The Logophoric Pronoun <i>émi</ i> as a LF Operator/Anaphor

THE LOGOPHORIC PRONOUN *ÉMI* AS A LF OPERATOR/ANAPHOR

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0. Introduction

As has been noted in Hagège (1974), Clements (1975), Comrie and Hyman (1981), and some other studies, some West African languages have a form of pronoun, referred to as a *logophoric pronoun* (LOG), which is morphologically different from a pronominal, and whose distribution is associated with a class of verbs known as logophoric verbs (Koopman & Sportiche, 1989). For instance, Clements (1975) writes that, in Ewe, LOG is restricted to reportive contexts, introduced by *be*, transmitting the words or thought of an individual or individuals other than the speaker or narrator; and that its antecedent may be 2nd- and 3rd-person (but not 1st-person). Examples:

(1) a. è - be yè - a - va.
PRO-say LOG-T-come
'you$_i$ (sg) said you$_i$ would come.'

b. Kofi be yè - dzo.
Kofi say LOG-leave
'Kofi$_i$ said that he$_i$ left.'

In a recent reanalysis of the data from Clements, Enç (1989) suggests that LOG is a variable that is (i) operator bound, and (ii) lexically specified as [+L, +$B_{A\text{-bar}}$, +ID]. Being [+L], it is subject to Principle A of the BT. The feature [+B] indicates that LOG needs a sentence-internal antecedent that semantically binds it. The feature [+ID] captures the fact that the licenser and the binder of LOG must be coindexed. Finally, Enç (1989, 75) proposes that the closest theta domain with a possible licenser position is the local domain in which a [+L, +$B_{A\text{-bar}}$, +ID] pronoun must find a licenser. On this analysis, (2a) from Ewe has the representation given in (2b), where *Op* is the local binder in an A-bar position; *NP** the licenser in an A-position; and the matrix clause the local domain in which LOG, a [+L, +$B_{\text{A-bar}}$, +ID] pronoun, must find a licenser.

(2) a. Kofi nya be me-kpɔ yè.
Kofi know I-see LOG
'Kofi knew that I had seen him.'

b. NP^*_i V [$_{CP}$ Op_i be [$_{IP}$ ... V $yè_i$]]

However, the data in (3) from Clements (1975, 170) indicate that the licenser of LOG need not occur in the closest theta domain with a possible licenser position.

(3) Kofi xɔ-e se be Ama gblɔ be yè-shu-i.
Kofi receive-PRO hear Ama say LOG-beat-PRO
a. 'Kofi believed that Ama_i said that she_i beat him.'
b. '$Kofi_i$ believed that Ama said that he_i beat her.'

Clements also notes that, in Ewe, the antecedent of LOG may occur several sentences earlier, provided that the sentence containing it is followed by the morpheme *be.* Given these facts, an analysis like that of Enç (1989) seems to call for a parameterization of the binding domain for anaphors.

Fɔ̀n, another West African language of the Kwa family, shows similar facts. Based on data from Fɔ̀n, I argue that a logophoric pronoun is a LF operator and an anaphor. As a LF operator, it must appear in an A-bar position at that level of representation. I propose that this position is the SPEC of the CP selected by SAY which obligatorily occurs with the verbs of believing, knowing, thinking, asking, etc. On the other hand, being an anaphor, LOG must be bound in a local domain, as required by Principle A of the BT. I argue that this domain is coextensive with the VP headed by SAY. On this analysis, the LF representation of a sentence containing LOG will be as in (4), where LOG is bound to PRO, the external argument of SAY that is controlled by the subject NP of a logophoric verb.

(4) NP_i [$_{VP}$ [$_{V'}$ [$_{V'}$ V] [$_{VP}$ PRO_i SAY [$_{CP}$ LOG_i [$_{IP}$ NP_j ...t_i...]]

This analysis dispenses with the features [+$B_{\text{A-bar}}$, +ID] as independent lexical properties of LOG. In Chomsky (1986, 85), a variable is subject to the requirement in (5), which is different from ordinary binding:

(5) *Strong Binding*:

A variable must be strongly bound.

Chomsky states that a variable can be strongly bound in one of two ways: either its range is determined by its operator, or its value is determined by an antecedent that binds the operator. In (4), the variable created by LF movement of LOG meets this requirement since its range is determined by the antecedent of PRO.

Note that this analysis maintains that LOG is an anaphor. Moreover, it provides an unambiguously defined local domain in which the anaphor is bound, as required by principle A of the binding theory. This then obviates the need for a parameterization of the binding domain for anaphors, a welcome result.

1. Syntactic Properties of *émì*

The first thing to note about *émì* is that it is incapable of independent reference, and that, unlike a pronominal, it cannot be licensed across discourse.

