COREFERENT PRONOMINALIZATION IN DIRÉ SONGHAI

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1. Introduction

The Songhai language is spoken mainly in Mali and Niger, and is classified by Greenberg as belonging to the Nilo-Saharan family. The purpose of this paper is to discuss the syntactic criteria explaining the variant forms of coreferent pronominalization in Songhai, and to point to the semantic implications of the analysis. This paper was written with the invaluable assistance of Mamadou Konaré who is from Diré, Mali. I am also indebted to Charles Bird and Tim Shopen for their help.

2. Main Clauses

In Diré Songhai, the third person singular pronoun is manifested in two distinctive forms, as shown in the sets I and II below:

(1)   Set I   Set II

        a (nga)   ngu

The pronoun form of Set II above does not occur in main clauses except in possessive constructions where the coreferent antecedent occurs in the same clause, and in focus constructions which will be discussed in section 4. Identity of reference is indicated by the use of subscripts in the following examples, and throughout the paper. (D = determiner)

(2) Ali_i dumbu ngu_i kamba di.

        Ali   cut   he   arm   D

        'Ali cut his arm.'

(3) Ali_i neere ngu_i bari di.

        Ali   sell   he   horse D

        'Ali sold his horse.'

The identical subscripts of examples (2) and (3) indicate unambiguous identity of reference.

The pronoun forms of set I above may occur in main clauses either independently or in possessive constructions when the coreferent antecedent does not occur in the same clause. Their occurrence in focus constructions will be mentioned later. The subscript $\times$ will be used to indicate obligatory reference to a noun phrase lying outside of the main clause but understood in the linguistic context.

(4) Ali_1 no $\text{a}_\times$ se gooro di.

Ali give he to kola D

'Ali gave him the kola nut.'

(5) Ali_1 dumbu $\text{nga}_\times$ kamba di.

Ali   cut   he   arm   D

'Ali cut his arm.'

As indicated by the subscripts, in (2) Ali has cut his own arm, while in (5) he has cut someone else's arm. In (4), coreference is obviated by the use of the set I form a.

The following examples demonstrate the limits on the use of the set II form in simplex sentences.

(6a) Moussa_1 no Ali_2 se ngu_1 kitaabu di.

Moussa give Ali to he   book   D

'Moussa gave Ali his book.' (Moussa's book)

(6b)   *Moussa_1 no Ali_2 se ngu_2 kitaabu di.

(6c) Moussa_1 no Ali_2 se $\text{nga}_{2/\times}$ kitaabu di.

'Moussa gave Ali his book.' (Ali's book)

(7a) Moussa_1 koy ngu_1 bugu di kuna

Moussa go   he   hut D into

'Moussa went into his hut.' (Moussa's hut)

(7b) Moussa_1 koy $\text{nga}_\times$ bugu di kuna.

'Moussa went into his hut.' (someone else's hut)

It appears then that the set II form is used for coreference with the subject noun phrase of a main clause and the set I form, either for

coreference with an antecedent object noun phrase, or for nonanaphoric reference. Example (6b) shows quite clearly that the set II form cannot be coreferent with an object noun phrase. In (7b), nga is again used to indicate noncoreference with a noun phrase in the same clause.

A brief glance at the passive forms of simplex sentences of Songhai allows us to further refine our observations. As Shopen and Konaré [1970] have demonstrated, passive sentences of Songhai are agentless, at least at the surface structure level.

(8a)   boro fo_1 guna Ali_2 $nga_{2/x}$ bugu di kuna.

　　　 someone see Ali he　　hut D in

　　　 'Someone saw Ali in his hut.'

(8b)   *boro fo_1 guna Ali_2 ngu_2 bugu di kuna.

(8c)   boro fo_1 guna Ali_2 ngu_1 bugu di kuna.

　　　 'Someone saw Ali at his hut.'

(9a) Ali_1 gunandi ngu_1 bugu di kuna.

　　　 Ali be seen he　 hut D in

　　　 'Ali was seen in his hut.' (Ali's hut)

(9b) Ali_1 gunandi nga_x bugu di kuna.

　　　 'Ali was seen in his hut.' (someone else's hut)

Thus, unambiguous coreference through the use of the set II form ngu in simplex sentences of Songhai, can only be established with the surface structure subject of the sentence.[1]

On the basis of data observed to this point in the analysis, it is possible to make a tentative approximation of a schema for pronominalization, which could be easily adapted to either a syntactic or an interpretive approach to the problem.

