

Wh-in-situ interrogatives in Spanish¹

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Abstract

The purpose of this paper is to provide a unified account of the behavior of wh-in-situ questions in Spanish (i.e., non-neutral word order and the Sentence Final Requirement). The analysis presented argues that phonological properties govern the distribution of in-situ wh-phrases. More precisely, in-situ wh-phrases in Spanish need to appear last within their intonational phrase. Following insights from Stjepanović (1999, 2003) on the interaction between stress assignment (Zubizarreta 1998) and the Copy Theory of movement (Chomsky 1993), I argue that in-situ wh-phrases need to appear in final position to receive main stress via the Nuclear Stress Rule. I show that in-situ wh-phrases are spell-outs of lower copies. This analysis captures the behavior of all in-situ wh-phrases in Spanish.

1. Introduction

The purpose of this paper is to provide an account of the behavior of wh-in-situ questions in Spanish. The analysis presented argues that phonological properties govern the distribution of in-situ wh-phrases. More precisely, in-situ wh-phrases in Spanish need to appear last within their intonational phrase. This

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generalization will capture the behavior of all in-situ wh-phrases in this language.

The paper is organized as follows. First, I introduce the data under discussion and I examine the main approach to the phenomenon (i.e., Uribe-Etxebarria (2002)). I conclude that Uribe-Etxebarria's approach fails to explain the defining properties of Spanish wh-in-situ questions. Second, I pursue the idea that the phonological properties of these questions determine their behavior and distribution. In order to formalize this idea, I adopt Stjepanović's (1999, 2003) system, in which stress assignment and the Copy Theory of movement interact. I argue that the outcome of the proposed account is more satisfactory than previous proposals. It not only overcomes previous problems but it also accounts for all wh-in-situ constructions in Spanish in a unified way. Finally, I draw a cross-linguistic comparison between wh-in-situ in Spanish, French and English. It turns out that the differences between the three languages can be explained by appealing to syntactic as well as phonological factors. The last section of the paper offers concluding remarks.

2. Spanish wh-in-situ: Data and previous analyses

As first observed by Jiménez (1997), Spanish exhibits a mixed pattern when it comes to question formation. That is, Spanish exhibits a movement pattern in which the wh-word moves to the front of the sentence ((1a)) and a non-movement pattern in which the wh-word stays in situ, as shown in (1b).^{2, 3} In this respect, Spanish question formation is very similar to French, as in (2) (for extensive discussion on French wh-in-situ, see Obenauer (1994), Chang (1997), Bošković (1998), Sportiche (1998), Cheng and Rooryck (2000, 2003), Munaro et al (2001), Vergnaud and Zubizarreta (2002), Boeckx (2003), and Mathieu (2004), among others).

- (1) a. *Qué compró Juan?*
 what bought John
 'what did John buy?'
 b. [*Y*] *Juan compró qué?*

2. Note that the conjunction *y* 'and' is inserted between square brackets in the wh-in-situ example. When I elicited the judgments from my informants, I gave them a previous context. The conjunction *y* was used to offer a smooth transition between the context itself and the wh-in-situ question. *Y* is in square brackets not only to indicate that its presence in the sentence is optional but also to indicate that there was a previous context. See Reglero (2004) for relevant discussion.

3. The Spanish data come from Jiménez (1997) and Uribe-Etxebarria (2002), unless noted otherwise. The French data come from Bošković (1998) and Boeckx (2003).

- (2) a. *Qu'a acheté John?*
 what has bought John
 'What has John bought?'
 b. *John a acheté quoi?*

The main work dealing with the wh-in-situ phenomenon in Spanish is Uribe-Etxebarria (2002). Uribe-Etxebarria points to the following syntactic properties of Spanish wh-in-situ that do not find an account in Jiménez's work (according to Jiménez, in-situ wh-phrases in Spanish do not move in LF. They are licensed through unselective binding). One property of wh-in-situ questions in Spanish is that they do not have a neutral order. This point is not obvious in an example such as (1b) above because there is only an object following the verb. However, if we consider the more complex example in (3), and we compare it with its declarative counterpart in (4), one immediately notices that the word order of the elements is non-neutral in the former example. To be more precise, under the neutral word order, the DO *un libro* 'a book' follows the verb *dí* 'gave' and precedes the IO *a María* 'to Mary'. In the in-situ question, this word order does not obtain. As can be observed in (3), the IO immediately follows the verb and precedes the DO wh-word *qué*.

- (3) [Y] *tú le diste a María (el) qué?*
 and you CL gave to Mary the what
 'What did you give to Mary?'
 (4) *Yo le dí un libro a María*
 I CL gave a book to Mary

Another property of Spanish wh-in-situ questions noted by Uribe-Etxebarria, which is related to the one discussed above, is that the wh-word needs to obey the Sentence Final Requirement (SFR), that is, the wh-word needs to appear in final position. If this is not the case, the sentence becomes considerably degraded.

- (5) a. [Y] *tú le diste la guitarra a quién?*
 and you CL gave the guitar to who
 b. ***/?/[Y] tú le diste a quién la guitarra?*

Uribe-Etxebarria notes that, curiously enough, the ungrammatical sentence in (5b) becomes grammatical if there is a pause immediately following the wh-word:

- (6) [Y] *tú le diste a quién # la guitarra?*
 and you CL gave to who the guitar

Uribe-Etxebarria also points out that in contrast to French (see (8b)), in-situ questions in Spanish are not limited to short-distance contexts. As shown in (7), the in-situ strategy is available in long-distance contexts as well.

- (7) a. [Y] *tú crees que vendrá quién?*
and you think that will-come who
'Who do you think will come?'
- b. [Y] *Pedro ha dicho que Juan ha comprado qué?*
and Peter has said that John has bought what
'What did Peter say that John bought?'
- (8) a. *Qu'a dit Peter que John a acheté?*
what has said Peter that John has bought
'What has Peter said that John has bought?'
- b. **Peter a dit que John a acheté quoi?*

In summary, Spanish wh-in-situ questions exhibit a non-neutral word order and the wh-element has to appear in final position. Moreover, they are allowed in long-distance contexts. As noted by Uribe-Etxebarria, the analyses proposed for the French data cannot be extended to the Spanish data in a straightforward manner. Therefore, a new analysis is needed to account for wh-in-situ questions in Spanish.

