

# Squibs and Discussion

ON THE ABSENCE OF SUPERIORITY  
AND WEAK CROSSOVER  
EFFECTS IN YORUBA  
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For more than thirty years, generative grammarians have been interested in accounting for the acceptability of (1) in contrast to (2). Such examples are usually cited to show the effect of the Superiority Condition—which in contemporary terms requires an attractor to attract the closest phrase to check its feature—in syntax (Kuno and Robinson 1972, Chomsky 1973, 1995).

- (1) Who do you think *t* bought what?  
(2) \*What do you think who bought *t*?

Many researchers, including Chierchia (1991), Chomsky (1995), Hornstein (1995, 2001), Huang (1995), Dayal (1996), Wiltschko (1998), Bošković (1999), and Barker and Shan (2004), have made diverse proposals about how to account for the unacceptability of examples such as (2). Most of these authors assume that there is a superiority effect in all languages.<sup>1</sup> However, the contrast is not found in Yoruba and several other Niger-Congo languages, as shown in (3) and (4) (Manfredi and Oyelaran 2000; see also Adesola 2005).

- (3) *Ta ni o rò pé ó t ra k ní?*  
who be you think that 3SG buy what  
'Who do you think bought what?'  
(4) *Kí ni o rò pé taní rà t?*  
what be you think that who buy  
'What do you think that who bought?' (\* in English)

The acceptability of (4) in Yoruba raises a fundamental question about whether Superiority is really a universal condition of syntax.

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<sup>1</sup>For example, Wiltschko (1998) argues for the presence of superiority effects in German, thereby reanalyzing the earlier claims to the contrary about the language.

A related issue that has also received much attention for decades in generative grammar is how to account for the unacceptability of examples such as (5) and (6).

(5) \*Who<sub>j</sub> does his<sub>j</sub> mother like t<sub>j</sub>?

(6) \*What<sub>j</sub> did you give its<sub>j</sub> owner t<sub>j</sub>?

The unacceptability of such examples has been attributed to the Weak Crossover (WCO) Condition (Postal 1971, Chomsky 1977, Koopman and Sportiche 1982, Safir 1984, 2004).

(7) *Weak Crossover Condition*<sup>2</sup>

A variable cannot be the antecedent of a pronoun to its left.  
(Chomsky 1977:201)

This condition also seems to be relaxed in Yoruba and several other Niger-Congo languages. For example, (8) is acceptable in Yoruba on the bound reading.

(8) Ta<sub>k</sub> ni ìyá rẹ̀k fẹ̀ràn t<sub>k</sub>?

who be mother his like

'Who<sub>k</sub> did his<sub>k</sub> mother like?'

It is therefore legitimate to investigate why the WCO effect seems to be systematically absent from Yoruba.

The goal of this squib is to provide a unified theoretical account for the absence of superiority and WCO effects from Yoruba. The Yoruba facts support Hornstein's (2001) claim that superiority is an instance of the WCO effects. I also show that the structure of *wh*-questions in Yoruba is such that it neutralizes WCO effects.

The rest of this squib is divided into three main sections. In section 1, I make a case for analyzing superiority as WCO. In section 2, I investigate the structure of *wh*-questions in Yoruba. In section 3, I discuss how the structure of *wh*-questions in Yoruba neutralizes WCO effects.

## 1 Superiority as a Weak Crossover Effect

One of the central claims of the Minimalist Program is that the derivations that involve the least effort are the best. Empirical support for the claim is seen in the fact that many languages show a contrast between the (a) and (b) examples in (9)–(11). The grammatical (a) examples involve the shortest move, in obedience to the Minimal Link Condition (Chomsky 1995).

(9) a. Who bought what?

b. \*What did who buy t?

(10) a. Who<sub>i</sub> did you give t<sub>i</sub> what<sub>k</sub>?

b. \*What<sub>k</sub> did you give who<sub>i</sub> t<sub>k</sub>?

<sup>2</sup> See also a c-command version of this condition in Lasnik and Stowell 1991 and many other recent works.

