not display minimality effects in Romance:¹²

- (19) a. Ana, a María, el secreto, se lo dijo. (Spanish)
Ana to María the secret CL-her CL-it told-3SG
'Ana, to María, the secret, she already told.'
- b. A María, Ana, el secreto, se lo dijo. (Spanish)
to María Ana the secret CL-her CL-it told-3SG
'To María, Ana, the secret, she already told.'
- c. El secreto, Ana, a María, se lo dijo. (Spanish)
the secret Ana to María CL-her CL-it told-3SG
'The secret, Ana, to María, she already told.'

The puzzle, to be precise, is that subextraction is bad in (18), even though we have evidence that Romance topicalization is immune to minimality, in standard terms. I take this asymmetry to indicate that, whatever the problem with (18) turns out to be, it should be dissociated from minimality.

The conclusion is further reinforced by (20). As these examples show, if the complex *wh*-phrase remains *in situ* (thus away from criterial/edge positions), subextraction is in fact allowed. This is not expected if A-bar features can be computed on A-over-A grounds, but the puzzle goes away if, first, intervention effects are restricted to the A-systems, and, second, only criterial/edge positions yield freezing.

- (20) a. ?[_{CP} Who_i C did you buy [what pictures of t_i]]] ?
b. [_{CP} Which actress_i C did you buy [which pictures of t_i]]] ?

In sum, in this section I have argued that the examples raised by Torrego and Rizzi do not involve *wh*-movement out of an already *wh*-moved constituent, but implement, instead, an aboutness dependency. On these grounds, I conclude that Rizzi's (2006) initial version of *Criterial Freezing* is to be preferred over the second. It now remains to be determined what the nature of this constraint is.

¹² In order to account for the absence of intervention effects in cases like these, Rizzi (2004) suggests that topics can target the same projection so that they become 'equidistant,' in Chomsky's (1993) sense.



3. *Criterion Freezing under Full Interpretation*

The previous section emphasized that an accurate analysis of the Torrego/Rizzi data argues against *Criterion Freezing* operating in a context-sensitive fashion. As it turns out, though, such a trait constitutes the hallmark of Rizzi's framework, ever since Rizzi (1990). To put it in current terms, A-bar features participate in Probe-Goal dependencies, and thus give rise to intervention effects.

In this section I want to flesh out my argument against Rizzi's *Criterion Freezing*. As a starting point, it must be noted that, to all intents and purposes, this constraint is virtually equivalent to Chomsky's (2001) mechanism in (21):

(21) The EPP position of a phase *Ph* is assigned Int.

(from Chomsky 2001: 33)

Under (21), XPs that have undergone movement to the specifier of a phase head are assigned a discourse-oriented interpretation, not because of feature checking, but simply because of the position they occupy. Simplifying somewhat, (21) amounts to an XP being interpreted as a 'topic' or a 'focus' for essentially the same sort of reason an XP is interpreted as a 'theme' or a 'goal' in Hale & Keyser's (2002) framework: the structure they are part of, nothing else.

The gist of the proposal I want to put forward here is in line with (21), as well as with the assumption that an XP cannot be assigned more than one interpretation of the same kind, for legibility/convergence purposes.¹³ For concreteness, I want to phrase this idea under Boeckx's (2003) *Principle of Unambiguous Chain* (PUC), an interface condition that can arguably be subsumed under Chomsky's (1986b) PFI:¹⁴

(22) Principle of Unambiguous Chain

Chains must be defined unambiguously

(from Boeckx 2003: 13)

In Boeckx (2003), chains are ambiguous if they contain more than one 'strong' (meaning 'checking') position (i.e., a position that requires creation of a specifier by means of an EPP feature). Boeckx (2003) argues at length that in

¹³ But see Rizzi (2006: 128) for discussion of cases where multiple interpretations of the same type are allowed to target the same DP via head movement of the relevant criterial heads.