Aware of the aforementioned problems, Uribe-Etxebarria has proposed the following account: Spanish wh-in-situ questions have a complex syntax and involve two movement operations. First, the wh-word moves to Spec CP overtly. Then, the non-interrogative material (i.e., the remnant IP) moves over the displaced wh-word. She summarizes her proposal schematically as follows:

- (9) X wh-phrase Y \rightarrow X Y wh-phrase t_{WH} t_Y

Regarding the final landing site of the displaced non-interrogative material, Uribe-Etxebarria is not very explicit with respect to this issue. She suggests that the landing site is a topic-like position, which she labels XP.⁴

The following examples demonstrate how the analysis works. The most basic example is (1b), repeated as (10):

- (10) [Y] *Juan compró qué?*
and John bought what

According to Uribe-Etxebarria's analysis, *qué* moves to Spec CP overtly, and then the non-interrogative material (i.e., the remnant IP) *Juan compró* moves over *qué* to land in a position higher than Spec CP, namely XP. The derivation is given below (irrelevant details are omitted):

4. For Etxepare and Uribe-Etxebarria (2005), in-situ wh-phrases move overtly to Spec FP followed by movement of the remnant to TopP.

- (11) a. [IP Juan compró qué]
 b. [CP qué_i [IP Juan compró t_i]]
 c. [XP [IP Juan compró t_i]_j [CP qué t_j]]

A more interesting example is the non-neutral word order in (3), repeated as (12):

- (12) [Y] *tú le diste a María (el) qué?*
 and you cl gave to Mary the what

The derivation for the example is provided below:

- (13) a. [IP tú diste qué a María]
 b. [CP qué_i [IP tú diste t_i a María]]
 c. [XP [IP tú diste t_i a María]_j [CP qué_i t_j]]

As the derivation makes clear, *qué* starts in its neutral position, that is, the position following the verb *diste* and preceding the IO *a María*. The wh-phrase moves to Spec CP and then the IP remnant *tú le diste a María* moves to XP generating the correct word order in (12). Given the existence of these two movement operations (i.e., (13b–c)), one can go from the neutral word order in (13a) to the non-neutral word order represented in (13c). Consequently, the wh-phrase appears in sentence final position and hence conforms to the requirements of the SFR.

Long-distance cases are derived in a parallel fashion, as shown below (note that movement of a wh-phrase across a clausal boundary is acceptable in Spanish ((14b)), as predicted by Uribe-Etxebarria):⁵

- (14) a. [Y] *tú crees que vendrá quién?*
 and you think that will-come who
 ‘Who do you think will come?’
 b. *Quién crees que vendrá?*
 who think-you that will-come
 ‘Who do you think will come?’
- (15) a. [IP tú crees [CP que vendrá quién]]
 b. [CP quién_i [IP tú crees [CP que vendrá t_i]]]
 c. [XP [[IP tú crees [CP que vendrá t_i]]_j [CP quién_i t_j]]

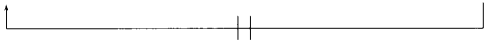
5. Long-distance cases are discussed in detail in Etxepare and Uribe-Etxebarria (2000).

2.1. Counterarguments

There are several problems with Uribe-Etxebarria’s analysis. First of all, if we assume that *wh*-words move overtly to Spec CP and the non-interrogative material moves to XP, the prediction here is that a *wh*-in-situ within an island should be ungrammatical under Uribe-Etxebarria’s analysis. This prediction is not confirmed by the data, as shown by the example below:

- (16) a. *Te has enamorado del hombre que vive con quién?*
 CL (you) have fallen-in-love of-the man that lives with who
 ‘Who have you fallen in love with the man that lives with?’
 b. **Con quién te has enamorado del hombre que vive?*

If we adopt Uribe-Etxebarria’s analysis, the two examples in (16) should have the same grammatical status because overt movement to Spec CP out of an island occurs in both cases. However, (16a) is grammatical but its overt movement counterpart is not. This implies that there is no overt movement to Spec CP in the a-example. If that were the case, this sentence should be ungrammatical, contrary to fact. The relevant steps of the derivation are provided below. Note that moving the *wh*-word in the a-example overtly to Spec CP is problematic. This step corresponds exactly to the ungrammatical example in b. From this evidence, I conclude that *wh*-in-situ elements are not moving to Spec CP in the overt syntax:

- (17) a. *Te has enamorado del hombre que vive con quién*
 b. [_{CP} Con t_i] [_{IP} te has enamorado del hombre que vive t_i]

 = (16b)

Uribe-Etxebarria (2002) and Etxepare and Uribe-Etxebarria (2005) note that (16a) may involve pied-piping of the whole island (*del hombre que vive con quién*) followed by movement of the remnant (*te has enamorado*). Under this derivation, no island is violated. This analysis relies on the idea that the in-situ *wh*-phrase is contrastively focused and that contrastive focus may trigger massive pied-piping (*[del hombre que vive con QUIÉN] te has enamorado?*). However, note that I treat in-situ *wh*-phrases as instances of new information focus (Zubizarreta (1998)). If correct, it is not clear that the in-situ *wh*-word would be able to trigger massive pied-piping. Moreover, (16a) and sentences involving pied-piping of the whole island receive different answers. For Etxepare and Uribe-Etxebarria (2002), (16a) would receive an answer such as *con Juan* (with John). In contrast, the overt pied-piping counterpart does not admit

the same answer. In this case, the whole island needs to be repeated: *del hombre que vive con Juan* (with the man that lives with John). If the relevant part of both sentences shares the same syntax, the origin of the answer difference is unclear (see Etxepare and Uribe-Etxebarria for a similar conclusion). This seems to suggest that pied-piping of the whole island is not taking place in (16a) above.

Before I continue with more counterarguments, I will discuss some examples that suggest that Spanish wh-in-situ constructions show island effects (thanks to an anonymous reviewer for bringing these data to my attention). As shown in (18a–b), wh-phrases in-situ with matrix scope give rise to argument/adjunct asymmetries when they are embedded in wh-dependents. This is curious given that wh-adjuncts can be left in situ, as in (18c). Note that this asymmetry also obtains in overt movement cases (Torrego, 1984), suggesting that overt movement also takes place in the in-situ examples.

- (18) a. [Y] *tú no sabes cómo llegó quién?*
and you neg know how arrived who
'Who is such that you don't know how he/she arrived?'
- b. *[Y] *tú no sabes quién llegó cómo?*
- c. [Y] *tú dijiste que Pedro llegó cómo?*
and you said that Pedro arrived how
- d. *Quién no sabes cómo llegó?*
who neg you-know how he-arrived
'Who is such that you don't know how he/she arrived?'
- e. **Cómo no sabes quién llegó?*
(Etxepare and Uribe-Etxebarria 2005)

