

WH Constructions in Ikalanga: A Remnant Movement Analysis

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1. Introduction

WH constructions in Bantu languages (i.e. interrogatives) are standardly assumed to involve no WH movement. Rather, they are analyzed as cleft constructions (see for example, Bokamba 1976, Kimenyi 1981, Sabel and Zeller 2004). This paper proposes an analysis different from the standard cleft analysis drawing data from Ikalanga, a Bantu language spoken in Botswana. I propose an analysis in which WH constructions in this language are mono-clausal arguing that the WH phrase optionally moves to the specifier of a Focus phrase (spec FocP)¹. This proposed analysis enables me to account for the morphological asymmetry between examples (1, 2a and 3) and example (2b) in a principled and straightforward way.

Among other things, this paper argues that Bantu languages such as Ikalanga have two types of WH constructions: WH constructions in which the WH phrase is fronted (example (1) and the WH construction in which the WH phrase occurs in a sentence final position (example 2). The main focus of this paper is the latter type of WH constructions, that is WH constructions with sentence final WH phrases such as in the examples in (2).

Fronted WH phrase

- (1) Ndiani Neo wa- á- ka-bona?
Foc-who Neo_{1a} WH_{agr1} SA_{1a} past see
'Who did Neo see?'

Sentence final

- (2a) Neo wa- á- ka- bona ndi-ani?
Neo_{1a} WH_{agr1} SA_{1a} past see Foc-who₁
'Who did Neo see?'
- (2b) Neo wá-ka-bona ani?
Neo_{1a} SA_{1a}past see who
'Who did Neo see?'

At a first glance, one might conclude that in example (2) type sentences the WH phrase is *in-situ* in both (2a&b). However, the fact that even subject WH phrases occur in this position as illustrated in example (3) casts doubt on such a hypothesis.

¹ Abbreviations: 1, 1a, 2, 2a = Noun classes. N.B. class 1 is singular and class 2 is the plural of class 1; Agr = agreement; SA = subject agreement; pres. = present; Neg. = negation; Foc. = focus; WH_{agr} = WH agreement

- (3) Wa-ka bona Neo ndi-ani?
 WH_{agr1} past. See Neo_{1a} Foc-who
 ‘Who saw Neo?’

Thus, the main argument of this paper is that the WH phrase in (2b) and the WH phrases in (2a & 3) occupy different syntactic positions. I provide both syntactic and morpho-syntactic arguments to show that the WH phrase in (2b) is *in-situ* while the WH constructions in (2a & 3) are derived from sentence initial WH constructions such as (1) above. I also argue that both the WH constructions in (1) and (2a & 3) bear a +WH feature and a +Focus feature. Further, I argue that the +Focus feature is strong necessitating movement to a position (spec, FocP) in which the focus feature is checked (see Sabel and Zeller 2004 for a similar analysis regarding Zulu WH constructions). I propose an analysis which accounts for how the WH constructions with sentence final WH phrases are derived from WH constructions in which the WH phrase is sentence initial. The analysis proposed here is couched in terms of Chomsky’s (2001) recent theory of *attract*. To provide the reader with a clear understanding of what the issues are, I briefly provide the basic agreement facts in Ikalanga since the analysis proposed in this paper partly hinges on an understanding of these facts. Thus, in the next section (section 2) I describe the agreement facts in Ikalanga. Section 3 outlines the theoretical assumptions adopted in this paper while section 4 investigates the status of sentence final WH phrases. Section 5 is the analysis and section 6 concludes the paper.

2. Agreement facts

Ikalanga is a pro-drop language and as characteristic of pro-drop languages, it has a rich inflection system. One of the ways in which the inflection system manifests itself is through obligatory agreement triggered by any XP that occurs preverbally.² Specifically, agreement with the subject NP is obligatory in finite declarative sentences as illustrated in the examples in (4) below.

Declarative: Present Tense

- (4a) Neo ú- no- bika nyama.
 Neo_{1a} SA_{1a} pres. cook meat₉
 ‘Neo cooks meat.’

Subject Agr deletion

- (4b) *Neo no-bika nyama.
 Neo_{1a} pres. -cook meat₉
 ‘Neo cooks meat.’

Example (4b) is ungrammatical because the subject agreement has been omitted. Another interesting point about agreement in Ikalanga is that the morphological form of the agreement is determined by tense/aspect, mood and negation as illustrated in the examples below:

Perfective:

- (4c) Neo wá- bika nyama.
 Neo_{1a} SA_{1a} perf. cook meat₉
 ‘Neo has cooked meat.’

Past Tense

- (4d) Neo wá- ka- bika nyama.
 Neo_{1a} SA_{1a} past. cook meat₉
 ‘Neo cooked meat.’

