AKAN FOCUS AND TOPIC CONSTRUCTIONS AND THE PROSODY-SYNTAX INTERFACE

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Focus and Topic constructions in Akan have common characteristics of constituent dislocation to the left periphery of an extra-sentential clause and pronoun resumption in canonical base position of the dislocated constituent (Saah 1988; Boadi 1990). This paper discusses the influence of phonological and syntactic structures in phonological and syntactic rule application. It is claimed in this paper that the syntactic occurrence of an 'anaphoric relation' between a topicalized or focused constituent and the pronoun resumption in its canonical base position must draw on the phonological structure for a satisfactory account. Also, in the application of phrasal tonal rules of 'boundary assimilation' in simple clauses and 'inserted H-spread' in focus constructions the sensitivity of the phonology to syntactic information is emphasized. This paper, however, discusses the interface through the prosodic structure of the Prosodic Phonological Theory (Selkirk 1981; Nespor and Vogel 1986; Hayes 1989, etc.), which underscores the Indirect Reference Hypothesis (Inkelas 1989, etc.).

Les constructions relatives au Topic et au Focus dans la langue Akan partagent les traits communs de dislocation à la frontière gauche d'une clause extraphrastique et la reprise du pronom dans une position canonique de base du constituant objet de dislocation (Saah 1988 ; Boadi 1990). Cette communication met en vedette l'influence des structures phonologiques et syntaxiques sur la formulation des règles phonologiques et syntaxiques. Nous proposons, entre autre, que l'occurrence syntaxique d'une relation anaphorique entre un constituant topicalisé ou mis en relief et la reprise pronominale dans sa position canonique de base puise dans la structure phonologique. De même, Dans l'application des règles sur les tons comme l'assimilation frontalière dans de courtes clauses et 'inserted H-Spread' dans les constructions topicalisées, le rapport entre la phonologie et la syntaxe est mise à l'évidence. Cette communication éclaire l'interface entre la structure prosodique et la Théorie sur la Prosodie/Phonologique (Selkirk 1981; Nespor and Vogel 1986; Hayes 1989, etc). Cette dernière met l'accent sur l'Hypothèse de la Référence Indirecte (Inkelas 1989, etc).

0. INTRODUCTION

This paper discusses some phrasal occurrences in focus and topic constructions in Akan[1] based on the proposition that beyond the level of the word phonological and some (morpho)syntactic rule applications need to operate at an interface level between the phonological and the syntactic structures of the grammar, hence the phonology-syntax interface. I show in this paper that the phonology-syntax connection is prominent in Akan focus and topic constructions. The interface analysis of phrasal occurrences that are identified is pursued within the theoretical framework of Prosodic Phonology (Selkirk 1981; Nespor and Vogel 1986; Hayes 1989; etc.).

Prosodic phonology posits an intermediate structure, referred to as the prosodic structure (henceforth, p-structure), for the phonology-syntax interface analysis. Consequently, phrasal rules must draw clues from this p-structure to apply. That is to say, the syntactic categories do not directly provide the conditioning domains of phrasal rule application, but are employed as inputs to the generation of rule domains constituting

[1] Akan consists of several dialects. Prominent among them are Asante-Twi, Fante and Akuapim-Twi. Although mutually intelligible, these dialects exhibit some segmental and autosegmental differences. This paper mainly focuses on Asante-Twi, although throughout the paper we will be using the name Akan. This is to preclude segmental and autosegmental (especially, tonal) differences in the other dialects that may complicate the issues we are dealing with.

p-structure.[2] The proposal I advance in this paper, therefore, is that phrasal phenomena (either syntactic or phonological) that result from the interface between the phonology and the syntax are best analyzed in the p-structure.

The data I give also show the fact that the phonology-syntax connection is not only syntax-to-phonology directed, but also phonology-to-syntax directed. One syntactic phenomenon that takes account of some prosodic properties of a focused or topicalized constituent is discussed. Some phrasal phonological rules that are triggered by individual prosodic domain boundaries are also looked at.

The paper is organized as follows: In section 1 a brief description of the focus and topic constructions in Akan is given. The paper proceeds with the interface analysis and gives an account of rules in both the focus and topic constructions in sections 2, 3 and 4. Particularly, I show a case of an influence of the phonology in the syntax in section 3 and instances of syntactic influence in the phonology in section 4. Section 5 concludes the discussion.

1. THE STRUCTURE OF FOCUS AND TOPIC CONSTRUCTIONS

1.1 FOCUS CONSTRUCTIONS

A constituent is focused in Akan when it is placed at the left periphery of the functional projection of Focus Phrase (FOCP), with an immediately following clitic morpheme, **na**.[3] This clitic morpheme, referred to as the 'focus marker' (FM), narrows down the referent of its host (Saah 1988:25). A constituent cannot be focused in Akan and still remain *in-situ*. This is because FM cannot be introduced when constituents are in their *in-situ* positions.

Examples (1a) and (1b) show the subject and the object in focus, respectively.[4] The ill-formed construction in (1c) also demonstrates that FM cannot be invoked when the constituent that is supposed to be focused is still in the canonical clause. Therefore, FM only occurs at the right edge of a constituent in focus. Particularly, a constituent in focus sits at the specifier position of the projected discourse functional phrase (FOCP), as the categorial (bracketing) structure of (1a) shows in (2). As will be revisited in §3, observe also that the constituent in focus is replaced in the canonical base position with a co-referential pronoun.

(1) a. **kòfí$_i$ nà ò$_i$-bóá-Ø á!má**
Kofi FM 3SG-help-HAB Ama
It is Kofi who helps Ama.

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[2] Linguists differ on the number of levels that constitute the prosodic component. In a descending order of hierarchy, we adopt Nespor and Vogel's (1986:11) general proposal of the following seven prosodic units/levels: Phonological utterance (*U*), Intonational phrase (*I*), Phonological phrase (ϕ), Clitic group (*C*), Phonological word (ω), Foot (Σ) and Syllable (σ).

