

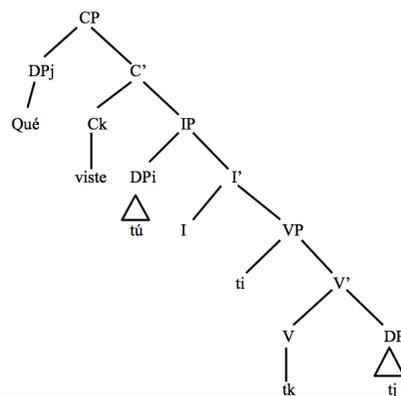
On Multiple Wh-Movements in Spanish

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Being inquisitive is a basic characteristic of human development. It is no wonder then, that the ability to form and ask questions is an early-developed attribute of human languages. According to the National Institute on Deafness and Other Communication Disorders (NIDCD), children can understand and respond to simple questions (“Where’s your shoe?”) and can use some one-to two-word questions (“Where kitty?” or “Go bye-bye?”) by the age of two. This significant progress is further exemplified by the fact that children are able to understand sentences with multiple ideas and ask and respond to multiple-idea questions by the age of three (“Speech”, Dec. 4, 2013). Even though forming questions is a commonly shared attribute among human languages, its manifestation in each language differs greatly because of different rules and constraints specific to each language. This paper will begin by discussing the basics of forming simple questions (single Wh-movement questions) in Spanish from an X-Bar theory perspective and with filler-gap structures as explained by Grant Goodall. This section will be followed by a summary of other scholars’ findings on multiple Wh-movements in other languages. Finally, a hypothesis will be presented along with preliminary findings of how multiple Wh-movements function in Spanish.

X-Bar Theory’s Explanation of Wh-Movement

In her book *The Syntax of Spanish*, Karen Zagona (2002) explains that there is a functional category above IP called CP. The CP permits the movement of any Wh-phrase to the Specifier of CP which becomes the clause-initial position. This allows any question word to move to the front of a sentence. The CP also provides an empty space below C for the verb to move past the subject to create the subject-verb inversion that occurs in Spanish questions. The example “¿Qué viste tú?” is diagrammed using X-Bar theory below in Facsimile 1.



Facsimilie 1

On the Syntax and Processing of Wh-questions in Spanish by Grant Goodall

Goodall (2004) begins by explaining the well-known fact that Spanish allows preverbal and postverbal subject placement, but that the postverbal subject location is the consistently preferred position for Wh-questions with few exceptions. The example Goodall provides is the contrast between “*¿Qué Juan compró?” and “¿Qué compró Juan?” He argues that the former strains the working memory due to the longer wait to place the filler, the Wh-word “qué”, into its corresponding gap. Assigning a gap can only take place “. . . when processing the head that subcategorizes for the gap” (Goodall, 102). The longer it takes to get to the head the lower the activation level of the Wh-word is. In other words, the harder it is to place the Wh-word in its gap. Goodall demonstrates this by sharing data from an experiment that he conducted. Twenty-three participants ranked questions with subjects in the preverbal position on a scale from 1 (“very bad”) to 5 (“very good”). Three of the questions are provided below with their corresponding mean ratings.

¿Qué **tú** leíste en la biblioteca? Mean rating: 2.174

¿Qué **el niño** leyó en la biblioteca? Mean rating: 1.913

¿Qué los amigos de tu hermana leyeron en la biblioteca? Mean rating: 1.833

(Goodall, 103)

As can be seen in the results above, the bigger and more D-linked a subject becomes the lower the acceptability rating the question receives. This is verified even more when Goodall compares Wh-arguments versus Wh-adjuncts.

By classification, an argument has a strong connection with the verb in that it receives its subcategorization directly from the verb. Therefore if anything (i.e. a preverbal subject) hinders that connection then filling the gap with a Wh-argument becomes increasingly challenging. A true adjunct, on the other hand, has no subcategorizing connection to the verb whatsoever and thus should be unaffected by any impediment it being a preverbal subject or something else. Wh-locative and Wh-temporal adjuncts have a slightly weaker independence from the verb and consequently are affected a tad more by intervening subjects than a pure adjunct. This is demonstrated in the following five examples taken from Goodall the first two being arguments, the next two being a locative and a temporal adjunct respectively, and the last being an adjunct.