There is an interfering factor with the data regarding the grammatical status of some adjuncts left in situ (the same objection can be raised for factive islands, negative islands and extraposition islands. See Etxepare and Uribe-Etxebarria for relevant data). According to my judgment, (18c) is degraded (but might improve with heavy contextualization). More significantly, multiple questions such as *quién llegó cómo?* 'who arrived how?' are unacceptable or very degraded (this example is traditionally ruled out via the ECP, but see Bošković (2000) for some cross-linguistic remarks and a more current account of the phenomenon under the minimalist framework). Note that this is a potentially serious interfering factor for the ungrammaticality of (18b). The interfering factor does not arise with other adverbs such as *dónde* (*quién vive dónde?* 'who lives where?') or *cuándo* (*quién llegó cuándo?* 'who arrived when?') (see Huang (1982) for similar contrasts in Chinese). Interestingly, these adverbs (I use *dónde* for illustration purposes) can be left in situ when embedded in wh-dependents, as in (19a–b). Note that extraction of an adjunct is still ungrammatical, as in (19d):

- (19) a. [Y] *tú no sabes dónde vive quién?*
and you neg know where lives who
b. [Y] *tú no sabes quién vive dónde?*
c. *Quién no sabes dónde vive?*
who neg know where lives
d. **Dónde_i no sabes quién vive t_i?*

These data are problematic for a movement analysis (i.e., (19b) and (19d) should have the same grammatical status).⁶

Another problem with Uribe-Etxebarria's analysis involves constructions with two wh-phrases in-situ. A sentence such as (20) is possible in Spanish. As shown in the example, both *qué* and *a quién* can appear in postverbal position, subject to the SFR:

- (20) a. [E] *Iván le pidió qué a quién?*
and Ivan CL asked what to who
'What did Ivan ask to who?'
b. *[E] *Iván le pidió que a quién el otro día?*
and Ivan CL asked what to who the other day
'What did Ivan ask to who the other day?'
c. *[E] *Iván le pidió qué el otro día a quién?*
d. [E] *Iván le pidió qué a quién # el otro día?*
e. ?[E] *Iván le pidió qué # el otro día # a quién?*

If we adopt a two-step derivation, we would obtain the following (I only represent the first step in (21b). The second step is irrelevant for the purposes of my argumentation):

- (21) a. *Iván le pidió qué a quién*
b. [_{CP} A *quién_i*; *qué_j* [_{IP} *Iván le pidió t_i t_j*]]⁷

6. Extraction of complements of verbs is also problematic for the movement analysis ((ia)–(id) adapted from Jaeggli (1981), see also Torrego (1984)). Note that *qué* can stay in situ but overt extraction of the same element leads to ungrammaticality. Under Etxebarria and Uribe-Etxebarria's analysis, the two examples should be ungrammatical, contrary to fact:

- (i) a. [Y] *tú no sabes qué compró quién?*
and you neg know what bought who
b. [Y] *tú no sabes quién compró qué?*
c. *Quién no sabes qué compró?*
who neg know what bought
d. **Qué no sabes quién compró?*

7. The order in which the wh-phrases move to Spec CP is irrelevant. Whether the IO precedes the DO, or vice versa, the same problem remains.

(21b) shows that Spanish, like Bulgarian, is a Multiple-Wh-Fronting language. Note that this derivation is forced on (21a) given that both wh-phrases are subject to the SFR (cf. (21b–e)). Under Uribe-Etxebarria’s analysis, this implies that both wh-phrases are located in Spec CP. Of course, this is a wrong prediction. In Spanish, the most common way to express the Bulgarian sentence in (22) is as in (23b), with one wh-phrase in Spec CP and the other one in situ. Crucially, the Multiple-Wh-Fronting pattern in (23a) (see also (21b) above) is ruled out in Spanish.⁸

- (22) *Kogo kakvo e pital Ivan?*
 who-dat what-acc is asked Ivan
 ‘Who did Ivan ask what?’
- (23) a. **A quién qué le compró Iván?*
 to who what CL bought Ivan
 b. *A quién le compró Iván (el) qué?*
 to who CL bought Iván (the) what
 ‘Who did Ivan buy what?’

Uribe-Etxebarria addresses the Multiple-Wh-Fronting problem in a similar context. The relevant example is provided below:

- (24) *Quién dijo qué a quién?*
 who said what to who

As Uribe-Etxebarria explicitly points out, Multiple-Wh-Fronting is not available in Spanish. Based on this, she concludes that only one wh-phrase needs to move overtly to check the strong +wh-feature of C. Therefore, she discusses the following derivation for (24):

8. An anonymous reviewer points out that it is possible to derive (20a) by using a “wh-movement plus remnant movement” analysis, as in (i):

(i) [_{TopP/XP} [_{IP} Iván le pidió qué t_i]]_j [_{CP} a quién_i t_j]]

However, this derivation is problematic. It is well-known that topicalization, focalization or wh-movement can never take a wh-phrase outside of its scope (so that its interrogative does not c-command it). In (ii) (data from Bošković and Takahashi (1998), see Bošković (to appear) for related discussion), topicalization of the phrase containing “who” places this element outside the +wh CP of the sentence. This process is clearly disallowed. Note that this is exactly what is happening in (i): a phrase containing a wh-word undergoes remnant movement (i.e., topicalization) and ends up outside of its scope.

(ii) *_i[That picture of who₁]₂, I know who₃ t₃ bought t₂

Furthermore, note that the derivation in (i) would incorrectly predict that (20e) should be grammatical, contrary to fact.

- (25) a. *Quién dijo qué a quién*
 b. [CP A *quién*_i [IP *quién* dijo qué *t*_i]]
 c. [XP [IP *quién* dijo qué *t*_i]_j] [CP a *quién*_i *t*_j]

She argues that there is no way to generate sentence (24) in this way because (25b) is not allowed in Spanish: it is an ungrammatical sentence. The conclusion here is that the two-step movement derivation cannot be applied to (24). As Uribe-Etxebarria states, (24) is derived as a regular interrogative. That is, *quién* 'who' moves to Spec CP and the two remaining wh-phrases stay in situ, licensed via unselective binding.

Assuming this line of reasoning, we can see another construction in which the two-step movement analysis would not work (i.e. a sentence very similar to (24) above). The relevant example is (26):

- (26) *Quién compró qué?*
 who bought what

Derivation for (26):

- (27) a. *Quién compró qué*
 b. [CP *qué*_i [IP *quién* compró *t*_i]] → problematic step

Recall that Uribe-Etxebarria would analyze (26) as a regular interrogative with *quién* in Spec CP and *qué* in its base-generated position. Now, I will examine a more complex and really crucial example involving two wh-phrases and a verb taking two complements (see Zubizarreta (1998) and Ordóñez (1997) for more examples along these lines). The example is provided in (28). A surprising result emerges from the data. (28) would be analyzed as a regular interrogative by Uribe-Etxebarria. Note that in this example, the in-situ wh-phrase also needs to obey the SFR. To put it clearer, (28a) is ungrammatical because *qué cosa* is not in final position.⁹ (28b) is acceptable because the wh-phrase appears at the end of the sentence (note that the word order in (28b) is non-neutral). Even though Uribe-Etxebarria rejects her 2-step derivation for examples in (24)-(28), the evidence in (28) indicates that she also needs her derivation in these cases.