(6) a.* Émì hwlá Asíbá sín gbɔ̆.
LOG hide Asiba GEN goat
'S/he hid Asiba' s goat.'

b. ùn mɔ̀ Sìká. É / *Émì hù Asíbá sín gbɔ̆.
I see Sika. 3PRON LOG killed Asiba GEN goat
'I saw Sika$_i$. She$_i$ killed Asiba' s goat.'

Assuming with Chomsky (1981, 188) that the inability for NPs to refer inherently is the defining property of anaphors, I propose that *émì* is [+anaphoric].

To be licensed, *émì* must occur in a CP selected by the verb ɖɔ̀ 'to say', which occurs in a serial verb construction with a verb in (7) (Akoha, 1990, Anonyme, 1983):

(7)	a.	ɖɔ̀	'to say'	b.	kɛ́n	'to bet'
	c.	kan byɔ́	'to ask'	d.	gbɛ̆	'to refuse'
	e.	yǐ gbè	'to answer'	f.	tùn	'to know'
	g.	flín	'to remember'	h.	ɖì	'to believe'
	i.	lìn	'to think'	j.	ɖó nùkún	'to hope'
	k.	wɔ̀n	'to forget'	l.	jló	'to want'
	m.	dó àkpá	'to promise'	n.	gblɔ́n àdǎn	'to threaten'
	o.	sè	'to hear'	p.	mɔ̀	'to see'
	q.	zɔ̆n	'to command'	r.	kú drɔ̀	'to dream'
	s.	mɔ́	'to deny'	t.	xwlé	'to swear'

A study of the semantics of these verbs is beyond the scope of this paper. Suffice it to note that most of them involve some mental state.

Second, *émì* is subject-oriented as is illustrated in (8) through (12). Examples (8), (9) and (10) show that the antecedent of *émì* may be 2nd, or 3rd person, but not 1st person. Note that *émì* does not vary with the number, person and gender of the antecedent.

(8) mì tùn ɖɔ̀ émì fìn Asíbá sín gbɔ̆ à?
you (pl) know LOG steal Asiba GEN goat Q
'Do you$_i$ know that you$_i$ stole Asiba' s goat?'

(9) Sìká /Kɔ̀kú ɖɔ̀ ɖɔ̀ yé tùn ɖɔ̀ émì fìn Asíbá sín gbɔ̌.
Sika /Koku say they know LOG steal Asiba GEN goat
a. 'Sika$_i$ said that they know that she$_i$ stole Asiba' s goat.'
b. 'Koku$_i$ said that they know that he$_i$ stole Asiba's goat.'
c. 'Sika / Koku said that they$_i$ know that they$_i$ stole Asiba' s goat.'

(10) * mǐ flín ɖɔ̀ émì hwlá Asíbá sín gbɔ̌.
we remember LOG hide Asiba GEN goat
'we remember that we hid Asiba' s goat.' / 'we remember hiding ...

Adapting Corbett's (1991) way of representing 1st, 2nd and 3rd person features as speaker and participant in conversation, I will assume that *émì* is [-speaker].

Examples (11) and (12) show that the object of a preposition or a verb cannot be the antecedent of *émì*. In this, *émì* differs from a pronominal.

(11) ùn ɖɔ̀ nú Sìká ɖɔ̀ é // * émì hwlá Asíbá sín gbɔ̌.
I say to Sika he/she // LOG hide Asiba GEN goat
'I told Sika$_i$ that she$_i$ hid Asiba' s goat.'

(12) ùn kàn byɔ́ ɛ́ ɖɔ̀ fítɛ́ é // * émì nɔ̀ nɔ̀ àjí.
I ask him/her where he/she LOG usually live Q
'I asked him$_i$ where he$_i$ lives.' // 'I asked her$_i$ where she$_i$ lives.'

Third, the domain in which *émì* finds an antecedent is unbounded, provided that a logophoric verb is followed by *ɖɔ̀*.

(13) Sìká tùn ɖɔ̀ yè ɖɔ̀ a flín ɖɔ̀ émì hwlá Asíbá sín gbɔ̌.
Sika know they say you remember LOG hide Asiba GEN goat
a. 'Sika knows that they said that you$_i$ remember that you$_i$ hid A's goat.'
b. 'Sika knows that they$_i$ said that you remember that they$_i$ hid A's goat.'
c. 'Sika$_i$ knows that they said that you remember that she$_i$ hid A's goat.'

Although the verb *tùn* 'to know' is drawn from (7), its subject cannot be the antecedent of LOG, deriving (14b). The reason is that *tùn* is not followed by *ɖɔ̀*.

(14) Sìká ɖɔ̀ à tùn fí ɖě émì hwlá Asíbá sín gbɔ̌ ɖó.
Sika say you(sg) know place Op LOG hide Asiba GEN goat
a. 'Sika$_i$ said that you know the place where she$_i$ hid Asiba' s goat.'
b.* 'Sika said that you$_i$ know the place where you$_i$ hid Asiba' s goat.'