¹⁴ This account is in the spirit of Epstein's (1992), which was phrased in terms of economy: a syntactic object cannot receive two interpretations, so one of the two *a priori* expected readings must be eliminated. Boeckx's (2003) PUC is also reminiscent of Müller & Sternefeld's (1996) *Principle of Unambiguous Binding* (PUB).

cases where one element is forced to participate in more than one checking operation, the system resorts to additional strategies (e.g., resumption) to avoid PUC violations.

Viewed in a broad sense, (22) can be applied not only to cases of syntactic checking, but also to cases where interface demands must be met by transferred chunks of a derivation (the ‘phases’). Consider this possibility from the PF perspective: in (23), PF has to decide which occurrence of *John* is to be spelled-out in order to avoid a linearization conflict –that is, a ‘PF ambiguity/crash’ (see Nunes 2004).

(23) [_{CP} C [_{TP} <John> T was [_{VP} v arrested <John>]]]

Suppose we extend (22) to interpretive effects such as theta-role assignment, binding, and so on. What I have in mind is, in the end, very likely an appropriately extended interface version of Chomsky’s (1981) *Theta Criterion*.¹⁵ To make my point, consider (24), an example due to Juan Uriagereka (p.c.), where scattered binding of *which picture of himself and herself* is impossible:

(24) a. [_{CP} Which pictures of himself and herself_i C did John and Mary think I saw t_i]?

b. * [_{CP} Which pictures of himself and herself_i C did John think Mary saw t_i]?

In the context of Boeckx’s (2003) PUC, the interesting case is (24b), where the anaphors *himself* and *herself* cannot be bound in the intermediate and lower clauses by *John* and *Mary* respectively. This suggests that the DP-portion undergoing reconstruction (the restriction *pictures of himself and herself*) cannot operate in two different positions for binding purposes, pretty much like a chain cannot contain two strong positions, nor two spelled-out occurrences.¹⁶

The binding fact just mentioned is similar to the difficulty in (6a), repeated below as (25) for convenience:

(25) * [_{CP} Who thinks [_{CP} that, which problem_i, Mary hates t_i]]?

Recall that, for Rizzi (2006), (25) would be ruled out because *which problem* cannot satisfy two different criteria –one of them in passing. For me the problem is related to Boeckx’s (2003) PUC. Given that I do not express A-bar

¹⁵ Problems for this view arise in accounts where theta-roles are viewed as features that can be checked by movement. See Bošković & Takahasi (1998), Lasnik (1999), and Hornstein (2001) among others. With Chomsky (2008), I depart from these non-configurational approaches to theta-theory, and tacitly assume that the *Theta Criterion* boils down, in the current system, to the fact that a given syntactic object cannot be externally merged twice.

¹⁶ See Hornstein (2001:85 and ff.) for a virtually identical proposal, applied to QR and binding interactions.



distinctions in a featural fashion, I am committed to the thesis that the computational system doesn't have much to say about (25): sentences like this can be generated, but they will be interpreted as deviant at the interface, because the same XP is assigned two discourse-oriented interpretations.

Both the PUC and the PFI are interface conditions, not substantive constraints on derivations. Now, Rizzi (2006) provides one argument against a sentence like (25) being ruled out on interpretive (interface) grounds. As he notes, Italian allows for contrastive focus to be assigned either *in situ* or in a left peripheral position, a fact that holds in Spanish too. Rizzi (2006) then offers the pair in (26) to claim that *Criterial Freezing* cannot be reduced to interpretive matters:

- (26) a. Mi domandavo [_{CP} quale RAGAZZA_i C avessero scelto t_i] non quale ragazzo. (Italian)
 CL-me wonder-1SG which GIRL had-3PL chosen not which boy
 'I wonder which GIRL they had chosen, not which boy.'
- b. * [_{CP} Quale RAGAZZA_i C mi domandavo [_{CP} t_i avessero scelto t_i] ...
 which GIRL CL-me wonder-1SG had-3PL chosen
 ... non quale ragazzo. (Italian)
 not which boy
 'Which GIRL do I wonder had chosen, not which boy?'