- (28) a. **Quién puso qué cosa sobre la mesa?*
 who put what thing on the table
 b. *Quién puso sobre la mesa qué cosa?*
 (Zubizarreta 1998, ex. (97a))

9. These data might be subject to dialectal variation. According to one anonymous reviewer, (28a) is acceptable for some speakers. I leave open where the dialectal variation might stem from.

The paradigm in (28) is strikingly similar to the in-situ questions I have been discussing thus far. In both cases the wh-words appear at the end of the sentence creating a non-neutral order. If the whole motivation for the two-step movement analysis was to make sure that the in-situ wh-word appeared in sentence-final position in spite of a non-neutral word order, then, the explanation for (28) remains unclear. Uribe-Etxebarria's derivation accounts for part of the generalization, not its entirety. We need something more general that accounts for all the cases under discussion.

I propose that the phonological properties of the in-situ wh-phrases are crucial in determining their distribution.¹⁰ I will show that Stjepanović's (1999, 2003) proposal for an interaction between stress assignment and the Copy Theory of movement offers us a perfect tool to account for the Spanish data. In the next section I review the main points of this system, and I show how it can help us in our analysis of wh-in-situ questions in Spanish.

3. Stjepanović (1999, 2003)

In order to account for the paradoxical behavior of subjects in Serbo-Croatian (it looks like there is only one subject position but with two realizations in the word order), Stjepanović (1999, 2003) proposes a system in which word order is derived as the result of the joint work of the syntactic and PF components. More specifically, she argues that subjects are always located in Spec AgrSP in Serbo-Croatian. If correct, it is not clear why subjects appear low in some cases. Stjepanović suggests that movement leaves copies (Chomsky 1993) and that sometimes a lower copy of the subject is pronounced in PF.

To account for the obligatory pronunciation of some lower copies, Stjepanović claims that the interplay of focus and stress assignment in Serbo-Croatian plays a crucial role. As a starting point, Stjepanović takes Zubizarreta's (1998) modular formulation of the Nuclear Stress Rule (NSR). To be more precise, the NSR is sensitive to selectional ordering (S-NSR) and also to asymmetric c-command (C-NSR).

- (29) C-NSR:
Given two nodes C_i and C_j , that are metrical sisters, the one lower in the syntactic asymmetric c-command ordering is more prominent.¹¹

10. Uribe-Etxebarria mentions that phonological properties may play a role but she claims that her evidence points to a complex syntactic analysis of wh-in-situ questions in Spanish.

11. Metrical sisterhood is defined as follows:

- (i) Constituents X and Y are *metrical sisters* =_{def} there exist two constituents Z and W such that (a) Z and W are sisters and (b) Z (resp. W) is metrically nondistinct from X (resp. Y).

- (30) S-NSR:
 Given nodes C_i and C_j , that are metrical sisters, if C_i and C_j are selectionally ordered, the one lower in the selectional ordering is more prominent.

For Zubizarreta, both the S-NSR and the C-NSR are active in German and English. In Spanish (and by extension, Serbo-Croatian) only the C-NSR is active.¹² One important aspect of the definitions is the idea of metrical sisters, in particular, the idea of being metricaly visible. For instance, phonologically null elements such as traces are metricaly invisible. Moreover, “defocalized constituents are metricaly invisible for the NSR in English and German” (Zubizarreta 1998: 46). Furthermore, Zubizarreta claims that “all phonological material is metricaly visible for the NSR in Spanish” (Zubizarreta 1998: 76).

In addition to the modular version of the NSR, Stjepanović adopts with Zubizarreta the “Focus Prominence Rule” (FPR). The purpose of this rule is to capture the relationship between focus and prosody (focused elements are marked [+F] and non-presupposed material [−F]):

- (31) Focus Prominence Rule (FPR)
 Given two sister categories C_i (marked [+F]) and C_j (marked [−F]), C_i is more prominent than C_j .

Given the existence of both the NSR and the FPR, there are some cases where there is a conflict between the output of the NSR and the output of the FPR. English (and German) resolves this conflict by treating the [−F] constituent as metricaly invisible for the NSR. However, this solution cannot work for Spanish-type languages because, for Zubizarreta, all phonologically specified material is metricaly visible in these languages. In order to resolve this problem, Zubizarreta proposes that Spanish can appeal to a movement operation called p-movement (prosodically motivated movement), which moves the [−F] constituent away so that the [+F] constituent ends up in a position to receive main prominence via the C-NSR.

Stjepanović’s innovation comes at this point. According to her, there is no need for positing the existence of p-movement (see Bošković (2001) for general arguments against PF movement). She proposes that the NSR can decide which

Where metricaly non-distinct means:

- (ii) Constituents A and B are *metricaly nondistinct* =_{def} A and B dominate the same set of metricaly visible heads.

12. This cross-linguistic difference will become relevant in our discussion of Spanish, French and English wh-in-situ (see section 5 below).

copy should be pronounced in Serbo-Croatian. For this, the NSR needs to apply before copy deletion (as will become clear below, there is cross-linguistic variation in this respect). Furthermore, the NSR assigns NS to the most embedded copy of the focused element. Stjepanović assumes that a lower copy is pronounced if pronunciation of the higher copy would lead to a PF violation, as argued by Bobaljik (1995), Hiramatsu (1997, 1999), Franks (1998) and Bošković (2001, 2002). As Stjepanović makes clear, “not pronouncing [the lowest] copy would cause a PF violation, i.e., no main stress would be assigned” (Stjepanović 2003: 157). In order to avoid this PF violation, the lowest copy gets pronounced.

The Serbo-Croatian data below illustrates how Stjepanović’s system works ((32b) is an answer to (32a)):

- (32) a. *Ko hvata miša?*
 who catches mouse
 ‘Who is catching a mouse?’
 b. *Miša hvata mačka*
 mouse catches cat
 ‘A cat is catching a mouse’

(33) illustrates the syntactic structure for (32b), including copies and, following Zubizarreta, [+F] and [-F] elements.

