

Multiple Fronted Wh-Questions in Spanish

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1. Introduction

Spanish is considered a language where only one wh-phrase can move at a time (Bošković, 2006). In a question that contains multiple wh-phrases, only one moves to the left periphery, while the rest remain *in situ*. The focus of this study is an underexplored type of multiple question in Spanish involving the fronting of all wh-phrases:

(1) (a) ¿Quién a quién le ha pedido en matrimonio?
‘Who to who has proposed?’

(b) ¿Quién con quién juega esta noche?
‘Who against who plays tonight?’

Building on the existing literature on multiple wh-questions, I attempt to provide an account of the features governing this particular type of question in Spanish, as well as to determine the syntactic and semantic nature of these structures. The semantic analysis is centered on two main claims. First, multiple fronted wh-questions in Spanish always involve wh-phrases that define the same set of individuals, and second, these individuals are given in the context. The syntactic analysis provides a structure that is consistent with the general structure of Spanish. The main claim is that one of the wh-phrases moves in order to satisfy a wh-feature requirement, and the other wh-phrase moves as a result of a Focus operation.

2. Typology of multiple wh-questions

2.1 Multiple wh-questions crosslinguistically

Languages are usually divided into four main groups, depending on the strategies they employ in constructing Multiple Wh (MW) questions. The first group, the Front-all languages, includes languages that must front all the wh-phrases within the sentence. The Slavic family of languages belongs to this linguistic group:

(2) (a) Ko koga/Koga ko voli? (Serbo-Croatian)
Who whom loves?

(b) Koj kakvo dade? (Bulgarian)
Who what gave?

(Hosono, 2103)

The second group, *Wh-in situ* languages, is comprised of languages that leave all *wh*-phrases in their canonical place, embedded within the sentence. Examples of this behavior can be found in Japanese and Chinese:

(3) (a) Dare-ga nani-o tabeta no? (Japanese)
 Who what ate Q
 Who ate what?

(b) John gei-le shei shenme? (Chinese)
 John give who what
 What did John give to who?
 (Hosono, 2103)

The third group, *Front-1* languages, are languages that only allow the fronting of a single *wh*-phrase, while the rest must remain *in situ*. English, the Scandinavian languages, and Spanish are generally considered to belong to this group:

(4) (a) Who gave the book to whom? (English)

(b) ¿Quién le dio el libro a quién? (Spanish)
 Who CL gave the book to whom?
 (Hosono, 2103)

The fourth and final group is comprised of languages that can front one *wh*-phrase and leave the rest *in situ* (5a), or that, alternatively, can leave all *in situ* (5b) in certain contexts. French is such a language, and, although Spanish can produce structures like (5b), these seem to favor echo question interpretations, and so are left out of this analysis:

(5) (a) Qui a donné le livre à qui? (French)
 Who gave the book to whom?

(b) Il a donné quoi à qui?
 He gave what to whom?
 (Hosono, 2103)

Regarding the interpretation of MW questions, it is widely claimed, from Wachowicz (1974) and on, and extended by Bošković (1998a, 1998b, 1999, 2000), that they must receive a pair-list (PL) interpretation, at least in English and all languages that allow *wh*-fronting. Languages that are obligatory *in situ* do not seem to follow this generalization, and MW questions may have single-pair (SP) readings. The following examples, adapted from Grohmann (2003), display this behavior.

Scenario I: *John is in a department store and, off in the distance, sees somebody buying an article of clothing, but he does not see who it is, neither does he see exactly what is being bought. He goes to a shop assistant and asks:*

(6) (a) #Who bought what? (English: *SP)

(b) Dare-ga nani-o katta no?
 who-NOM what-ACC bought Q
 ‘Who bought what?’ (Japanese: SP)

As can be seen, the scenario forces an SP reading—one individual is buying one single thing. English does not allow a MW question under this set of circumstances, while Japanese does. This generalization, which assumes a PL context for MW questions if at least one *wh*-phrase has been fronted, is observed cross-linguistically, regardless of single fronting or multiple fronting strategies.

2.2 Multiple Fronted Questions in Spanish

Spanish, traditionally considered a *Front-1* language, patterns with languages like English, in which only one of the *wh*-phrases undergoes movement, and the rest remain *in situ*:

(7) (a) ¿Quién ha comprado qué para la fiesta?
 ‘Who has bought what for the party?’