This establishes that *ɖɔ̀* licenses the occurrence of *émì* in that it defines a syntactic domain in which the latter must be syntactically bound.

Examples (15) show that *émì* can occur in a non-finite IP; or in an adjunct.

(15) a. Sìká ɖɔ̀ Kɔ̀kú jló ná dà émì.
Sika say Koku want irrealis marry LOG
'Sika$_i$ said that Koku wants to marry her$_i$.'

b. Sìká ɖɔ̀ yè kún ná wá ò àfî nú Kɔ̀kú yɔ́lɔ́ émì.
Sika say they NEG irrealis come NEG unless Koku invite LOG
'Sika$_i$ said that they won't come unless Koku invites her$_i$.'

So, modulo the presence of *ɖɔ̀*, *émì* may be licensed out of a *wh*-island, out of a non-finite IP, and out of an adjunct.

Fourth, *émì* cannot be coreferential with a c-commanding NP within the same finite IP, as shown in (16a); nor can it be coindexed with a pronominal that it does not c-command, as in (16b). By contrast, a pronominal may, but need not, get its reference from an NP that does not c-command it, as in (16c).

(16) a. * Kɔ̀kú ɖɔ̀ é blɛ́ tɔ́ émì tɔ̀n.
Koku say 3PRON mislead father LOG GEN
'Koku$_i$ said that he$_i$ misled his$_i$ father.'

b. * Kɔ̀kú ɖɔ̀ tɔ́ émì tɔ̀n blɛ́ ɛ̀.
Koku say father LOG GEN mislead 3PRON
'Koku$_i$ said that his$_i$ father misled him$_i$.'

c. vì Kɔ̀kú tɔ̀n blɛ́ ɛ̀.
child Koku GEN mislead 3PRON
'Koku$_i$' s child misled him$_i$.' // 'Koku$_i$' s child misled her/him$_j$.'

There are two contexts, however, in which two occurrences of *émì* within the same (tensed) IP may be coindexed, provided that principle B of the BT is not violated. For example, two *émì*s are obligatorily coindexed in sentences in which there is one CP selected by *ɖɔ̀*, as in (17).

(17) a. Kɔ̀kú ɖɔ̀ émì blɛ́ tɔ́ émì tɔ̀n.
Koku say LOG mislead father LOG GEN
'Koku$_i$ said that he$_i$ misled his$_i$ father.' [compare with (16a)]

b. Kɔ̀kú ɖɔ̀ tɔ́ émì tɔ̀n blɛ́ émì.
Koku say father LOG GEN mislead LOG
'Koku$_i$ said that his$_i$ father misled him$_i$.' [compare with (16b)]

Similarly, the two *émì*s are obligatorily coindexed when an IP contains the compound anaphor *émì-ɖê*. In Fɔ̀n, the anaphor translating *X-self*, *X-selves*, or *each other* is constructed by compounding *ɖê* to a pronominal, as shown in (18), or to *émì*, as seen in (19). In (19a), the antecedent of the two *émì*s is *yè* "they"; in (19b), it is *Koku*.

(18) a. Kɔ̀kú blɛ́ éyɛ̀ - ɖê.
Koku mislead 3PRON
'Koku$_i$ misled himself$_i$.'

b. yè blɛ́ éyɛ̀ - ɖê.
3PRON mislead 3PRON
'They$_i$ misled each other$_i$.'

(19) Kɔ̀kú ɖɔ̀ yè lìn ɖɔ̀ émì blɛ́ émì-ɖê.
Koku say they think LOG mislead LOG
a. 'Koku said that they$_i$ think that they$_i$ misled themselves$_i$/each other$_i$.'
b. 'Koku$_i$ said that they think that he$_i$ misled himself$_i$.'

Two *émì*s in the same finite IP may be optionally coindexed. The relevant cases are (20c, d), where one *émì* takes *Sika* as its antecedent and the other *Koku.*

(20) Sìká tùn ɖɔ̀ Kɔ̀kú mɔ́ ɖɔ̀ émì blɛ́ tɔ́ émì tɔ̀n.
Sika know Koku deny LOG mislead father LOG GEN
a. 'Sika$_j$ knows that Koku$_i$ denied that he$_i$ misled his$_i$ father.'
b. 'Sika$_j$ knows that Koku$_i$ denied that she$_j$ misled her$_j$ father.'
c. 'Sika$_j$ knows that Koku$_i$ denied that he$_i$ misled her$_j$ father.'
d. 'Sika$_j$ knows that Koku$_i$ denied that she$_j$ misled his$_i$ father.'