- (33) [_{AgrSP} miša [_{AgrSP} mačka [_{TP} mačka hvata [_{AgrOP} miša hvata
 [-F] [+F] [+F] [-F] [-F] [-F]
 [_{V1} mačka hvata [_{V2} hvata miša]]]]]
 [+F] [-F] [-F] [-F]

Following Zubizarreta, Stjepanović takes the first two metrical sisters, that is, the left-adjoined *miša* and AgrSP. *Miša* is marked [-F] and AgrSP is not specified for the feature [F] because there are both [+F] and [-F] elements inside AgrSP. For these kinds of cases, Zubizarreta assumes that the feature specification is just [F]. The FPR does not apply in these cases because AgrSP is not specified for [F]. The C-NSR applies and assigns prominence to the most embedded element in the asymmetric c-command ordering, that is, AgrSP. The next pair of metrical sisters are *mačka* and the TP. *Mačka* is [+F] and the TP is only [F]. Hence, the FPR does not apply. The C-NSR applies and assigns prominence to the TP. The same process repeats itself until we reach the metrical sisters *mačka* in V1 and the V1'. As can be observed, *mačka* is [+F] and V1' is [-F]. The FPR can now apply because there is an element that is [+F] and an element that is [-F]. The FPR assigns prominence to the [+F] element *mačka*. A problem arises at this point. The C-NSR wants to assign prominence to V1' because this is the most embedded element in the asymmetric c-command ordering. If this were to happen, there would be a problem with the FPR. We are

and the verb, these copies have to be pronounced. It should be noted that, in this particular example, the NSR and the FPR have determined that the lowest copy of *qué* should be pronounced. However, nothing would go wrong with respect to word order if the highest copy of this element were pronounced.^{14, 15}

The example in (39) illustrates a ditransitive structure. The stress assignment algorithm applies exactly in the same way as in (35). In other words, the joint work of the C-NSR and the FPR determines that the lowest copy of the wh-phrase will be pronounced.

- (39) [Y] *tú le diste la guitarra a quién?*
and you CL gave the guitar to who
- (40) [_{AgrSP} *tú diste* [_{AgrOP} *la guitarra diste* [_{AgrOP} *a quién diste*
[-F] [-F] [-F] [-F] [+F] [-F]
[_{VP} *tú diste la guitarra a quién*]]]
[-F] [-F] [-F] [+F]
- (41) [_{AgrSP} *tú diste* [_{AgrOP} *la guitarra ~~diste~~* [_{AgrOP} *a ~~quién diste~~*
[-F] [-F] [-F] [-F] [+F] [-F]
[_{VP} *~~tú diste la guitarra a quién~~*]]]
[-F] [-F] [-F] [+F]

Example (3) (repeated as (42)) demonstrates that pronouncing the lowest copy is obligatory if one wants to derive the correct word order. This example is particularly interesting because it contains a non-neutral word order resulting from the SFR imposed on the wh-phrases.

14. A question that arises is how to analyze sentences where a wh-phrase is moved to Spec CP overtly:

- (i) *Qué compró tu padre?*
what bought your father
'What did your father buy?'

According to Zubizarreta, the wh-phrase does not bear Nuclear Stress in this example (the subject does). Consequently, Zubizarreta proposes that the fronted wh-phrase is licensed syntactically "by virtue of occupying the specifier position of a functional category with the feature [+wh]" (Zubizarreta 1998: 92). See Zubizarreta for the specifics of this proposal.

15. One anonymous reviewer wonders how in-situ wh-phrases (and by extension, focused XP's) receive quantificational interpretation if they do not move to Spec CP. The idea behind this is that the wh-phrase needs to move in LF (via QR) to a position to receive scope. This would ensure proper interpretation. Note that movement is not the only possibility to ensure proper interpretation. Following Tsai (1994) and Reinhart (1995) (see also Cheng (1991) and Aoun and Li (1993) for related discussion), I adopt a non-movement possibility in which wh-phrases introduce variables in situ which can be unselectively bound by C (i.e., the unselective binding approach).

- (42) [Y] *tú le diste a María (el) qué?*
 and you CL gave to Mary the what
 ‘What did you give to Mary?’

The input structure to PF yields the following:

- (43) [_{AgrSP} *tú* *diste* [_{AgrOP} *qué* *diste* [_{AgrOP} *a* *María* *diste* [_{VP} *tú*
 [-F] [-F] [+F] [-F] [-F] [-F] [-F]
diste *qué* *a* *María*]]]
 [-F] [+F] [-F]

The stress assignment algorithm considers the first two metrical sisters *tú* and AgrS'. *Tú* is [-F] and AgrS' is unspecified for the feature [F], therefore the FPR does not apply. The C-NSR applies and assigns prominence to AgrS'. Then, the algorithm considers the verb *diste* and AgrOP. *Diste* is marked [-F] and AgrOP is marked [F]. Because there is no contradictory situation in the F-marking of both sisters, the FPR does not apply. The NSR applies and assigns prominence to the lowest element in the asymmetric c-command ordering: ‘AgrOP’. The algorithm continues to reapply and finally encounters the two last metrical sisters, namely, *qué* and *a María*. *Qué* is [+F] and *a María* is [-F]. There is a clear contradictory situation in terms of F-marking. The FPR wants to assign prominence to the [+F] constituent *qué*. However, the NSR wants to assign prominence to *a María* because this is the lowest element in the asymmetric c-command ordering. The conflict between the FPR and the NSR is resolved in the following way. According to Stjepanović, copy deletion applies at this point and deletes the lowest copy of *a María*. The FPR applies again and assigns prominence to *qué*. The NSR no longer applies because *a María* is not metrically visible (recall that the NSR only applies to sisters that are metrically visible). The NSR and the FPR have determined that the highest copy of the PP should be pronounced, whereas the lowest copy of the object should be pronounced. Because there are no PF requirements on the copies of the subject and the verb, the highest copies of these elements get pronounced. After copy deletion takes place, (43) results in (44):

- (44) [_{AgrSP} *tú* *diste* [_{AgrOP} ~~*qué*~~ ~~*diste*~~ [_{AgrOP} *a* *María* ~~*diste*~~ [_{VP} ~~*tú*~~
 [-F] [-F] [+F] [-F] [-F] [-F] [-F]
~~*diste*~~ *qué* ~~*a*~~ ~~*María*~~]]]
 [-F] [+F] [-F]

Note that in this example not pronouncing the lowest copy of *qué* would not yield the right word order. Instead, we would generate the ungrammatical (45):

- (45) *[Y] *tú le diste qué a María?*
 and you CL gave what to Mary

“intentionally” is higher than “twice”. Bošković takes these facts as a testing ground for the movement of elements outside of VP. The crucial Serbo-Croatian example is provided below:

- (48) *Jovan je oborio Petra namerno dva put*
 Jovan is failed Peter deliberately twice
 ‘Jovan failed Peter deliberately twice’

According to Bošković, this example is ambiguous. The conclusion emerging from these data is that on the reading in which the first adverb has scope over the second adverb, the object (and the participle) has moved outside of the VP because the adverbs must be left-adjoined.

Applying the same test to the Spanish data yields similar results. Sentence (49) is also ambiguous indicating that, on the reading in which the first adverb has scope over the second, the object has moved outside of the VP (see Ortega-Santos (2006) for similar data and conclusions):¹⁶

- (49) *Juan (le) falló a Pedro intencionalmente dos veces*
 John CL failed to Peter intentionally two times
 ‘John failed Peter deliberately twice’

Sentences with two objects yield exactly the same results, i.e. (50) is ambiguous. This indicates that both objects are moving out of the VP. More precisely, this is the case under the reading in which *intencionalmente* scopes over *dos veces*.