- (b) *¿Quién qué ha comprado para la fiesta?
‘Who what has bought for the party?’

However, multiple fronted wh-questions (MFW) can be found in Spanish. The following are examples from online sources¹:

- (8) (a) ¿Quién con quién cruzo?
‘Who with who do I breed?’

(b) ¿Quién con quién juega?
‘Who with who plays?’

Structures such like the ones in (8) seem to contravene the notion that Spanish is a strict Front-1 language, and that native speakers cannot produce Front-all type structures. Although there is extensive literature in the field of multiple questions, this particular structure in Spanish has been thus far overlooked. The following sections examine the interpretation and contexts in which MFW questions in Spanish occur and also attempt to provide an analysis for this particular phenomenon.

3. Analysis of the phenomenon

Even though MFW can be found in Spanish, not every MW question seems to be able to undergo multiple fronting of its wh-phrases. The MFW structures have several features that need to be examined in order to give an analysis of their interpretation and constraints. In all observed cases, Superiority effects are found in the distribution of the fronted wh-phrases (Jaeger, 2003; Bošković, 2006; *inter alia*). In addition, the wh-phrases involved in the MFW structure all refer to the same set of individuals. What is meant by these structures referring to the same set of individuals? Wh-phrases are quantifying expressions (Dayal, 1996) that refer to a member of a set that needs to be identified in order to answer the question. For example, in a simple question such as *Who wrote “The Iliad”?*, the wh-phrase *who* refers to an individual in the set of human beings that satisfies

the condition that he wrote *The Iliad*. In the multiple question in example (6b), the two wh-phrases involved refer to individuals from different sets—*who* refers to a set of human beings, while *what* refers to a set of inanimate objects. On the other hand, in example (8b), which was produced in the context of football teams playing the Super Bowl, both wh-phrases (*quién* and *con quién*) select one individual from the same set (i.e. NFL teams). Both the Superiority and same set wh-phrases conditions will be examined in detail in the following sections.

3.1 Superiority

MFW structures in Spanish display a strict Superiority effect (9b), which causes all of the wh-phrases involved to appear in the left periphery in the same order they occupy in the lower structure:

- (9) (a) El Madrid va a jugar la final con el Barcelona.
‘Madrid is going to play the final with Barcelona’

(b) ¿Quién con quién va a jugar la final?
‘Who with who is going to play the final?’

(c) *¿Con quién quién va a jugar la final?
‘With who who is going to play the final’

According to Bošković (1999, 2000) Superiority effects are defined here as a sign of wh-movement, which is a type of movement driven by the need to check the strong +wh-feature. It then follows that at least one of the wh-phrases fronted in this type of structure must have moved for this reason. This is to be expected in a language such as Spanish, but it is not necessarily the case crosslinguistically, as languages like Serbo-Croatian and Hungarian are analyzed as fronting their wh-phrases to a Focus position, which eliminates Superiority effects (Bošković, 2000). In the case of Spanish MFW questions, Superiority indicates at least one movement to satisfy a +wh-feature.

3.2 Same Set Wh-phrases

Multiple questions in which all wh-phrases involved refer to the same set of individuals appear to have certain properties that set them apart from other MW questions. Bošković (1998a, 2000) argues, as we saw previously, that MW questions in languages such as Spanish always carry with them a presupposition that they will have an answer in the form of a list of pairs. Furthermore, it is theorized that this restriction carries with it the necessity that at least one of the wh phrases involved in the question has moved to the Complementizer Phrase in order check a +wh feature. This creates a structure that displays both superiority effects and PL presuppositions. This hypothesis holds for languages that normally only allow one wh-phrase to be fronted, like Spanish, or multiple wh-phrases that can do so, such as Bulgarian.

In the case of MW questions where both wh-phrases refer to the same set of individuals, a different picture arises, however. In Spanish, this type of question does not seem to have the PL requisite, although it does still display Superiority effects. For example:

Scenario II: *You are a student, and, while you are right outside of your classroom, you see through a translucent window two of your classmates. Suddenly, one of them slaps the other.*

A question such as (10a) is appropriate, but (10b) is not:

(10) (a) ¿Quién ha pegado a quién?
‘Who has slapped who?’

