

# Explaining logophoricity, with special reference to Aghem

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**1 Introduction.** This is a study of logophoricity with special focus on Aghem, a Grassfields Bantu language spoken in and around the city of Wum in the Northwest Province of Cameroon, Africa. To the best of my knowledge, this study constitutes the first in-depth formal syntactic analysis of logophoricity, certainly for Aghem. This study presents new data that counter previous assumptions about the nature of logophoricity in Aghem. Additionally, it sheds light on the nature of logophors in West African languages and their relationship to other natural human language phenomena, such as switch-reference, long distance anaphora and indexical shift. This analysis attempts to show that logophors are not unique and puzzling but analyzable under a single universal mechanism that can also explain related phenomena from diverse languages.

**2 Aspects of logophoricity.** The term logophor(icity) is often a source of confusion because it has been used to refer to two different cases in the literature: 1) logophors in West African languages, often called logophoric pronouns, which are special pronouns that take the “author of discourse” as an antecedent (Hagège 1974) and 2) anaphors that are bound outside of a local domain, a use of the term which has been widely adopted since Clements (1975) (Reuland 2006). The later type is also called an indirect reflexive. The main difference between these two cases is that the West African logophors are morphologically unique forms that are distinct from other pronominal forms in the particular language in question. The later case refers to the logophoric effects induced by a reflexive pronoun that is bound outside of its local domain. It has been argued in the typological literature that these two cases are different and should be considered separately (Culy 1994). In this analysis, however, these two cases are analyzable under a single syntactic mechanism.

**2.1 Logophoric context.** A peculiar property of West African logophors is that their referential properties are sensitive to the verbal context under which they are embedded. West African logophors

normally occur in clauses embedded under verbs of saying, thinking, knowing, perceiving, or showing emotion. An example from Aghem in (1) shows that the logophor embedded under a clause with a verb of saying co-refers with the subject of the matrix clause.<sup>1</sup>

- (1) Nnsin<sub>i</sub> dzɛ enyia é<sub>i/\*j</sub> bvɔ̀ nù<sup>2</sup>  
 Nsen say that LOG fall FOC  
 'Nsen said that she (herself) fell.'

In some languages, such as Abe, a Niger-Congo, Kwa language of Ivory Coast, there is only one verb under which a logophor can be embedded. This is the verb "say." Additionally, a particular complementizer co-occurs with the logophor, introducing the embedded clause in which the logophor occurs (Koopman & Sportiche 1989)<sup>3</sup>. In fact, it has been observed that the verbs that license logophors in West African languages fall into the hierarchy, shown in (2) below (Culy 1994).

- (2) *say > know > think > perceive*

If a language licenses logophors in just one verbal context, it will license them embedded under a verb of saying, as in Abe. This suggests that there may be a diachronic tendency for the development of a logophor in contexts of reported speech first. The prediction made by the hierarchy in (2) is that if a language licenses logophors embedded under verbs of perceiving, it will also license them under verbs of thinking, knowing and saying. In contrast to Abe, Aghem allows logophors in contexts of saying, knowing, thinking, perceiving, showing emotion, and even direct perception (a surprising finding counter to claims by Culy (1994)). The example in (3) below shows that in Aghem co-reference is established between the matrix subject and the embedded logophor with a verb of telling. Likewise, the example in (4) below shows that co-reference is also established between the matrix subject and the

1 Unless otherwise noted, the Aghem data were collected by the author in Wum, North West Province, Cameroon in the summer of 2007. The logophor in Aghem is restricted to third person singular, subject position referents. Some West African languages, however, have third and second second person, singular and plural, subject and object logophors.

2 The focus particle *nù* in Aghem is considered to bear sentence-level unmarked focus. It is obligatory unless there is a focus-bearing completive aspect marker or a verbal complement in the sentence. For example, the focus particle *nó* is obligatory in (a), ungrammatical in (b) and is optional in (c) (Watters 1979). For more in-depth analyses of focus in Aghem, see Hyman (2006) and Hyman and Polinsky (2006).

- (a) bighà 'ki mɔ̀ wì nò  
 leopard SM COMPL kill FOC  
 'The leopard killed (it).'
- (b) bighà 'ki máà wì  
 leopard SM COMPL.FOC kill  
 'The leopard *did* kill (it).'
- (c) bighà 'ki mɔ̀ wì fɪ-nwɪn  
 leopard SM COMPL kill CL11-bird  
 'The leopard killed a bird.' (Watters 1979: 166)

3 See Culy (1994) for more detail on the relationship between complementizers and logophors.

embedded logophor with a verb of direct perception, namely hearing. Aghem also allows the logophor with a verb like "see," shown in (5). Finally, the example in (6) shows that the same holds for a verb of showing emotion, namely sadness. These examples show that in Aghem a logophor can be licensed in a wider range of verbal contexts than previously thought.

- (3) Tsɔŋ<sub>i</sub> mò dzɛ̃ â Nnsin<sub>j</sub> enyia é<sub>i/\*j</sub> ndù an na' e filansi  
 Tsong PST say to Nsen that LOG go to country of France  
 'Tsong<sub>i</sub> told Nsen<sub>j</sub> that he<sub>i/\*j</sub> would go to France.'
- (4) Nnsin<sub>i</sub> mo zuw enyia é<sub>i/\*j</sub> ndù an na' e filansi  
 Nsen PST hear that LOG go to country of France  
 'Nsen<sub>i</sub> heard that she<sub>i/\*j</sub> would go to France.'
- (5) Tsong<sub>i</sub> màa kô ghuw wila é<sub>i/\*j</sub> mò tso â zuèè  
 Tsong PST see man who LOG PST hit PREP yesterday  
 'Tsong<sub>i</sub> saw the man that he<sub>i/\*j</sub> hit yesterday.'
- (6) Abàŋ<sub>i</sub> mò muŋ nû aŋ-ghia é<sub>i/\*j</sub> zigha ndugho  
 Abang PST sad FOC as LOG leave house  
 'Abang<sub>i</sub> was sad as he<sub>i/\*j</sub> left the house.'

When the logophor is embedded under a verb that is not one of saying, thinking, knowing, perceiving or showing emotion, then it displays the referential properties of a normal pronoun. The example in (7) shows that in Aghem, when the logophor is embedded under a verb like "leaving," then the logophor can optionally establish co-reference or disjoint reference with the subject of the matrix clause.