Future Tense

- (4e) Neo ú- noo - bika nyama.
 Neo_{1a} SA_{1a} -future cook meat₉
 ‘Neo will cook meat.’

² All XPs in Ikalanga (excluding clauses and topicalized XPs) that occur preverbally trigger agreement on the verb.

Negation:

- (4f) Neo a á- zo - bika nyama.
 Neo_{1a} Neg. SA_{1a} pres. cook meat₉.
 ‘Neo did not cook meat.’

Conditionals:

- (4g) Neo a á- nga- zha, Nchidizi
 Neo_{1a} if SA_{1a} should come, Nchidzi_{1a}
 u noo langwa.
 SA_{1a} fut. sulk
 ‘If Neo comes, Nchidzi will sulk.’

The subject agreement morpheme for declaratives in the present tense and future tense is *u*. *wa* is used in perfective (4c) and past tense (4d) sentences while *a* is used in negatives (4f) and conditionals (4g).³

WH phrases prefixed with *ndi-* also trigger agreement on the verb. Such WH phrases can occur in a sentence initial position as shown in example (5a & 5b) or they can occur in a sentence final position as shown in example (6a & 6b).

A. Fronted

- (5a) Ndi-ani wa- ka- bona Neo?
 Foc-who WH_{agr1} -past see Neo_{1a}
 ‘Who saw Neo?’ (Subject)
- (5b) Ndiani Neo wa- á- ka- bona?
 Foc-who Neo_{1a} WH_{agr1} SA_{1a} past-see
 ‘Who did Neo see?’ (Object)

B. Sentence final

- (6a) Wa-ka- bona Neo ndi-ani?
 WH_{agr1} past. see Neo_{1a} Foc-who
 Who saw Neo?’ (Subject)
- (6b) Neo wa- á- ka- bona ndi-ani?
 Neo_{1a} WH_{agr1} SA_{1a} past see Foc-who₁
 ‘Who did Neo see?’ (Object)

Notice that in example (7a) type of WH construction, no WH agreement is triggered. In fact, WH-agreement is prohibited in sentence (7) type WH constructions as illustrated by the ungrammaticality of example (7b).

- (7a) Neo wá- ka- bona ani?
 Neo_{1a} SA_{1a}past see who
 ‘Who did Neo see?’
- (7b) *Neo wa- á- ka- bona ani?
 Neo_{1a} WH_{agr} SA_{1a}-past see who
 ‘Who did Neo see?’

The data in (5– 7) raise at least three questions: First, do the WH phrases in example (6a) and in (7a) occupy the same syntactic position? Second, if both WH phrases in (6a) and (7) occupy the same syntactic position, why do we get WH agreement in examples (6) while WH agreement is prohibited in example (7a)? Finally, how are these WH constructions derived?

³ Ikalanga is a tone language. However, I only indicate tone on subject markers to distinguish them from WH_{agr} markers which have low tone since this is the only relevant grammatical tone distinction in this paper.

Before proceeding to the next section, one more fact worth noting about Ikalanga, is that consistent with inflection rich languages, NPs have some relative flexibility. For example, a subject NP can occur at the end of the sentence as illustrated in (8b) and an object NP can be fronted as illustrated in (8c).

- (8a) Neo wá- ka- bona Nchidzi.
 Neo_{1a} SA_{1a} past see Nchidzi_{1a}
 ‘Neo saw Nchidzi.’
- (8b) Wá- ka-bona Nchidzi, Neo.
 SA_{1a} past see Nchidzi_{1a} Neo_{1a}
 ‘Neo saw Nchidzi.’
- (8c) Nchidzi, Neo wá- ka- m-bona.
 Nchidzi_{1a} Neo_{1a} SA_{1a} past-OM-see
 ‘Nchidzi, Neo saw him.’

Languages that have this kind of flexibility have been referred to in the literature as discourse configurational languages (see Kiss (1995), Jelinek (1984)). Further, it is also assumed that these kinds of languages display flexibility because they use topic and focus strategies which result in placement of NPs in the different positions such as observed in example (8). Thus in this paper I assume that Ikalanga at least to some degree displays some characteristics of discourse configurational languages and uses the discourse strategies of topic and focus. At this juncture, I now return to two of the questions raised in this paper namely whether the WH phrases in example (6a) and (7a) occur in the same syntactic position and also why we get WH agreement in (6) but not in (7a). I address these questions in section 4 below. The question of how different WH constructions are derived is addressed in section 5. However, before I present any arguments in support of my claims, I first provide the reader with the theoretical assumptions that are relevant to my analysis.