- (11) a. Who<sub>i</sub> did you persuade t<sub>i</sub> to buy what<sub>k</sub>?  
 b. \*What<sub>k</sub> did you persuade who<sub>i</sub> to buy t<sub>k</sub>?

In the (a) examples, the closest *wh*-phrase is attracted to check the uninterpretable *wh*-feature of the complementizer. The (b) examples are excluded because the closest eligible phrase is not the one that is attracted to check the uninterpretable feature of the complementizer. However, sentences that correspond to these examples are acceptable in Yoruba. For example, the sentences in (12) are grammatical (see also (3)).<sup>3</sup>

- (12) a. Ta<sub>i</sub> ni o rọ̀ t<sub>i</sub> láti ra kíni?  
 who be you persuade to buy what  
 ‘Who did you persuade to buy what?’  
 b. Kí<sub>k</sub> ni o rọ̀ tani<sub>i</sub> láti rà t<sub>k</sub>?  
 what be you persuade who to buy  
 ‘What did you persuade who to buy?’ (\* in English)

Many researchers have made diverse proposals about how to account for the contrast in (9)–(11) (see, e.g., Chomsky 1981, 1995, Pesetsky 1987, Hornstein 1995, 2001, Huang 1995:153, Bošković 1999). The acceptability of examples such as (12b) suggests that the Minimal Link Condition approach to superiority cannot adequately account for the Yoruba facts.

The data in (12) can, however, be explained in light of Hornstein’s (1995, 2001) proposal that superiority actually reduces to the WCO effect.

Hornstein’s proposal is that in multiple-*wh* sentences, pair-list readings are mediated by the functional interpretation of the in-situ *wh*-phrases. Each in-situ *wh*-phrase is decomposed into a bound pronominal and a nominal restrictor. For example, *what* is interpreted as ‘pro + thing’, while *who* is interpreted as ‘pro + person’. The pronominal part of the *wh*-in-situ is then bound by the moved (quantificational) *wh*-phrase to produce pair-list readings. Given this configuration, superiority effects arise when this sort of pair-list reading is blocked by constraints on pronominal binding—analogueous to what is found in the standard WCO configurations. Therefore, once this decomposition is adopted, the ungrammaticality of (14) and (16) can be accounted for in terms of illicit pronominal binding as in standard WCO configurations, where a pronoun is not allowed to depend on a variable to its right.

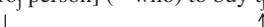
<sup>3</sup> Perhaps the occurrence of *ni* with in-situ question nouns like *tani* ‘who’ and *kíni* ‘what’ also has something to do with their monosyllabic form. Nouns in Yoruba canonically consist of two or more syllables. The *ni* does not occur with the other in-situ question nouns (e.g., *ibo* ‘where’ and *báwo* ‘how’) because they are disyllabic and need not be augmented; compare (ia) with (ib).

- (i) a. \*Wọ̀n rí tani níbo ni?  
 they see who where PRT  
 ‘They saw who where?’  
 b. Wọ̀n rí tani níbo?  
 they see who where

- (13) a. Who bought what?  
 b.  $[_{CP} \text{who}_j [_{IP} t_j \text{ bought } [_{\text{pro}}_j \text{ thing}] (= \text{what})]]$   

- (14) a. \*What did who buy?  
 b.  $*[_{CP} \text{what}_j [_{IP} [_{\text{pro}}_j \text{ person}] (= \text{who}) \text{ buy } t_j]]$   

- (15) a. Who<sub>i</sub> did you persuade t<sub>i</sub> to buy what<sub>k</sub>?  
 b.  $[_{CP} \text{who}_j [_{IP} \text{you persuade } t_j \text{ to buy } [_{\text{pro}}_j \text{ thing}] (= \text{what})]]$   

- (16) a. \*What<sub>k</sub> did you persuade who<sub>i</sub> to buy t<sub>k</sub>?  
 b.  $*[_{CP} \text{what}_j [_{IP} \text{you persuade } [_{\text{pro}}_j \text{ person}] (= \text{who}) \text{ to buy } t_j]]$   


According to Hornstein (2001), (13) and (15) are acceptable because the pronouns are linked to a variable (i.e., a *wh*-trace) on their left, whereas (14) and (16) are unacceptable because the pronouns are linked to a variable (*wh*-trace) on their right. The ungrammaticality of (14), for example, is analogous to the standard WCO violation displayed in (18) (cf. the licit (17)).

