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Youngmi Jeong

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1 Background on Multiple Wh-fronting

Extensive research on the syntax of multiple wh-fronting (Rudin, 1988; Bošković, 1999, 2002; Richards, 1997, 2001; Boeckx and Grohmann, 2003) has demonstrated the existence of two patterns, the Bulgarian pattern, illustrated in (1), and the Serbo-Croatian pattern, illustrated in (2).

- (1)a. Koj kogo kakvo e pital? (Bulgarian)
who whom what is asked
'Who asked whom what?'
- b. Koj kakvo kogo e pital?
c. *Kogo kakvo koj e pital?
d. *Kakvo kogo koj e pital?
e. *Kakvo koj kogo e pital?
f. *Kogo koj kakvo e pital?
g. *koj e pital kogo kakvo
h. *kogo e pital koj kakvo
i. *kakvo e pital koj kogo
etc.

As (1) shows, Bulgarian forces the highest wh-word to be the topmost element in the "wh-cluster" (so-called superiority effect), and does not impose any further ordering on the remaining wh-fronting. In Serbo-Croatian, no ordering condition at all is observed:

- (2)a. Ko šta gdje kupuje (Serbo-Croatian)
who what where buys
'who buys what where'
- b. Ko gdje šta kupuje
c. Šta ko gdje kupuje
d. Šta gdje ko kupuje

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- e. Gdje ko šta kupuje
- f. Gdje šta ko kupuje

However, as Bošković (1997 and subsequent work) has observed, superiority effects surface in Serbo-Croatian as well once we move away from simple, monoclausal contexts. In particular, Bošković has argued that superiority obtains in the language in all contexts where there is evidence for the presence of a complementizer node in overt syntax: matrix questions with overt complementizer, embedded questions, long-distance questions, correlatives, etc. I here illustrate this fact by using long-distance extraction (3).

- (3)a. Ko si koga turdio da je istukao?
 who are whom claimed that is beaten
 ‘Who did you claim beat whom?’
- b. *Koga si ko turdio da je istukao?

2 Previous Accounts

Currently, we have two ways of accounting for the observed patterns: Bošković (1999) and Richards (1997). For Bošković (1999), superiority effects arise as a result of checking a [wh]-feature that is located on C^0 . That feature can only be checked once (in his terms, it is an ‘Attract-1 feature’), and only by the Closest element, due to Attract Closest, which demands that the Closest matching element be attracted for checking purposes (see Chomsky 1995). Wh-fronting is also induced by the presence of a [Focus]-feature on C^0 . That feature, unlike [wh], is an ‘Attract-All feature’. Specifically, it has the effect of forcing movement of all matching elements (i.e., *wh*/focus-phrases). Because of its ‘unselective’ nature, movement to check [Focus] may take place in any order, as the same number of nodes is ultimately crossed in whatever order of attraction. The combination of [wh] and [Focus] accounts for Bulgarian. For Serbo-Croatian, Bošković claims that in simple contexts C^0 need not be present in overt syntax, hence there is no [wh]-feature active. Unlike [wh], [Focus] can reside on a distinct head, and attract as it does in Bulgarian, that is, in any order. Beyond simple clauses, C^0 (and [wh]) must be present in the language, and the effect of Attract Closest are then being felt.

For Richards, the Bulgarian pattern is not the effect of combining distinct features, but combining distinct principles: Closest Attract (Attract the Closest element; target-perspective), Shortest Move (Move by crossing the minimum number of nodes possible; mover-perspective), and the Principle of Minimal Compliance (PMC), stated in (4).

(4) Principle of Minimal Compliance (PMC)

If a tree contains a dependency headed by H which obeys constraint C, any syntactic object G which H “immediately c-commands” can be ignored for purposes of determining whether C is obeyed by other dependencies.

The effect of Shortest Move forces multiple movement to the same domain to ‘tuck-in’ (moving to the inner specifier, as opposed to an outer specifier, as moving to the latter would cause movement to cross more nodes than necessary for convergence). The PMC essentially relaxes the order among tucked-in/inner-specifiers. Richards claims that no different account is needed for Serbo-Croatian. The cases where superiority fails to obtain are due to the fact that scrambling has disrupted the ‘base’ order of wh-elements, so that what gets attracted first is not what is canonically closest.

Both Bošković’s and Richards’s accounts suffer from problems of their own, but it is not my intention to address these. Rather, I would like to bring new data from Basque that, when correctly interpreted, require a different *kind* of account for multiple wh-fronting. Put simply, either Bošković’s or Richard’s analysis works as long as languages fall into either the Bulgarian pattern (1) or the Serbo-Croatian pattern (2). Basque, which has multiple wh-fronting, as we will see in section (3), doesn’t.