[3] Boadi (1974) notes that another clitic morpheme, **dɛɛ**, which occurs in the same syntactic position as **na**, also plays a role as a focus marker, as in **á!má$_i$ dèè kòfí ré-bóá nó$_i$**, 'as for Ama, Kofi is helping her'. He, however, notes that **dèè** does not define the concept of new information (or contrastiveness) in definite terms and does not induce an exclusive focus on an extraposed constituent.

[4] Akan is a two-tone language; i.e., high tone (H) and low tone (L). H is indicated with an acute (e.g., **dá** 'day') and L is indicated with a grave (e.g., **dà** 'never'). There is also a case of downstepped H after another H and it is indicated as !H (e.g., **àdá!ká** 'a box').

b. **á!má$_i$ nà kòfí bóá-Ø nó$_i$**
Ama FM Kofi help-HAB 3SG
It is Ama that Kofi helps.

c. ***kòfí bòá-Ø á!má *nà***
Kofi help-HAB Ama FM
It is Kofi who helps Ama.

(2) [$_{FOCP}$ **kòfí$_i$ nà** [$_{IP}$ **ò$_i$-** [$_{VP}$ **bóá** [$_{NP}$ **á!má**]]]]

1.2 TOPIC CONSTRUCTIONS

A topicalized constituent in Akan, as in other languages (see, e.g., Frascarelli 2000 for Italian), is discussed as that constituent in a sentence, which the rest of the sentence is about. Like a focused constituent in Akan, but without the clitic morpheme **na**, this constituent is always dislocated to the left periphery of its (functional) projection, the Topic Phrase (TOPP), from some canonical clause position. Subsequently, a topicalized constituent is replaced in the canonical position by a co-referential pronoun.

The illustrations in (3a,b) show the respective cases of object and subject topicalization. In (4), the categorial structure of the construction in (3b) is shown. Also significant in (3) is the fact that, as in Italian (Frascarelli 2000:3), there is always an intonational partition (i.e., a pause), indicated by comma here, between the topicalized constituent and the canonical clause.

(3) a. **kòfí$_i$, pàpá rè-sɹ̀ɛ́ nó$_i$**[5]
Kofi, father PROG-beg 3SG
(As for) Kofi, father is begging him.

b. **pàpá$_i$, ɔ̀$_i$-rè-sɹ̀ɛ́ kòfí**
father, 3SG-PROG-beg Kofi
(As for) Father, he is begging Kofi.

(4) [$_{TOPP}$ **pàpá$_i$**, [$_{IP}$ **ɔ̀$_i$-** [$_{VP}$ **rè-sɹ̀ɛ́ kòfí**]]]

2. THE PLACE OF THE PHONOLOGY-SYNTAX INTERFACE

It is obvious that focus (with the occurrence of FM) and topicalization bring about categorial variation in the syntax in Akan. By this variation, phonological rules are also affected, such that a rule that applies at a particular categorial boundary in a canonical clause does not apply in its related focus construction. In addition, a phenomenon of 'antecedent-anaphor' relation is triggered in the syntax. In the following, I explain that these show that, at the post-lexical level the interface between phonology and syntax is crucial. As already mentioned, I discuss the syntactic and phonological occurrences that are touched on from the perspective of p-structure (the basis of the prosodic phonological theory), with which the Indirect Reference Hypothesis (Inkelas

[5] Generally, only vowels bear tones in Akan, but sonorants (e.g., [**r**]; [**n**]) also bear tone when they constitute a separate syllable or the nucleus of a syllable, as in **sɹ̀ɛ́**, syllabified as CC.V with /**r**/ as the nucleus of the CC syllable. Consonants that bear tones are referred to as syllabic consonants.

1989; etc.) is enforced. By capturing the interface in the p-structure, domains of rule application are properly defined. Again, resulting rules and their applications are explained.

Advocates of the Indirect Reference Hypothesis recognize the fact that the syntactic constituent structure plays an influential role in the explanation of phrasal phonological rules. However, they also claim that the domains of such rules are actually taken from the p-structure of the grammar. Specifically, they claim that the syntactic constituent structures influence phrasal phonological rules only in the generation of the various and 'strictly layered' prosodic domains that constitute the p-structure (Selkirk 1984; etc.). Consequently, phrasal rules apply with pieces of prosodic information.

The p-structural argument of the interface strengthened by the fact that, although the p-structure is primarily generated on the syntactic constituent structures, other grammatical facts, such as the status of a word (i.e. lexical or functional), syllable structure, intonational break, etc., may also contribute to a complete definition of rule domains (Hayes 1989; Frascarelli 2000; etc.). In other words, the p-structure is defined depending on mapping rules involving information from the various structures of the grammar (Nespor and Vogel 1986:7), and not on syntax alone. Finally, any one of the prosodic domains may not be isomorphic to any syntactic constituent (see (7)). That is, there is lack of perfect isomorphy between syntactic and prosodic constituent hierarchies (Nespor and Vogel 1986; Selkirk 1984; etc.).

3. INFLUENCE OF THE PROSODY IN THE SYNTAX

It has been noted in both focus and topic constructions that when a particular constituent is dislocated, its base position in the canonical clause is filled by a co-referential resumptive pronoun (henceforth, RPro).[6] Observe in (5a), a repetition of (3b), that when the subject, for instance, is topicalized and surfaces at the specifier of TOPP, an RPro replaces it in the specifier of IP. This RPro then refers back to the disposed subject, hence the realization of an 'antecedent-anaphor' (anaphoric) relation. As exemplified in (5b), a repetition of (1b), observe that the same phenomenon is realized with a focused constituent. As also shown in (5c & d), lack of RPro in the canonical base position results in ungrammaticality.

(5) a. [$_{\text{TOPP}}$ **pàpá**$_i$, [$_{\text{IP}}$ **ɔ̀**$_i$-[$_{\text{VP}}$ **rè-sɪ̀ré** **kòfí**]]]
father 3SG- PROG-beg Kofi
(As for) Father, he is begging Kofi.

b. [$_{\text{FOCP}}$ **kòfí**$_i$ **nà** [$_{\text{IP}}$ **ɔ̀**$_i$- [$_{\text{VP}}$ **kɔ́-Ø** **kùmásí**]]]
Kofi FM 3SG- go-HAB Kumasi
It is Kofi who goes to Kumasi.