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[1]The transformational derivation of passives would therefore require that pronominalization rules be post-cyclic. Later evidence in section 4 will indicate that focus rules would then have to follow pronominalization rules of Songhai, post-cyclically.

(10a) Context: $[_S$ NP$_1$ X ngu Y]

NP$_1$ is [+coreferential] with ngu.

(10b) Optional Subpart

Context: $[_S$ X NP$_1$ Y $^a_{nga}$ Z]

NP$_1$ may be [+coreferential] with $^a_{nga}$ and X $\neq \emptyset$.

(X, Y, and Z represent variables.)

The use of the pronoun form ngu of set II, is obligatorily anaphoric.
It must be coreferent with a surface structure subject noun phrase at
a stage of derivation prior to the application of a focussing rule.
Part (b) of the above schema is optional since the set I form a must
be nonanaphoric in simplex sentences, and the set I form nga may be
nonanaphoric or may corefer with any antecedent noun phrase that is not
the surface structure subject of the simplex.

Reflexive constructions of Songhai are not clearly distinguished
from other forms of pronominalization. The notion of reflexivization
is expressed by the use of the set II pronoun ngu, plus the noun bomo
meaning 'head'. The set I forms cannot be used in reflexivization for
obvious reasons.

(11a) Ali$_i$ hinsa ngu$_i$ bomo.

Ali prepare he head

'Ali prepared himself.'

(11b) *Ali$_i$ hinsa nga$_i$ bomo.

(11c) ?Ali$_i$ hinsa nga$_x$ bomo.

?'Ali prepared his head.' (someone else's head)

The pronouns of set I may as well occur in sentence-initial posi-
tion functioning nonanaphorically, as subject noun phrases. As pre-
viously observed, the set II form establishes coreference with any
subject noun prhase. (C = copula)

(12a) a_i koy ngu_i bugu di kuna.

he go he hut D into

'He went into his hut.'

(12b) *a_i koy nga_i bugu di kuna.

(12c) a_i koy nga_x bugu di kuna.

'He went into his hut.' (someone else's hut)

(13a) nga_i bugu di go ngu_i batuma di ra.

he hut D C he courtyard D in

'His hut is in his courtyard.'

(13b) *nga_i bugu di go nga_i batuma di ra.

(13c) nga_i bugu di go nga_x batuma di ra.

'His hut is in his courtyard.' (someone else's courtyard)

The following examples demonstrate that the set II form ngu cannot be substituted for the set I forms in subject position since there is no antecedent subject noun phrase with which coreference can be established. In examples (12) and (13) we observe the set II form corefering with an antecedent nonanaphoric set I form. In examples (14) and (15), the set II form is obviated from nonanaphoric use.

(14a) *ngu_i koy ngu_i bugu di kuna.
       he go he hut D into

(14b) *ngu_i koy nga_x bugu di kuna.

(15a) *ngu_i bugu di go ngu_i batuma di ra.

he hut D C he courtyard D in

(15b) *ngu_i bugu di go nga_x batuma di ra.

In order to exhaust the paradigmatic possibilities in main clauses or simplexes, here are examples with noun phrases, other than pronouns, in object position.

(16a) a_i koy Ali_2 bugu di kuna.

he go Ali hut D into

'He went into Ali's hut.'

(16b) $*$ngu$_1$ koy Ali$_1$ bugu di kuna.

(16c) $*$a$_1$ koy Ali$_1$ bugu di kuna.

On the basis of the data thus far observed, it is apparent that for either the set I or the set II type of coreferent pronominalization to occur, the noun phrase that is to be pronominalized must be preceded by its coreferent noun phrase. Backwards pronominalization is obviously not permitted. It turns out that precedence is the only one of Langacker's primacy relations that holds across the board for coreferent pronominalization in Songhai. Unlike English, the primacy relation <u>precedes</u> is both necessary and sufficient in Songhai at a semi-surface derivational level, regardless of the <u>command</u> relationships. This is demonstrated by the following examples.[2] (S = subordinator)

(17a) Ali$_1$ nimsi   sa di ka a$_{1/x}$ hirow kaso.

     Ali be repentant time D S he   enter prison

     'Ali was repentant when he entered prison.'

(17b) a$_1$ nimsi sa di ka Ali$_2$ hirow kaso. ($*$ngu)[3]

     'He was repentant when Ali entered prison.' (he $\neq$ Ali)

(17c) $*$a$_1$ nimsi sa di ka Ali$_1$ hirow kaso.