- (7) Abàŋ<sub>i</sub> zigha ndugho mò é<sub>i/j</sub> gbin zì  
 Abang leave house PST LOG morning eat  
 'Abang<sub>i</sub> left the house when he<sub>i/j</sub> ate breakfast.'

The previous examples have shown that the referential properties of logophors hold only when they are embedded under certain verbs, mainly verbs of saying, knowing, thinking, perceiving and/or showing emotion. Moreover, the verbs that license logophors will vary from one language to another, but if a language only licenses a logophor under one verb, it should be a verb of speech. Additionally, the data from Aghem have shown that the class of verbs that license logophors is much larger than has been previously assumed<sup>4</sup>. Now, we turn to a description of the referential properties of logophors by contrasting them with the referential properties of other pronominal elements.

## 2.2 Obligatory co-reference. Another peculiar property of West African logophors is that the

<sup>4</sup> For other examples of West African languages in which a large number of verbs license logophors, see Bond (2006) on Ogonoid languages and Jones (2000) on Boko.

logophor in a clause embedded under a verb of speech, thought, perception, emotion, etc. obligatorily establishes co-reference with the subject of the higher clause. As a result of this, there is a blocking effect that occurs with respect to the normal, non-logophoric pronoun in the same context. In other words, in contexts in which the logophor is obligatorily co-referent, the normal, non-logophoric pronoun is obligatorily disjoint in reference. This is the case for most West African logophors (Culy 1994, 1997) but not all (c.f. Abe (Koopman & Sportiche 1989)). This is indeed the case in Donno So, as discussed by Culy (1994). The example in (8) has a regular pronoun in the embedded clause, which is interpreted as disjoint in reference from the matrix subject of the verb of speech. The example in (9) shows that with the logophor in the embedded clause, co-reference is established with the matrix subject of the verb of speech.

- (8) Oumar<sub>i</sub>        Anta<sub>j</sub>    woñ<sub>k</sub>    waa    be    gi  
 Oumar<sub>i</sub>        Anta    3SG    seen    AUX    said  
 'Oumar said that Anta had seen him.'
- (9) Oumar<sub>i</sub>        Anta<sub>j</sub>    **inyemñ**<sub>i</sub>    waa    be    gi  
 Oumar        Anta    **LOG-ACC**    seen    AUX    said  
 'Oumar said that Anta<sub>j</sub> had seen him.' (Culy 1994: 1056)

The examples in (10) and (11) from Aghem also demonstrate these referential properties. The example in (10) shows the regular pronoun in the embedded clause, which is obligatorily disjoint in reference from the subject of verb of speech in the higher clause. The example from (1), repeated here in (11) has the logophor in the lower clause and shows obligatory co-reference with the subject of the verb of speech in the higher clause.

- (10) Nnsin<sub>i</sub>    dzɛ̀    enyia    ù\*<sub>i/j</sub>        bvɔ    nù  
 Nsen    say    that    3.SG.SUB    fall    FOC  
 'Nsen said that she fell.'
- (11) Nnsin<sub>i</sub>    dzɛ̀    enyia    é<sub>i/\*j</sub>    bvɔ    nù  
 Nsen    say    that    **LOG**    fall    FOC  
 'Nsen said that she (herself) fell.'

The property of marking co-reference or disjoint reference between subjects of two clauses is a function of the grammar that is found in other languages but goes by different names. This property of obligatory co- or disjoint reference between subjects is reminiscent of a switch reference system<sup>5</sup>. Switch reference is a system in which a clause is marked by some element, usually an inflectional

5 Thanks to Heidi Harley for pointing out the importance of the question of how logophors are similar/different from same subject markers.

morpheme on the verb, to indicate if its subject is the same or different from the subject of another clause<sup>6</sup>. The sentences in (12) and (13) below show that the verbal suffixes *-k* and *-m* function as the same subject and different subject markers, respectively, in Maricopa (a Yuman language of Arizona). In (12), the same subject marker indicates that the subject of one clause is the same as the subject of the other. In (13), the different subject marker indicates that the two clauses have different subjects.

(12) nyaa-'ashvar-**k**-'iima-k  
 1-sing-SS-1-dance-ASP  
 'I sang and I danced.'

(13) Bonnie-sh-ø-ashvar-**m**-'iima-k  
 Bonnie-SUBJ-3-sing-DS-1-dance-ASP  
 'Bonnie danced and I sang.' (Haiman & Munro 1983: ix)

Likewise in Imbabura Quichua (a Quechuan language of Ecuador), the sentences in (14) and (15) below show the verbal suffixes *-shpa* and *-jpi* function as the same subject and different subject markers, respectively.

(14) Utavalu-man chaya-shpa ñuka mama-ta riku-rka-ni  
 Otavalo-to arrive-SS my mother-ACC see-PAST-1  
 'When I arrived in Otavalo, I saw my mother.'

(15) Juzi Utavalu-man chaya-jpi paypaj wasi-man ri-rka-ni  
 Jose Otavalo-to arrive-DS his house-to go-PAST-1  
 'When Jose arrived in Otavalo, I went to his house.' (Cole 1983: 5)

Moreover, the property of obligatory disjoint reference seems similar to what has been called the anti-anaphor in Dogrib, an Athapaskan language of Canada. In Dogrib, the anti-anaphor, *ye*, must be disjoint in reference from a c-commanding subject within its clause<sup>7</sup>. It may, however, co-refer with the subject of a higher clause (Saxon 1984), shown in (16).

(16) John<sub>i</sub> ye<sub>j</sub>-hk'è ha  
 John him-3.shoot FUT  
 'John<sub>i</sub> is going to shoot him<sub>j</sub>.' (Saxon 1984)<sup>8</sup>

West African logophors are indeed similar to same subject markers in their subject-orientation and reference tracking function. There are, however, a number of important differences. First, switch reference markers never occur in subordinate clauses, they normally occur in coordinate or other linearly adjacent clauses. Logophors, on the other hand, normally do occur in subordinate clauses.