Fifth, *émì* cannot be "absorbed" by a *wh*-operator. In Fɔ̀n, long distance movement from Spec, IP of an embedded tensed clause obligatorily requires the presence of a resumptive pronoun (RP) at the site of extraction, as shown in (21b) (see Ndayiragije, forthcoming). (21c) is ungrammatical as it contains *émì* at the site of the extraction.

(21) a. Sìká ɖó nùkún ɖɔ̀ Asíbá ná yɔ́lɔ́ Kɔ̀kú.
Sika have eye Asiba irrealis call Koku
'Sika hopes that Asiba will invite Koku.'

b. mɛ́ (wɛ̀) Sìká ɖó nùkún ɖɔ̀ *(é) ná yɔ́lɔ́ Kɔ̀kú?
who FM Sìká have eye RP irrealis call Koku
'Who does Sika hope will invite Koku?'

c.* mɛ́ (wɛ̀) Sìká ɖó nùkún ɖɔ̀ émì ná yɔ́lɔ́ Kɔ̀kú?
who FM Sìká have eye LOG irrealis call Koku
'Who does Sika hope will invite Koku?'

Example (22b) shows that *émì* cannot be coreferential with a c-commanding RP:

(22) a. vì ɖě Sìká ɖɔ̀ nú Kɔ̀kú ɖɔ̀ yè blɛ́ tɔ́ yè tɔ̀n lɛ́ ɔ́ nɛ̀.
child Op Sìká say to Koku RP mislead father pro gen num det there is
'There are the children who Sika told Koku misled their father.'

b.*vì ɖě Sìká ɖɔ̀ nú Kɔ̀kú ɖɔ̀ yè blɛ́ tɔ́ émì tɔ̀n lɛ́ ɔ́ nɛ̀.
child Op Sìká say to Koku RP mislead father log gen num det there is
'There are the children who Sika told Koku misled their father.'

The difference between (17), (19), (20a, b) and (22b) is that the c-commanding NP is another *émì* in the former examples, while it is a resumptive pronoun in (22b). So, provided that principle B of the BT is not violated, the generalization is that *émì* can only be locally bound by another *émì*. On the view that LOG is a LF variable, it is not clear how the contrast between (17), (19), (20a, b) and (22b) is to be captured. For instance, one would have to reject as incomplete an account of (22b), based on the Bijection Principle of Koopman and Sportiche (1982), which holds that an operator must bind one and only one variable. In (22b) and (17), (19), (20a, b), an operator would A-bar bind two variables. On the other hand, Enç's (1989) account cannot provide an explanation of this fact without further assumptions about the nature of the local binder of *émì*. An analysis of *émì* as a LF operator provides an explanation of the contrast between (17), (19), (20a, b) and (22b), as will be shown later.

Sixth, (23) shows that *émì* must be c-commanded by its binder at S-structure.

(23) a.* àfì nú Kɔ̀kú yɔ́lɔ́ émì Sìká ɖɔ̀ yè kún ná wá ò.
unless Koku invite LOG Sika say they NEG irrealis come NEG
'Unless they invite her$_i$, Sika$_i$ said that they won't come.'

b.* ɖó Kɔ̀kú kún yɔ́lɔ́ émì ò Sìká ɖɔ̀ yè kún ná wá ò.
because Koku NEG invite LOG NEG Sika say they NEG irrealis come NEG
'Because they did not invite her$_i$, Sika$_i$ said that they won't come.'

Seventh, in VP-ellipsis, *émì* can only receive sloppy identity interpretation.

(24) à ɖɔ̀ nú mí ɖɔ̀ émì ná wá; Kɔ̀kú ɖésú.
you (sg) say to me LOG irrealis come Koku too
'you (sg) told me that you (sg) will come; Koku too.'
a. 'You told me that you will come; Koku$_i$ told me that he$_i$ will come.'
b. * 'You told me that you will come; Koku told me that you$_i$ will come.'

Finally, *émì* cannot appear to the left of the genitive marker *sín*.

(25) Kɔ̀kú lín ɖɔ̀ Sìká /*émì sín wèmá bú.
Koku think Sika LOG GEN book be lost
"Koku thinks that Sika's / his$_i$ book is lost."

A striking fact is that this is a context from which syntactic *wh*-movement is disallowed in Fɔ̀n, as seen in (26b). Instead, the entire possessive NP must pied-pipe, as shown by (26c).

(26) a. ùn mɔ̀ Sìká sín xwé yɔ̀yɔ́ vɔ̀vɔ́ ɔ̀.
I see Sika GEN house new red DET
'I saw Sika' s new red house.'

b.* mɛ́ wɛ̀ ùn mɔ̀ sín xwé yɔ̀yɔ́ vɔ̀vɔ́ ɔ̀?
who FM I see GEN house new red DET
'whose new red house did I see?'

c. mɛ́ sín xwé yɔ̀yɔ́ vɔ̀vɔ́ ɔ̀ wɛ̀ ùn mɔ̀?
who GEN house new red DET FM I see
"whose new red house did I see?"