(18a) sa di ka Ali$_1$ hirow kaso, a$_{1/x}$ nimsi.

     'When Ali entered prison, he was repentant.'

(18b) sa di ka a$_1$ hirow kaso, Ali$_2$ nimsi.

     'When he entered prison, Ali was repentant.' (he $\neq$ Ali)

(18c) $*$sa di ka a$_1$ hirow kaso, Ali$_1$ nimsi.

Example (18c) shows clearly that although Ali does not <u>command</u> a, coreference without <u>precedence</u> does not occur. This evidence also

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[2]An apparent exception to the position taken here will be considered in section 3.

[3]The impossibility of the occurrence of ngu in constructions like (17) and (18) will be treated in sections 3 and 6.

further substantiates the hypothesis that pronominalization is a very late, semi-surface structure phenomenon. Whether by a transformation or by an interpretive rule, it occurs quite late. The only exceptions to this would of course be the nonanaphoric occurrences of the set I forms a and nga.

It is now clear that the set I forms a and nga may occur freely in main clauses of Songhai, when establishing identity of reference with a noun phrase outside of the linguistic context, or when corefering with a non-subject noun phrase near the surface structure level. The set II form ngu, occurs only in main clause predicates, and establishes unambiguous coreference with the subject noun phrase in that main clause. The set II form is thereby not allowed to occur in (or as) the subject noun phrase of the main clause. Neither the forms of set I nor the form of set II can be used to establish coreference with a following noun phrase.

3. Complement Constructions

It is now important to turn to complement constructions of Songhai in order to substantiate and elaborate the observations made in section 2. Examples (19) and (20) are representative of the two basic types of complement constructions with which this discussion will be concerned. (A = auxiliary)

(19a) Ali$_i$ har ka ngu$_i$ go ta koy tira.

       Ali say S he A A go school
       'Ali said that he (Ali) would go to school.'

(19b) *Ali$_i$ har ka ngu$_x$ go ta koy tira.

(19c) *Ali$_i$ har ka a$_i$ go ta koy tira.

(19d) Ali$_i$ har ka a$_x$ go ta koy tira.

       'Ali said that he (not Ali) would go to school.'

(20a) a kan Ali$_i$ se ka nga$_{i/x}$ harme di go koy tira.

       it please Ali to S he brother D A go school
       'It pleased Ali that his brother is going to school.'

(20b) *a kan Ali$_i$ se ka ngu$_i$ harme di go koy tira.

(20c) *a kan Ali$_i$ se ka ngu$_x$ harme di go koy tira.

In (19), the set II form $_{ngu}$, and only that form, can indicate co-reference with Ali, the subject of the matrix verb. If the set I form is used, as in (19c) and (19d), coreference with Ali is impossible. In (19a), coreference with Ali is unambiguous. In (20), the set I form nga, and only that form, can be used for establishing coreference with Ali, which occurs in object position in the expletive-it matrix clause. As indicated by the subscripts, (20a) is ambiguous since nga may be coreferent with Ali, or nonanaphoric. Examples (20b) and (20c) indicate that ngu cannot occur in that environment under any conditions.

In complement constructions like (19), as was observed in section 2, ngu is obligatorily coreferent with a main clause initial subject noun phrase, near the surface structure level. Further evidence is provided by the following examples. (SJ = subjunctive)

(21a) Ali$_i$ go tammaha ngu$_i$ ma ka Président.

Ali A expect he SJ become president
'Ali expects to become President.'

(21b) *Ali$_i$ go tammaha ngu$_x$ ma ka Président.

(21c) *Ali$_i$ go tammaha a$_i$ ma ka Président.

(21d) Ali$_i$ go tammaha a$_x$ ma ka Président.

'Ali expects him to become President.'

(22a) Ali$_i$ go ba alkati diyo ma guna ngu$_i$ bari di.

Ali A want police D SJ see he horse D
'Ali wants the police to find his horse.'

(22b) *Ali$_i$ go ba alkati diyo ma guna ngu$_x$ bari di.

(22c) *Ali$_i$ go ba alkati diyo ma guna nga$_i$ bari di.

(22d) Ali$_i$ go ba alkati diyo ma guna nga$_x$ bari di.

'Ali wants the police to find his (not Ali's) horse.'