6 For formal treatments of switch reference, see Finer (1984, 1985), Watanabe (2000), Sato (to appear).

7 Thanks to Andrew Barss for pointing me to this data.

8 For a formal analysis of the Dogrib anti-anaphor, see Enç (1989)

Additionally, switch reference markers are not arguments. They can, and often do, co-occur with full argument NPs. On the other hand, logophors are arguments of their verbal heads. Moreover, what have been argued to be canonical switch reference markers are manifested as inflectional morphemes on the verb, while what have been called canonical logophors are borne out as independent pronominal elements.<sup>9</sup>

Despite these differences, there may indeed be a diachronic relationship between switch reference markers and logophors as has been proposed (Comrie 1983, Stirling 1993). In some switch-reference languages, the markers are not verbal inflectional elements, but independent morphemes. This is the case for Pima. In (17) below, the same subject marker is not a verbal affix, and, in fact, it does not even occur adjacent to the verb. The same holds for the different subject marker in Pima, shown in (18).

(17) hegai 'uuvi 'a-t 'am şohñi hegai ceoj c 'am şoşa  
 that woman 3-PERF hit that man SS cry  
 'The woman hit the man and she cried.' (Haiman & Munro 1983: x, from Langdon & Munro 1979)

(18) hegai 'uuvi 'a-t 'am şohñi hegai ceoj ku-t 'am şoşa  
 that woman 3- PERF hit that man DS-PERF cry  
 'The woman hit the man and he (the man) cried.' (Haiman & Munro 1983: x, from Langdon & Munro 1979)

In Aghem, the obligatory co-reference property of the logophor is certainly restricted to particular verbal contexts of saying, thinking, knowing, perceiving and feeling emotion. Example (19) shows that optional co-reference, the behavior of normal pronouns, obtains when the Aghem logophor is not embedded under a predicate of saying, thinking, perceiving, etc. In example (19), the logophor can co-refer or can be disjoint in reference from the matrix subject.

(19) Abàŋ, zìgha ndugho mò é<sub>i/j</sub> gbin zì  
 Abang leave house PST LOG morning eat  
 'Abang left the house when he ate breakfast.'

The property of obligatory co-reference is well established for West African logophors. At this juncture, we turn to an explication of the long distance reference properties of logophors.

**2.3 Long distance co-reference.** A third property of logophors is that they can establish reference across long distances. In Aghem, if the logophor is embedded under more than one verb of

<sup>9</sup> For an example of a West African language in which the logophoric pronouns are hardly distinct from same subject markers, see Jones (2000) on Boko. Also, for some cases of switch reference that look more like logophoricity, see Stirling (1993) who also points out some important differences between logophoricity and switch reference.

saying, thinking, or another verb that licenses logophors, then the logophor can optionally refer to either of the higher subjects. The example in (20) shows that the logophor can refer to either Tsong's thinking or Abang's saying.

- (20) Tsɔŋ<sub>i</sub> mo'nlo enyia Abàŋ<sub>j</sub> dzɛ̃ enyia e<sub>i/j/\*k</sub> zàŋsò nù  
 Tsong think that Abang say that LOG smart FOC  
 'Tsong thinks that Abang said that he is smart.'

Long distance reference or anaphora has been observed for a large number of human languages. Long distance anaphora allows elements such as reflexives to be bound across the subject of an intervening clause. Languages such as Icelandic, in (21) and Mandarin Chinese, in (22) show these effects. In (21), the reflexive element *sig* can be bound by any of the higher subjects.

- (21) Jón segir að María telji að Haraldur vilji að Billi heimsæki sig  
 John says that Maria believes that Harold wants that Billy visit REFL  
 'John says that Maria believes that Harold wants Billy to visit him.' (Maling (1984: 213) from Thráinsson 1976)

The example in (22) shows that in Mandarin Chinese, the reflexive element *ziji* can be bound by *Zhangsan* across the intervening subject *Lisi*.

- (22) Zhangsan<sub>i</sub> renwei Lisi hai-le ziji<sub>i</sub>  
 Zhangsan thought Lisi hurt-ASP self  
 'Zhangsan thought that Lisi hurt himself.' (Harbert 1995: 194, from Huang & Tang 1991)

These long distance anaphors often display some peculiar and interesting constraints on reference. The long distance reflexive in Chinese, for example, cannot establish reference across and intervening indexical pronoun. Thus, in the example in (23) shows that when there is an intervening first or second person pronoun, the reflexive *ziji* can no longer be bound by *Zhangsan*.

- (23) \*Zhangsan<sub>i</sub> zhidao wo/ni juede Lisi dui ziji<sub>i</sub> mei xinxin  
 Zhangsan know I/you think Lisi toward self not confident  
 'Zhangsan knows I/you think that Lisi has no confidence in himself.' (Harbert 1995: 209, from Tang 1985)

It is notable that in narratives in Aghem, one can find instances of the logophor as the subject of a matrix, non-embedded clause. The clause, however, is discourse-embedded, in a sense, under a much higher verb of saying. In these instances, the logophor co-refers with the subject of the verb of speech that can occur a number of sentences before it in a discourse. These cases are still interpreted as larger chunks of reported discourse. We will return to the long distance properties of logophors in the analysis. Now, we turn to an explanation of the property of indexical shift induced by the presence of a

logophor.

**2.4 Indexical shift.** A forth property of the Aghem logophor is that it triggers indexical shift, making it look much like a so-called Kaplanian monster. According to Kaplan's (1977) theory of indexicality, indexicals should be specified by the point at which a character in a sentence is applied to the utterance context. In other words, languages that allow the shifting of indexicals, allow an indexical first or second person pronoun to refer to the a third person referent in the matrix clause. For example, the utterance in (23) would be interpreted as Beatrice's self-report of hunger (Anand & Nevins 2004).

(23) Beatrice<sub>i</sub> said that I<sub>i</sub> am hungry. (adapted from Anand & Nevins 2004)

We have already observed that in Aghem, the logophor obligatorily co-refers with the subject of the matrix clause. If Aghem allows indexical shift, we would expect an indexical pronoun in the lower clause to establish reference with a third person DP in the matrix clause. This is indeed the case in Aghem. The examples in (24) and (25) show that an indexical second person pronoun in the lower clause refers to the object DP in the matrix clause, while the logophor references the subject of the matrix clause.

(24) wìzɪn<sub>i</sub> 'vɪ ndzɛ̀ à wɪn<sub>j</sub> enyia é<sub>i</sub> ŋgé 'lɪghá wò<sub>j</sub>  
woman that said to him that LOG much like you  
'The woman said to him that she liked him a lot.' (Hyman & Watters 1979: 203)

(25) bɪghà<sub>i</sub> 'vɪ n'lelò tòm wó kɪmàʔsò â wì<sub>j</sub> enyia é<sub>i</sub> zɪghà tɪn wò<sub>j</sub>  
guy that looked wrote hither letter to wife that LOG left forever you  
'That guy wrote a letter to his wife that he had left her forever.' (Hyman & Watters 1979: 205)

These examples cannot be instances of quoted speech because in Aghem direct quotations employ first and second person pronouns, like English. Additionally, these cannot be cases of direct quotation because the logophor cannot be used without an antecedent. In other words, (26) below would be ungrammatical.