[6] Although it will not be taken up any further in this paper, note that unlike in the subject, the RPro occurrence is very much restricted in the object and other post-verbal environments (Stewart 1963; Saah 1988, 1992). The restriction on the post-verbal constituents is with regard to the feature specification of animacy. A distinction is, therefore, made between an overt and a covert manifestation of an RPro. If an extraposed object is animate, its canonical base position is filled with the RPro, '**no**'. However, where the object is inanimate, the resumption is covertly represented.

c. *[$_{TOPP}$ **pàpá**, [$_{IP}$ **e-** [$_{VP}$ **rè-sɪ̀ɛ́** **kòfí**]]]
father, EC- PROG-beg Kofi
(As for) Father, he is begging Kofi.

b. *[$_{FOCP}$ **kòfí$_i$** **nà** [$_{IP}$ **e-** [$_{VP}$ **kɔ́-Ø** **kùmásí**]]]
Kofi FM EC- go-HAB Kumasi
It is Kofi who goes to Kumasi.

The realization of this anaphoric relation in Akan provides one instance that the influence of the phonology (in terms of prosody) becomes evident in the syntax. In the anaphoric relation, a distinction is made between two kinds of antecedents. These are nouns (i.e., full NPs) and pronouns, which are described in this paper as 'prosodically independent' and 'prosodically dependent/insufficient', respectively, in the light of prosodic/phonological word (ω) domain constitution for Akan.

This asymmetric distinction is also based on the traditional notion of 'contentiveness' (i.e., the lexical/functional distinction), such that while full nouns are contentive (i.e., lexical), pronouns are not (hence, functional) and cannot constitute a ω-domain in isolation. In agreement with Zec & Inkelas (1990), Chen (1987), Selkirk (1996), etc., I suggest that unlike a 'full NP', a pronoun does not constitute a ω. The domain of ω in Akan, then, should conform to (6).

(6) Domain of a phonological word (ω)
Each contentive (i.e. lexical) syntactic terminal node/word is a prosodic word.[7]

From the definition in (6), it is evident that there cannot always be a one-to-one correspondence between a syntactic word and a prosodic one. Thus, as shown in (7),[8] we explain that in the syntax each terminal node constitutes a syntactic word (indicated by S), but in the prosody a constituent becomes a ω on the satisfaction of the ω constitution requirement(s) in place, e.g. (6) for Akan. So, while **ɔ̀(nó)** 's/he' and **mè** 'I', for instance, are (morpho)syntactic words like **pàpá** 'father', and **kòfí**, personal name (PN), they need to be mapped with other constituents into a ω or a higher prosodic unit.

(7) a. [$_{TOPP}$ [**pàpá$_i$**,]$_S$ [**ɔ̀$_i$-**]$_S$ [**rèsɪ̀ɛ́**]$_S$ [**kòfí**]$_S$]
[$_{TOPP}$ [**pàpá$_i$** [**ɔ̀$_i$-**]$_{\bar{\omega}}$]$_\omega$ [**rèsɪ̀ɛ́**]$_\omega$ [**kòfí**]$_\omega$]
(As for) father, he is begging Kofi.

b. [$_{TOPP}$ [**mè$_i$**]$_S$ [**mè$_i$-**]$_S$ [**rèsɪ̀ɛ́**]$_S$ [**kòfí**]$_S$]
[$_{TOPP}$ [[**mè$_i$**]$_{\bar{\omega}}$[**mè$_i$-**]$_{\bar{\omega}}$]$_\omega$ [**rèsɪ̀ɛ́**]$_\omega$ [**kòfí**]$_\omega$]
(As for) me, I am begging Kofi.

The ω-domain definition is necessary because the ω status of an antecedent we may have determines the phonetic form of its anaphor in Akan. Specifically, a focused or a topicalized constituent in the singular employs the 'third person singular' pronoun, **ɔ̀nó**

[7] Note that a compound (of two lexical stems), for instance, is also beyond the domain of a ω. So, the ω-domain could also be limited as follows: Not every grammatical word (GrWd) is also a ω.

[8] In (7) and other data to follow, with the subscript $\bar{\omega}$, I draw attention to the prosodic word (represented as ω) insufficiency status of a pronoun, as already mentioned. In other words, not all syntactic terminal nodes are also prosodic nodes, hence the distinction in the prosody. I do not intend to postulate another level in the prosodic hierarchy (see footnote (2)), but only to show that not every syntactic word can also be counted as a prosodic one.

(represented as /ɔ-/ in the subject and **nó** in the object),[9] in the canonical base position if this constituent is a *ω*. The suggestion that follows is that a focused or topicalized *ω* corresponds to a neutral phonetic form—i.e., the 'third person' pronoun—in the canonical clause position. We describe this 'antecedent-anaphor' correspondence as constituent-base neutrality. As may be observed in (8), therefore, in both focus and topic constructions we realize constituent-base neutrality.

(8) a. Focus construction: *Full Noun*

F. Subject: $[_{FOCP}\ [\textbf{kòfí}_i]_\omega\ \textbf{nà}\ [_{IP}\ \textbf{ɔ}_i\text{-}\ [_{VP}\ \textbf{ré-wáré}\ \ \textbf{ésí}]]]$
Kofi FM 3SG- PROG-marry Esi
It is Kofi who is marrying Esi.

F. Object: $[_{FOCP}\ [\textbf{ésí}_i]_\omega\ \textbf{nà}\ [_{IP}\ \textbf{kòfí}\ [_{VP}\ \textbf{ré-wáré}\ [_{NP}\ \textbf{nó}_i]]]]$
Esi FM Kofi PROG-marry 3SG
It is Esi whom Kofi is marrying.

b. Topic construction: *Full Noun*

T. Subject: $[_{TOPP}\ [\textbf{kòfí}_i]_\omega,\ [_{IP}\ \textbf{ɔ}_i\text{-}\ [_{VP}\ \textbf{rè-wàré}\ \ \textbf{ésí}]]]$
Kofi 3SG- PROG-marry Esi
(As for) Kofi, he is marrying Esi.

T. Object: $[_{TOPP}\ [\textbf{ésí}_i]_\omega,\ [_{IP}\ \textbf{kòfí}\ [_{VP}\ \textbf{rè-wàré}\ [_{NP}\ \textbf{nó}_i]]]]$
Esi Kofi PROG-marry 3SG
(As for) Esi, Kofi is marrying her.