3. Theoretical assumptions

The analysis that I propose for Ikalanga WH constructions is based on the notion of ATTRACT proposed in Chomsky (1998). Chomsky (1998) proposes an analysis in which a category β gets displaced from its base position because another category α has matching features with β and therefore attracts β to check its uninterpretable features. Thus, attract is a syntactic operation which results in displacement of a syntactic category from position A to position B. In addition, I also follow Chomsky (1973, 1993 and subsequent work) in assuming that movement takes place in successive cycles from bottom up and that all transformational applications are subject to cyclicity. Furthermore, I adopt Kayne’s Linear Correspondence Axiom (LCA) which states that there is a correspondence between linear order and hierarchical relationships and that movement is to a c-commanding position (Kayne 1994:6). My analysis also adopts Rizzi’s (1997) proposal in which CP is exploded into functional projections including Force phrase, Topic phrase (which is assumed to be recursive) and Focus phrase.

4. The status of sentence final WH phrases

There are a number of arguments to support the claim that both fronted and sentence final WH phrases with *ndi-* are in a derived position while *ani* is *in-situ*. Before I go into the arguments in support of this claim, I first say something about the position of *ndi-ani*.

4.1 The syntactic position of *ndi-ani*

As noted in the introduction, I work under the premise that sentence initial WH phrases in Ikalanga such as (9) move to the specifier of a Focus Phrase (see Clements 1984 and Bergvall 1983 for similar analysis regarding Kikuyu and Hovarth (1995) analysis of Hungarian). One of the reasons for assuming that WH phrases in Ikalanga are not in spec CP as in languages like English comes from indirect questions exemplified in (10).

- (9a) Ndi-boani **ba-** no-bona Neo?
 Foc-Who₂ WH_{2agr.} pres. -see Neo_{1a}
 ‘Who_(PL) sees Neo?’ (Subject)
- (9b) Neo **ba-** á- no-bona ndi-boani?
 Neo_{1a} WH_{2agr} SA_{1a} pres. -see Foc-who₂
 ‘Who_(PL) does Neo see’ (Object)
- (10a) [_{IP} Neo [_{TP} wa- ka- [_{VP} zwibuzwa [_{CP} kuti [_{FocP} ndi-ani_i [_{XP2} Nchidzi
 Neo_{1a} SA_{1a} past wonder that Foc-who Nchidzi
 [_{XP1} wa- [_{TP} á- ka- [_{VP} bona t_i]]]]]]]]]]]
 WH_{agr} SA_{1a}-past see
 ‘Neo wondered who Nchidzi saw.’
- (10b) * [_{IP} Neo [_{TP} wa- ka- [_{VP} zwibuzwa [_{CP} ndiani_i kuti [_{XP2} Nchidzi
 Neo_{1a} SA_{1a} past wonder Foc-who that Nchidzi
 [_{XP1} wa- [_{TP} á- ka- [_{VP} bona t_i]]]]]]]]]]]
 WH_{agr} SA_{1a} past see

Example (10a) in which the complementizer *kuti* precedes the WH phrase *ndi-ani* is grammatical. The standard assumption is that the complementizer *that* is the head of CP. If *kuti* is the head of CP in Ikalanga, then clearly the WH phrase is not in spec, CP. Notice that the order of the complementizer *kuti* and the WH phrase cannot be switched, that is, the WH phrase is prohibited from being in spec, CP at surface structure. This leaves open the suggestion that whatever position the WH phrase occupies, it is not spec, CP but some other position within the CP domain. I assume with others (Clements 1984, Bergvall 1983, Sabel and Zeller 2004) that this position is spec, FocP. In fact, this analysis is applicable to both WH constructions with sentence initial WH phrases (example 9a) and those with sentence final WH phrases (that is those with the prefix *ndi-* such as example 9b).⁴

4.2 The morphological evidence

There are two arguments that I discuss in this section in favor of the hypothesis that WH phrases (both sentence initial and sentence final with the prefix *ndi*) move to the specifier of a Focus phrase while the sentence final WH phrase without the prefix *ndi* is *in-situ*. The third argument which involves movement tests will be presented in a separate sub-section (section 4.3) below. First, sentence initial WH phrases always take the prefix *ndi* which is a focus marker. Sentence initial WH phrases without the focus marker *ndi* are prohibited as shown by the ungrammaticality of (11a&b).