- (50) *Juan le enseñó el libro a María intencionalmente dos veces*
 John CL showed the book to Mary intentionally two times
 ‘John showed the book to Mary intentionally twice’

Stjepanović uses Condition A and Condition C effects as further arguments for overt movement of objects in Serbo-Croatian. The same test can be applied to the Spanish data to determine whether objects undergo overt movement or not. As (51) shows, an object can bind into a VP adverb (assuming that the adverb is VP-adjoined). This indicates that the object can move to a higher position where binding into the VP adverb can occur, assuming (with Stjepanović) that the object moves to Spec of AgrOP in these constructions.

16. If *intencionalmente* takes scope over *dos veces*, the sentence makes reference to two instances of intentional failing. If the scope facts are reversed (*dos veces* > *intencionalmente*), the sentence refers to only one intention, which was to fail Peter twice.

- (51) *Fotografiaron a Pedro_i durante el reportaje de*
 photographed to Peter during the illustrated-report of
sí mismo_i
 himself
 'They photographed Peter_i during his_i illustrated report'

Similar effects arise with Condition C data. As can be observed below, (52) violates Condition C. The object c-commands the R-expression in the VP adverb, indicating that the object is high, presumably in Spec AgrOP.

- (52) **Despidieron a Pedro_i por las afirmaciones de*
 fired to Peter because-of the statements of
Pedro_i / del idiota_i
 Peter / of-the idiot

In summary, arguments raise out of the VP in Spanish, at least as an option (for additional discussion see Romero (1997), Torrego (1998), Suñer (2000), Cuervo (2003), de Pedro (2004), and Ortega-Santos (2006), among others).

So far it has been shown that the SFR imposed on the wh-phrases can be derived as a result of the joint work between copy theory and stress assignment. Next, it will be argued that the same mechanism can account for the whole Spanish paradigm, as illustrated in (5), repeated as (53):

- (53) a. **/?[Y] tú le diste a quién la guitarra?*
 and you CL gave to who the guitar
 b. *[Y] tú le diste a quién # la guitarra?*

(53a) above is ungrammatical because the wh-word does not conform to the SFR. The sentence can be salvaged if there is a pause after the wh-word. One common characteristic between this example and previous examples is that in all cases there exists the intuition that the wh-word is in final position. This is clear in (35) but is not as obvious in (53b). In fact, *a quién* is intonational-phrase final in (53b), not sentence final. One issue needing clarification is whether the domain of the stress assignment is the sentence or the intonational phrase. If the domain is the sentence, then (35) is fine but (53b) becomes problematic. If the domain is the intonational phrase, then we are fine in both cases. Following Zubizarreta (1995a, 1995b, 1996), it can be assumed that the domain of stress assignment is the intonational phrase:

- (54) Within an intonational phrase, the rhythmically most prominent word must be right-adjacent to the intonational phrase boundary (...) (Zubizarreta 1998: 84)

If this is correct, then only the intonational phrase needs to be taken into account (not the whole sentence, although the two may coincide) when applying the stress assignment algorithm.

Following Selkirk (1984, 1986), Nespor and Vogel (1986), Schütze (1994), or Bošković (2001), I assume that intonational phrases correspond to elements such as root clauses, parenthetical expressions, nonrestrictive relative clauses, tag questions, vocatives and heavy fronted constituents (evidence for this comes from the fact that they can be followed by pauses). The left edge of a CP also corresponds to an independent intonational phrase boundary. Furthermore, as Zubizarreta (1998) herself notes in her appendix on right dislocation, right-dislocated phrases constitute independent intonational phrases (this claim is based on phonetic evidence). Given this, there are two independent intonational phrases in (53b): *tú le diste a quién* and *la guitarra*. If the domain of stress assignment is the intonational phrase, the stress assignment algorithm is only going to see the *tú le diste a quién* part in (53b). I assume that the NSR and the FPR proceed in the same way and assign prominence to *a quién* by virtue of it being marked [+F] and by virtue of it being the lowest element in the asymmetric c-command domain.

With a refinement of the domain of stress assignment, namely, the assumption that the domain is the intonational phrase and the prominence bearing element needs to be right-adjacent to the intonational phrase boundary, an example such as (53) has received an explanation as well. This refinement does not pose a problem for (35) or (42). The analysis proposed for those data remains unaffected because the intonational phrase in those cases is going to be the root clause.

This analysis can also account for multiple questions such as (28) (repeated as (55)):

- (55) a. **Quién puso qué cosa sobre la mesa?*
 who put what thing on the table
 b. *Quién puso sobre la mesa qué cosa?*

The input to PF of sentence (55) gives rise to (56):¹⁷

17. As can be observed, the PP *sobre la mesa* raises overtly to a projection between AgrOP and VP. I will leave the nature of the projection open, labeling it only XP. This projection shares the same characteristics as Stjepanović's (1999) PredP, that is a projection which is located low in structure and is capable of hosting topic-like elements. My XP is similar to Stjepanović's PredP: it is located low in the structure and hosts [-F] elements. Presumably, the movement of *sobre la mesa* is just an instance of short topicalization. This assumption is quite plausible given that the moving element is marked [-F].

- (56) [CP *quién puso* [_{Ag_rSP} *quién puso* [_{Ag_rOP} *qué cosa puso* [_{XP} *sobre la*
 [+F] [-F] [+F] [-F] [+F] [-F] [-F]
mesa puso [_{VP} *quién puso qué cosa sobre la mesa*]]]]]
 [-F] [+F] [-F] [+F] [-F]

The domain of stress assignment is the intonational phrase. Therefore, the entire CP in (56) is considered by the algorithm. The stress assignment algorithm considers the first metrical sisters, which are *quién* and C'. *Quién* is [+F] but C' is unspecified for feature [F]. As a result, the FPR does not apply. The NSR applies and assigns prominence to C'. This is so because C' is lower in the asymmetric c-command ordering than *quién* is. The algorithm continues reapplying until it considers the two last metrical sisters inside the VP: *qué cosa* and *sobre la mesa*. The two constituents have contradictory specifications, *qué cosa* is [+F] and *sobre la mesa* is [-F]. This is exactly the kind of context where the FPR applies. Because *qué cosa* is [+F], the FPR wants to assign prominence to this element. However, the NSR wants to assign prominence to *sobre la mesa*, because this is the lowest element in the asymmetric c-command domain. The conflict is resolved via deletion of the lowest copy of *sobre la mesa*. Once this process takes place, the highest copy of *sobre la mesa* and the lowest copy of *qué cosa* get pronounced and the grammatical word order in (55b) is derived. After copy deletion takes place, the resulting structure is given in (57):

- (57) [CP *quién puso* [_{Ag_rSP} ~~*quién puso*~~ [_{Ag_rOP} ~~*qué cosa puso*~~ [_{XP} *sobre la*
 [+F] [-F] [+F] [-F] [+F] [-F] [-F]
mesa ~~puso~~ [_{VP} *quién ~~puso~~ qué cosa ~~sobre la mesa~~*]]]]]
 [-F] [+F] [-F] [+F] [-F]

Note that the interaction between stress assignment and copy deletion would prevent word orders such as the ungrammatical (55a). According to this system, (55a) would violate the requirements imposed by the stress assignment algorithm. Consequently, (55a) would never come into existence as a well-formed structure.