¿**Qué** Juan leyó en la biblioteca? Mean rating: 2.130

¿**A quién** María vio en el parque? Mean rating: 2.478

¿**Dónde** Ana compró el periódico? Mean rating: 2.957

¿**Cuándo** José escribió la carta? Mean rating: 3.043

¿Por qué Miguel trabaja tanto?

Mean rating: 4.783

(Goodall, 107)

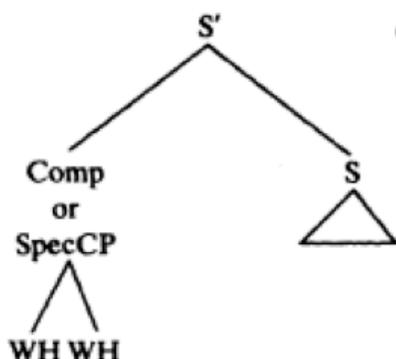
Goodall does not apply his filler-gap structures to multiple Wh-movements in Spanish. It will be applied later in this paper.

On Multiple Questions and Multiple Wh-Fronting by Catherine Rudin

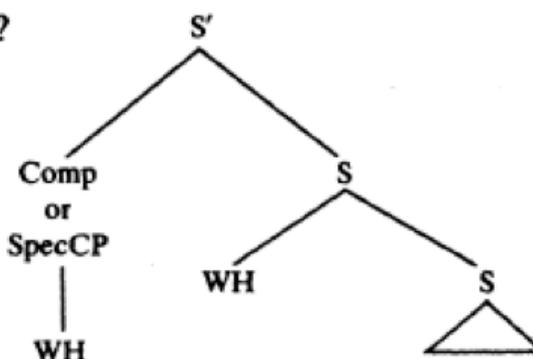
Catherine Rudin (1988) identifies four types of multiple Wh-fronting languages. These four types, she says, are represented by the following languages: English, Chinese, French, and Russian (Slavic languages). English allows only one Wh-word to move to the Specifier position of the CP. This means that when two Wh-words are present one moves and the other stays in its original place. Chinese, however, does not permit any Wh-movement to the Specifier position meaning that all Wh-words stay *in situ*. In languages like French, Wh-movement is optional meaning that the English and Chinese patterns are available and used interchangeably. Russian, according to Rudin, moves all Wh-words to the clause-initial position. She continues by providing two options of how generative grammar can account for the multiple Wh-fronting that occurs in Russian. Her proposed solutions are provided below in Facsimile 2.

multiple Wh-fronting languages

c.



d.
or?

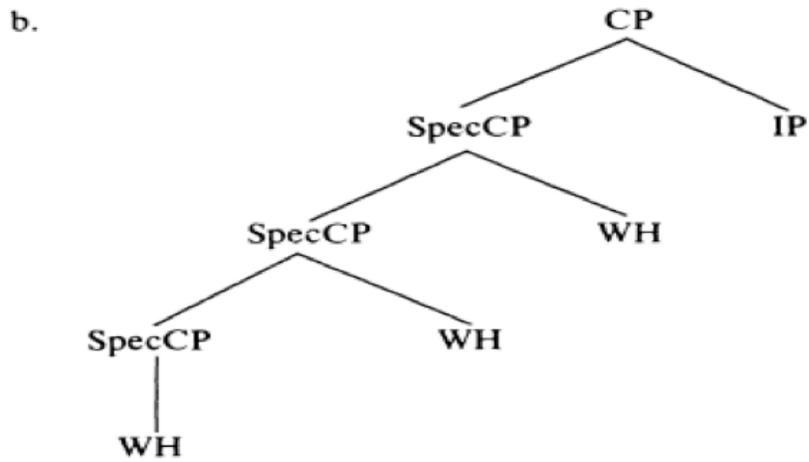


Facsimile 2

(Rudin 446)

Rudin concludes her paper by endorsing both of her options because she argues that there are two types of Wh-fronting languages: [+MFS] (Multiply Filled Specifier) and [-MFS]. She explains that for the [+MFS] languages, the CP is a functional category which means it can be expanded with as many Specifiers as needed to account for numerous Wh-words. The farthest left Specifier is determined to be the head and

