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The Long-Distance Anaphor in Fula*

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1 Long-Distance Anaphors

We use the term *anaphor* informally to refer to any expression that is incapable of independent reference and cannot be used deictically, for example, English *himself*. The standard Binding Theory (Chomsky 1981) in (1) takes this as a definition for pronouns bearing the feature [+anaphor]. Its Condition A requires [+anaphor] elements to find an antecedent in a *local* governing category, for practical purposes the minimal NP or IP containing them.

(1) *Binding Theory (BT)*
Condition A: A [+anaphor] element is bound in its governing category
Condition B: A [+pronominal] element is free in its governing category
Condition C: An R-expression is free

Long-distance anaphors (LDAs) also exist in a large number of the world's languages. The long-distance character derives from the observation that they are typically found outside of the local domain in which the BT predicts that

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they must have an antecedent. Often, in fact, long-distance anaphors are prohibited from appearing in this domain (Reinhart and Reuland 1993). Instead, they behave like bound pronominals: [+pronominal] elements that obey Condition B but must have a syntactic antecedent. LDAs present a challenge to the Binding Theory in (1) because they seem to need to be simultaneously specified as [+anaphor] for their reference properties and [+pronominal] for their syntactic distribution.[1]

This paper investigates the long-distance anaphor in Fula, a West African language. Section 2 outlines the pronominal system of Fula and lays out the facts to be accounted for. My assumptions about the interpretation of pronouns closely follow proposals in Reinhart (1983, 1986), which emphasize the importance and generality of variable binding in the study of anaphora. In section 3, I investigate the hypothesis that the long-distance anaphor in Fula functions grammatically as a logical variable. Since this claim cannot be upheld, section 4 proposes an alternative account based on the insight that the Fula LDA is fundamentally a referentially deficient pronoun, having the properties of a bound pronominal. Section 5 closes with a summary of the main results.

2 Introductory Language Facts

Fula is a member of the West Atlantic branch of the Niger-Congo language family. Various dialects are spoken from Senegal eastward to Niger. The data here are from the Senegalese dialect Pulaar (Sylla 1979, 1982; my own notes).

Fula has nominal classes which are the analogue of syntactic gender. Every noun belongs to a particular class which is referred to by the characteristic object clitic. The paradigm for the singular human *mo* class is in the first column of (2). Fula also has a series of third person neuter pronouns which do not belong to any particular nominal class and may be used to refer to any nominal, regardless of its class. The singular forms are given in the second column of (2). In what follows, the neuter pronouns will be glossed as REFL and may also be referred to as *ɗum*(-series) pronouns. The neuter pronouns differ from the class pronouns in that they must have an antecedent somewhere in the sentence. They are true LDAs.

(2)

	mo class pronoun	neuter pronoun
subject clitic	*o–*	*ø–*
object clitic	*–mo*	*–ɗum*
long subject clitic	*omo–*	
emphatic pronoun	*kanko*	*kañum*
possessive pronoun	*makko*	*mum*

The two series of pronouns interact in interesting ways. First, a class pronoun can never be the antecedent for a *ɗum* pronoun. This observation rules out

[1] Since the [anaphor]/[pronominal] feature system is insufficient to handle LDAs, it is prudent to be careful about how we use these terms. In what follows, the term *anaphor* will be used in a general sense to mean any nominal that cannot independently refer. I will use the terms [+anaphor], Condition A anaphor, or reflexive to mean an anaphor that additionally obeys Condition A. Similarly, I will reserve the terms [+pronominal], Condition B pronoun, or pronominal for a noun phrase that obeys Condition B. Pronoun will be used in a theoretically-neutral way to encompass both these classes.

(3)a and b. Since the class pronouns *o* and *mo* are not licit antecedents for *ɗum* and there are no other third person noun phrases in the sentences, they are ungrammatical. The translations in (3) are expressed using another class pronoun in place of the illicit anaphor as in (4).