(26) \*é zɪghà tɪn wò  
LOG left forever you  
'I have left you forever.'

Indexical shift is a property that has been observed for a number of diverse languages: Zazaki and Slave (Anand & Nevins 2004) , Amharic (Schlenker 2003), Navajo (Speas 1999) on Navajo), and Hyman (1979) originally pointed out that indexical shift is a property of logophoric reference in Aghem. Anand and Nevins (2004) have argued that there are constraints on the interpretation of

shifting indexicals. They expect the indexicals to be restricted to establishing reference within the same speech context, and they propose the Shift-Together constraint, shown in (27).

(27) *Shift-Together*- All indexicals within a speech-context domain must shift together.

In Zazaki, also called Dimli, an Indo-Iranian language spoken mainly in Turkey, the first person indexical pronoun embedded under a verb of speech can be interpreted as co-referent with the subject of the matrix verb or as the speaker of the actual utterance. In other words (28) is ambiguous between the first person pronoun referring to the speaker of the actual utterance or co-referring with the subject of the matrix clause, Hesên.

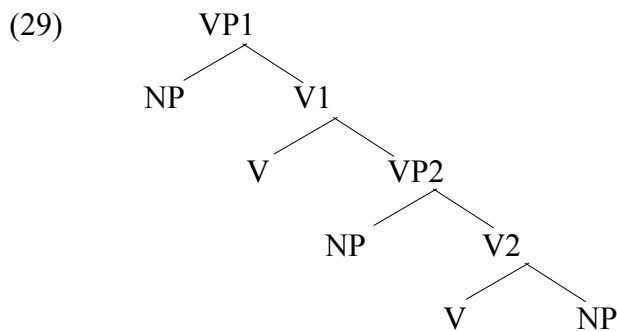
(28) Heseni            va        kε        εz        dεwletia  
Hesên.OBL    said    that    1.SG    rich.be-PRES  
'Hesên said that {I am, Hesên is} rich.' (Anand & Nevins 2004)

Now that the various aspects of logophoricity have been made clear, in the next section, I describe the various elements of the analysis that will be necessary to explain the data and various properties explored in this section.

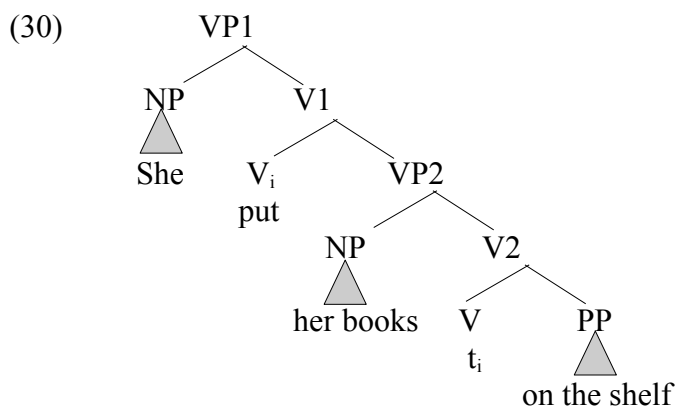
**3 Elements of the analysis.** An analysis that encompasses all the previously described properties of logophors hinges on a number of elements. One element of the analysis is that the SPEAKER and ADDRESSEE discourse participant roles are configured in the syntax, a line of research that has been taken by Speas and Tenny (2002), Speas (2004) and Tenny (2006). This element is explained in Section 3.1. A second element of the analysis is the selectional nature of the class of verbs that license logophors. I argue that these verbs select Speech Act Phrases (SAPs), in which the aforementioned discourse roles are configured as internal and external arguments of the phrase. The final element of the analysis concerns the referential and agreement properties of the logophor. I claim that the logophor is referentially deficient, or [-R] in terms of Reinhart & Reuland (1993) and similar to Landau's (2004) analysis of PRO in control constructions. In terms of agreement properties, however, the logophor is not agree deficient. It is [+Arg] since logophors typically show phi- and case features.

**3.1 Configuration of discourse roles.** The extent to which pragmatic information is encoded in the syntax has been a topic of major debate for decades. Some theoretical enterprises, such as Generative Semantics, were rejected in the end for being much too unconstrained (see Newmeyer 1986 for a summary). Recent explorations into the nature of the syntax-pragmatics interface, however, have shown that encoding some pragmatic information in the syntax in a constrained manner, is perhaps

desirable and necessary to explain certain salient phenomena in natural human language. A number of researchers have shown pragmatic or discourse phenomena to be interfacing with the syntactic component of the grammar (Rizzi 1997, Cinque 1999, Ambar 1999). Moreover, some researchers have proposed that SPEAKER and ADDRESSEE discourse roles are configured in the syntax of the left periphery, in the Speech Act Phrase (Speas & Tenny 2002, Speas 2004, Tenny 2006), much the same way that theta-roles are configured in the syntax of the Verb Phrase (as has been explored by Hale & Keyser 1993, 1998, 1999, DiSciullo 1996, 1999, Travis 2000, Borer 1998, others). The diagram in (29) shows the possible syntax of the verb phrase predicate-argument structure in which heads, specifiers and complements represent lexical relational structures.

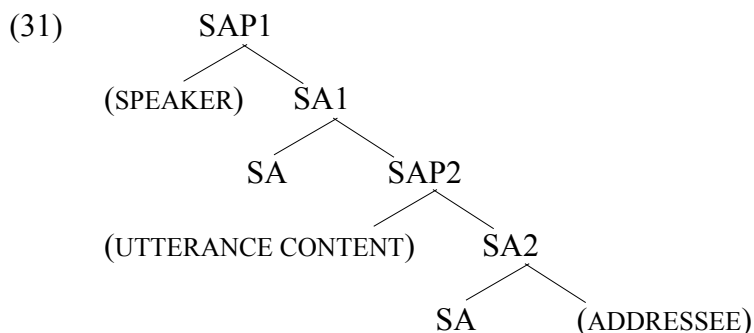


This representation above includes the full projection possibilities necessary to capture the double object construction in which the verb, the head of VP2, has a internal and external arguments in the Specifier positions. The verb can then move via head movement to the head position of VP1 in a Larsonian dative shift-type operation (Larson 1988). This operation is shown with the English verb *put* in the diagram below, in (30).