Regardless of the degree of embeddedness of ngu, the unambiguous coreference with the matrix subject is possible. The matrix verbs in

examples (19), (21) and (22), are har 'say', tammaha 'expect, hope', and ba 'want', respectively. These verbs are representative of the class of verbs whose subject noun phrases may corefer with ngu in any embedded position. In addition to the syntactic constraints already observed on the occurrence of ngu, it is also important to look at the semantic constraints, as reflected in this class of verbs. All the verbs of the class in some way reflect the feelings, desires, beliefs, opinions, or words of their subject noun phrases. It appears that the speaker is letting it be known that the subject noun phrase of a matrix verb of this class is the one <u>responsible</u> for the information being communicated by the utterance. In complement constructions, this <u>responsibility assignment</u> and the related use of ngu for coreference, occurs only with the verbs of the class represented by the above-mentioned verbs: verbs of <u>main clause subject responsibility</u>.

The point being made is that syntactic constraints on coreferent pronominalization in Songhai seem to be indicative of corresponding regularities and differences of semantic interpretation. We have already looked at set II coreferent pronominalization in <u>main clause subject responsibility</u> constructions.

Set I coreferent pronominalization occurs in complement constructions headed by what will be referred to as <u>speaker responsibility verbs</u>. This class includes those main clause verbs which do not allow the set II form ngu to occur in embedded complement sentences. Syntactically, a number of the verbs of this class allow only an expletive-<u>it</u> to occur in matrix initial subject noun phrase position. On the basis of our observations, the absence of ngu in the expletive-<u>it</u> constructions would therefore be explained. This is demonstrated in the following example:

(23a) a tar Ali$_i$ se ka nga$_{i/x}$ bari di jeyndi.

      it displease Ali to S he horse D be stolen

      'It displeased Ali that his horse was stolen.'

(23b) *a tar Ali$_i$ se ka ngu$_{i/x}$ bari di jeyndi.

(23c) *Ali$_i$ tarndi ka ngu$_{i/x}$ bari di jeyndi.

      Ali be displeased he horse D be stolen

Semantically, in constructions like (23), the speaker is in effect assuming responsibility for the information communicated. In (23a), responsibility is not being assigned to Ali, but rather the speaker is stating factive information on the basis of his own knowledge or experience. In other words, the speaker presupposes the truth of his statement.

Basing an argument for explaining the different forms of coreferent pronominalization in Songhai complementation on the syntactic requirement of an expletive-_it_ matrix sentence is not however justifiable. Such a hypothesis does not hold throughout the data as evidenced by example (24) below, which is similar to example (18) of section 2.

(24a) Ali$_1$ nimsi ka a$_{1/x}$ hirow kaso.

      Ali be repentant S he   enter prison

      'Ali was repentant over entering prison.'

(24b) *Ali$_1$ nimsi ka ngu$_{1/x}$ hirow kaso.

It appears then that the semantic constraints on the different forms of coreferent pronominalization are more powerful than any constraints on the syntactic environments in which they can occur. The matrix verb nimsi 'be repentant' in the perfective in example (24), is definitely a speaker responsibility verb.[4] Notice what happens to the coreferents when example (24) is embedded under a main clause subject responsibility

[4]This verb nimsi, in Songhai and in English, is a one argument verb à la Shopen, personal communication. It may be the case then that any additional arguments, such as the embedded sentence in (24), cannot fall within the scope of a one argument verb. This might explain why coreferent pronominalization in Songhai sentences like (24) must be with the set I form, i.e. since the subordinate clause is outside the scope of the verb, it is sentential. With a matrix verb of two or more arguments like in (25), complement sentences do fall within the scope of the verb and therefore do allow set II coreferent pronominalization. Drawing a parallel with factivity then, the subordinate clause in (24) is in a sense independent, presupposed to be true, and not governed by a responsible main clause subject. In (25), the complement sentences are not presupposed to be true and are in a sense more dependent upon and governed by a responsible main clause subject; thus set II coreferent pronominalization occurs there.

matrix:

(25)   Ali₁ hungu ka ngu₁ nimsi   ka ngu₁ hirow kaso.

       Ali believe S he be repentant S he   enter prison

       'Ali thought that he was repentant over entering prison.'

Example (24) could be put into any tense and still be a speaker respon-
sibility construction. If (25) is put into any tense, Ali, the matrix
clause subject, remains responsible for the information communicated.