As the postulation in (6) predicts, pronouns fall short of a *ω*, hence their description as prosodically dependent (*ω̄*). It follows that the same phonetic form as in the specifier of the functional projection is maintained in the canonical base position, if the focused/topicalized constituent is a pronoun. Accordingly, as also shown in both constructions in (9), the antecedent and the anaphor are identical. We refer to this 'antecedent-anaphor' correspondence as constituent-base sameness. Compared to the constituent-base neutrality of a focused/topicalized *ω*, the emphasis here is that only a syntactic word that is also a *ω* (or above) assumes neutrality in the canonical base position in Akan.

(9) a. Focus construction: *Pronoun*

F. Subject: $[_{FOCP}\ \textbf{wó}_i]_{\bar{\omega}}\ \textbf{nà}\ [_{IP}\ \textbf{wó}_i\text{-}\ [_{VP}\ \textbf{ré-wáré}\ \ \textbf{kòfí}]]]$
2SG FM 2SG- PROG-marry Kofi
It is you who is marrying Kofi.

F. Object: $[_{FOCP}\ \textbf{mé}_i]_{\bar{\omega}}\ \textbf{nà}\ [_{IP}\ \textbf{kòfí}\ [_{VP}\ \textbf{ré-wáré}\ [_{NP}\ \textbf{mé}_i]]]]$
1SG FM Kofi PROG-marry 1SG
It is me that Kofi is marrying.

[9] In particular, the pronominal form **ɔno** is used for an animate *ω*. If the focused or topicalized *ω* is inanimate, however, it employs the pronoun **ɛno**, represented as /**ɛ-**/ in the subject, but no overt phonetic form in the object position, as noted already.

b. Topic construction: *Pronoun*
T. Subject: [$_{TOCP}$ **wó**$_i$]$_{\bar{\omega}}$, [$_{IP}$ **wó**$_i$- [$_{VP}$ **rè-wàré** **kòfí**]]]
2SG 2SG- PROG-marry Kofi
(As for) You, you are marrying Kofi.

T. Object: [$_{TOCP}$ **mè**$_i$]$_{\bar{\omega}}$, [$_{IP}$ **kòfí** [$_{VP}$ **rè-wàré** [$_{NP}$ **mé**$_i$]]]]
1SG Kofi PROG-marry 1SG
(As for) Me, Kofi is marrying me.

Indeed, it is possible to analyze this anaphoric phenomenon and the associated dichotomous distinction we have established directly in the syntax. However, there is one issue with the distinction that the syntax may fail to account for or integrate into the analysis so far; and that is, when a focused or topicalized pronoun does not occur in isolation, but is rather conjoined with another constituent (either a full noun or a pronoun). In this case, both constituents are represented by a neutral pronoun in the base position. This neutral pronoun identifies with one of the antecedents in person, just as we demonstrated with full nouns and 'third person' in (8); and with the whole antecedent in number (i.e., plural, see (11)).

The prosodic account of this pronoun-in-conjunction case is that, unable to constitute a ω by itself, the pronoun creates a ω subcategorization frame, schematized in (10), with which it projects to the status of a ω. This frame is similar in interpretation to the constituent subcategorization of Serbo-Croatian clitics (Zec & Inkelas 1990:369).[10]

(10) $[[Pro]_{\bar{\omega}} ...]_{\omega}$ or $[... [Pro]_{\bar{\omega}}]_{\omega}$

Following the attainment of ω status through subcategorization, resumption of a neutral pronoun in a canonical clause position (i.e., constituent-base neutrality) is realized in the syntactic occurrence of anaphoric relation, as the data in (11) demonstrate. Also shown in (12) is the emphasis that, once a focused or topicalized constituent attains the ω status, it must have a neutral pronoun in the canonical base position. Consequently, an identical phonetic form manifestation in the canonical base position of the syntactic structure is utterly ungrammatical.

(11) a. Focused pronominal subject-in-conjunction:
Pro + Pro: [$_{FOCP}$ [[***mè***]$_{\bar{\omega}}$ ***né*** ***wó***]$_{\omega i}$ **nà** [$_{IP}$ **yè**$_i$**-ré-sɾ́é** **kòfí**]]
1SG and 2SG FM 1PL-PROG-beg Kofi
It is you and me who are begging Kofi.

b. Topicalized pronominal object-in-conjunction:
Pro + Noun: [$_{TOCP}$ [***àdú né*** [***wó***]$_{\bar{\omega}}$]$_{\omega i}$, [$_{IP}$ **kòfí rè-sɾ́é** [$_{NP}$ **mó**$_i$]]]
Adu and 2SG Kofi PROG-beg 2PL
(As for) Adu and you, Kofi is begging you.

[10] See Inkelas (1989) for a detailed discussion on prosodic subcategorization. The same constituent(s) constituting a ω could also be a prosodic unit higher than it (e.g. *C* or ϕ). The check in place, however, is that in order not to violate the Strict Layer Hypothesis (SLH: Selkirk 1984), a higher unit must, as a matter of dominance, include all units below it. The prosodic units are, therefore, guided by formulation constraints. In the 'pronoun-in-conjunction' cases, one may analyze them as more than a ω, but since a pronoun, as a functional unit, is discussed as prosodically inadequate in isolation, it follows theoretically that it subcategorizes into a ω first (with regards to SLH), before it falls into a higher unit.

(12) * [$_{FOCP}$ [***mè*** ***né*** ***wó***]$_{\omega i}$ **nà** [$_{IP}$ ***mè*** ***né*** ***wó***$_i$**-ré-sɾ́ɛ́** **kòfí**]]
1SG and 2SG FM 1SG and 2SG-PROG-beg Kofi
It is you and me who are begging Kofi.