Under the assumption that LOG is a logical variable, then (25) and (26b) indicate that a variable cannot appear to the left of the case marker *sín*. It is very unlikely that this is an independent principle of Fɔ̀n grammar, which cannot be reduced to principles of UG. For instance, Chomsky (1981, 168) rules out (27a) by the ECP.

(27) a.* whose$_i$ did John see [$_{XP}$ t$_i$ mother] b. [whose mother]$_i$ did J. see t$_i$

If we extend Chomsky's (1981) analysis to (26b), then the obvious move to make is to propose a similar account for (25). This follows if *émì* has a feature that allows it to raise like a *wh*-phrase. Since it does not do so in the syntax, I will assume that *émì* raises at LF. I therefore propose that *émì* is a LF operator.

To sum up, we have seen that (i) *émì* may not be free; (ii) it must be long-distance bound in a syntactic domain defined by ɖɔ̀, with the additional constraint that it can be locally bound only by another *émì*; (iii) it is subject-oriented, although it cannot refer to a first person; (iv) it must be c-commanded by the potential binder at S-structure. In what follows, I provide an account of the binding properties of *émì*, together with the factors that constrain its distribution.

2. Analysis

Before providing a structure underlying the sentences in section 1, I briefly discuss the status of ɖɔ̀. Following Lord (1976), it is widely assumed that West African languages have a *that*-Comp that has developed from the verb *say* (Clements, 1975; Comrie & Hyman, 1981; Sells, 1987; but see Koopman, 1984). I propose that the ɖɔ̀ that licenses the occurrence of *émì* has the properties of a verb rather than those of a Comp; and that it occurs in a serial verb construction (SVC), much as in (28)-(30): ɖɔ̀ combines with other verbs to derive new predicates. For instance, as shown by (28b) vs (28c), it obligatorily combines with *yɔ́lɔ́* and *Kojo* to form a complex predicate predicated of the NP *vì tɔ̀n* "her child".

(28) a. Asíbá yɔ́lɔ́ vì tɔ̀n.
Asiba call child GEN
'Asiba called her child.'

b. Asíbá yɔ́lɔ́ vì tɔ̀n ɖɔ̀ Kɔ̀jó.
Asiba call child GEN Kojo
'Asiba named her child Kojo.'

c. * Asíbá yɔ́lɔ́ vì tɔ̀n Kɔ̀jó.
Asiba call child GEN Kojo
'Asiba named her child K.'

(29) a. nɛ̌ Asíbá yɔ́lɔ́ vì tɔ̀n ɖɔ̀? b. nɛ̌ᵢ Asíbá yɔ́lɔ́ vì tɔ̀n ɖɔ̀ tᵢ
how Asiba call child GEN
'what did Asiba name her child?'

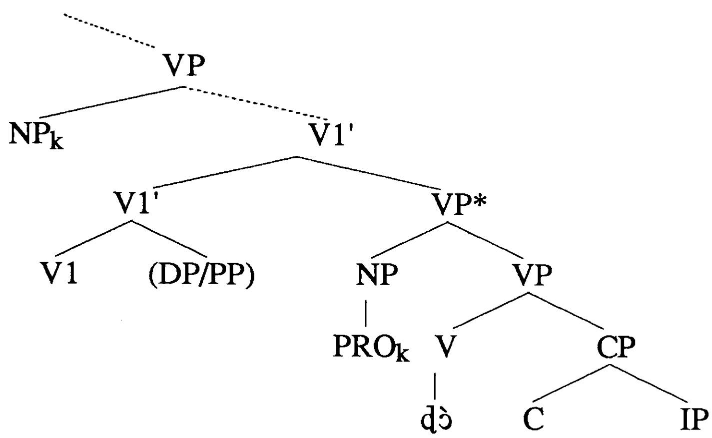
In (30), *ɖɔ̀* combines with *vɔ̀* and *sɔ́* in taking a PP as well as a NP complement.

(30) a. vɔ̀ xó nɛ́ ɔ́ ɖɔ̀ nú mí.
repeat word that DET to me
"Tell me that word in question again."

b. Kɔ̀kú sɔ́ hwènùxó ɖɔ̀ nú A.
Koku take story to A
"Koku told a story to Asiba."