3 Some Background on Multiple Wh-questions in Basque

Let us examine the interrogative strategies in Basque.¹ Basque is a predominantly head-final language with free word order. In neutral contexts, the order of arguments is <Nominative/Ergative, Dative, Accusative/Absolutive>.

Basque has several strategies to form multiple questions. The first possibility is to move one wh-phrase and leave the other(s) in situ, as shown in (5). If that strategy is chosen, no superiority effect arises: the fronted wh-phrase need not be the Closest one; and the order of wh-phrases in situ is free.²

¹For reasons of space, I focus here exclusively on wh-arguments; for general comments on the wh-adjuncts, see Jeong (2003). For an analysis of wh-adjuncts in Basque, see Jeong (in progress).

²Note, incidentally, that the appearance of *in situ* wh-phrases to the right of the verb in (5) indicates that the verb in Basque moves leftward, in accordance with Kayne’s (1994, 2003) Universal Base (SVO) hypothesis.

- (5)a. Nork eman dio nori zer?
Who-ERG give aux to whom-DAT what-ABS
'Who gave what to whom?'
- b. Nork eman dio zer nori?
Who give aux what to whom
- c. Nori eman dio nork zer?
To whom give aux who what
- d. Nori eman dio zer nork?
To whom give aux what who
- e. Zer eman dio nork nori?
What give aux who to whom
- f. Zer eman dio nori nork?
What give aux to whom who

The second option is for Basque to move two wh-phrases and leave the remaining wh-phrase in situ. Here there are superiority effects between the fronted wh-phrases. Consider (6).

- (6)a. Nork nori eman dio zer?
Who-ERG to whom-DAT give aux what-ABS
'Who gave what to whom?'
- b. Nork zer eman dio nori?
Who what give aux to whom
- c. Nori zer eman dio nork?
To whom what give aux who
- d. *Nork nork eman dio zer?
To whom who give aux what
- e. *Zer nork eman dio nori?
What who give aux to whom
- f. *Zer nori eman dio nork?
What to whom give aux who

However, superiority effects disappear in situations like (6) only if there is a pause/intonational break after the wh-phrase 'violating' superiority. Consider (7). (The pause/intonational break is indicated by #.)

- (7)a. Nori # nork eman dio zer?
To whom who give aux what
- b. Zer # nork eman dio nori?
What who give aux to whom

- c. Zer # nori eman dio nork?
 What to whom give aux who

The third and last strategy for Basque is to move all three wh-phrases. In this case, as originally noted by Ortiz de Urbina (1989), superiority effects arise. However, unlike Bulgarian, Basque imposes a strict ordering among *all* wh-phrases, as we can see in (8).

- (8)a. Nork nori zer eman dio?
 Who-ERG to whom-DAT what-ABS give aux
 ‘Who gave what to whom?’
 b. *Nork zer nori eman dio?
 Who what to whom give aux
 c. *Nori nork zer eman dio?
 To whom who what give aux
 d. *Nori zer nork eman dio?
 To whom what who give aux
 e. *Zer nori nork eman dio?
 What to whom who give aux

And just like we saw in (7), superiority effects disappear if there is a pause/intonational break after the wh-phrase ‘violating’ superiority. Witness (9).

- (9)a. Nork zer # nori eman dio?
 Who what to whom give aux
 b. Nori # nork zer eman dio?
 To whom who what give aux
 c. Nori zer # nork eman dio?
 To whom what who give aux
 d. Zer nori # nork eman dio?
 What to whom who give aux

Interestingly, whenever superiority fails to obtain ((7) and (9)), replacing the otherwise offending wh-phrase by an aggressively non-D-linked element corresponding to ‘*wh-the hell*’ renders the sentence ungrammatical. Likewise, wh-phrases that remain in situ ((5), (6), (7)) cannot be modified by ‘*the hell*’ (see also Reglero, 2003 for a similar observation):

- (10)a. Zer # nori eman dio nork?
 What to whom give aux who
 'who gave what to whom'
 b. *Zer arraio nori eman dio nork
 what the hell to whom give aux who
 'who gave what the hell to whom'
- (11)a. Nork erosi du zer?
 who-ERG buy AUX what-ABS
 'Who bought what?'
 b. *Nork erosi du zer arraio?
 who-ERG buy AUX what hell-ABS
 'Who bought what the hell'

The facts in (10) and (11) are very reminiscent of the fact that D-linked wh-phrases (which cannot be modified by *the hell*, see Pesetsky, 1987) are the only type of wh-phrase that need not front in Bulgarian/Serbo-Croatian, and that may violate superiority in contexts where it otherwise obtains (see Bošković, 2002):

- (12) Ko je kupio koju knjigu? (Serbo-Croatian)
 Who is bought which book
 'Who bought which book?'
- (13) Koja knjiga koj čovek e kupil? (Bulgarian)
 Which book which man is bought
 'Which man bought which book'