Following the observations made, the motivation for the prosodic analysis is clear. That is, the three cases—i.e., full nouns, pronouns-in-isolation and pronouns-in-conjunction—in the anaphoric relation are wholly defined with a statement. Specifically, a ω employs a neutral pronoun in its base position in the canonical clause, but a constituent that falls short of a ω maintains identical phonetic form in the relation. This affirms the thesis that the prosodic requirement on a constituent exerts some influence in the syntactic rule of anaphora in Akan. In the syntax, we would have been forced to explain each case of focused/topicalized constituent (i.e., full-NP, pronoun-in-isolation and pronoun-in-conjunction) differently, since each terminal node constitutes a syntactic word.

4. SYNTACTIC INFLUENCE IN PROSODIC JUNCTURE RULES

One area in the phonology of Akan where the influence of the syntax (with regards to phrasal rule application) is clearly evident is with regard to tonal structure in various constructions. In focus constructions, the occurrence of the FM, **na**, initiates a unique tonal alteration, as against the tonal representation of a related simple clause or topic construction.

In the following, I explain that the tonal alteration associated with focus constructions in Akan is due to a focus restructuring of particular prosodic domain boundaries. I show that an ensuing tone rule in focus constructions is sensitive to a particular prosodic domain boundary that ensues from the restructuring. Thus, this ensuing tone rule is triggered on the attainment of the desired domain boundary. Concurrently, the restructuring also breaks down some boundary alignments of an earlier prosodic domain in a related simple clause and, subsequently, blocks the application of an expected rule.

4.1. TONE RULE IN THE SIMPLE CLAUSE

Before explaining the unique tone rule that obtains in focus constructions in Akan, I first explain a basic tonal (sandhi) rule that consistently applies in related simple clauses. Following Marfo (2004), I refer to this rule as 'boundary assimilation' (hereafter, B-A). With the application of B-A, a final tone of a word assimilates an onsetless or single-segment initial syllable of a following word.[11] However, B-A does not apply at every syntactic word or phrase boundary even if the following word has an onsetless initial syllable. As may be seen in (13) below, within the VP B-A applies between the verb and its complement in (13a),[12] but does not apply between the verb and its complement in (13b).

[11] The application of B-A is, therefore, immediately constrained by the syllable structure of the absorbing syllable. I refer to this constraint as 'initial syllable singleness'. An onsetless or single-segment initial syllable could be a prefix of a word (e.g., /**a**/ in ***à*-dènsù** 'whales' (pl.); **dènsù** 'whale' (sg.)), or part of a monomorphemic word (e.g., /**a**/ in ***à*dò** and /**n**/ in ***ǹ*kɾ́ómá**, PNs).

[12] Besides the H tone that surfaces in the onsetless initial syllable of the complement, the application of B-A in (13a) is evidenced by the downstep effect that appears in the stem-initial H tone. That is, the assimilating

(13) a. [$_{IP}$ **yàẁ** [$_{VP}$ **à-sómá àbénáá**] Lexical tone structure

[$_{IP}$ **yàẁ** [$_{VP}$ **à-sóm*á*** ***á***$^{!}$**bénáá**] Surface tone structure
Yaw PRF-send Abenaa
Yaw has sent Abenaa.

b. [$_{IP}$ **yàẁ** [$_{VP}$ **à-bó àbénáá**]] Lexical tone structure

[$_{IP}$ **yàẁ** [$_{VP}$ **à-bó àbénáá**]] Surface tone structure
Yaw PRF-beat Abenaa
Yaw has beaten Abenaa up.

I explain the inconsistency in the application of B-A within the VP in (13) as being due to the fact that B-A is sightless to syntactic domain boundaries. Rather, it is set off across a particular prosodic domain boundary. I suggest that this prosodic domain is the phonological phrase (ϕ), and that B-A is a ϕ-domain juncture rule. As structured in (14) below, this means that B-A only applies when a ϕ-boundary or boundaries obtain between syntactic units.

(14) The boundary assimilation rule
$[\grave{\sigma}\text{–}\sigma]_{\phi} \rightarrow [\acute{\sigma}\text{–}\sigma]_{\phi} \quad / [\,[_{N1} \ldots\acute{\sigma}]_{\omega/\phi} \_\_\_\,]_{\phi}$

Having identified the ϕ as the domain at the boundary or boundaries of which B-A is triggered, I now define the domain of the ϕ in Akan; i.e., how it is mapped. We have already observed in §2 that, besides the primary input base of the syntactic constituent structure, other grammatical resources also contribute to the generation of a complete p-structure (Hayes 1989; Frascarelli 2000; etc.). In the present case of Akan, the other grammatical resource is the syllable structure of the verb-stem. Based on these facts, the general ϕ formation scheme I suggest for Akan on the basis the canonical clause (IP) is given in (15).

(15) Domain of the phonological phrase (ϕ):
Every lexical NP in Spec-IP constitutes one ϕ, while a monosyllabic verb maps into a separate ϕ with its immediate (lexical) complement.
I.e., [$_{IP}$ NP [$_{VP}$ $V_{monosyllabic}$ NP]] is mapped as '[NP]$_{\phi}$ [V NP]$_{\phi}$'

The mapping scheme in (15) presupposes that where the verb stem is disyllabic (and provided the object is lexical) it constitutes a separate ϕ.[13] In this case, Nespor & Vogel's (1986:168) definition is more plausible—i.e. 'the domain consists of a lexical phrasal head and all other constituents on its non-recursive side, up to the next phrasal lexical head'. The ϕ formation is also constrained by the Lexical Category Condition (LCC: Truckenbrodt 1999:226ff, etc.), which restricts the mapping between syntax and prosody to lexical units, but not functional ones. Therefore, in an IP, for instance, a lexical Spec-IP constituent phrases separately from the VP, since they are dominated by a functional phrase, IP.

H tone from the verb dislocates the lexical L tone in the onsetless initial syllable, which then causes a reduction in the pitch level of the stem initial H tone, hence the downstep.

[13] This mapping in Akan is, however, subject to the phonetic condition of speech rate. Thus, in slow speech a disyllabic verb stem, like a monosyllabic one, may be mapped into a common ϕ with its (non-branching) complement.

We proceed in the analysis by looking at the application of B-A in the data in (16), where the ϕs are correctly plotted based on the present mapping scheme given in (15).[14] Further, with the ϕ-mapping in place, I draw attention to the lack of perfect isomorphy between syntactic domains and prosodic ones. That is, while a syntactic head and its complement are always contained in a phrase in the syntax, a syntactic head and its complement may map into one ϕ (see the VPs in (16c & d)) or may map into separate ϕs (as in the VPs (16a & b) and in the NP at Spec-IP in (16d)).