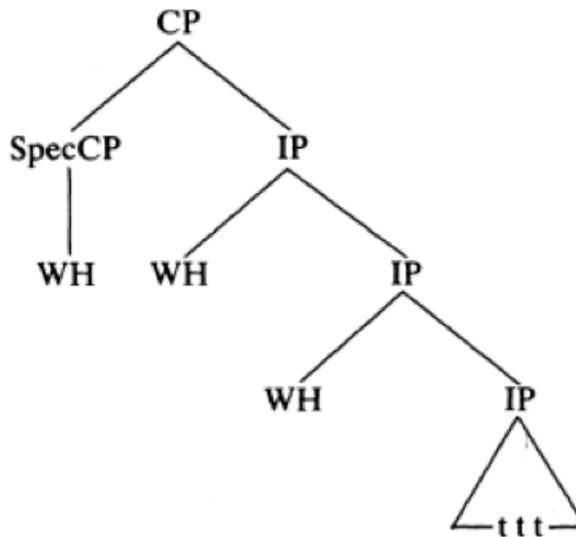
takes the clause-initial Wh-word while the remaining Specifier positions take the noninitial Wh-words. This type of solution is depicted below in Facsimile 3.



Facsimile 3

(Rudin, 480)

The [-MFS] languages are similar to the [+MFS] languages in that they have the clause-initial Wh-word move to the head of the Specifier of the CP. The difference, however, lies in the fact that the remaining noninitial Wh-words are all attached in the IP instead of the CP. This is illustrated below in Facsimile 4.



Facsimile 4

(Rudin, 495)

On Multiple Wh-Fronting by Željko Bošković

Željko Bošković (2002) counters Rudin's argument by stating that there are only three types of Wh-movement (represented by the following languages: English, Chinese, and French) and that Rudin's two Wh-fronting groups are actually distributed among these three types. Bošković accomplishes this by showing the similarities and connections that the multiple Wh-fronting (MWF) languages of Bulgarian, Russian, and Serbo-Croatian have with English, Chinese, and French respectively.

Bulgarian, he argues, exhibits Superiority effects in all the contexts where English requires Wh-movement (meaning always). Russian shows no Superiority effects when relocating Wh-words to the front of a clause in the same contexts that Chinese requires Wh-movement (meaning never), and Serbo-Croatian conforms to Superiority effects where French requires Wh-movement. Bošković continues by showing that even MWF languages do not always exhibit Wh-phrase fronting. In fact, they have several exceptions three of which are semantic, phonological, and syntactic.

In MWF languages, D-linked Wh-words can stay in place. This is a semantic concept that is manifest in all MWF languages and that is a personal preference of the speakers of these languages. MWF languages do not permit what Bošković refers to as homophonous Wh-words or simply stated a Wh-word cannot appear together with an identical Wh-word (i.e. what and what). The second Wh-word does not front if it is identical to the Wh-word that is in clause-initial position. The final exception that is mentioned is that Wh-words are not allowed to leave syntactic islands. The Wh-word must remain in the island or it causes ungrammaticality.

Bošković concludes by saying:

I have shown that MWF languages do not display uniform behavior with respect to wh-movement, thus eliminating this type . . . This leaves three types, represented by English, French, and Chinese. MWF languages are scattered across these three types: Bulgarian is a MWF counterpart of English, Serb Croatian of French, and Russian of Chinese. 379

Spanish will be classified as one of these three types of languages later in this paper.

Rhetorical Questions and Wh-Movement by Jon Sprouse

Jon Sprouse (2007) observes that rhetorical questions (RQs), despite being semantically different, are syntactically equal to interrogative questions. The semantic difference is shown in the following examples.

What does John know?

Interrogative Question

After all, what does John know?

Rhetorical Question

Sprouse makes a further observation that some languages (English and others) only allow one Wh-word in a RQ while others (Chinese, Japanese, and Russian) permit multiple Wh-words to be present in a single RQ. Sprouse's examples are provided below in Facsimile 5.

- (3) a. *Chinese*
 Shei hui dai shenme lai bisai ne?
 who will bring what to competition Q
 'Who will bring what to the competition?'
 'Nobody would bring anything to the competition.'
- b. *Japanese*
 Dare-ga nani-o paatii-ni mottekita-to iu-no?
 who-NOM what-ACC party-to bring-COMP saying-Q
 'After all, who will bring what to the party?'
 'Nobody will bring anything to the party.'
- c. *Russian*
 V principe, kto prineset čto na tvoju večerinku?
 after all who will bring what to your party
 'After all, who will bring what to your party?'
 'Nobody will bring anything to your party.'
- d. *English*
 *After all, who would bring what to the party?

Facsimile 5
 (Sprouse, 573)

Whether or not Spanish allows multiple Wh-words in RQs will be addressed later in this paper.

Amnestying Superiority Violations: Processing Multiple Questions by Clifton et al.