Speas and Tenny (2002) argue that the inventory of pragmatic or discourse roles are syntactically constrained in much the same way as lexical relational structures. The diagram below, in (31), shows Speas and Tenny's (2002) proposal of the configuration of discourse roles in the Speech Act Phrase

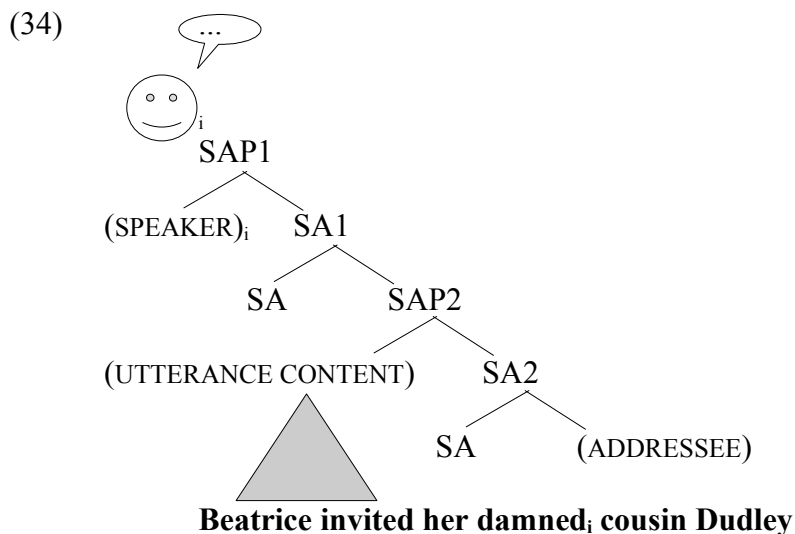
(SAP). The SPEAKER and UTTERANCE CONTENT are structural positions that are the internal and external arguments, respectively, of the Speech Act head. Moreover, the ADDRESSEE discourse role is configured in the complement position of the bipartite SAP.



Speas and Tenny (2002) refer to the case of speaker-evaluative adjectives as an example of a phenomenon that is sensitive to SPEAKER roles in Speech Act Projections. In the examples below, the adjective *damned* differs in which discourse referent is evaluating the referent as damned. In the first example in (32), the referent is a damned cousin from the point of view of the speaker of the actual utterance, not Beatrice. In the second example in (33), however, the reference is a damned cousin from the point of view of the embedded speaker, the speaker of the reported speech act, which is Beatrice.

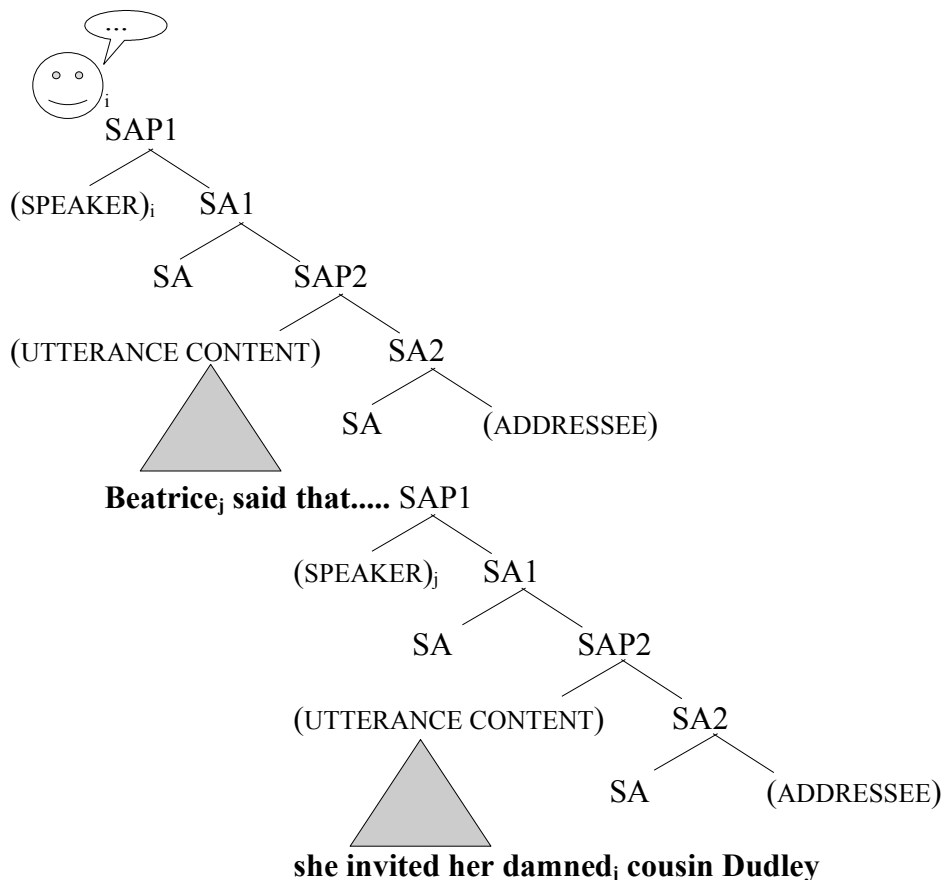
- (32) Beatrice invited her damned cousin Dudley. (damned by SPEAKER of actual utterance)
- (33) Beatrice said she invited her damned cousin Dudley. (damned by SPEAKER of reported/ embedded utterance) (adapted from Speas & Tenny 2002)

The difference in interpretation can be explained by adopting Speas and Tenny's theory. In the tree in (34), which diagrams the syntax of (32) above, there is only one speaker, the speaker of the actual utterance, and the adjective *damned* is interpreted from the point of view of that speaker.



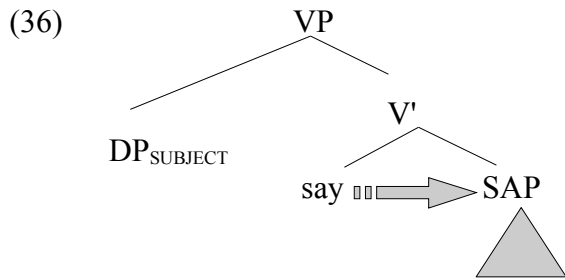
In the case of the second example, in (33), however, there are two SPEAKER roles that can be referenced in the sentence. The higher SPEAKER role refers to the speaker of the actual utterance, and the lower SPEAKER refers to the speaker of the embedded speech act, or Beatrice. In this case, the speaker-evaluative adjective *damned* appears to refer to the closest SPEAKER in the SAP, diagrammed in (35).