(b) *¿A quién ha pegado quién?
‘Whom has slapped who?’

The Superiority effect in (10b) is expected, and so it is not unexpectedly ungrammatical. The availa-

bility of (10a), on the other hand, is surprising, since it contradicts Bošković (1998a, 2000) and his strict SP contexts being available for MW questions in Spanish. On the other hand, if the context is modified so that both wh-phrases involved do not refer to the same set of individuals, Bošković’s predictions are confirmed.

Scenario III: *Through a translucent window, you see a teacher slapping a student.*

Since the wh-phrases involved in this particular instance do not refer to the same set of individuals, if we ask the following questions, none result acceptable:

(11) (a) #¿Quién ha pegado a quién?
‘Who has slapped who?’

(b) *¿A quién ha pegado quién?
‘Whom has slapped who?’

(c) #¿Qué profesor ha pegado a qué alumno?
‘Which teacher has slapped which student?’

Question (11a) no longer works in a strict SP context, and there is now a strong presupposition that multiple teachers have slapped students, which is a PL context, as in other multiple questions. The same is true in (11b), which violates Superiority and thus is not just semantically inadequate in the context, but also syntactically odd. In (11c) we have a clearer case of wh phrases denoting different sets of individuals, leading unequivocally to a PL interpretation. In other words, the examples in (11) behave as Bošković predicts: strict Superiority and a PL interpretation.

More support for considering same set wh-questions as not requiring a PL context, while still having wh-motivated movement, can be found in languages that also have the same SP and PL restrictions as Spanish and English, but are syntactical-

ly distinct, having true multiple fronting strategies, like Bulgarian, for example. Despite their different syntax, Bošković (1998b, 2000) shows that both types of syntactic structures—Front-all and Front-1—have the same restrictions about PL and SP readings, which leads him to consider the semantic interpretation of multiple questions for both types of languages as the same.

Bulgarian is a strict MFW language, and has the same interpretation as Spanish for multiple questions. For example, in a question such as the following, there is a PL restriction, native speakers of Bulgarian were consulted about their interpretations.

(12) (a) Koj kakvo dade? (Bulgarian)
‘Who what gave?’

(b) *Kavko koj dade?
‘What who gave?’

Just as in Spanish MFW, there is a Superiority effect in Bulgarian that renders (12b) unacceptable. Furthermore, just like in Spanish, the questions in (12) do not work in a SP context in which one unknown person gave only one unknown thing, and it is not known who or what was given. Rather, there needs to be multiple individuals giving multiple things, that is to say, a PL reading. However, when the question is one where both wh-phrases refer to the same set of individuals, the PL presupposition disappears, according to native speakers consulted.

Scenario IV: *Through a translucent window, you see one student kissing another student.*

(13) (a) Koj kogo celúna? (Bulgarian)
‘Who whom kissed?’

(b) *Kogo koj celúna?
‘Whom who kissed?’

Despite the SP context, given that we know exactly one classmate kissed exactly some other classmate, the question in (13a) is acceptable for native speakers. Moreover, just like happens in Front-1 languages, Superiority is still in effect, making (13b) unacceptable not on grounds of PL requirements, but as a Superiority violation.

It can be assumed then that, both in Front-all languages like Bulgarian, and Front-1 languages like Spanish, MW questions where both wh-phrases refer to the same set of individuals have the same syntactic properties—Superiority—but different semantic ones—no PL presupposition. One question that still remains is in what way the elimination of the restriction on SP readings allows for multiple fronting of wh-phrases in languages that normally do not allow them, such as happens in Spanish. In order to answer this question, we will need to take a look at how multiple questions are analyzed semantically.

One such analysis can be found in Dayal (1996). The author assumes that all MW questions have the same semantic derivation, and that at Logical Form (LF), all have the same structure, regardless of their overt syntax. This is the reason behind multiple questions having the same semantic interpretation in Front-1 languages like Spanish, or Front-all languages like Bulgarian. It follows then that the lack of PL constraints in same set MW questions must be tied to the semantic interpretation, not the overt syntactic position of the wh-phrases.