     The parallels between my analysis of Songhai pronominalization and
the analysis of English complementation presented in the Kiparskys'
paper <u>Fact</u> [1970], should not be overlooked. Example (24) appears to
be a factive complement construction in the Kiparskian sense. Whether
the subordinator between the clauses is sa di ka 'when', ka se
'because', ka 'that', or something like the English 'due to the fact
that', the construction is factive (cf. note 4). <u>Speaker responsibility</u>
constructions are much like Kiparskian <u>factive</u> constructions, and <u>main
clause subject responsibility</u> constructions are very much like Kiparskian
<u>nonfactive</u> constructions. Notice that example (24) is amenable to trans-
lation into English as a gerundive complement construction. The Kipar-
skys state that "gerunds can be objects of factive predicates, but not
freely of nonfactive predicates". [1970:146]. There is no way that
(24) can be translated as a for-to complement construction. The Kipar-
skys also state that "only nonfactive predicates allow the accusative
and infinitive constructions". [1970:146]

     The expletive-<u>it</u> constructions of my <u>speaker responsibility</u> class
can as well be translated as gerundives or as object clauses beginning
with the fact that, if an optional movement rule is applied. The rule
would correspond to Emonds' "Subject Replacement" rule and, as will be-
come apparent, would have to be ordered after our schema for pronominal-
ization.

(26)   a   tar   Ali₁ se ka nqa₁/ₓ bari di jeyndi.

       it displease Ali to S he   horse D be stolen

       'It displeased Ali that his horse was stolen.'

(27)   Ka nga$_{1/x}$ bari di jeyndi tar Ali$_1$ se.

'His horse's being stolen displeased Ali.'

'(The fact) That his horse was stolen displeased Ali.'

(27a) *ka Ali$_1$ bari di jeyndi   tar   a$_1$ se

S Ali horse D be stolen displeased him to

(27b) ka Ali$_1$ bari di jeyndi tar a$_x$ se.

'That Ali's horse was stolen displeased <u>him</u>.' (not Ali)

Examples (26) and (27) are both <u>factive</u> and <u>speaker responsibility</u>.
Songhai also provides supporting evidence for placing embedded senten-
ces in expletive-<u>it</u> constructions in extraposed position in the deep
structure. If this is agreed upon, then pronominalization will have to
be ordered <u>before</u> a subject replacement movement rule. This seems quite
natural since intuitively, such an arbitrary movement would best occur
quite late in a competence model of grammar. If a Rosenbaum-type of
deep structure is chosen, then an extraposition rule will have to
<u>precede</u> Songhai pronominalization. This alternative might involve some
form of backward pronominalization. No matter which alternative is
chosen, I think that coreferent pronominalization should remain based
on <u>precedence</u> rather than command, due to the already observed facts
of the language. If coreferent pronominalization were allowed, in (26)
and (27), to apply backward and on the basis of command alone, it would
be the only such case thus far observed in the language. A Rosenbaum-
type of deep structure would therefore be questionable.

Examples (21) and (22) above both have <u>main clause subject responsi-
bility</u> matrix verbs and can only be translated as infinitive (for-to)
complements in English. This correlates closely with the Kiparskys'
generalization about <u>nonfactives</u> cited above.

The following two examples illustrate the importance of the obser-
vations made in this section.

(28)   a   kan   a$_{1/x}$ se ka nga$_{1/2/y}$ harme$_3$ di dey attey

it please he to S he   brother D buy tea

nga$_{1/2/3/z}$ bitiki di ra.

he   store D in

'It pleased him that his brother bought tea in his shop.'

(29) Ali$_1$ har ka a kan ngu$_1$ harme$_2$ di dey attey ngu$_{1/2}$ bitiki

di ra.

'Ali said that it pleased him that his brother bought tea in
his shop.'

The subscripts x, y, and z, all refer to nonanaphoric antecedents, i.e.
outside of the linguistic context. The final ngu in (29) is ambiguous
in that it may refer either to Ali or to Ali's brother. This set II
form of coreferential ambiguity will be as many fold as there are ante-
cedent subject noun phrases which are either unpronominalized or from
set I.

The set II form ngu occurs in complement constructions either
independently or in possessive constructions. In simplexes it only
occurred in possessive constructions. In both cases, ngu is corefer-
ential with either a complement or a matrix sentence antecedent subject
noun phrase. When ngu occurs in an embedded sentence, like its main
clause counterpart, it is either derived or interpreted by a rule
which looks backward in the semi-surface structure phrase marker for an
antecedent noun phrase in subject position, and it agrees in the fea-
tures animacy, person, and number. In complement constructions, this
occurs only with matrix verbs belonging to the class of main clause
subject responsibility verbs.