- (17) Who<sub>j</sub> t<sub>j</sub> saw his<sub>j</sub> mother?  

- (18) \*Who<sub>j</sub> did his<sub>j</sub> mother see t<sub>j</sub>?  


Thus, the unacceptability of (14), (16), and (18) could be explained by saying that they violate the Weak Crossover Condition (repeated here).

- (19) *Weak Crossover Condition*  
 A variable cannot be the antecedent of a pronoun to its left.  
 (Chomsky 1977:201)

However, the simple leftness account of WCO does not by itself predict that the effect should be absent from Yoruba. Consider the following examples:

- (20) Ta ni ó ra kí ni?  
 who be he buy what  
 ‘Who bought what?’
- (21)  $[_{\text{PredP}} \text{ta}_j \text{ni } [_{CP} [_{IP} \text{ó } t_j \text{ra } [_{\text{pro}}_j \text{thing}] (= \text{kí ni})]]]$   

- (22) Kí ni ta ni rà?  
 what be who buy  
 ‘What did who buy?’ (\* in English)
- (23)  $[_{\text{PredP}} \text{kí}_j \text{ni } [_{CP} [_{IP} [_{\text{pro}}_j \text{person}] (= \text{ta ni}) \text{rà } t_j]]]$   


Given the structures in (21) and (23), a WCO effect is expected in Yoruba as well—a pronoun is linked to a variable on its right in (23).

So, we need to revise the structures and find an alternative WCO analysis. I will turn to this in section 3. For now, what is important to note is that, given Hornstein's theory, the acceptability of "Superiority violations" like (22) reduces to the absence of standard WCO effects in Yoruba. The following questions, which are examples of the standard WCO effects, are acceptable in the language on the bound reading.

- (24) Ta<sub>j</sub> ni iyá rẹ̀<sub>j</sub> fẹ̀ràn t<sub>j</sub>?  
 who be mother his like  
 'Who<sub>j</sub> does his<sub>j</sub> mother like?' (\* in English on the bound reading)
- (25) Kí<sub>j</sub> ni o rọ olówó rẹ̀<sub>j</sub> láti fún ọ t<sub>j</sub>?  
 what be you persuade owner its to give you  
 'What<sub>j</sub> did you persuade its<sub>j</sub> owner to give you?' (\* in English)

So, superiority effects and WCO effects are seen to be related, either both arising (English) or both not arising (Yoruba). The next question, then, is why WCO effects (now subsuming superiority) are absent from Yoruba. We need to know more about *wh*-questions in Yoruba before we can answer the question satisfactorily.

## 2 The Structure of Yoruba *Wh*-Questions

English *wh*-questions are derived through the simple movement of a *wh*-phrase to the specifier position of the attracting complementizer. The structure of *wh*-questions in Yoruba is a little more complicated. I will show that they have a biclausal structure.

The particle *ni* that occurs after the moved *wh*-word and before the rest of the clause in each *wh*-question and focus construction is a verbal element in Yoruba (Yusuf 1990, Dekydtspotter 1992, Awoyale 1997). For example, it serves as the only verb in a copular sentence (26). Here, I assume for concreteness that it is a predicate head (Baker 2003).

- (26) Ọlórún *ni* ọba.  
 God *be* king  
 'God is the king.'