- (11a) *Boani **ba-** no-bona Neo?
 Who₂ WH_{agr.} pres. see Neo_{1a}
 ‘Who_(PL) sees Neo?’ (subject)
- (11b) *Boani Neo **ba-** á- no-bona?
 Who₂ Neo_{1a} WH_{2agr} SA_{1a} pres.-see
 ‘Who_(PL) does Neo see?’ (Object)

Second, WH_{agr} is not observed in sentences in which the WH phrase occurs sentence finally without the prefix *ndi-*. In fact WH_{agr} is prohibited from a sentence in which the WH phrase without the prefix *ndi-* occurs sentence finally as shown by the ungrammaticality of (12b). I argue that these restrictions are due to the fact that a WH phrase prefixed with *ndi-* has a focus feature that matches the focus feature of the head of FocP while *ani* is an *in-situ* WH phrase which has no matching features with the head of FocP. This morphological asymmetry attests to the fact that sentence final WH phrases such as in example (12a) and sentence final WH phrases such as (13a) occupy different syntactic positions. Specifically, the WH agreement is observed only if a syntactic operation namely *attract* has taken

⁴ I use plural WH phrases to avoid the confusion that results from the fact that 3rd person singular subject maker and 3rd person singular WH agreement have the same morphological shape.

place (Sabel and Zeller 2004 independently point out that the morphological markings observed in clefts and relative clauses reflect a specific syntactic movement). This means that in example (12) the WH phrase is *in-situ* while in example (13) the position of the WH phrase is derived.

- (12a) Neo wá- ka-bona ani?
 Neo_{1a} SA_{1a} past -see who
 ‘Who did Neo see?’
- (12b) *Neo wa- á- ka- bona ani?
 Neo_{1a} WH_{agr} SA_{1a} past see who
 ‘Who did Neo see?’
- (13a) Wa- ka-bona Neo ndi-ani?
 WH_{agr1} past. see Neo_{1a} Foc-who
 ‘Who saw Neo?’ (Subject)
- (13b) Neo wa- á- ka-bona ndi-ani?
 Neo_{1a} WH_{agr1}-SA_{1a} past -see Foc-who₁
 ‘Who did Neo see?’ (Object)

Before going any further into the analysis of these WH constructions and showing how example (13) type sentences are derived, I take up further the argument that (13) type WH sentences are derived. I use movement tests to show that indeed these types of sentences are not *in-situ* like example (12).

4.3 Constraints on movement

Ross (1967) proposed different island tests that are standardly regarded as diagnostics for movement. The tests discussed here are extraction out of a complex NP, the WH island test and the adjunct island test all of which have since been subsumed under the general principle of subjacency stated as (14) (Chomsky 1973 and subsequent work).

- (14) Movement cannot cross more than one bounding node, where bounding nodes are IP and NP.

First, consider example (15) which involves movement across a WH phrase.

- (15a) [_{FoPP} Ndi-ani_i Neo wa- [_{IP2} á- ka - zwibuzwa [_{CP} t_i kuti
 Foc-who Neo_{1a} WH_{agr1}. SA₁ past wonder that
 [_{XP} t_i kene [_{IP1} Nchidzi wá- ka- bona t_i]]]]
 whether Nchidzi_{1a} SA₁ past see
 ‘Who did Neo wonder whether Nchidzi saw?’
- (15b) * [_{FocP} Ndi-ani_i Neo wa - [_{IP2} á - ka- zwibuzwa [_{CP} t_i kuti
 Foc-who Neo_{1a} WH_{agr}. SA₁ past wonder that
 [_{FocP} ndi-ani [_{IP1} wa- ka- bona t_i]]]]]?
 Foc-who SA₁ past see
 ‘Who did Neo wonder who saw?’

In (15a), although the object NP is moved from IP1, the sentence is grammatical suggesting that there is an escape hatch for the WH word *ndi-ani* to move through in order to get to its fronted surface position. The movement proceeds as follows: First, *ndi-ani* moves from IP1, crossing only this IP before landing in spec, XP. I assume that *kene* ‘whether’ is the head of the XP and not an XP itself. If this is the correct, then this means that spec, XP is unoccupied and available for the WH word to use as an escape hatch in the first cycle. In the final cycle, *ndi-ani* crosses only IP2 before landing in spec, FocP. In (15b), *ndi-ani* crosses IP1 and spec, FocP occupied by the WH phrase in step one. This results in a violation of subadjacency and hence the ungrammaticality of (15b)⁵. Now compare the ungrammatical (15b) with (16) in which the WH phrase *ani* is *in-situ*.

- (16) Neo wá- ka- zwibuzwa kuti ndi-ani wa- ka- bona ani?
 Neo_{1a} SA_{1a} past wonder that Foc-who WH_{agr} past-see who?
 ‘Who did Neo wonder who saw?’

Example (16) is grammatical because no subadjacency violation is incurred since the embedded WH phrase *ani* is not displaced hence it does not cross the WH island created by the WH phrase *ndi-ani*.

Next, I look at movement of WH phrases from relative clauses exemplified in (17c&17d).