4. Focus

In Songhai, an operation may be applied which puts special emphasis
or focus on a given element of a sentence. The best way that we have
found to translate sentences containing such focussed elements into
English, is by the use of the English cleft sentence. There is a great
deal of freedom with regard to which elements can be brought into focus
position. Two morphemes, na and nga, are used in various ways for
focus. The morpheme nga is used to focus surface structure subjects
of sentences. It must be remembered that although homonymous, this
new nga is not the same morpheme as the set I pronoun. The following
examples introduce the use of the focus markers. (SF = subject focus;

PF = predicate focus)

(30a) Ali jey bari di.

      Ali steal horse D

      'Ali stole the horse.'

(30b) Ali nga jey bari di.
           SF
      'It's Ali that stole the horse.'

(30c) bari di na Ali jey.
             PF
      'It's the horse that Ali stole.'

(31a) Ali ka bi.

      Ali come yesterday

      'Ali came yesterday.'

(31b) Ali nga ka bi.
          SF
      'It's Ali that came yesterday.'

(31c) bi na Ali ka.
        PF
      'It's yesterday that Ali came.'

In certain complement constructions, an entire embedded sentence may be brought into focus position. Transformationally, this would involve Emonds' subject replacement rule as discussed in section 3, followed by a focus rule comparable to clefting in English.

(32a) a   tar   Ali se ka bari fo   jeyndi.

      it displease Ali to S horse one be stolen

      'It displeased Ali that a horse was stolen.'

(32b) ka bari fo jeyndi nga tar Ali se.
                  SF
      'It's that a horse was stolen that displeased Ali.'

Provided that postcyclic rules may be ordered, it is clear that the movement of elements into focus position by either of these processes does not in any way alter our observations regarding coreference.

(33a) Ali‚ neere ngu‚ albasar diyo fulan di se.

      Ali sell he   onion   D Fulani D to

      'Ali sold his onions to the Fulani.'

(33b) Ali_| nga neere ngu_| albasar diyo fulan di se.
           SF
      'It's Ali that sold his onions to the Fulani.'

(33c) fulan di se na Ali_| neere ngu_| albasar diyo.
           PF
      'It's to the Fulani that Ali sold his onions.'

(33d) ngu_| albasar diyo na Ali_| neere fulan di se.
           PF
      'It's his onions that Ali sold to the Fulani.'

It is now apparent that $_{ngu}$ can occur on the surface to the left of the noun phrase <u>antecedent</u> with which it corefers, when moved to sentence-initial position under focus. The focussing rule will therefore have to be ordered after the rules of pronominalization. This is as well substantiated by additional examples of complement constructions.

(34a) Ali_| hungu ngu_| baba ma ka   Président.

      Ali   think he father SJ become president

      'Ali thought his father would become president.'

(34b) Ali_| nga hungu ngu_| baba ma ka Président.
          SF
      'It's Ali that thought his father would become president.'

(34c) Président na Ali_| hungu ngu_| baba ma ka.
           PF
      'It's president that Ali thought his father would become.'

(34d) ngu_| baba na Ali_| hungu ma ka Président.
           PF
      'It's his father that Ali thought would become president.'

(35a) a kan   Ali_| se ka a_{|/x} ka   Président.

      it please Ali to S he become president

      'It pleased Ali that he became president.'

(35b) ka a_{|/x} ka Président nga kan Ali_| se.
                SF
      'It's that he became president that pleased Ali.'

(35c) Ali_| se na a kan ka a_{|/x} Président.
          PF
      'It's Ali that it pleased that he became president.'

Given rule ordering, examples (34) and (35) show that neither the set I nor the set II form of coreferent pronominalization is affected by the focus movements.

When the set I pronoun a is separated from its verb form as a result of focus movement, it is replaced by nga as is demonstrated in (36b):

(36a) a   tar   Ali$_i$ se ka a$_{i/x}$ ci jey di.

    it displease Ali to S he   C thief D

    'It displeased Ali that he is the thief.'

(36b) a tar Ali$_i$ se ka nga$_{i/x}$ nga ci jey di.

                             SF

    'It displeased Ali that it's he that is the thief.'

No comparable change occurs when the set II form ngu is separated from its verb due to focus movement:

(37a) a$_i$ go har ka ngu$_i$ ci jey di.

    he A say S he   C thief D

    'He says that he is the thief.'