On the basis of this parallelism between Slavic and Basque, I would like to argue that instances of wh-in-situ in Basque are necessarily D-linked (on simplex forms like 'who' and 'what' as covert D-linked phrases like 'which person' and 'which thing' respectively, see Pesetsky, 1987), and similarly for wh-phrases 'violating' superiority. Following Grohmann (1998) and Rizzi (2001), among others, I would like to argue that D-linked wh-phrases are 'topics' which target a TopicPhrase that may be located at the left edge of VP (see Rizzi, 1997; Belletti, 2001; Jayaseelan, 2001, among others), or at the left periphery of the clause ('C-domain', see Rizzi, 1997). Since topicalization in general does not have to abide by Closest Attract, it is not surprising to find apparent superiority violations with D-linked wh-phrases in Basque.

If the claim just made is correct, instances of multiple wh-fronting with superiority are the only instances of genuine multiple wh-fronting,³ where fronting takes place to check a [wh] or [focus] feature.⁴ From here on, I will set aside instances of topicalization, and propose an analysis of genuine multiple wh-fronting.

4 Analysis

The distinguishing factor between Basque and Bulgarian/Serbo-Croatian is the fact that superiority is pervasive in Basque, while it stops applying after the first instance of fronting in Slavic. Neither Bošković nor Richards predict the Basque pattern; their analyses appear to dovetail for Slavic. To capture Basque, Richards would have to claim that the PMC does not apply in Basque, while it (crucially) does in Slavic. This would be a strange parameter to say the least. For Bošković, Basque poses a different problem altogether. For him, multiple fronting is the result of an [Attract-All] feature ([Focus]). Superiority arises as a result of the presence of an [Attract 1]-feature in C⁰ ([wh]). Since Basque shows two instances of superiority, it would require two features with an [Attract-1] quality, alongside the Attract-All [Focus]. It's not clear what the additional [Attract-1] feature could be. Moreover, it's not clear how two [Attract-1] features would combine their effects to yield the observed patterns. There should be a hierarchy among the two [Attract-1] features. How this hierarchy could be achieved is by no means obvious.

In light of the shortcomings of the prevailing views on multiple wh-fronting, I would like to develop an alternative. I will focus on Basque first, and return to Slavic at the end of this section.

Following Rizzi 1997 and much subsequent work, I assume that the target of wh-movement is Focus⁰. Focus⁰ has an Attract-All [Focus] feature, which acts as Bošković claims it does: it is unselective in its pattern of at-

³The 'the-hell' data, especially (i), removes the possibility that (8) is in effect a situation where all wh-phrases are in situ, in their canonical positions (a possibility pointed out to me by Juan Uriagereka, p.c.), since *arrio* 'the hell' is incompatible with a wh-phrase in situ.

(i) Nork nori zer arraio eman dio?
 Who-ERG to whom-DAT what-ABS the-hell give aux
 'Who gave what to whom?'

⁴That should not be taken to imply that whenever superiority effects obtain, as in (8), wh-phrases are necessarily non-D-linked. They may be D-linked, and we may be dealing with multiple topics. Although topicalization need not abide by Closest Attract, it need not violate it.

traction. In addition, Focus⁰ has a “V”-type feature forcing verb movement. This is independently needed, as Basque, like so many other languages, requires the finite verb to be adjacent to the focused element(s), a much-discussed phenomenon in Basque linguistics (both traditional and generative) known as ‘galdegaia’ (see Ortiz de Urbina, 1989, 1995, 1999, and Uriagereka, 1999, among many others). This is exemplified in (14).

- (14)a. Zer egiten duzu zuk hemen?
 What do.IMPF AUX you.ERG here
 ‘What are you doing here?’
 b. *Zer zuk egiten duzu hemen?

The “V”-feature in Focus⁰ must single out the finite verb, not just any verb, since only finite verbs undergo ‘galdegaia.’ Typically, finite verbs have two features: a T(ense)-feature, and Φ -features. It is the combination of both Φ and T to define a finite verb. In Basque, the finite verb encodes both Ergative/Nominative and object agreement. Importantly, in ditransitives, the dative element triggers agreement. In such situations, the Absolutive/Accusative marker is always restricted to a \emptyset -marker (see Ormazabal and Romero, 2002), which I take to mean absence of agreement (as opposed to the more common interpretation of 3rd person agreement in the Basque literature. (The reason for my interpretation will be clear shortly)). Thus, consider (15).