- (17a) [_{FocP} Ndi-ani_i [_{XP2} Neo [_{XP1} *ndiani*_i wa- [_{IP2} [_{TP2} á- ka- [_{VP} alakana [_{CP} *ndiani*_i]
 Foc-who Neo_{1a} WH_{agr} SA₁ past. think
 kuti [_{IP1} Nchidzi [_{TP} wá- ka- [_{VP} loba *ndiani*_i]]]]]]]?
 that Nchidzi_{1a} SA_{1a} past hit
 ‘Who did Neo think that Nchidzi hit?’
- (17b) [_{XP2} Neo [_{XP1} *ndiani*_i wa- [_{TP2} á- ka- [_{VP} alakana [_{CP} *ndi-ani*_i kuti
 Neo_{1a} WH_{agr} SA₁ past. think that
 [_{IP} Nchidzi [_{TP1} wá- ka- [_{VP} loba *ndiani*_i]]]]]]]]]k [_{FocP} ndi-ani_i t_k]]]]]?
 Nchidzi_{1a} SA_{1a} past hit Foc.who
 ‘Who did Neo think that Nchidzi hit?’
- (17c) * [_{FocP} Ndi-ani_i [_{XP2} Neo [_{XP1} *ndiani*_i wa- [_{TP2} á- ka- [_{VP} bona
 Foc-who Neo_{1a} WH_{agr} SA₁ past see
 CP [_{DP} nthu [_{IP} [_{TP} wá- ka- loba *ndiani*_i]]]]]?
 person SA_{1a} past hit
 ‘Who did Neo see the person who hit?’
- (17d) * [_{XP2} Neo [_{XP1} *ndiani*_i wa- [_{IP2} [_{TP} á- ka- [_{VP} bona [_{CP} [_{DP} nthu
 Neo_{1a} WH_{agr} SA₁ past see person
 [_{IP1} wá- ka- loba *ndiani*_i]]]]]]]]k [ndi-ani_i t_k?]
 SA_{1a} past-hit Foc-who
 ‘Who did Neo see the person who hit?’

(17) is an example of object WH questioning/relativizing from an embedded clause. In (17a), the WH phrase *ndi-ani* is displaced from its base position (i.e complement of V position of IP1) to the left periphery of the matrix clause. This derivation takes place as follows: In the first cycle, *ndi-ani* moves to the specifier of CP. Then as it proceeds to spec, FocP it crosses only one IP, IP2 and lands in spec XP1 where it checks agreement features against *wa* the head of XP1. From spec XP1, *ndi-ani* moves to spec FocP crossing only XP2 in this cycle. This sentence is grammatical since *ndi-ani* undergoes successive cyclic movement suggesting that no subadjacency violation is incurred. (17b) is derived in a similar fashion to (17a) with the exception that in (17b) the WH phrase occurs in a sentence final position. (I leave the discussion of the mechanics of how (17b) is derived for section 5). A crucial example in determining what the bounding nodes in Ikalanga are and consequently a test for subadjacency is example (17c). (17c) is an example of extracting a WH phrase from a relative clause. I

⁵ It is not clear what category *whether* is. There are two possible analyses: it is either a WH phrase or it is the head of some projection. If *kene* is a WH phrase, then it must have different features from *ndi-ani* since *nd-iani* can move to spec CP without any violation occurring. If it is a complementizer, then *ndiani* potentially lands in *kene*'s specifier.

am assuming Kayne's (1994) analysis of relative clauses whereby the head noun of a relative clause moves from a position inside the relative clause to the specifier of CP. Given this analysis, this means that in (17c) *ndi-ani* crosses both IP₁ and CP and DP in one step since it cannot go via Spec, CP which is occupied by the head NP *nthu* of the relative clause. The relevant bounding nodes for Ikalanga are IP and FocP and thus movement across these two bounding nodes in one step results in a subjacency violation, which explains the ungrammaticality of (17c). Before I discuss the next movement test, I compare the ungrammatical (17d) with a similar example involving WH *in-situ*. Consider example (18).

- (18) [IP Neo [TP wá- ka- [VP bona [DP bathu [IP [TP ba- ka- [VP loba
 Neo_{1a} SA_{1a} past see people₂ Agr₂ past hit
 ani]]]]]]]]?
 who
 'Who did Neo see the people who hit?' (Neo saw the people who hit who?)

In (18) the WH phrase undergoes no displacement and hence incurs no subjacency violation. The sentence is grammatical unlike in (17d) in which the WH phrase *ndi-ani* is in a derived position as will be shown later (section 5).

Finally, it has also been shown that movement of a WH phrase from an adjunct is prohibited. The Ikalanga facts involving fronted and sentence final WH phrases attest to this fact also. Consider example (19).