(35)

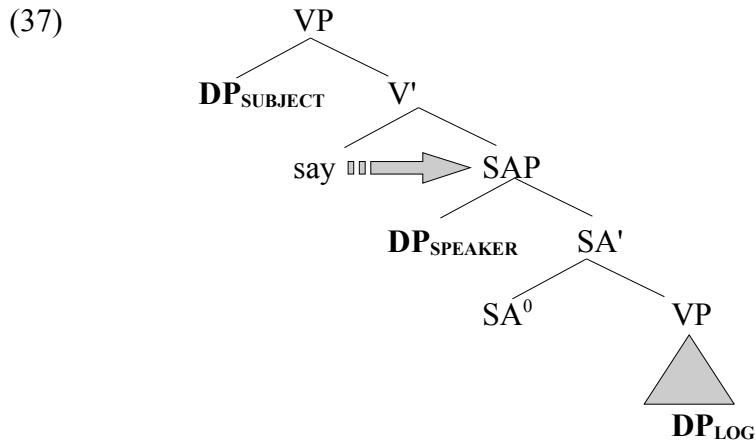


Now that we have explored the configuration of the SPEAKER and ADDRESSEE discourse roles in the Speech Act Phrase, we turn to an investigation of the selectional properties of the class of verbs that select for SAPs.

**3.2 Verb classes and optionality.** Since only certain verbs license obligatory co-reference between a logophor and a matrix subject, it follows that the lexical semantic representation of these verbs is an important factor in any analysis. I argue that the class of verbs that license logophors crucially and directly select for Speech Act Phrases. These specifications are summarized in the diagram in (36) below.



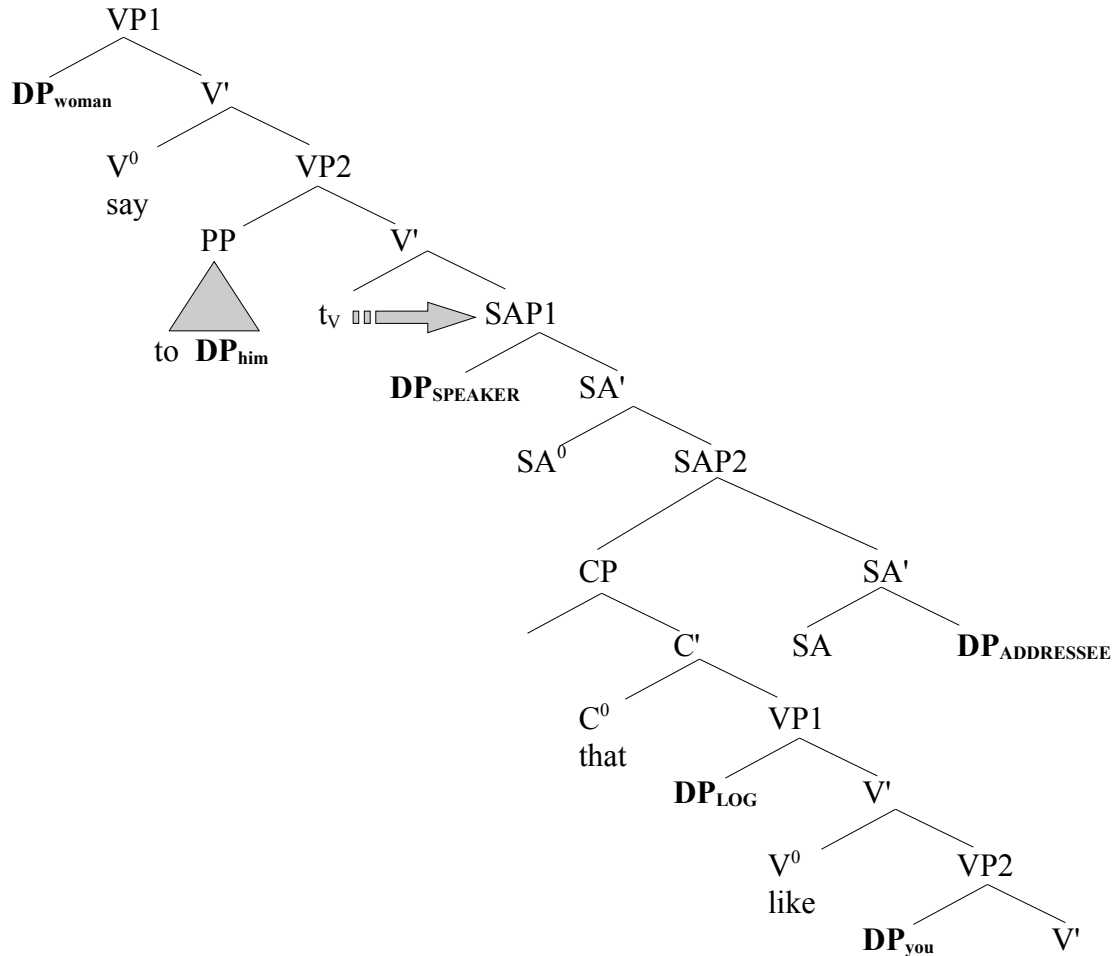
When the verb selects a SAP, the SPEAKER role is configured as the external argument of the SA<sup>0</sup>. This is shown in (37) below.



To show how the DPs are configured in an Aghem sentence, I show a diagram of sentence (24), repeated here as (38), with the diagram in (39).

- (38) wízh<sub>i</sub>          'vú   ndzè   à   wín<sub>j</sub>   enyia   é<sub>i</sub>   ngé   'l'ghá   wò<sub>j</sub>  
 woman          that   said   to   him   that   LOG   much   like   you  
 'The woman said to him that she liked him a lot.' (Hyman & Watters 1979: 203)

(39)



In the instance of multiple embedding of logophor-licensing verbs, the logophor can refer to either of the higher subjects, as was shown in (20), repeated here as (40). What is crucial to the analysis of this fact is that the logophor always establishes reference with the subject of the verb that selects the Speech Act Phrase.