(from Rizzi 2006: 113)

When elaborating on (26), Rizzi (2006: 113) argues that "a wh-phrase in an embedded question can be contrastively focused in its criterial position, in the embedded C system, but it cannot be moved to the left periphery of the main clause [...] as contrastive focus is clearly compatible with a wh-phrase (see [26a]), it does not seem plausible to assume that [26b] is ruled out for interpretive reasons."

Rizzi's (2006) observation is well-taken, but not conclusive. I would like to suggest that the status of (26b) has nothing to do with this author's conception of *freezing*, but rather with the semantic intricacies of purely interrogative verbs such as *wonder*, which require an overt mark indicating the interrogative nature of the clause they select (see Cheng 1997 for much relevant discussion). Since this point is relevant, compare (26) with (27):

- (27) a. María ha dicho [_{CP} qué CHICA_i C han elegido t_i] no qué chico. (Spanish)
 María have-3SG said which GIRL have-3PL chosen not which boy
 'María has said which girl they have chosen, not which boy'
- b. [_{CP} Qué CHICA_i C ha dicho María [_{CP} que t_i han elegido t_i] ...
 which GIRL have-3SG said María that have-3PL chosen

... no qué chico? (Spanish)
not which boy

'Which girl has María said that they have chosen, not which boy?'

As far as I can tell, the examples in (26) and (27) are identical –the only difference concerns the matrix verb. I take this to reinforce the hypothesis that the problem in (26b) above is due to the verb, which requires the presence of an interrogative morpheme in the embedded CP, contrary to verbs such as *decir* (Eng. *say*), which can also select for an interrogative CP, as (27) shows. This conclusion is further favored by the example (28): like Italian *domandarsi*, English *wonder* requires an overt (and, crucially, interrogative) C.

(28) I wonder [_{CP} *(whether) Mary called John]

Notice, therefore, that the reasoning behind (26) is at odds with the data in (27) and (28). For the punch line, consider (29), which is ungrammatical in Spanish:

(29) *Me pregunto [_{CP} han elegido a qué CHICA] no a qué chico. (Spanish)
CL-me wonder-1SG have-3PL chosen to what girl not to what boy

'I wonder what GIRL they have chosen, not what boy.'

This time, the *wh*-phrase containing a contrastively focused NP remains *in situ*: it has not been extracted, and it has not been raised to its criterial position either (a step that would occur at LF, if Rizzi's *freezing* is understood in a representational fashion). From Rizzi's (2006) perspective, it is not clear why (29) should be out, as Spanish can have both *wh*-phrases and contrastive focused XPs *in situ* (Etxepare & Uribe-Etxebarria 2005), but it clearly is. If I am correct, this effect follows, yet again, from the intricacies of *preguntarse* (Eng. *wonder*).

4. Conclusions

In the preceding pages I have expressed skepticism about Rizzi's (2006, 2007) *Criterial Freezing*, not only for what it has to offer with respect to CED effects (see Chomsky 2008) but more generally for what it says with respect to the so-called *Left Periphery*, the nature of minimality, and the existence of 'syntactic freezing'. If my critique is on track, freezing proper can be entertained only within the A systems. When it comes to the A-bar systems, facts suggest that sensitivity to features such as [topic], [wh], or [focus] for Probe-Goal dependencies is doubtful.



I have put forward an alternative way to capture *criterial Freezing* effects with no feature checking involved. Building on Chomsky's (1986b) hypothesis that every element must receive an (unambiguous) interpretation at the interfaces, I have argued that Boeckx's (2003) PUC suffices to account for the deviance that arises whenever an XP is assigned more than one interpretation of the same type.

If correct, the overall account suggests that one other device previously taken to be 'substantive' within the system (*criterial Freezing*) can be reduced to interface conditions. This is –I feel– a much welcome possibility, as it reinforces the (strong) minimalist thesis that descriptive technology associated to the first factor (UG) can be recast in third-factor terms, thus providing a principled explanation for the linguistic phenomena investigated here (see Chomsky 2005, 2007, 2008).

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