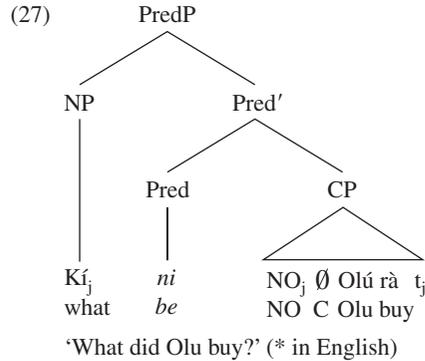
Furthermore, the constituent in the specifier of *ni* (i.e., its subject) is base-generated in an A-position.

The *ni* that occurs in copular sentences like (26) is the same *ni* that occurs in Yoruba *wh*-questions and focus constructions.<sup>4</sup> The *ni*

<sup>4</sup> For example, the two have the same negative form. The NP negative marker *kọ* is used before *ni* in both copular sentences (i) and focus constructions (ii).

- (i) Ọlórún *kọ* ni ọba.  
 God NEG be king  
 'God is not the king.'
- (ii) Ìwé<sub>j</sub> *kọ* ni NO<sub>j</sub> Ọlú rà t<sub>j</sub>.  
 book NEG be NO C Olu buy  
 'It wasn't a book that Olu bought.'

takes a clausal complement with a moved null operator (NO), as illustrated in (27). (See Browning 1987 for more on null operators.)



According to this proposal, *wh*-questions in Yoruba involve moving only a null operator to the specifier position of the CP of the embedded clause.<sup>5</sup> The null operator is then obligatorily coindexed with the (base-generated) subject of *ni*, in a control-like relation. One of the consequences of such movement from the subject position is discussed in detail in Adesola 2005. There, I show that Yoruba requires the insertion of an expletive pronoun to satisfy the EPP requirement of T since a null operator does not have the features required to satisfy the EPP. (See also Mikkelsen 2000 and Holmberg and Hróarsdóttir 2004 for similar accounts of null operator movement in Danish and Icelandic, respectively.)

The overall structure of the Yoruba questions and focus constructions is more or less like that of *tough*-movement constructions in English (Lasnik and Stowell 1991, Safir 2004). If this is correct, then *wh*-questions in Yoruba do not involve simple *wh*-movement like *wh*-questions in English. The structure involving null operator movement can then be used, as I do in the next section, to explain why Yoruba does not have superiority and WCO effects.

### 3 Null Operator Movement and Weak Crossover Effects

Lasnik and Stowell (1991) argue that not all kinds of operator-like movement induce WCO effects. Simple *wh*-movement does induce the effect (28).

(28) \*Who<sub>j</sub> does his<sub>j</sub> mother like t<sub>j</sub>?

However, null operator movement does not induce WCO effects. (29)

<sup>5</sup> These structures contrast with the structures that have been proposed for Yoruba focus constructions and *wh*-questions in the literature, where *ni* is analyzed as a focus head and the NPs in Spec,*ni* are said to be derived by  $\bar{A}$ -movement rather than being base-generated (see Awoyale 1995, 1997, Adesola 1997, Rizzi 1997, Aboh 1998). One of the advantages of the structure proposed here is that it can account for the near absence of WCO effects in Yoruba, whereas the traditional structure cannot.

is acceptable to most speakers of English on the bound reading even though the pronoun is linked to a variable on its right.

- (29) [John<sub>i</sub> was hard [NO<sub>i</sub> [PRO to persuade his<sub>i</sub> boss [PRO to vouch for e<sub>i</sub>]]]].

Thus, given Lasnik and Stowell's results, we do not expect WCO effects in Yoruba *wh*-questions once we realize that they are derived through null operator movement.

An alternative way to account for this pattern is proposed by Safir (2004). He notes that WCO effects do not arise whenever a pronoun in the scope of a null operator has an external antecedent. For example, the null operator construction (30) is acceptable on the bound reading because *Terry* serves as the external antecedent for *his*.

- (30) *Terry* is tough [NO [for *his* mother to love *t*]].



If we apply this to Yoruba, the variable in the scope of a moved null operator always has an external (A-)antecedent—that is, the subject of copular *ni*. The external antecedent binds an overt pronoun in the standard WCO examples and a covert pronoun in the so-called superiority examples. *Kí* is the external antecedent of the variable in (31). This is why a WCO effect is not found in Yoruba in configurations that involve movement.