According to the semantic treatment at LF of multiple questions by Dayal (1996) and Hornstein (1995), one wh-phrase must leave a complex functional trace containing a bound variable. The subject term sets the domain of the function, the object term sets its range, and the propositions relate individuals in the domain set with some functionally dependent entity in the range set. Nevertheless, this particular conception, as even Dayal admits, cannot account for the SP interpretation of examples such as those found in (11), that required a PL reading and Superiority.

3.3 Reinhart's alternative and SP readings

Reinhart (1998) proposes an alternative to the semantic interpretation of wh-phrases *in situ* that can handle SP readings. In her account, she argues that there is no LF wh-movement involved in wh *in-situ* questions. Instead, Reinhart proposes a choice function approach, where the wh-*in situ* quantifies over a choice function (i.e. a function applying to a non-empty set and yielding an individual member of the set). The author shows that the wide scope reading of existentials can be explained by quantification over choice functions (since the variable associated with the choice function can be bound arbitrarily far away). These wh-phrases are also interpreted as quantifiers, this analysis can be extended to them as well. Under her analysis, the derivation of the semantic representation of (14) *Who whom kissed?* would be:

(14) for which $\langle x, f \rangle$, $f(y)$, x kissed y

That is, for any individual x , there is a choice function that selects an individual y , such as x kissed y . One interesting consequence of Reinhart's analysis, as Dayal (2002) points out, is that it allows for SP answers since the derivation produces atomic tuples—a single pair made of two elements, such as $\langle \text{Mary}, \text{John} \rangle$ for (15)—that satisfy the Answer, instead of sets of sets on propositions, as in Dayal's model, which lead to PL interpretations.

Reinhart (1998) proposes that her particular conception is based on interface economy as defined by Chomsky (1991), with the purpose of reducing the computational complexity of the syntax. In the particular case of wh phrases *in-situ*, Reinhart proposes that, since these wh phrases don't need to raise to gain scope, her analysis is more economical than the one proposed by Dayal (1996), in which both wh-phrases, either overtly or covertly, need to move to a scope position on SpecCP.

In the specific case of same set MW questions, one wh phrase can provide enough scopal infor-

mation for both. In the case of the Spanish examples in (15), one of the wh-phrases moves to SpecCP—obeying Superiority—and the other projects the choice function that allows for the generation of SP answers, following Reinhart's model:

(15) (a) ¿Quién ha denunciado a quién?
 (b) Quién_i t_i ha denunciado a quién_i
 Who has sued who?'

In other words, only one of the wh-phrases needs to move, and, given the semantic derivation employed by Reinhart, an SP context is available. This maps perfectly with the interpretation available for such questions.

In the case of multiple questions where the wh-phrases refer to different sets of individuals such as in (16), we observe a difference in the scopal configuration:

(16) (a) ¿Quién ha comprado qué?
 (b) *Quién_i t_i ha comprado qué
 (c) ¿Quién_i qué_j t_j ha comprado t_j?

In (16a), the wh-phrase *quién* moves, leaving behind a trace t_i , while the wh phrase *qué* remains *in-situ*. In (16c), on the other hand, *qué* also moves, leaving behind a trace t_j . The choice function strategy proposed by Reinhart does not work, since the wh phrase *in-situ* cannot properly quantify over the proposition (16b) without moving to SpecCP, whether overtly like in Bulgarian, or in LF, like (16c) shows for Spanish. In other words, the mechanism proposed by Dayal (1996) needs to be applied. If, on the other hand, we have a structure as in (18a), Reinhart (1998) argues that the economy rule, as expressed in Chomsky (1991, p. 47): "a given convergent derivation α is evaluated against a set of alternative convergent derivations - its reference set. If a derivation more economical than α is found in this set, α is blocked" comes into question. The deriva-

tion in (17a) is more economical than the one expressed in (17d).

- (17) (a) ¿Quién ha denunciado a quién?
 (b) ¿Quién_i t_i ha denunciado a quién_i?
 (c) ‘Who has sued who?’
 (d) ¿Quién_i a quién_i t_i ha denunciado t_i?

This follows from the fact that only one of the wh-phrases involved moves (17b), and not both, as in (18d). Consequently, the second derivation will then be blocked, given Chomsky’s economy rule, and the resulting question will be able to given a SP interpretation.