(37b) a$_i$ go har ka ngu$_i$ nga ci jey di.

                      SF

    'He says that it is he that is the thief.'

5. The Gao Dialect

In 1956, R. P. A. Prost wrote a Songhai grammar entitled La Langue Sonay et Ses Dialectes. His grammar focussed primarily on the dialect spoken in Gao, Mali. For the purposes of this paper it is interesting to look at the way in which the Gao dialect handles coreferent pronominalization in data comparable to that which we have examined from the Diré dialect. On the basis of Prost's grammar, the following paradigm can be established for the third person pronouns.

(38) | Dialect | Set I | Set II |
|---|---|---|
| Gao | a | nga (ngi pl.) |
| Diré | a (nga) | ngu |

The form ngu is absent from the Gao dialect. It will become clear that the sets I and II posited for the Gao dialect, fulfill the same function as do their counterparts in the Dire dialect.[5]

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[5]It is difficult to gain any insight into the responsibility and factivity aspects of this analysis, as reflected in the Gao dialect, on the basis of Prost's grammar alone.

Prost presents the Gao nga and ngi in the following manner:
"Mais nga , ngi , reprennent le sujet de la principale,
en se rapportant comme complément au sujet de la princi-
pale, qu'il s'agisse d'un complément du verbe ou d'un
complément déterminatif." [1956:69]

Thus, according to Prost, these set II pronoun forms refer to the sub-
ject of the principal clause and act like a complement to that subject.
The following examples from Prost, in light of our analysis of the
Diré dialect, lend support to the coreferential pronominalization
hypothesis implied by the paradigm in (38). The Gao verb ne 'say'
corresponds to the Diré verb har. The subscripts and the English
translation are my own.

(39) a_1 koy nga_1 do.

     he go he home
     'He went home.'

(40) $nyongo_1$ ne $a_{x/2}$ si   koy hal' $a_{y/2}$ ma nga_1 tyirkosa te.

     mother say she neg. go until she SJ she prepare food
     'The mother says that she (her daughter) will not go until
     she has prepared the food for her (the mother).'

While the dialects differ in certain morphemes and in the syntactic
order of objects, it is apparent that the two different set forms
are being used to make coreference distinctions. Later, after giving
additional examples, Prost refers to nga and ngi as "determinative
complements that represent the subject of the sentence". This is ex-
actly what we have observed with regard to the set II form in our
Diré Songhai data. This captures what is happening with the <u>main
clause subject responsibility</u> verbs in complement constructions of
Diré Songhai. The important thing to note in Prost's analysis is that
regardless of where the Gao nga and ngi occur (which seems to be
almost anywhere except matrix or main clause subject position), they
are coreferent with the subject of the main clause or matrix sentence.

6. <u>Conclusions</u>

    Returning specifically to the Diré dialect, the following example

contains a larger representative sample of the <u>main clause subject</u> <u>responsibility</u> verbs.

(41a)

$$\text{Ali}_i \text{ (+PERF)} \begin{cases} \text{har} & \text{'say'} \\ \text{hungu} & \text{'think'} \\ \text{ba} & \text{'want'} \\ \text{tammaha} & \text{'expect'} \\ \text{mom} & \text{'hear'} \\ \text{guna} & \text{'see'} \\ \text{naney} & \text{'be sure'} \\ \text{bay} & \text{'know'} \\ \text{faham} & \text{'understand'} \\ \text{hambur} & \text{'fear'} \end{cases} \text{ka ngu}_i \text{ bari di jeyndi.}$$

S he horse D be stolen

'Ali _____ that his horse was stolen.'

(41b) *ka ngu$_i$ bari di jeyndi Ali$_i$ _____ .

*'That his horse was stolen, Ali _____ .'

All of the above verbs allow the occurrence of ngu in complement sentences. In the above context, all of the above verbs permit only the set II pronoun form ngu to establish coreference with a main clause subject noun phrase. The only way that any part of the sentences of (41) can be permuted is through the use of one of the focus markers; no other movements may apply as is demonstrated in (41b). However, some of the above verbs can perform a double function in the sense that they can also be used in contexts that allow coreferent pronominalization only through the use of the set I forms nga and a. In only these set I contexts, movement rules other than focus are applicable, and of course focus may as well be applied. For example, the verb hambur 'to fear':

(42a) aa$_{i/x}$ hambur ni ka ni go ci a$_{i/y}$ se sa kul.

he   fear you S you A speak he   to time all.

lit: 'He fears you that you always reprimand him.'

or: 'He fears your always reprimanding him.'