- (19a) *[FocP Ndi-boani_i [XP₂ Neo [XP₁ ba- [IP₂ á- ka- bona Nchidzi
 Foc-who₂ Neo_{1a} WH_{2agr} SA_{1a} past -see Nchidzi_{1a}
 [CP asathu [IP₁ a- ka- loba t_i]]]]]
 before SA_{1a} past -hit
 'Who did Neo see Nchidzi before he hit?'
 (19b) *[XP₂ Neo [XP₁ ba- [IP₂ á- ka- [bona Nchidzi [CP asathu a-
 Neo_{1a} WH_{2agr} SA_{1a} past see Nchidzi_{1a} before SA_{1a}
 ka-loba ndi-boani]]]]]?
 past-hit Foc-who
 Who did Neo see Nchidzi before he hit?'

Both examples in (19) are ungrammatical. This is because when the WH phrase *ndi-boani* is extracted from the embedded clause it crosses the adjunct clause [*asathu a ka loba t*] (which acts as a bounding node (Chomsky 1986) and IP₁ which is also a bounding node in one fell swoop resulting in a subjacency violation. On the other hand a similar construction involving the WH phrases *ani* is grammatical (example 20) since *ani* does not undergo any displacement.

- (20) Neo wá- ka- bona Nchidzi a sathu á- ka- loba ani?
 Neo_{1a} SA_{1a} past-see Nchidzi_{1a} SA_{1a} before SA_{1a} past see who
 'Who did Neo see Nchidzi before he hit?'

An additional argument that can be used to show that the sentence final WH phrase without the prefix *ndi* is *in-situ* comes from the adverb test. It has been argued that adverbs can be used to test what forms a constituent with VP and what does not. Consider examples (21) and (22) below.

- (21) Neo wa- á- ka- bona zubuyanana ndi-ani?
 Neo_{1a} WH_{1agr} SA₁ past see well Foc-who₁
 'Who did Neo see well?'
 (22) *Neo wá- ka- bona zubuyanana ani?
 Neo_{1a} SA₁ past see well who₁
 'Who did Neo see?'

Example (21) in which an adverb intervenes between the WH phrase and the verb *bona* is grammatical. This suggests that *ndi-ani* does not form a constituent with VP. On the other hand example (22) is ungrammatical because the *in-situ* WH phrase *ani* forms part of VP and therefore it cannot be separated from the rest of the VP constituent through an adverb.

From the tests discussed in this section, I conclude that indeed sentence final WH phrases with the focus marker *ndi* and those without *ndi* occupy different syntactic positions and must be derived differently. Sentence final WH phrases with the prefix *ndi* are sensitive to subjacency constraints suggesting that some syntactic displacement is involved in their derivation. WH constructions without *ndi* on the other hand are not sensitive to subjacency constraints. The question then is how are the WH constructions that are not *in-situ* but occur sentence finally derived? I address this question in the next section.

5. Analysis

There are two alternative analyses that can be explored regarding the derivation of WH constructions in which the WH phrase occurs sentence finally: one possible analysis is to assume that the WH phrase undergoes rightward movement and the second possible analysis is to comply with the LCA (Kayne 1994) and assume that all movement is to the left. I explore each of these analyses below beginning with the rightward movement analysis.

5.1 Rightward movement

Under the rightward movement analysis, we can assume that (23) type sentences are derived when the head of the Focus phrase attracts the WH phrase since they have matching features namely +Focus. This causes the WH phrase to be displaced to spec, Foc.P where its features are checked against the Focus features of the Focus head. The displacement of the WH phrase results in the structure shown in (24).

- (23) Neo **wa-** á- ka- bona ndi-ani?
 Neo_{1a} WH_{1agr} SA₁ -past- see Foc-who₁
 ‘Who did Neo see well?’
- (24) [_{FocP} ndi-ani_i [_{XP} Neo [_{XP} wa- [_{TP} á- ka- [_{VP} bona *ndi-ani_i*]]]]]

Assuming that the WH phrase first moves to spec, FocP straightforwardly explains why (23) type sentences have WH_{agr}, a phenomenon associated with the left periphery. Next the WH phrase undergoes rightward movement as follows:

- (25) [_{FocP} t_i [_{TopP} Neo [_{XP} wa- [_{TP} á- ka- [_{VP} bona ~~ani_i~~ ndi-ani_i]]]]]

Rightward movement is a syntactic operation that has usually been argued against especially among generative linguists (see among others Culicover 1997). One of the reasons rightward movement has been argued against is because it violates the E(mpty) C(ategory) P(inciple) stated as (26).