- (31) [<sub>PredP</sub> *Kí* *ni* [<sub>CP</sub> NO  $\emptyset$  [<sub>IP</sub> [pro person] (= *ta ni*) *rà t*]]]?  
 |-----|

what be NO C who buy

‘What did who buy?’ (or ‘What was the thing that who bought?’)

This analysis can be extended to other examples that have been used to illustrate superiority effects above. For example, it also explains why the so-called pure superiority effect is absent in (32).

- (32) *Kí* *ni* [<sub>CP</sub> NO  $\emptyset$  [<sub>IP</sub> *o bẹ* [pro person] (= *ta ni*) *látí rà t*]  
 |-----|

what be NO C you beg who to buy

‘What did you beg who buy?’ (\* in English)

Notice that this representation still violates Superiority as it is usually understood, under the assumption that the *wh*-in-situ and the null operator share a *wh*-feature.<sup>6</sup> The lower element with this feature moves to Spec,CP over the higher element. This representation does not vio-

<sup>6</sup> An alternative explanation would be to assume following Watanabe (1992) that the in-situ *wh*-phrase has a null operator that can be moved to Spec,CP. In these terms, the fact that the lower null operator can be moved instead of the one in the in-situ *wh*-phrase suggests that null operator movement is not subject to the Superiority Condition in Yoruba.

late the Weak Crossover Condition, however, so it is correctly said to be grammatical in Hornstein's theory adopted here.

In this section, I have shown that WCO is neutralized in Yoruba because of the particular way *wh*-questions are derived in the language. The analysis thus predicts that WCO effects will surface in configurations that do not involve null operator movement. This prediction is borne out. (33) and (34) are unacceptable in Yoruba as in English on the bound reading.

(33) \*Ìyá rẹ̀j fẹ̀ràn ẹ̀nikòṣkan.  
 mother his like everyone  
 'His<sub>j</sub> mother likes everyone<sub>j</sub>.'

(34) \*Olú fún olówó rẹ̀j ní gbogbo ìwé.  
 Olu give owner it PRT all/every book  
 '\*Olu gave its<sub>j</sub> owner every book.'

Note that the variables in (33) do not have any external antecedents that can neutralize the WCO effect. This confirms that the Weak Crossover Condition itself is universal, but the structures it applies to vary.

#### 4 Conclusion

This squib discussed the absence of superiority and weak crossover (WCO) effects in movement configurations in Yoruba. It proposed that superiority is an instance of WCO (Hornstein 2001). It showed that the structure of *wh*-questions in Yoruba involves an "extra" A-position. The NP in the A-position serves as an external antecedent to the pronoun in the scope of a null operator, thereby neutralizing WCO effects. The squib also showed that Yoruba displays WCO effects in configurations that do not involve *wh*-movement. Thus, we can conclude that the Weak Crossover Condition is indeed universal but the structure of *wh*-questions is not.

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COORDINATION, SUBJECT RAISING,  
AND AGRP IN JAPANESE

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Takano (2004) convincingly shows, on the basis of interpretation of *betubetuno* ‘different’, that verbs in coordination structures in Japanese stay within vP in overt syntax. (More precisely, he claims that the tense morpheme is located in T in syntax.) His reasoning is readily extended to examples where subjects are contained in conjuncts, so that it can be shown that in addition to verbs, subjects reside in vP in overt syntax in Japanese. On the other hand, Kishimoto (2001) elegantly accounts for the subject-object asymmetry with regard to indeterminate pronoun binding in Japanese by assuming that subjects undergo raising in that language. Surprisingly, the subject-object asymmetry at stake is detected even in coordination structures where subjects seemingly occupy vP-internal positions. The purpose of this squib is to propose an analysis that resolves the contradiction. The analysis revives Pollock’s (1989) original Split-IP Hypothesis by

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