(42b) ka ni go ci a$_{I/y}$ se sa kul, aa$_{I/x}$ hambur ni.
           he

      lit: 'That you always reprimand him, he fears you.'

      or: 'Because you always reprimand him, he fears you.'

No focus marker is necessary for the movement manifested in (42b), as was the case with examples of <u>speaker responsibility</u> verbs already observed. The set II form ngu cannot occur under any conditions in either (42a) or (42b).

    In their paper "Fact", the Kiparskys state the following:

    "The speaker presupposes that the embedded clause expresses a true proposition, and makes some assertion about that proposition. All predicates which behave syntactically as factives have this semantic property and almost none of those which behave syntactically as nonfactives have it. This we propose is the basic difference between the two types of predicates. It is important that the following things should be clearly distinguished:

    1) Propositions the speaker asserts, directly or indirectly, to be true.

    2) Propositions the speaker presupposes to be true. Factivity depends on presupposition and not on assertion." [1970:147]

Thus I contend that the embedded sentence of (42), perhaps because of the adverb sa kul 'always' contained therein, is presupposed to be true by the speaker. Like a Kiparskian factive construction, (42) is amenable to a gerundive translation in English. Whereas the morpheme ka is all that is necessary at the surface structure level for subordination of this type in Songhai, comparable English constructions will most often have such factive subordination headed by because, when, due to the fact that, due to [+gerundive], or some such marker of subordination which in a sense contributes to the factivity or the presupposed truth of the embedded sentences. Notice that both example (24) and example (42) are somewhat awkward in English with only a that-S translation and that one of the above-listed subordinators makes

them much more acceptable in English (cf. section 3).

Other Songhai verbs of the class represented in (41) that would
serve the double function are verbs like faham 'understand', and
bay 'know'. On the Kiparskys' factive list we find both comprehend
and be aware (of) which would roughly correspond to these Songhai
verbs. In a footnote to the above citation from "Fact", the Kiparskys
state the following:

> "There are some exceptions to this second half of our
> generalization. Verbs like know, realize, though
> semantically factive are syntactically nonfactive so
> that we cannot say *I know the fact that John is here,
> *I know John's being here. Whereas the propositional
> constructions are acceptable: I know him to be here.
> ..." [1970:147]

Thus it is understandable that certain of the Songhai verbs can be used
to head either Kiparskian factive constructions or Kiparskian nonfactive
constructions. When a double function verb is involved, the presuppo-
sitions of the speaker as to the truth value of the embedded sentences
are what determine whether a construction is factive or nonfactive in
the Kiparskian sense. It is this semantic property of the deep struc-
ture of a given derivation that will be reflected in the permissable
variety of coreferent pronominalization in Songhai. A verb like
nimsi 'to be repentant', occurs as the matrix verb of factive con-
structions only. As observed in footnote 5, the verb is quite impor-
tant in functioning as a referee in and among arguments. An explana-
tion of all that has been observed, will have to be concerned with a
matching of the subcategorizations of verbs with the presuppositions
on complements. The implications of factivity and presupposition in
Songhai will be thoroughly discussed in a forthcoming paper.

To avoid the considerable overlap which would result from an
attempt to divide the Songhai verbs on the basis of factivity, I
propose that complement constructions of Songhai and the possible
verbs that can be used in them, be classified on the basis of <u>respon-
sibility assignment</u>. It is my contention that the semantic distinction

is more properly drawn on this basis. When the speaker presupposes and is in effect accepting responsibility for the information, certain syntactic structures and certain verbs will be matched to create the environment for our set I coreferent pronominalization. When the speaker of Songhai is asserting something which may or may not be true, and is in effect assigning responsibility to a matrix subject, again certain syntactic structures and certain verbs will be matched to create the environment for our set II form of coreferent pronominalization.

This analysis has provided evidence in support of the hypothesis that the deep structure of expletive-it constructions should show complements in extraposed position. In addition it appears that the rules of Songhai pronomialization cannot be cyclic. The same holds for the focus rules since they must be ordered after the rules of pronominalization. We have also observed that the primacy relation command is not required for a description of coreferent pronominalization in Songhai. And finally, it is important to point out that the syntactic constraints on coreferent pronominalization in Songhai are indicitave of and closely related to the rules of semantic interpretation.

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