- (40) Tsɔŋ<sub>i</sub> mo'nlo enyia Abàŋ<sub>j</sub> dzɛ enyia e<sub>i/j/\*k</sub> zàŋsò nù  
 Tsong think that Abang say that LOG smart FOC  
 'Tsong thinks that Abang said that he is smart.'

In (41) below, when the highest verb *mo'nlo*, 'think,' embeds the SAP, the logophor refers to the subject of that verb, *Tsɔŋ*. When the lower verb *dzɛ*, 'say,' embeds the SAP, the logophor refers to the subject of that verb, *Abàŋ*, shown in (42).

- (41) Tsɔŋ<sub>i</sub> mo'nlo [<sub>SAP</sub> DP<sub>SPEAKERi</sub> ... DP<sub>ADDRESSEE</sub> enyia Abàŋ<sub>j</sub> dzɛ enyia e<sub>i</sub> zàŋsò nù  
 Tsong think that Abang say that LOG smart FOC  
 'Tsong thinks that Abang said that he is smart.'

- (42) Tsəŋ<sub>i</sub> mo'nlo enyia Abàŋ<sub>j</sub> dze [SAP DP<sub>SPEAKERj</sub> ... DP<sub>ADDRESSEE</sub> enyia e<sub>j</sub> zàŋsò nù  
 Tsong think that Abang say that LOG smart FOC  
 'Tsong thinks that Abang said that he is smart.'

Thus, we have seen optionality with respect to selection of a Speech Act Phrase, but when a Speech Act Phrase is selected, an embedded logophor displays obligatory co-reference. In the next section, I explain the necessity of postulating two *é*-items in the Aghem lexicon.

**3.3 Two *é*-items.** A particularly peculiar property of the logophor in Aghem and other West African languages is that its referential properties differ depending on the context of the verb under which it is embedded. The examples in (6) and (7), repeated here as (43) and (44), showed that in Aghem, the logophor is obligatorily co-referent with the subject of the matrix clause under the context of being sad, in (43), whereas it is optionally co-referent or disjoint in reference under the non-logophoric-inducing context of leaving, in (44).

- (43) Abàŋ<sub>i</sub> mò muŋ nù aŋ-ghia é<sub>i/\*j</sub> zigha ndugho  
 Abang PST sad FOC as LOG leave house  
 'Abang<sub>i</sub> was sad as he<sub>i/\*j</sub> left the house.'

- (44) Abàŋ<sub>i</sub> zigha ndugho mò é<sub>ij</sub> gbin zì  
 Abang leave house PST LOG morning eat  
 'Abang<sub>i</sub> left the house when he<sub>ij</sub> ate breakfast.'

To explain these effects, I postulate that there are two *é*-items in the lexicon. I propose that one *é*-item, the one that shows obligatory co-reference, is specified for the feature [SPEAKER]. The other *é*-item is underspecified for person features. For the cases in which the *é*-item is embedded under a verb that selects a Speech Act Phrase, its closest c-commanding DP is also specified for [SPEAKER]. The technical machinery of these reference chains is explain in the next section.

**3.4 Referential dependencies via Agree.** A number of researchers have been exploring the idea that referential dependencies are really Agree relations in terms of Chomsky (2000, 2001). Borer (1989) explored the anaphoric nature of Agr, and Landau (2004) derives the properties of obligatory control from a similar idea that tense, T, can be anaphoric as well. Moreover, Sato (2009) explores the anaphoric nature of T on C to explain the facts of switch reference, based on former work by Finer (1984, 1985) and Watanabe (2000).

In this analysis, I assume that all DPs have positive or negative features for Agreement, [Agr], and



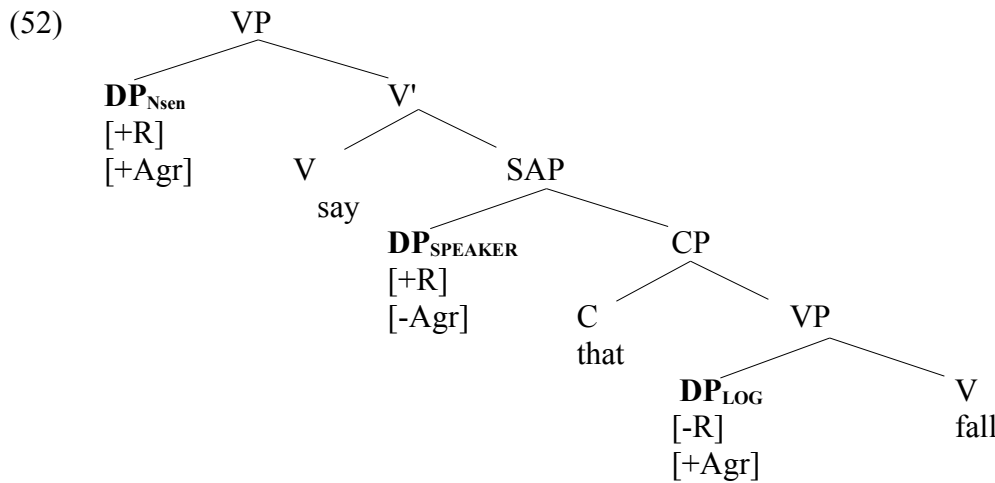
in Chomsky (1995). Essentially, the lower DP looks up the tree, rather than the case of a Probe looking down the tree, to find a Goal or a value for its unvalued feature. To apply the analysis to the Aghem data with the logophor embedded in clause under the verb "say," take the example from (11), repeated here as (50).

(50) Nnsin<sub>i</sub> dzɛ́ enyia é<sub>i/\*j</sub> bvɛ̀ nù  
 Nsen say that LOG fall FOC  
 'Nsen said that she (herself) fell.'

The R- and Agr-features of the three DPs in (50) are shown below in (51). The referential dependencies are shown with dashed lines. The logophor is R-dependent on the closest c-commanding DP, the DP<sub>SPEAKER</sub> in the SAP, that can value its interpretable R-feature. Likewise, the DP<sub>SPEAKER</sub> is Agr-dependent on the closest c-commanding DP, DP<sub>NSEN</sub>, that can value its unvalued Agr features.