(16) Simple Clauses

a. $[_{IP}$ **ákú** $[_{VP}$ **rè-wàré àdò**]]
⇒ **[ákú**$_\phi$ **[rè-wàré]**$_\phi$ **[ádò]**$_\phi$
Aku PROG-marry Ado
Aku is marrying Ado.

b. $[_{IP}$ **kòfí** $[_{VP}$ **à-núnú àdú**]]
⇒ **[kòfí]**$_\phi$ **[á-!núnú]**$_\phi$**[á!dú]**$_\phi$
PN PRF-tickle PN
Kofi has tickled Adu.

c. $[_{IP}$ **yàẁ** $[_{VP}$ **à-bó àbénáá**]]
⇒ **[yàẁ]**$_\phi$ **[à-bó àbénáá]**$_\phi$
Yaw PRF-beat Abenaa
Yaw has beaten Abenaa up.

d. $[_{IP}$ **kòfí àdò** $[_{VP}$ **à-kyé àdú**]]
⇒ **[kòfí]**$_\phi$ **[ádò]**$_\phi$ **[à-kyé àdú]**$_\phi$
Kofi Ado PRF-catch Adu
Kofi Ata has caught Adu.

e. $[_{IP}$ **kòfí** $[_{VP}$ **rè-tété kùbé**]]
⇒ * **[kòf*í*]**$_\phi$ **[*ré*-tété]**$_\phi$ **[kú!bé]**$_\phi$
Kofi PROG-pluck coconut
Kofi is plucking coconuts.

f. $[_{IP}$ **yàẁ** $[_{VP}$ **à-bó àbénáá**]]
⇒ * **[yàẁ]**$_\phi$ **[à-*bó á*!bénáá]]**$_\phi$
Yaw PRF-beat Abenaa
Yaw has beaten Abenaa (up).

Observing the application of B-A, the data in (16) show that an onsetless initial syllable of a word adopts the final tone of a preceding word if these words share separate ϕs; i.e., if a ϕ-boundary (or ϕ-boundaries) obtains between them. As noted earlier, the assumption then is that B-A is basically blocked in succeeding ϕs with onset-marked initial syllables. The basic assumption behind the unyielding nature of the onset-marked initial syllables to the application of B-A is that the onset (i.e., the consonant) is opaque to the rule. It, therefore, blocks the rule in the syllable,[15] as shown in the initial syllable of the verb in (16a). B-A, however, takes place in the initial syllable of the object in (16a), which is without an onset. B-A also correctly applies at the ϕ-boundaries in (16b,c,d). In (16b), in particular, the dislodged lexical L tones of the onsetless initial syllables also cause a pitch reduction in the H tones of the succeeding syllables, hence the realization of downstepping in the verb and the object. The unyielding nature of an onset-marked initial syllable also explains the tonal ill-formedness at both ϕ-boundaries in (16e) although ϕ-boundaries are attained. Since B-A is a ϕ-domain juncture rule, it cannot apply within a ϕ (of two ωs), hence the

[14] Note that, by the enforcement of LCC, Spec-IP constituent maps into a separate ϕ. However, within the NP at Spec-IP, the nouns could map into separate ϕs because they are dominated by a lexical phrase, NP.

[15] There are some languages in which consonants block (or allow) tone spreading although, in most cases, consonants of a particular quality block a process. For instance, Hyman and Schuh (1974) and Schuh (1978) note that in Bade (a Chadic language spoken in Nigeria), H-spreading is blocked from taking place in a L-toned initial syllable of a succeeding word if this syllable begins with a nonglottalized voiced obstruent, including prenasalized voiced stops, as may be observed in the data below. The present case in Akan then is not unusual, although no specifications have been made of the blocking consonant in this paper.

Bade:	/**nén kàtáw**/	→ **nén *ká*!táw**	'I returned.'	
	/**nén ɗàmáw**/	→ **nén *ɗá*!máw**	'I submerged.'	
	/**nén gàfáw**/	→ **nén gàfáw**	'I caught.'	(Schuh 1978:226)

tonal ill-formedness of the VP in (16f). Also, in (16c) and (16f) B-A actually appears in the verb. It is, however, not evident because the assimilation involves low tone.

4.2. RULES IN FOCUS CONSTRUCTIONS

Employing the ϕ formation scheme given in (15) in the focus constructions in (17), the monosyllabic verb-stems in (17a,b,c) immediately map into one ϕ with their complements. Further, unlike the noun at Spec-IP in (17c), the pronouns at Spec-IP in (17a,b), as non-lexical units, cannot constitute separate ϕs. So, they are mapped into another ϕ with the succeeding ϕ. This causes ϕ-recursion—i.e., one ϕ within another.[16] This recursion also appears in (17d). Within the VP of (17d), however, the disyllabic verb-stem primarily phrases separately from its lexical complement.

(17) a. $[_{FOCP}$ **ésí$_i$ nà** $[_{IP}$ **wó-** $[_{VP}$ **à-bòà nó$_i$**]]]
⇒ **[ésí$_i$ nà]$_\phi$** **[wó-** **[á-bóá nó$_i$]$_\phi$** **]$_\phi$**
Esi FM 2SG- PRF-help 3SG
It is Esi that you have helped.

b. $[_{FOCP}$ **kòfí$_i$ nà** $[_{IP}$ **ɔ$_i$-** $[_{VP}$ **à-bò àbénáá**]]]
⇒ **[kòfí$_i$ nà]$_\phi$** **[ɔ$_i$-** **[á-bó àbénáá]$_\phi$** **]$_\phi$**
Kofi FM 3SG- PRF-beat Abenaa
It is Kofi who has beaten Abenaa (up).

c. $[_{FOCP}$ **ésí$_i$ nà** $[_{IP}$ **yàẁ** $[_{VP}$ **à-bò nó$_i$**]]]
⇒ **[ésí$_i$ nà]$_\phi$** **[yàẁ]$_\phi$** **[á-bó nó$_i$]$_\phi$**
Esi FM Yaw PRF-beat 3SG
It is Esi that Yaw has beaten (up).

d. $[_{FOCP}$ **kòfí$_i$ nà** $[_{IP}$ **ɔ$_i$-** $[_{VP}$ **rè-bòà àbénáá**]]]
⇒ **[kòfí$_i$ nà]$_\phi$** **[ɔ$_i$-** **[ré-bóá]$_\phi$** **]$_\phi$** **[á$^!$bénáá]$_\phi$**
Kofi FM 3SG- PROG-help Abenaa
It is Kofi who is helping Abenaa.