An obvious question is how to analyze (20a) (repeated as (58a)). The problem with this example is that there are two [+F] elements in a final position. In order to solve this puzzle, I will assume that the two wh-phrases form a single stress unit (i.e., both wh-phrases are treated as a single [+F] element). In this respect, the derivation would proceed in the same way as in examples containing only one wh-phrase in situ. Note that, as expected, the order of the wh-phrases can be reversed (see (58b)):

- (58) a. [E] *Iván le pidió qué a quién?*
 and Ivan CL asked what to who
 'And what did Ivan ask to who?'

- b. [E] *Iván le pidió a quién (el) qué?*

One anonymous reviewer wondered how example (59) could be derived (see Section 2.1 for related discussion). This example is similar to (58), but it differs in that it contains one additional wh-phrase in Spec CP. The example is also similar to (55b). Note that in (59) there are two wh-phrases in situ. In this example, I will make the same assumption suggested above (see also Zubizarreta, 1998). I will treat the two wh-phrases in situ as one stress unit. The derivation will proceed as in (55b). The algorithm will apply until it reaches the last pair of metrical sisters, that is, the verb *compró* and the in-situ wh-words *qué a quién*. As can be observed, *compró* is [-F] and *qué a quién* is [+F]. The FPR applies and assigns main prominence to the [+F] *qué a quién*. The NSR also applies and assigns prominence to the same elements.¹⁸

- (59) *Quién compró qué a quién?*
 who bought what to who

The analysis proposed here has been able to account for all the wh-in-situ phenomena in a unified way. Therefore, the lack of island effects in wh-in-situ constructions will now be examined. The answer is going to lie in the fact that there is no overt movement of the wh-word to Spec CP under the current analysis. For this reason, the grammaticality of (60a) does not come as a surprise. The relevant structures are provided in (61) and (62). As indicated above (see Bošković, 2001), the left edge of a CP corresponds to an intonational phrase boundary. Therefore, I assume that the embedded CP is parsed as an independent intonational phrase.

18. Note that the same assumption is not adequate for sentences which combine two focused elements in situ, one of them being a wh-word and the other one a focused non-wh-element. The ungrammaticality of (i) (the example was provided by the anonymous reviewer. Note that *el libro* is focused) could be explained as follows (I leave a more thorough analysis of these cases, including (58) and (59), for further research). There is a problem with the information structure of the sentence. It is commonly assumed that wh-phrases correspond to the new information part of the question (and in this sense they are intrinsically marked [+F]), and the rest of the elements are presupposed (i.e., marked [-F]). In (i), *quién* and *a quién*, being the wh-phrases, are marked [+F]. *Compró* and *el libro* are presupposed and should be marked [-F]. However, the information structure of the sentence forces *el libro* to be marked [+F]. This scenario creates a conflict. More specifically, the FPR cannot apply because there is not a contradictory situation between the two sisters (both *el libro* and *a quién* are marked [+F]).

- (i) **Quién compró el libro a quién?*
 who bought the book to who

- (60) a. *Te has enamorado del hombre que vive con quién?*
 CL (you) have fallen-in-love of-the man that lives with who
 'Who have you fallen in love with the man that lives with?'
 b. **Con quién te has enamorado del hombre que vive?*
- (61) [CP que [_{AgrSP} vive [_{AgrOP} con quién vive [_{VP} vive con quién]]]]
 [-F] [-F] [+F] [-F] [-F] [+F]
- (62) [CP que [_{AgrSP} vive [_{AgrOP} con quién vive [_{VP} vive con quién]]]]
 [-F] [-F] [+F] [-F] [-F] [+F]

In summary, this analysis has accounted for all wh-in-situ questions and related constructions in Spanish by appealing to the interaction between stress assignment and copy theory, i.e., by using Stjepanović's system.¹⁹

5. Cross-linguistic comparison: Spanish, French and English

In this section I compare wh-in-situ constructions in Spanish with French and English wh-in-situ. I evaluate whether the same phenomenon exists in the three languages or whether different analyses are needed to account for the cross-linguistic variation.

5.1. French

As mentioned in Section 2, wh-in-situ in French is allowed in short-distance questions but disallowed in embedded and long-distance contexts. In contrast, Spanish allows both constructions (see (1) and (7) above). Although it is true that both languages allow the in-situ construction, Spanish is not like French syntactically in this type of construction.

In his analysis of French wh-in-situ, Bošković (1998) mentions that there are crucial differences between the examples in (63a) and those in (63b):

- (63) a. **Jean et Pierre croient que Marie a vu qui?*
 Jean and Pierre believe that Marie has seen whom
 'Whom do Jean and Pierre believe that Marie saw?'
 b. *Qui croit que Marie a vu qui?*
 who believes that Marie has seen whom

19. See Reglero and Ticio (to appear) for an analysis of Spanish wh-in-situ constructions in the nominal domain.

The main difference between (63a) and (63b) is that (63b) contains an additional wh-phrase located in Spec CP in the overt syntax (see Bošković (1998) for an analysis of both examples). What (63a) and (63b) illustrate is that the in-situ wh-phrases in (63a) and those in (63b) have a different syntax and, hence, should be analyzed in a different way.

The examples below demonstrate that, in contrast to French, all in-situ wh-phrases in Spanish have the same grammatical status regardless of the presence or absence of an additional wh-phrase in Spec CP:

- (64) a. [Y] *Juan y Pedro creen que María ha visto a*
 and John and Peter think that Mary has seen to
quién?
 who
- b. *Quién cree que María ha visto a quién?*
 who thinks that Mary has seen to who

As the examples make clear, Spanish in-situ wh-phrases behave the same in (64a) and (64b). Both types of wh-phrases are allowed in long-distance wh-movement contexts, in contrast to French.

Examples (65) and (66) provide further evidence that all in-situ wh-phrases in Spanish behave the same.