It is generally assumed, as Bošković (1998b, 2006) proposes, that an SP reading being available is an indicator that none of the wh-phrases involved has moved to check a wh-feature. Nevertheless, the availability of this SP reading, even in Front-1, *in situ* structures like (16a), seems to point to a different semantic consideration for same-set multiple questions. Although this type of same-set multiple question warrants further study, for the purposes of the present analysis, it is sufficient to say that they have the same behavior regarding SP and PL presuppositions, regardless of the overt syntax of the language in question.

4. Syntactic Analysis

We have established that, in Spanish MFW questions, one of the wh phrases moves to satisfy a wh feature, which creates a Superiority context (Bošković, 1998, 2000). There remains the question of what the landing site of the second wh phrase is. The current proposal is that MFW in Spanish have a structure similar to MFW in Basque, as described by Reglero (2004), where one of the wh phrases is a

Topic, which is then fronted. The proposed structure for a MFW in Spanish is observed in (18).

Taking a closer look at the data, it appears that MFW in Spanish share, aside from the property of having both wh-phrases refer to the same set of individuals, the property that the identity of the members of that set is given in the context. The following are examples from data collected from Internet message boards²:

- (19) (a) ¿Quién a quién le robó el nombre?
 ‘Who from who stole the name?’
 (b) ¿Quién con quien juega?
 ‘Who with who plays?’
 (c) ¿Quién con quién cruzo?
 ‘Who with who do I breed?’

Example (19a) comes from a music message board, and the question refers to two singers that have adopted the same stage name. Example (19b) comes from a soccer board, and it asks which two teams are going to be playing the World Cup final. Example (19c) comes from a message board for gerbil enthusiasts, and the question refers to a member asking which of his gerbils will yield the best result when cross-breeding them. In all three examples we see that, as expected, both wh-phrases refer to the same set of individuals, and that the members—the two singers, the teams that play in the World Cup, and the gerbils owned by that breeder—are given within the context.

The following sections will provide support for the Focus movement interpretation of the lower wh-phrase in Spanish MFW.

- (18) ¿Quién con quién juega la final?
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- [TOPICP Quién_i [INTP con quién_j [IP t_i juega [VP [la final] t_j]]]

4.1 *Aggressive non-D-linking*

One test that can be used to determine the link of a wh-phrase to the context is proposed by Pesetsky (1987) with aggressively non-D-linked wh-phrases. This type of wh-phrase is found in examples such as *what the hell*, *what on earth*, or, in Spanish, *qué demonios*. One of their semantic characteristics, and one that is relevant in the present study, is that they license a negative inference, or surprisal:

- (20) ¿Quién demonios ha puesto la calefacción?
‘Who the hell has turned on the heat?’

In (20), the negative inference is that no one was supposed to have turned on the heat. As such, this type of wh-phrases always refers to an entity that has not been previously mentioned in the discourse, and, therefore, cannot be given a Topic interpretation. Example (21) shows how this particular type of wh-phrase is not available in Spanish MFW.

- (21) *¿Quién demonios con quién demonios se lleva bien?
‘Who the hell with who the hell gets along well?’

The ungrammaticality of sentences like (21) shows that the wh phrases in MFW structures in Spanish cannot refer to surprising entities, and therefore have to be linked to the previous discourse. Consequently, these wh phrases can potentially be given a Topic feature in the sentence.

Another piece of evidence supporting the current analysis is that, even though aggressively non-D-linked wh-phrases are not allowed in Spanish MFW, they are more acceptable in the second wh-phrase, as (22a- 22c) shows:

- (22) (a) *¿Quién demonios con quién demonios se lleva bien?
‘Who the hell with who the hell gets along well?’

- (b) *¿Quién demonios con quién se lleva bien?
‘Who the hell with who gets along well?’

- (c) */??¿Quién con quién demonios se lleva bien?
‘Who with who the hell gets along well?’

- (d) ¿Quién demonios se lleva bien con Pepe?
‘Who the hell gets along well with Pepe?’

As a preliminary consideration, both wh phrases would need to be marked with an aggressive non-D-linked structure, since both wh phrases refer to the same set. It makes little sense to mark one as given in the context, but not the other, which would assume that the individuals in question are both given in the context, and not given at the same time.