- (26) Traces must be properly governed.
 α properly governs β iff α theta-governs β or α antecedent governs β .
 α theta-governs β iff α governs β and α theta-marks β .
 α antecedent governs β iff α governs β and α is coindexed with β .

Notice that if we assume that the WH phrase *ndi-ani* undergoes rightward movement as illustrated in (25), then the trace of the WH phrase *ndi-ani* is neither properly governed nor properly bound. Proper Binding is defined as (27) (Chomsky 1986).

- (27) Every trace must be c-commanded by the category whose movement created the trace.

Clearly the rightward moved WH phrase *ndi-ani* in (25) does not c-command its trace. In addition, it is not clear what category (if any) attracts the WH phrase unless of course if we assume that the Focus Phrase projects on the right.⁶ Given the challenges that the rightward movement analysis faces, I do not pursue it any further. Rather, I consider an alternative analysis which though might also have challenges, proves to be a more constrained theory.

5.2 Remnant movement analysis

The analysis I propose for WH constructions such as (28) involves remnant movement as proposed in Epstein (2001) and Mueller (1998).

(28a) Wa-ka- bona Neo ndiani?
 WH_{agr1} past. see Neo_{1a} Foc-who
 ‘Who saw Neo?’ (subject)

(28b) Neo wa- á- ka- bona ndiani?
 Neo_{1a} WH_{agr1}- SA_{1a}- past see Foc-who₁
 ‘Who did Neo see?’ (object)

Epstein (2001) and Mueller (1998) show how German sentences involving remnant movement such as example (30) are derived without violating the Proper Binding Condition (PBC) formulated in Chomsky (1986) as (29).

(29) Every trace must be c-commanded by the category whose movement created the trace.

As observed in Mueller (1998) and Epstein (2001), the PBC as formulated in Chomsky (1986) is too restrictive as it rules out remnant movement structures such as the grammatical German example (30):

(30) [t₁ Zu lesen]₂ hat keiner [das Buch]₁ t₂ versucht
 to read noone the book tried

However, the grammaticality of (30) can be accounted for if we assume Epstein’s (2001) derivation based PBC stated as (31).

(31) Every movement must be to a c-commanding position.

Given (31) we can account for how (30) is derived by assuming that first *das Buch* is scrambled out of the infinitival clause resulting in an intermediate structure such as (32).

(32) hat keiner [das Buch]₁ [t₁ zu lesen]₂ versucht.
 Noone the book to read tried

The remnant phrase [t₁ Zu lesen] containing t₁, the trace of *das Buch* is topicalized resulting in (33).

⁶ Ndayiragije (1999) derives OVS sentences such as (iii) in Kirundi by arguing that Foc P projects rightward and that the subject NP *abâna* ‘children’ occupies Spec FocP.

iii. Amatá y-á-nyôye abâna.
 Milk 3s-past-drink:perf. children
 Children (not parents) drank milk.

However, the Kirundi phenomena discussed in Ndayiregije differs from the phenomena observed in Ikalanga WH constructions in that while the focused DP *abana* in Kirundi triggers no agreement on the verb, the Ikalanga focused sentence final WH phrase does.

- (33) [t₁ Zu lessen]₂ hat keener [das Buch]₁ t₂ versucht].
 To read noone the book tried
 ‘Noone tried to read the book’.

Notice that in (33) *das Buch* does not c-command t₁ which is its trace. This should be ruled out according to the PBC as formulated in Chomsky (1986). However, this sentence is well formed in German despite the free trace t₁. If on the other hand PBC is formulated such that it is not a filter on output representations but rather a syntactic operation that operates on derivations as in (31), then the grammaticality of (33) is not surprising. I therefore extend this analysis to the Ikalanga WH constructions with sentence final focused WH phrases. I propose that sentences such as (34) type WH constructions are derived as follows:

- (34) Neo wa- á- ka- bona ndi-ani?
 Neo_{1a} WH_{agr1} SA_{1a} past see Foc-who₁
 ‘Who did Neo see?’

First, the verb *bona* selects the focused WH phrase *ndi-ani* from the numeration forming VP [_{VP} *bona ndi-iani*]. VP then merges with the head of T, forming T’ [_{T’} *a ka* [_{VP} *bona ndi-iani*]]. T’ merges with the subject DP *Neo* forming TP [_{TP} *Neo a ka bona ndi-iani*]]. TP then selects *wa*, the WH agreement morpheme which presumably is the head of some XP. Since WH_{agr} shares the +WH feature with *ndi-ani*, *ndi-ani* is then attracted to the specifier of XP where the agreement relation between *ndi-ani* and *wa* is established in a spec-head relation. Since the WH_{agr} intervenes between the subject NP *Neo* and the subject agreement marker, the only logical assumption to make is that the NP *Neo* is also displaced. I will assume that subject NPs in Ikalanga have a topic feature which is strong in WH constructions thus requiring checking. However, the topic feature must be weak in declarative sentences since normally the subject NP and its agreement morpheme are found in a local configuration as illustrated in (35).