- (65) a. [Y] *tu padre invitó a la fiesta a quién?*
 and your father invited to the party to who
- b. *[Y] *tu padre invitó a quién a la fiesta?*
- c. [Y] *tu padre invitó a quién # a la fiesta?*
- (66) a. *Quién invitó a la fiesta a quién?*
 who invited to the party to who
- b. **Quién invitó a quién a la fiesta?*
- c. *Quién invitó a quién # a la fiesta?*

(65) contains a familiar paradigm. In the three questions there is only one wh-phrase, which is in situ, and which is subject to the SFR. The crucial difference between (65) and (66) is that there is an extra wh-phrase in Spec CP in all the examples. As the examples make clear, there is a striking parallelism between (65) and (66). Regardless of the fact that there are one or two wh-phrases, the in-situ wh-phrases in both cases obey the SFR and create non-neutral word orders. In both cases the b-examples become grammatical if there is a pause after the wh-phrase. This paradigm looks very different from the French data. In French, the two sets of examples exhibited an opposite behavior. In Spanish they are the same. Note that French is not subject to the SFR. Viviane Déprez (p.c.) provided me with the following example:

- (67) *Et toi tu fais quoi pour tes vacances?*
 and you you are-doing what for your holidays
 ‘What are you doing for your holidays?’

The conclusion from the Spanish data is that all Spanish in-situ wh-phrases exhibit the same syntax. French in-situ wh-phrases are different; they have a different syntax depending on the presence or absence of an additional wh-phrase in Spec CP. Clearly, we are dealing with constructions that are the same on the surface but that are very different under closer scrutiny.

5.2. *English*

It is standardly assumed that wh-in-situ questions in English ((68)) only have an echo reading.

- (68) *Your father saw who?*

Lasnik (1995) and Bošković (2000) mention that the status of questions such as (68) is rather unclear. It seems that (68) is not as good as the French counterpart. Interestingly, my informants accepted (68) given a previous context.²⁰

Let us explore whether there are more parallelisms between English and Spanish. As (68) below makes clear, English wh-in-situ can be used in long-distance contexts.

- (69) *[And] your father believes that Mary admires who?*

So far, Spanish and English exhibit a parallel behavior, a behavior which sets them apart from French. Now, let us examine English constructions where there is a wh-phrase in situ and another wh-phrase in Spec CP. This will help us determine whether all kinds of wh-in-situ in English have the same syntax.

- (70) a. *[And] John and Peter believe that Mary has seen who?*
 b. *Who believes that Mary has seen who?*

In (70a) we have familiar data. Interestingly, once we add an additional wh-phrase the judgments remain the same. All sentences are grammatical.

At this point English is behaving just like Spanish. There is one last aspect that needs to be considered before proposing a unified analysis for wh-in-situ in these two languages. Wh-phrases in situ are subject to the SFR in Spanish. As (71a) shows, wh-phrases in English are not subject to this requirement. Wh-phrases can appear in final position, as in (71b), but they do not have to ((71a)).

20. See Ginzburg and Sag (2001) and Pires and Taylor (2007) for discussion on the semantics and pragmatics of these questions.

In (71a), there is no need for a pause after the wh-word. In fact, according to one of my informants, a pause makes the sentence worse ((71c)).

- (71) a. [And] you gave who the guitar?
 b. [And] you gave the guitar to who?
 c. ??[And] you gave who # the guitar?

Note that the judgments remain the same when I add another wh-phrase in Spec CP. This is expected given the previous discussion.

- (72) a. Who gave who the guitar?
 b. Who gave the guitar to who?
 c. ??Who gave who # the guitar?

Based on the previous data I can conclude that wh-in-situ in Spanish and wh-in-situ in English have the same syntax but different prosody.²¹ My last claim is based on the fact that only in-situ wh-phrases in Spanish are subject to the SFR. English in-situ wh-phrases are not subject to this requirement. This finding is not surprising; in fact, it is expected. Recall from the discussion in Section 3 that stress assignment works differently in English and Spanish (Zubizarreta (1998)). English makes use of both the S-NSR and the C-NSR. Spanish only appeals to the C-NSR. Furthermore, in Spanish all material is metrically visible. In English this is not the case because defocalized material is metrically invisible for the NSR. As a concrete example, (71a) (repeated as (73)) would be analyzed in the following way (the same logic would apply to (72a)):²²

- (73) you gave who the guitar
 [-F] [-F] [+F] [-F]

As the F-marking of the sentence makes clear, the wh-phrase is [+F] and the element following the wh-phrase is [-F]. Given the previous discussion, the [-F] element is analyzed as extrametrical to the NSR. This means that the NSR does not even see the [-F] element.

Stjepanović explicitly mentions that English is different from Serbo-Croatian (and by extension, different from Spanish). In Serbo-Croatian, copy deletion

21. Furthermore, the syntactic parallelism extends to island cases. Similarly to Spanish, in-situ wh-phrases in English are allowed in island contexts (see Section 2.1 above for relevant discussion):

(i) *You are going to admit the student that applied for which reason?*
 (example from Pires and Taylor, 2007)

22. I will leave open whether the arguments of the verb move out of the VP in the overt syntax. For overt movement of objects in English, see Lasnik (1995).

interacts with stress assignment. In English this cannot be the case. According to Stjepanović, copy deletion is more rigid in English in the sense that it requires the highest copy to be pronounced at all times.²³ If this were not the case, then (74b) should be a possible answer to (74a). In other words, if copy deletion applied after the NSR, it would be possible to pronounce the lowest copy of “John”. This is not desirable, as indicated by the ungrammaticality of (74b).

- (74) a. *Who was arrested?*
 b. **Was arrested John*

In summary, French, Spanish and English are different when it comes to the wh-in-situ strategy. French in-situ wh-phrases have a different syntax depending on the presence or absence of a wh-phrase in Spec CP. In contrast, all in-situ wh-phrases in Spanish and English have the same syntax. On the surface, Spanish and English wh-in-situ behave the same. Under closer scrutiny, one finds that the syntax is the same but the prosody is different. This follows from the analysis proposed above. Wh-in-situ in English and Spanish has a different prosody because the stress assignment mechanism in the two languages works differently.

6. Conclusions

The arguments presented in this paper have shown that the defining properties of wh-in-situ constructions in Spanish (non-neutral word order and the SFR) can be derived from their phonological properties. To be more precise, in-situ wh-phrases in Spanish need to be last within their intonational phrase. Using Stjepanović’s (1999, 2003) system as a tool, I have accounted for this property by showing that in-situ wh-phrases appear in this position as a result of the joint work of the stress assignment algorithm and the Copy Theory of movement. The analysis has proven successful in offering a unified account of all wh-in-situ in Spanish (i.e. wh-phrases that do not move to Spec CP overtly). Furthermore, I have been able to offer an account of the cross-linguistic differences between Spanish, French and English wh-in-situ constructions.

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23. I am assuming that we need this assumption plus the assumption about the invisibility of [-F] material to the NSR in English.

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