Having established that *ɖɔ̀* occurs in a SVC, let us now turn to the structure of such constructions. I follow Carstens (1988) in assuming that the second verb in a SVC occurs in a VP (hereafter VP*) whose external argument, PRO, is controlled by the external argument of the first verb; the control effect is shown by the index *k*. Following Law and Veenstra (1992), I will assume that VP* is adjoined to the V-bar headed by the first verb, as in (31):

(31)



This structure, coupled with the BT, explains all the syntactic properties of LOG that were established in section 1. The BT that I assume follows (Chomsky, 1986):

(32) a. A. An anaphor is bound in a local domain.
B. A pronominal is free in a local domain.
C. An r-expression is free (in the domain of the head of its chain).

b. α *binds* β if α c-commands β and is co-indexed with β.

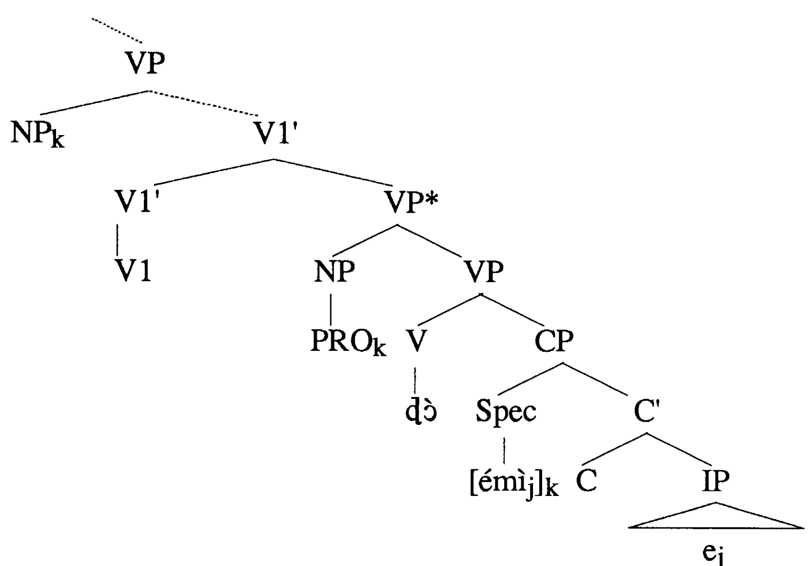
c. The local domain for an anaphor α [is] the CFC (Complete Functional Complex) immediately containing β that is MGC(α), because this is the minimal category containing a subject and a governor of α. [...] The GC for α is the minimal CFC which contains α, a lexical governor for α, and a subject.

In (33a), the GC for *himself* is the root clause: *George* c-commands and binds the reflexive. In (33b), the GC of the reflexive is the matrix IP.

(33) a. George did not shave **himself.**
b. George believes [$_{IP}$ **himself** to be the defender of the New World Order].
c. George$_i$ [$_{VP}$ t$_i$ [$_{VP}$ believes [$_{IP}$ **himself$_i$** to be ...]]]

Let us now return to Fɔ̀n. The fact that *émì* cannot take the object of a V or a P as its antecedent follows directly from (31) under the claim that this is a subject control structure. On the other hand, locality restrictions on anaphor binding are captured with (31) by assuming that *émì* undergoes LF movement (for a similar idea, see, e.g., Katada, 1991; Tang & Huang, 1991). I will assume with Huang (1982) that such a movement is not constrained by Subjacency. It follows that *émì* moves directly from its S-structure position into the Spec position of any CP selected by *ɖɔ̀*, a position from which it is bound to the subject of *ɖɔ̀*. Let us briefly see how this works. Consider (34), which is three-way ambiguous. A partial LF representation of (34) is given in (35). Here, V1 corresponds to either *kɛ́n* 'to bet', *wɔ̀n* 'to forget', or *lìn* 'to think'.

(34) mì lìn ɖɔ̀ Sìká wɔ̀n ɖɔ̀ yè kɛ́n ɖɔ̀ Kɔ̀kú ná yɔ́lɔ́ émì.
you (pl) think Sika forget they bet Kɔ̀kú irrealis invite LOG
a. 'You think that Sika forgot that they$_i$ bet that Koku will invite them$_i$.'
b. 'You think that Sika$_i$ forgot that they bet that Koku will invite her$_i$.'
c. 'You$_i$ think that Sika forgot that they bet that Koku will invite you$_i$.'

(35)


When V1 is *kɛ́n* 'to bet', *émì* must, by (32c), be bound to the external argument of *ɖɔ̀*, which is controlled by the external argument of *kɛ́n* 'to bet'. The variable created by LF movement of LOG will then be strongly bound by *yè* 'they', deriving (34a). If V1 is *wɔ̀n* 'to forget', *émì* will be bound to the external argument of *ɖɔ̀*, which is controlled by the external argument of *wɔ̀n* 'to forget'. The range of the variable is then determined by *Sika*, yielding (34b). Finally, suppose that V1 is *lìn* 'to think'. By (32c), *émì* is bound to the external argument of *ɖɔ̀*, which we know to be controlled by the external argument of *lìn* 'to think'. The semantic range of the variable is determined by *mì* 'you', giving (34c). With LF-movement of *émì*, every long-distance antecedent of *émì* becomes a local binder. I therefore state the generalization in (36):

(36) The VP headed by *ɖɔ̀* 'to say' is the minimal CFC in which *émì* meets its binding requirement at LF.