However, native speaker informants consulted for the present research agree that, even though none of the structures in (22) are acceptable, (22c) is the better option among all of them. The lower wh phrase has a slightly better acceptability to take the aggressive non-D-linked marker *demonios*, while the upper wh phrase does not. The proposed analysis of this phenomenon is that this is due to the lower wh phrase having to move to check the wh feature, a position where it can potentially be marked as non-given in the discourse, as can be seen in example (22d). The upper wh phrase, on the other hand, is in SpecTopicP, a position that could never take a marker of non-Topichood. The fact that the resulting structure in (23c) is generally not acceptable can be credited to the impossibility of interpreting two wh-phrases that refer to the same set of individuals as one being a Topic, and the other not.

4.2 *Syntactic Position of Topics and Weak Crossover*

Another piece of evidence that supports the Topic wh-structure proposed is that Topics in Spanish, if fronted, need to be placed before wh phrases in single questions:

- (23) (a) [A María_{TOP}]¿quién le ha pedido en matrimonio?
(b) *¿Quién [a María_{TOP}] le ha pedido en matrimonio?

This particular structure where one of the fronted wh-phrases in a multiple wh-question moves to Topic position has already been proposed in the literature for other languages. Reglero (2004) suggests it for Basque multiple fronted structures. The upper wh-phrase has moved to a Topic position, and the lower one, to a Focus one. The difference between Basque and Spanish is that the lower wh-phrase satisfies a wh-feature in Spanish, instead of a Focus requirement, like in Basque.

One problem that the multiple fronted structure in Spanish poses is that of the binding of the traces left by the fronted wh-phrases. The proposed structure for Spanish MFW is an example of Weak Cross-over Effects (WCO), having the Topicalized wh-phrase filler-gap chain crossing over the lower wh-phrase one. This can be seen by looking at the disposition of the traces in an example such as the following:

- (24) [Quién_i] [con quién_j] t_i juega la final t_j
 Who with who plays the final

However, WCO effects are not generally present in Topicalization movement, such as the one proposed for MFW in Spanish for the higher wh phrase. Lasnik and Stowell (1991) and Postal (1993) refer to this type of apparent WCO violation as Weakest Crossover, and it is generally deemed acceptable. Data from English and Spanish is presented to account for this amelioration effect of crossover.

- (25) (a) John_i [NO_i [I believe his_j mother loves e_i]]
 A Juan_i [NO_i [creo que su_j madre lo ama e_i]]

- (b) This book_i [NO_i [I would never ask its_j author to read e_i]]
 Este libro_i [NO_i [nunca le pediría a su_j autor que lo leyera e_i]]

Topicalization fronting in Spanish shows the same WCO effect that the English analog does (25). It is then to be expected that the binding violation in MFW will not cause the structure to create a prob-

lem in interpretation.

5. Conclusions

Although Spanish is traditionally considered a Front-1 language with regard to multiple questions, we have seen that there are structures containing multiple fronted wh phrases. Furthermore, these structures do not seem to contravene any of the rules governing multiple fronted wh-structures in other languages, but rather occur in very specific contexts that allow them. Namely, both wh phrases involved must refer to the same set of individuals, and those wh-phrases need to be Topics.

The current proposal draws from the research carried out in Bulgarian (Jaeger, 2003), Serbo-Croatian (Stjepanović, 1998) and Hungarian (Lipták, 2001), to name a few. Previous analyses of multiple question formation crosslinguistically have shown that individual languages seldom employ just the canonical strategy associated with that language, and that other structures of multiple questions are possible. Similarly, Spanish proves to be a mostly Front-1 language, and yet there are cases of multiple fronting. It seems that the classical categorization of language families (Front-1, Front-all, All *in situ*) are too restrictive.

Notes

1. hablemos de jerbos <http://www.hablemosdejerbos.com/t2555-sugerencias-quien-con-quien-cruzo, la boutique del felino http://shopcat.jimdo.com/esp%C3%B1ol/menu/de10.mx http://de10.com.mx/13334.html; boutique felino http://shopcat.jimdo.com/esp%C3%B1ol/menu/>, hablemos de jerbos <http://www.hablemosdejerbos.com/t2555-sugerencias-quien-con-quien-cruzo; boutique felino http://shopcat.jimdo.com/esp%C3%B1ol/menu/>

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