(51) [CP DP<sub>NSEN</sub> [SAP DP<sub>SPEAKER</sub> [CP DP<sub>LOG</sub> ] ] ]  
 [+Agr]-----[-Agr] [+Agr]  
 [+R] [+R]-----[-R]

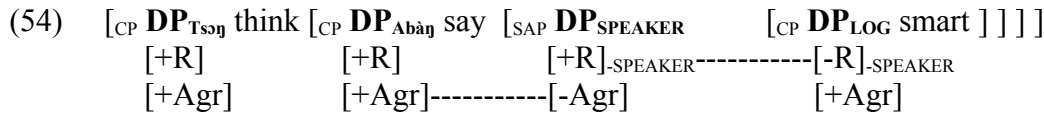
An abbreviated tree diagram of (50) is shown in (52).



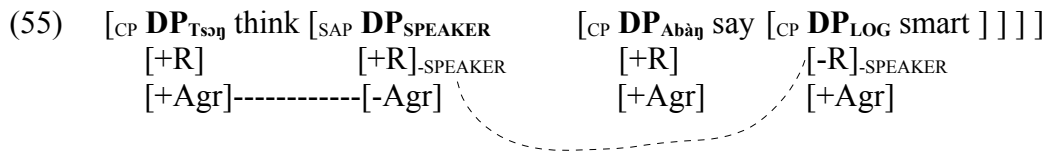
As discussed in Section 3.2, the long-distance reference property of the logophor can be explained by the selectional optionality on the part of the verb and its selection of a Speech Act Phrase. The example of long-distance reference from (20), repeated here as (53), demonstrates that the logophor can optionally refer to either of the subjects of the two higher verbs that can license the embedded logophor.

(53) Tsɔŋ<sub>i</sub> mo'nlo enyia Abàŋ<sub>j</sub> dzɛ́ enyia e<sub>i/j/\*k</sub> zàŋsò nù  
 Tsong think that Abang say that LOG smart FOC  
 'Tsong thinks that Abang said that he is smart.'

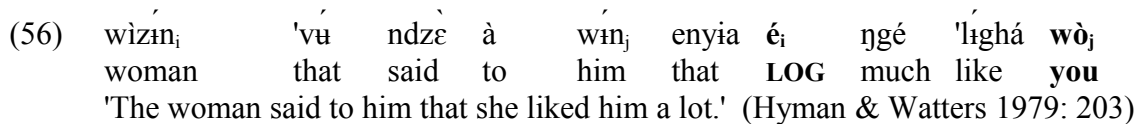
If the lower verb "say" selects the SAP, then the logophor gets its R-value from the DP<sub>SPEAKER</sub>, which in turn gets its Agr-value from DP<sub>Abàŋ</sub>. Through this series of chains, shown in (54), the logophor co-refers with the subject of the immediately higher clause.



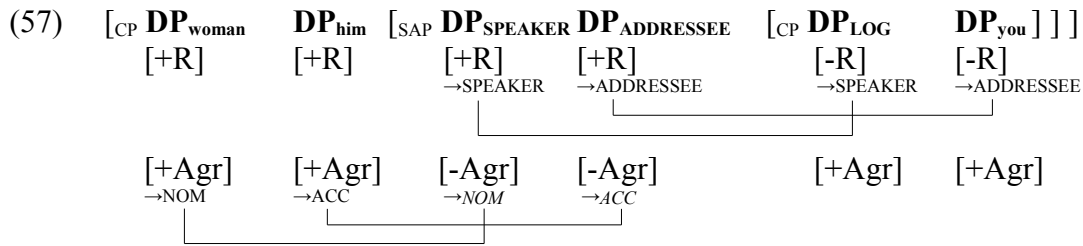
If, however, the higher verb "think" selects the SAP, then the logophor gets its R-value from the DP<sub>SPEAKER</sub>, which in turn gets its Agr-value from DP<sub>Tsəŋ</sub>. Likewise, through this series of chains, shown in (55), the logophor co-refers with the subject of the highest clause. In this case, however, the logophor does not get its value from the closest c-commanding DP. It gets its R-feature valued from the closest DP with the matching feature value, SPEAKER.



One more case remains to be explained. It is the case of indexical shift in Aghem. The example in (24), repeated here at (56), has the embedded logophor and an indexical pronoun, you, which refers to the embedded ADDRESSEE of the SAP selected by the matrix verb, say.



With the analysis presented here, we can explain the facts of indexical shift along with Anand and Nevins' (2004) *Shift-Together Constraint*, introduced in example (27) of Section 2.4. Taking (56) into consideration, the nature of the referential dependencies becomes clearer. Like in previous examples, the embedded logophor gets its R-feature valued by the closest matching, c-commanding DP, the DP<sub>SPEAKER</sub> in the SAP. Assuming that indexical pronouns also have a [-R] feature, the embedded second person pronoun get its R-feature valued by the closest c-commanding DP with a matching feature value, the DP<sub>ADDRESSEE</sub> in the SAP. Additionally, the Agr-features of the DP<sub>SPEAKER</sub> and DP<sub>ADDRESSEE</sub> are referentially dependent on the closest c-commanding DPs that can value their unvalued, interpretable Agr-features, the matrix subject and object respectively, DP<sub>woman</sub> and DP<sub>him</sub>. Presumably, these feature must match in value also, by way of case features. These two referential dependencies are diagrammed in (57) below.



Thus, the *Shift-Together Constraint* can be explained by the presence of the Speech Act Phrase selected by a verb of the class that licenses the logophor in the embedded clause. When the SAP and logophor are selected, lower indexical pronouns are restricted to getting their R-values from the closest SPEAKER and ADDRESSEE features, which are housed on the DPs in the SAP.

**4 Conclusion.** This study just scratches the surface of the nature of logophors by presenting a syntactic analysis of the logophor in Aghem. It is meritorious in that it introduces new data exploring the nature of the logophor in the Aghem language. Additionally, it sheds light on the properties of logophors in West African languages and their relationship to other natural language phenomena, such as obligatory co-reference, long-distance co-reference and indexical shift. This study has presented a novel syntactic analysis of the logophor in Aghem. Additionally, it has provided a definition of the logophor in terms of the formal features, [R] and [Agr]. A logophor, then, can be defined as a [-R], [+Agr] DP that gets its referential value from the closest c-commanding DP with a SPEAKER feature. Moreover, the logophor becomes obligatorily co-referential with a matrix subject by an intermediate DP in the Speech Act Phrase which is Agr-anaphoric on the closest c-commanding DP that can value its agreement feature. It will rest on the shoulders of future studies to test this analysis on logophors in other languages and related phenomena in various diverse languages.

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