- (15)saldu d- \emptyset -izki-o-te
 sell D-[\emptyset ABS]-IZKI-3Dat-3ERG
 ‘(they) sold (it) (to them)

I would like to relate the two Φ -feature exponents on the finite verb to the two features in INFL: Φ and T. I take it that the bundle Φ +T on INFL is related to (i.e., Probes for/Matches) the Ergative/Nominative NP. Infl’s T-feature is also related to (Probes for/Matches) v , which, following much recent work, I take to be the locus of object (Dative) agreement. So INFL contains information about the Nominative/Ergative NP and the Dative NP. Since Focus⁰ matches INFL, it contains that information too, so upon attraction, it attracts the Nominative/Ergative element (related to Φ and T) and the Dative element (related to v /T). The Accusative/Absolutive element moves due to the [Attract-All Focus] feature (that ensures overt multiple wh-fronting), as a default, and therefore occupies the last ‘slot’: <Nom/Erg, Dat, Acc/Abs>. So in effect I am claiming that what forces (iterative) superiority

is actually verb movement (and the features it contains), not a ‘wh’-feature (unlike Bošković).

My analysis receives striking confirmation from both Basque data not yet discussed, and from Slavic, as I now show.

Consider (16) (taken from Etxepare and Ortiz de Urbina 2002).

- (16)a. Nori nork zer iruditu zaio esan duela?
 who.to who.ERG what seem AUX say AUX.COMP
 ‘To whom does it seem that who said what?’
 b. Nork zer nori iruditu zaio esan duela?

(16) shows that superiority effects are absent in Basque in cases of multiple fronting of wh-phrases originating from different clauses. This is expected under my account since the verb immediately following the wh-phrases signaling the Focus⁰-attracting head no longer encodes agreement for all of the wh-phrases (the verb only encodes agreement for a clause-mate wh-phrase).

Let’s now turn to Slavic. Independent research on V-movement in Slavic (see Bošković, 2001, for review) has established the fact that in Bulgarian, the verb moves to Focus⁰ (like Basque, and English). But unlike Basque, the Bulgarian finite verb only encodes one instance agreement (17), not two, so we predict that superiority effects won’t be iterative in the language.⁵

- (17)(Petko) mi go dade
 Petko me.Dat it.Acc gave.3sg
 ‘Petko gave it to me’

As for Serbo-Croatian (or Russian), it has been shown that the language lacks V-movement to Focus⁰ (with Bošković, I assume that in such cases

⁵The agreement encoded is for the subject, but since I don’t assume that feature values enter into the computation of locality (see Boeckx and Jeong, 2002, for extensive discussion), I don’t predict that superiority in Bulgarian only affects subject wh-phrases. Rather, I predict that it only affects agreeing wh-phrases. Thus, I predict, correctly, that Focus⁰ will attract the dative wh-phrase over the accusative wh-phrase in the absence of a nominative wh-phrase (i). Likewise, I don’t predict that non-wh-subjects will raise to Focus⁰ in Bulgarian since they don’t match the [Focus] feature. For fuller discussion, see Jeong (in progress).

(i) kogo kakvo/*kakvo kogo e pital Ivan
 whom what/ what whom is asked Ivan
 ‘What did Ivan ask to whom?’

Focus⁰ is not present at all in overt syntax). We then predict no superiority effect.⁶

All in all, our account of superiority based on agreement and verb movement to the [wh]-attracting head captures all the attested patterns of multiple wh-fronting, not only in Basque, but also in Slavic. It is therefore superior to Bošković's and Richards's accounts.

5 Conclusion

In this paper I have investigated a special feature of multiple wh-questions in Basque, the existence of superiority with *each* instance of wh-fronting, and show how it forces us to reconsider our understanding of the mechanisms of multiple wh-fronting in general, since standard accounts based on Slavic (Bošković, 1999; Richards, 1997) predict a relaxation of superiority after the first instance of wh-fronting. As an alternative I have proposed that the role of the verb is crucial in determining the specific patterns of multiple wh-fronting found across languages. If correct, my analysis shows that head-movement cannot be entirely shifted from narrow syntax into the PF-component, as argued by Chomsky and others in recent work, as head-dependencies are the key factors in the syntactic organization of multiple wh-fronting. It also shows that because it depends on such uninterpretable features as Φ -features on finite verbs, superiority is a narrow-syntax requirement, and not an interpretive effect (as argued by Chierchia, 1991, and Hornstein, 1995).

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⁶When superiority emerges in Serbo-Croatian, Focus⁰/C⁰ is overt. Although V-movement does not take place, I assume that there is a featural relation between Focus⁰/C⁰ and the finite verb (see Pesetsky and Torrego, 2001), which is enough to force superiority. Again, since the finite verb in Serbo-Croatian only encodes one instance of agreement, we predict that superiority will not be iterative.

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Dept. of Linguistics
University of Maryland
College Park, MD 20740
yjeong@wam.umd.edu