- (35) [_{TP} Neo [_T wá- ka- [_{VP} bika]]].
 Neo_{1a} SA_{1a}-past cook
 ‘Neo cooked.’

Thus, at this point, I assume that XP merges with TopP resulting in the intermediate representation shown in (36).

- (36) [_{TopP} Neo_j [_{XP} *ndiani*_i [_X wa [_{TP} t_j á- ka- [_{VP} bona t_i]]]]]

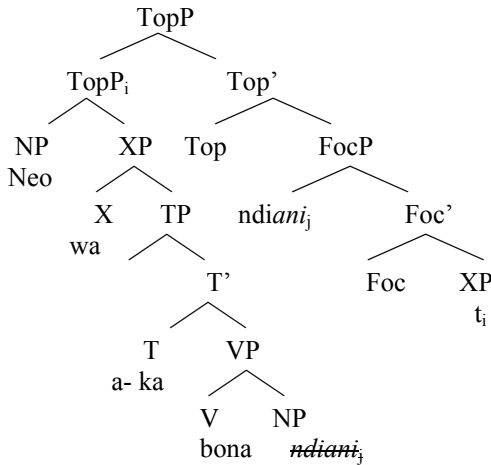
Example (36) does not give us the correct word order. This suggests that *ndi-ani* undergoes further movement to a position higher than the position occupied by the subject NP *Neo*. I will assume that this position is spec, FocP and that the XP headed by *wa* is not spec, FocP.⁷ Thus, at this point TopP merges with FocP and the head of FocP attracts *ndi-ani* causing it to move to the specifier of FocP where its focus feature is checked against the head of FocP. The resulting representation is (37).

- (37) [_{FocP} *ndiani*_i [_{TopP} Neo [_{XP1} *ndiani*_i [_X wa- [_{TP} á- ka- [_{VP} bona *ndiani*_i]]]]]]]

Notice that example (37) does not give us the correct word order since the WH phrase is sentence initial rather than sentence final. To get the WH phrase to a sentence final position, I assume that the clause [*Neo wa á ka bona ndiani*_i] which contains the trace (copy) of the WH phrase is dislocated for discourse reasons. One might assume following Rizzi (1997) that topic phrases are recursive and therefore that the remnant clause [*Neo wa á ka bona ndiani*_i]_T is remnant moved to the specifier of a Topic phrase. Since the subject NP *Neo* has already checked its topic feature, I speculate that perhaps the XP headed by *wa* has a topic feature which results in the movement described above. The representation described here is shown in (38).

⁷ Note however that example (36) is a grammatical sentence in Ikalanga.

(38)



In (38) however, the WH phrase, *ndi-ani* does not properly bind its trace since it does not c-command it. This should render this derivation ungrammatical according to Chomsky's (1986) PBC. However, this sentence like the German example (36) is grammatical despite the free WH trace. The grammaticality of this sentence can be accounted for if we assume the reformulated PBC of Epstein (2001). Given (31) since XP_i moves to a c-commanding position as shown in (38), the PBC is not violated hence such sentences are grammatical.

6. Conclusion

This paper has provided evidence that Ikalanga WH constructions with sentence final WH phrases prefixed with *ndi* are not *in-situ* and that in fact they are derived constructions resulting from a syntactic operation namely *attract*. Since Ikalanga has two types of WH constructions, namely *in-situ* and focused, this paper has shown that WH constructions with fronted WH phrases prefixed with *ndi* and those with sentence final WH phrases prefixed with *ndi* are essentially derived in the same way. Their derivation involves displacement of the WH phrase to spec FocP when the WH phrase gets attracted by the head of FocP. The sentence final WH phrase constructions differ from the sentence initial WH phrase in that the remnant clause containing the trace (copy) of the focused WH phrase is then dislocated for discourse purposes. I have argued that such remnant movement is possible only if we adopt Epstein's (2001) reformulated PBC since Chomsky's (1986) more restrictive PBC predicts such sentences to be ungrammatical. It is not very clear whether a category that is embedded in a clause (such as XP in (38) can be attracted by a head such as Top leading to the movement suggested in (38). However, despite this hitch, the analysis proposed in this paper accounts for the facts of Ikalanga WH constructions in a principled way and offers empirical data in support of the revised PBC proposed in Epstein (2001). I have not explored the cleft analysis to determine how well it can be used to account for the Ikalanga WH construction facts described in this paper. I leave that investigation for future research.

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