Chomsky originally proposed the Superiority effect in 1973 taking into account the presence of two or more Wh-words in a single question. The current interpretation is that if there are two or more Wh-words present in a question the one farthest from the clause-initial position cannot move there because the closer Wh-word is obligated to move there first. Clifton et al. (2006) demonstrates this in the example found in Facsimile 6.

- a. Who do you persuade ____ to buy what?

- b. *What do you persuade who to buy ____?


Facsimile 6
 (Clifton et al., 53)

Due to the ungrammaticality of the example b. in Facsimile 6, it is unexpected that adding a third Wh-word appears to alleviate the Superiority violation, at least according to other scholars. Clifton et al. show that this is possible if the lowest Wh-word does not refer to the same thing or person that the clause-initial Wh-word refers to. In Facsimile 7, the second question can be rendered grammatical only if the clause-initial “Who” does not refer to the same person as its identical counterpart that is *in situ*.

- a. What can who do about it?
- b. What can who do about it when?
- c. What can who do about it, and when?
- d. What can you do about it, and when?

Facsimile 7

(Clifton et al., 53)

Using this observation as a starting point, Clifton et al. decide to test the acceptability of adding a third Wh-word to questions that already contain Superiority violations. Facsimile 8 are four of the 16 questions they use in their two experiments.

Facsimile 8

- a. *Bill wonders what who bought.
- b. Who wonders what who bought?

(Clifton et al., 57)

Experiment 1 saw 48 University of Massachusetts undergraduates classify the provided 16 questions (all of which varied in acceptability) as either “acceptable” or “unacceptable”. “Acceptable” was defined as “ordinary, well-formed, acceptable sentence . . . in English” while “unacceptable” was defined as “anything that violated the normal rules of everyday English” (Clifton et al., 58). The results showed a slight assuagement of Superiority violations by the presence of a third Wh-word, but none of the questions with Superiority violations received higher than a 50% acceptability rating including those with a third Wh-word. The results are provided below in Facsimile 9.

Table 1
Percentages of “acceptable” responses and mean reaction times (in ms), Experiment 1

Sentence form	Percentage “acceptable”			Reaction time		
	Adj <i>wh</i>	Arg <i>wh</i>	Mean	Adj <i>wh</i>	Arg <i>wh</i>	Mean
a. What . . . who . . . ?	22	28	25	3,226	3,399	3,313
b. What . . . who . . . when?	26	29	28	3,993	4,314	4,154
c. What . . . who . . . , and when?	44	50	47	4,289	4,479	4,384
d. What . . . you . . . , and when?	81	85	83	3,154	3,359	3,257

Facsimile 9

(Clifton et al., 58)

Clifton et al. designed Experiment 2 to be “a control for whether the mere addition of a third wh-element adds so much complexity to a question that this complexity could completely offset the amnesty effect . . .” (Clifton et al., 59). They achieved this by having the same 48 students categorize six versions of the same question (three without Superiority violations, two of which had a third Wh-word and three with a Superiority violation, two of which had a third Wh-word) on a scale from 1 (unacceptable) to 5 (acceptable). The authors infer from the results that the presence of the third Wh-word does in fact lessen the effect of the Superiority violation, but that the added complication offsets the assuagement, “resulting in no net alleviation.” They conclude that the presence of a third Wh-word is “a minor factor” to the slightly increased acceptability of questions containing Superiority violations. Facsimile 10 has the results of Experiment 2.

	All	Adj	Arg
a. Who can do what about it?	3.73	3.34	4.13
b. Who can do what about it when?	3.02	2.67	3.36
c. Who can do what about it, and when?	3.64	3.72	3.57
d. What can who do about it?	2.27	2.39	2.16
e. What can who do about it when?	2.27	2.33	2.22
f. What can who do about it, and when?	2.53	2.52	2.55

Facsimile 10

(Clifton et al., 60)

In their conclusion, Clifton et al. state that “[f]rom the results of the experiment reported here, we conclude that there is no *general* [emphasis added] amnesty effect of adding a third wh-phrase to sentences with a Superiority violation” (Clifton et al., 65). This does not mean that the third Wh-word amnesty effect does not exist at all. In some contexts, the presence of a third Wh-word does affect the acceptability but only on a small scale. This concept will be addressed in regards to Spanish in the next section of this paper.

Multiple Wh-Movement in Spanish

Based upon all the research provided above, this paper will present a hypothesis of how multiple Wh-movement functions in Spanish. This hypothesis will be based upon the author’s own knowledge of the Spanish language along with the preliminary findings from consultations with six native Spanish speakers.