Following the attainment of the triggering prosodic domain and domain properties of B-A, i.e., ϕ and ϕ-domain edge-alignments, one would expect the rule to apply consistently in the onsetless initial syllable in the succeeding ϕs. However, this is not the case. In (17a) and 17(b), the H tones of the Spec-IP constituents cannot be the source of the surface H tones in the onsetless aspectual verb prefixes in the succeeding ϕs.[17] This is because, as can also be seen in (17c,d), the lexically L-toned onsetless aspectual prefixes in the verb again surface as H-toned after preceding final L tones. I claim that, instead of B-A, what happens is that a different tonal rule is initiated in focus constructions.

To buttress the fact that, indeed, the final H tone of the preceding pronouns cannot be the source of the phonetic H tone in the aspectual prefixes in the succeeding ϕs, recall an earlier observation in simple clauses that an onset in an initial syllable at the left-edge of a succeeding ϕ blocks B-A. In focus constructions, however, as can be

[16] Containing the pronouns at Spec-IP in one ϕ with the VP seems to violate LCC, which forbids such a mapping. Note however that the pronoun is not in a primary ϕ with the VP. Thus LCC is not violated.
[17] Indeed, as I will explain later in the discussion, the H tone in the Spec-IP constituent (pronoun) is not even a lexical one and has resulted through a regressive rule.

seen in the verb in (17d), an onset-marked initial syllable also surfaces as H even after a L-final constituent.

I explain the tonal phenomenon in (17) on the basis of a change in (or a loss of) basic prosodic domain boundaries. Specifically, focus constructions in Akan demand a unique restructuring of the basic ϕ-domains that are mapped on the basis of a particular scheme or theory; in this paper, the one given in (15). In the restructuring, the basic ϕ containing Spec-FOCP and FM (i.e., [NP **na**]$_\phi$) picks up the immediate constituent at its recursive side, Spec-IP.[18] Together, they then rise to the status of *I*, the immediate higher domain in the prosodic hierarchy, thereby canceling out the basic ϕ-boundary. As shown in (18), the verb is also mapped into a common I with its complement. Based on its progression to a higher level (in the prosodic hierarchy), I refer to the focus restructuring here as 'prosodic raising' (hence, p-raising).

(18) Focus restructuring

$[_{FOCP}$ NP **na** $[_{IP}$ NP/Pro $[_{VP}$ $V_{disyllabic}$ NP …]]]

a. [NP **na**]ϕ [NP]ϕ [VP]ϕ [NP]ϕ
⇒ [[NP **na**]$_\phi$ [NP]$_\phi$]$_I$ [[VP]$_\phi$ [NP]$_\phi$]$_I$ ⇒ [NP **na** N]$_I$ [VP NP]$_I$

b. [NP **na**]$_\phi$ [Pro [VP]$_\phi$]$_\phi$ [NP]$_\phi$
⇒ [[NP **na**]$_\phi$ Pro]$_I$ [[VP]$_\phi$ [NP]$_\phi$]$_I$ ⇒ [NP **na** Pro]$_I$ [VP NP]$_I$

Following p-raising, I suggest that the phonetic H tone we observe in the initial syllables of the verbs in (17) is an inserted H tone (henceforth, inserted-H) associated with focus constructions, but specifically induced by the L-toned FM. This inserted-H prefers to dock on a constituent at the left-edge of a succeeding *I* (which happens to be the verb), irrespective of its syllable structure. Further, this inserted-H spreads through the verb root. Hence, I refer to this tonal phenomenon as the 'inserted-H spread' rule. Therefore, note that *I*-boundaries predict inserted-H spread in focus constructions and erase the triggering domain, and for that matter, domain properties of B-A where necessary.

Based on p-raising, the constructions in (17) are restructured in (19) below. Observe that inserted-H spread is realized in the verbs based on the attainment of its conditioning prosodic boundary. Within the succeeding *I* in (19d), B-A is also realized following the attainment of the desired ϕ-boundary, unlike in (19b). Thus, domains of both rules are well defined and properly identified within the p-structure (i.e., with prosodic analysis).

(19) a. [**ésí$_i$ nà**]$_\phi$ [**wó- [à-bòà nó$_i$**]$_\phi$]$_\phi$
⇒ [**ésí$_i$ nà wó-**]$_I$ ^{H}[[**á-bóá nó$_i$**]$_\phi$]$_I$
Esi FM 2SG- PRF-help 3SG
It is Esi that you have helped.

b. [**kòfí$_i$ nà**]$_\phi$ [**ɔ$_i$- [à-bó àbénáá**]$_\phi$]$_\phi$
⇒ [**kòfí$_i$ nà ɔ$_i$-**]$_I$ ^{H}[[**á-bó àbénáá**]$_\phi$]$_I$
Kofi FM 3SG- PRF-beat Abenaa
It is Kofi who has beaten Abenaa (up).

[18] Specifically, this is focus (motivated) restructuring because of the involvement of FM. Frascarelli (2000, e.g., 62-64)) makes similar restructuring in prosodic parsing in Italian with the influence of focus and topic at play. In Italian, however, the restructuring is directed towards the non-recursive side of the constituent in focus.

c. [**ésí$_i$ nà**]$_\phi$ [**yàẁ**]$_\phi$ [**à-bó nó$_i$**]$_\phi$
⇒[[**ésí$_i$ nà**]$_\phi$ [**yàẁ**]$_\phi$]$_I$ ^{H}[[**á-bó nó$_i$**]$_\phi$]$_I$
Esi FM Yaw PRF-beat 3SG
It is Esi that Yaw has beaten (up).

d. [**kòfí$_i$ nà**]$_\phi$ [**ɔ$_i$- [rè-bóá**]$_\phi$]$_\phi$ [**àbénáá**]$_\phi$
⇒[[**kòfí$_i$ nà ɔ$_i$-**]$_\phi$]$_I$ ^{H}[[**ré-bóá**]$_\phi$ [**á$^!$bénáá**]$_\phi$]$_I$
Kofi FM 3SG- PROG-help Abenaa
It is Kofi who is helping Abenaa.