Whereas (36) is language specific, the other principles I have appealed to in order to explain the syntactic behaviour of *émì*, viz., Move α and application of principle A of the BT at LF, are drawn from UG. A language learner will easily arrive at (36) from experience. The implications of this analysis for Ewe are discussed elsewhere. It should be clear, however, how this account could extend to the Ewe sentence in (3), assuming, of course, that *be* is like *ɖɔ̀*. Clements' claim that, in Ewe, the use of LOG is restricted to reportive contexts introduced by *be* could then be stated as (36) by simply substituting *ɖɔ̀* for *be*, and *émì* for *ye*.

We now turn to the binding properties of *émì*. The analysis of LOG as a LF operator implies that the representation of (37a) is as in (37b). Since the subject NP c-commands the variable, the latter is not A-free in the domain of its operator. (37a) is therefore a condition C violation.

(37) a.* Kɔ̀kú ɖɔ̀ é blɛ́ tɔ́ émì tɔ̀n. [= (16a)]
Koku say 3PRON mislead father LOG GEN
'Koku$_i$ said that he$_i$ misled his$_i$ father.'

b.* Kɔ̀kú ɖɔ̀ [$_{CP}$ émì$_i$ [$_{IP}$ é$_i$ blɛ́ [$_{NP}$ tɔ́ t$_i$ tɔ̀n]]]

Consider now the ungrammaticality of (16b), repeated below as (38):

(38) * Kɔ̀kú ɖɔ̀ tɔ́ émì tɔ̀n blɛ́ ɛ̀.
Koku say father LOG GEN mislead 3PRON
'Koku$_i$ said that his$_i$ father misled him$_i$.'

This is explained if, following Reinhart (1983), one assumes that a variable cannot be the antecedent of a pronoun that it does not c-command, along the lines of (39):

(39) * who$_i$ does the fact that Jane fancies him$_i$ amuse t$_i$?

Given the BT, then, the fact that *émì* must be disjoint in reference from any NP within the same IP follows naturally.

As for coreference, I assume that it arises when two *émì*s occur in the same Spec, CP at LF, whether they originate in the same IP, as seen in (40), or not, as illustrated in (41b).

(40) Kɔ̀kú ɖɔ̀ émì blɛ́ tɔ́ émì tɔ̀n. [= (17a)]
Koku say LOG mislead father LOG GEN
'Koku$_i$ said that he$_i$ misled his$_i$ father.'

(41) mì yǐ gbè ɖɔ̀ émì wɔ̀n ɖɔ̀ yè kɛ́n ɖɔ̀ Kɔ̀kú ná yɔ́lɔ́ émì à?
you (pl) answer LOG forget they bet Kɔ̀kú irrealis invite LOG Q
a. 'Did you answer that you forgot that they$_i$ bet that Koku will invite them$_i$?'
b. 'Did you$_i$ answer that you$_i$ forgot that they bet that Koku will invite you$_i$?'

I assume that, when two *émì*s appear in one Spec, CP, they undergo the rule of Absorption discussed in Higginbotham & May (1981); hence (42):

(42) $[_{CP}$ émì$_1$, émì$_2$ $[_{C'}$ $[_{IP}$ ...$]]]$ ==> $[_{CP}$ émì$_{(1, 2)}$ $[_{C'}$ $[_{IP}$ ...$]]]$

Following this, (40) and (41b) will be interpreted as (43a) and (43b), respectively:

(43) a. for x = Koku, x misled x's father
b. for x = you, x forgot that they bet that Koku will invite x

Similarly, example (44) will have the representation in (45):

(44) Kɔ̀kú ɖɔ̀ yè lìn ɖɔ̀ émì blɛ́ émì-ɖê. [= (19)]
Koku say they think LOG mislead LOG
a. 'Koku said that they$_i$ think that they$_i$ misled themselves$_i$/each other$_i$.'
b. 'Koku$_i$ said that they think that he$_i$ misled himself$_i$.'

(45) a. for x = Koku; Koku said that they think that x misled x-self.
b. for x = they; Koku said that x think that x misled x-selves.

The ill-formedness of the representations in (46), where each *émì* has a different binder, is naturally explained on the assumption that they violate the agreement rule required in anaphora (viz., reflexive, reciprocal) binding.

(46) a. for x = Koku; for y = they; K. said that y think that x misled y-selves.
b. for x = Koku; for y = they; K. said that y think that y misled x-self.