As mentioned above, Goodall argues that post-verbal subjects are preferred in questions because they do not interfere with the filler, the Wh-word, reaching its gap (i.e. ¿Qué compró Juan? Vs. *¿Qué Juan compró?). Based upon his analysis, the author of this paper assumed that this pattern, post-verbal subject

placement, would continue to be the preferred or the most prevalent in multiple Wh-word questions. The two examples presented to the native speakers are found below.

- | | |
|-----------------------|------------------------------|
| 1. ¿Qué compró quién? | Post-Verbal Subject Position |
| 2. ¿Quién compró qué? | Pre-Verbal Subject Position |

Unanimously, all the consulted natives chose the second option over the first. All stated that while the first can be more or less understood the second option sounds more grammatically correct. This is surprising being that the distance between the filler and the subcategorizing verb is the same regardless of the positioning of the subject Wh-word and the direct object Wh-word. The fact that example number 2 is preferred appears to mean that the lower Wh-word “qué” cannot leapfrog the subject Wh-word “quién” to the clause-initial position, also referred to as the Specifier of CP. Though six informants is not enough for a representative sample, the information gathered leads to the formation of the hypothesis that Superiority rules have more prevalence than Filler-Gap structures in the forming of multiple Wh-word questions in Spanish. Further inquiry would be required to get conclusive data.

The same six native consultants then ranked six versions of the previous two questions on a 1 (very bad) to 5 (very good) scale. Each question included the third Wh-word “cuándo” placed in different positions and sometimes accompanied by the conjunction “y”. This was done in order to measure the effect of a third Wh-word on multiple Wh-questions with and without Superiority violations. The six questions are listed below in the order of lowest range of rankings to highest range of rankings.

- | | |
|--------------------------------|---------------------------|
| 1. ¿Qué compró quién cuándo? | Range of Rankings: 1 |
| 2. ¿Quién compró qué cuándo? | Range of Rankings: 1 to 2 |
| 3. ¿Qué compró quién y cuándo? | Range of Rankings: 2 to 3 |
| 4. ¿Qué y cuándo compró quién? | Range of Rankings: 2 to 3 |
| 5. ¿Quién y cuándo compró qué? | Range of Rankings: 4 to 5 |
| 6. ¿Quién compró qué y cuándo? | Range of Rankings: 4 to 5 |

As is evident in the rankings, the mere presence of the third Wh-word “cuándo” in question 1 does not alleviate a Superiority violation. In fact, it seems to lower the acceptability of question 2 which does not contain a Superiority violation. The combination of the conjunction “y” along with the third Wh-word “cuándo”, regardless of position (pre-verbal or post-verbal), seems to slightly alleviate the Superiority violations found in questions 3 and 4. This leads to the hypothesis that a third Wh-word does not alleviate a Superiority violation in all contexts and seems to only do so when partnered with the conjunction “y”. Curiously, questions 5 and 6 were equally acceptable by all consultants. This shows the possibility of some instances of multiple Wh-fronting as presented by Rudin and Bošković. Based on Bošković’s research, the hypothesis that Spanish is like French in terms of multiple Wh-fronting is proposed in this paper.

Once again a representative sample was not used and further investigation is needed to reach a definitive conclusion.

The last thing presented to the native consultants was a potential double Wh-word rhetorical question. The question “¿Quién traería qué a la fiesta?” was presented along with the description of the rhetorical meaning (Nobody would bring anything to the party.) based upon the findings of Sprouse. The consensus was that the question was grammatically correct and could be used as a repeat question, but it could never be used in a rhetorical manner.

Conclusion

This paper has presented some of the research on Wh-movement and a number of preliminary findings as a framework to better explain multiple Wh-movement in Spanish. Based upon this framework, it has been determined that multiple Wh-movement in Spanish follows the same Superiority rules as English, but is like French because it allows both English and Chinese patterns of Wh-movement in multiple questions. In Spanish, the presence of a third Wh-word does not appear to alleviate Superiority violations, but the combination of a conjunction with a third Wh-word does appear to improve the acceptability of questions with Superiority violations. Spanish also does not seem to have the ability to express a double Wh-word rhetorical question. While a truly representative sample would still be needed for this paper to be conclusive, the preliminary data show strong evidence of these findings and their significance. More research should be done in this area to confirm or to refute these findings.

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