Concerning the origin of the inserted-H, the occurring tonal structure in topic constructions supports the suggestion that FM induces it in focus constructions. That is, although we have an extra-sentential projection and constituent left-periphery dislocation in both focus and topic constructions, in topic constructions there is no occurrence of **na** and, as a result, no inserted-H.

Explaining further, in topic constructions, the constituent in topic immediately maps to *I*. This mapping is mandated by the intonational break (indicated by a comma) that inserts a boundary between it and the canonical clause. Following the *I* status of the constituent in topic, the rest of the construction is also mapped into a common *I*, as shown in (20).

(20) a. **kòfí$_i$, ɔ$_i$-à-fɪ̀rɛ̀ àtó**
⇒[**kòfí$_i$**,]$_I$[[**ɔ$_i$- [à-fɪ́rɛ́**]$_\phi$]$_\phi$ [**á$^!$tó**]$_\phi$]$_I$
Kofi, 3SG- PRF-call Ato
(As for) Kofi, he has called Ato.

b. **àtó$_i$, kòfí à-fɪ̀rɛ̀ nó$_i$**
⇒[**àtó$_i$**,]$_I$ [[**kòfí**]$_\phi$ [**á-$^!$fɪ́rɛ́ nó$_i$**]$_\phi$]$_I$
Ato, Kofi PRF-call 3SG
(As for) Ato, Kofi has called him.

Observe in (20) that, although *I*s are finally attained, the inserted-H is not realized. This points to the fact that the inserted-H in focus constructions is associated with the FM. Instead, B-A, as in simple clauses, is the primary tone rule in topic constructions provided its triggering domain boundary is realized—i.e., the left boundary of a succeeding ϕ. In (16a), therefore, the L tone on the immediate left constituent of the *I*, /**ɔ-**/, assimilates the left-edge aligned onsetless aspectual prefix in the embedded ϕ (by identical tone merger). The final H of this embedded ϕ also assimilates the onsetless initial syllable of the object left-aligned in the second ϕ (by lexical L dislodging), resulting in the downstepped H in the object. Likewise, in (20b), we witness the assimilation of the onsetless aspectual prefix left-aligned in the succeeding ϕ by the final-H of the preceding ϕ, with a further downstepping effect on the verb.

Based on the data in (19) and (20), it is crucial to note that both extra-sentential projections of focus and topic demand *I*-phrasing. Again, in focus constructions the inserted-H that results in inserted-H spread demands and prefers to dock at the left-edge of a succeeding *I*, but not a succeeding syntactic phrase. Otherwise, it should have been realized on the immediately succeeding syntactic boundary of Spec-IP (i.e., the left-edge of the canonical subject position).

Besides inserted-H spread, I shall also explain another tonal phenomenon on the RPro of a focused subject, capable of undermining the analysis so far. We observe in (19b,d), repeated below as (21a,b) respectively for ease of reference, that the RPro of the focused subject, /ɔ-/, surfaces as H-toned in (21a), but stays tonally intact in (21b).

(21) a. [**kòfí**$_i$ **nà** ɔ́$_i$-]$_I$ ^{H}[**á-bó àbénáá**]$_I$
It is Kofi who has beaten Abenaa.

b. [**kòfí**$_i$ **nà** ɔ̀$_i$-]$_I$ ^{H}[[**ré-bóá**]$_\phi$ [**á!bénáá**]$_\phi$]$_I$
It is Kofi who is helping Abenaa.

This tonal difference is due to a regressive tonal rule that applies across *I*-boundaries and is realized on the RPro. Let us refer to it as 'regressive tone sharing' (hereafter, Reg-TS). For the sake of description, I assume that this rule probably takes effect after the inserted-H has appropriately docked. With this assumption, it follows that the assimilatory effect of the FM-induced inserted-H is bi-directional. That is, it spreads to both its left and right.

Operating with the same immediate constraint as B-A (observed and exemplified in (15) and others), I explain that Reg-TS is also constrained by 'initial syllable singleness' (i.e., the opacity effect of onsets) pointed out on left-aligned constituents of succeeding ϕs. Accordingly, in (21b) we realize that Reg-TS does not apply from the aspectual prefix, /**ré-**/, to /ɔ**-**/. Specifically, unlike (21a), the aspectual morpheme to regressively share its acquired H tone is consonant-initial. Thus, the onset of the aspectual affix appropriately blocks Reg-TS, just as it blocks B-A. With Reg-TS, the primary prosodic analysis of inserted-H spread is maintained. That is, inserted-H docks on the left-edge of a succeeding *I*, but not on Spec-IP or any other succeeding constituent.

5. CONCLUSION

Syntactic and phonological occurrences that pertain to simple clauses, focus, and topic constructions have been observed and discussed in this paper. Considering all the occurrences, one realizes that working within the p-structure provides a common platform with regard to where phonological and syntactic information interface. In the anaphoric relation arising from focusing and topicalization of full nouns and pronouns (in isolation and conjunction), the diverse manifestation of the resumptive pronoun in the canonical base position have been observed. The diversity is conveniently captured and explained by the p-structure. By convenience, I mean that the various forms of the resumptive pronoun are not variously explained.

In the same direction, I have shown that the significance of defining prosodic domains of rule application, instead of working with those delineated in the syntax, is to be able to explain occurring phenomena consistently and appropriately. Thus, it has been noted that the syntactic influence in the phonology is not direct, although changes in the syntactic structures could result in changes in phonological rules. This has been witnessed with the tonal rules that come to bear in focus constructions (i.e., Inserted-H spread and Reg-TS), as against the tonal rule in simple clauses (i.e., B-A). With a well-defined p-structure, therefore, domains of phonological rule application are readily identified.

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