Since *Koku* and *yè* 'they' do not agree in the ϕ-feature number, and since *ɖê* needs to agree in the latter feature with the element to its left and the subject NP, the fact that the variables have different semantic range will only yield sentences that are semantically uninterpretable. Compare (46a) with (47a) and (46b) with (47b):

(47) a. * they like himself.
b. * he likes themselves/herself.

Given the BT, then, only a representation where the two variables have the same semantic range can be accepted in an IP containing *émì* and the compound anaphor *émì-ɖê*. If, however, such an IP only contains two *émì*s, as in (20), then the two *émì*s will not be coreferential, as indicated in (20c, d).

The reader must have noticed a contradiction in my account of (37a) vs (40), (41b), or (44). If a variable created by LF movement is not A-free in the domain of its operator in (37a), then it should not be A-free in (40), (41b) or (44) either. This contradiction is only apparent. It disappears once we assume that, in the latter cases, the bindign of the variables falls under Safir's (1984) *Parallelism Constraint on Operator Binding*. Safir shows that, when an operator binds two variables that have different phonetic content, the result is ungrammatical, when the two variables have the same phonetic content, however, the result is grammatical. Thus, consider the following English examples:

(48) a.* who$_i$ does his$_i$ mother love e$_i$ best?
b. [PRO shaving every day] convinced George to grow a beard.
c. Who$_i$ did [PRO$_i$ shaving every day] convince e$_i$ to grow a beard?

In (48a), the variable is coindexed with a pronominal. In (48b, c), however, it is coindexed with an EC. Safir (1984, 615) therefore suggests that multiple variable binding must satisfy the principle in (49):

(49) *Parallelism Constraint on Operator Binding (PCOB)*
If *O* is an operator and *x* is a variable bound by *O*, then for any *y*, *y* a variable of *O*, *x* and *y* are [αlexical]

The grammaticality of (40), (41b) and (44) in which two variables are bound by one operator, viz., *émì*, is explained if the PCOB extends to Fɔ̀n too. Incidentally, the PCOB provides us with another argument against the claim that LOG is a logical variable. Since, in (22b), the RP and *émì* are [+lexical], the PCOB predicts that they could be both locally A-bar bound by a single operator, without yielding ungrammaticality. Given that (22b) is ungrammatical, we must conclude that the RP is being associated with a gap at the level where A-bar binding takes place in order for the PCOB to rule out (22b). This follows naturally under my analysis because, in (22b), LOG obligatorily vacates its S-structure position at LF, leaving a gap behind.

We finally look at the contraints that govern the distribution of *émì*. Whenever *émì* occurs in a root sentence (see (6)), or in an fronted adjunct (see (23)), the range of the variable cannot be determined from discourse or by default rules. It is not sufficient for a verb to be drawn from (7) for its subject NP to be an antecedent of *émì*. Rather, the verb must be followed by *ɖɔ̀*. On this account, (6), (14b), and (23) all violate principle A violation of the BT at LF: the anaphor is not bound. On the other hand, the variable bound by *émì* does not satisfy the requirement that it be strongly bound. One always needs a strong binder, a lexical governor, viz., *ɖɔ̀*, and a c-commanding NP.

Finally, the impossibility for LOG to occur as a resumptive pronoun also finds a natural explanation. (50b) violates the prohibition against vacuous quantification, just like (51) from English does.

(50) a. mɛ́ (wɛ̀) Sìká ɖó nùkún ɖɔ̀ *(é) ná yɔ́lɔ́ Kɔ̀kú?
who FM Sìká have eye RP irrealis call Koku
'Who does Sika hope will invite Koku?'

b.* mɛ́ (wɛ̀) Sìká ɖó nùkún ɖɔ̀ émì ná yɔ́lɔ́ Kɔ̀kú?
who FM Sìká have eye LOG irrealis call Koku
'Who does Sika hope will invite Koku?'

(51) * who did the fact that Zsazsa kicked the policeman amuse the public?

Being a LF operator, *émì* must raise at that level of representation. Moreover, being an anaphor, it cannot be bound outside its governing category, viz., VP* in (50b). Assuming that this is a subject control structure, the antecedent of the variable left by LF movement of *émì* can only be *Sika*, the external argument of V1. Given that *émì* does not take the *wh*-operator as its binder in (50b), the latter has no variable to bind; hence the fact that the sentence is ruled out because it violates the prohibition against vacuous quantification.

3. Conclusion

My purpose in this paper has been to show that the syntactic behaviour of the logophoric pronoun *émì* is straightforwardly accounted for if it is a LF operator and anaphor. It was suggested that the VP headed by *ɖɔ̀* is the CFC in which LOG meets its requirement as an anaphor. It was also suggested that coreference arises when two *émì*s, whether they originate in the same IP or not, raise at LF into the same Spec, CP where they are subject to the rule of Absorption.

Notes

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