(3) a. *o noddii sehil mum
he call friend REFL
("He$_i$ called his$_i$ friend")

b. *mi wii mo aɗa yiɗii ɗum
I tell him you like REFL
("I told him$_i$ you like him$_i$")

(4) a. o noddii sehil makko
he call friend his
"He$_i$ called his$_{i,k}$ friend"

b. mi wii mo aɗa yiɗii mo
I tell him you like him
"I told him$_i$ you like him$_{i,k}$"

Second, only a *ɗum* pronoun may have a non-pronoun antecedent: quantified NP, *wh*-phrase, definite, indefinite, or name. (5)a shows obligatory coreference between a name and a *ɗum* pronoun. (5)b illustrates required disjoint reference when a class pronoun is substituted because the antecedent is not of the right type. Additional examples with quantified and *wh*-antecedents are in (10) and (11), below.

(5) a. Beeto noddii sehil mum
Beeto call friend REFL
"Beeto$_i$ called his$_{i,*k}$ friend"

b. Beeto noddii sehil makko
Beeto call friend his
"Beeto$_i$ called his$_{*i,k}$ friend"

This complementarity does not hold in (4) where the antecedent is a class pronoun. (4)a is ambiguous in a way that the corresponding example with a name as an antecedent, (5)b, is not.

It is important to observe that the antecedent always c-commands the pronoun in the above examples and, in what follows, I will only consider data in which this configuration holds. Although it is obviously impossible to know *a priori* what the theoretically significant data are, restricting the investigation in this way has empirical motivation. Most visible is that the neuter pronoun is simply not possible in the majority of cases where c-command is not available. For example, it is ruled out in (6) when the antecedent is the possessor of the subject.

(6) *sehil Beeto noddii ɗum
friend Beeto call REFL
("Beeto's friend called him")

Additionally, some unique behavior patterns arise in those situations in which the c-command condition is removed. They also suggest that the non-c-command examples are peripheral with respect to the grammar. The neuter pronoun is allowed without a c-commanding antecedent when the antecedent is located in a preceding conjunct or sentential adverbial. In such configurations, the restriction that only non-pronominals can antecede a *ɗum* pronoun disappears. Full noun phrases, such as names and (in)definites, may antecede a class pronoun when there is no c-command. In the conjoined clauses in (7), the antecedent is in the first conjunct while the coreferential pronoun is in the second. Unlike in the above data,

both pronouns can signal coreference. The antecedent restriction is apparently violated by allowing *mo* to be coreferential with the name *Aamadu.*

(7) o jaggi Aamadu, o nawi mo/ɗum galle — Sylla 1979:171
he catch Amadu he take him/REFL home
"He caught Amadu$_i$ and he took him$_i$ home"

Finally, when c-command is not present, semantic restrictions requiring that the antecedent be animate appear. In (8), the neuter pronoun is marginal because the antecedent is inanimate. Such effects are absent with c-command.

(8) o fergiti e haayre nde, o hocci ?ɗum/nde — Sylla 1979:173
he trip on stone the he pick.up REFL/it
"He tripped on the stone, he picked it up"

I take these facts to indicate that we are justified in limiting our attention to cases in which c-command obtains. Further investigation of the data will determine whether this simplification is, in fact, warranted.

3 LDA as a Bound Variable

Pronouns are standardly assumed to enter into two types of relationships with their antecedents: variable binding or coreference. An important result of Reinhart's (1983, 1986) work is that bound variable anaphora and pronominal coreference are two distinct phenomena in the grammar. Furthermore, variable binding is potentially available with all types of noun phrases, not just quantificational elements. If we take this observation seriously, we might hypothesize that there would be languages which choose to represent this distinction lexically. Languages with long-distance anaphors might be precisely those which have a distinct pronominal lexical item for a bound variable as opposed to a coreferential use. Koopman and Sportiche (1989:556) offer a suggestion of just this sort for the Fula pronominal system. Specifically, they propose that *ɗum*-series pronouns are always bound variables and the class pronouns, the human *mo*-series for example, are only used for coreference. The hypothesis is stated in (9).

(9) *ɗum*-series pronouns are always bound variables
mo-series pronouns are never bound variables

Crucial for the evaluation of (9) are examples in which 1) either coreference or binding is independently ruled out and 2) the two relationships yield different semantic interpretations. What we will see is that (9) is incorrect; although, it can account for some of the data. Both series of pronouns may be bound variables or corefer.

3.1 Quantified antecedents

Coreference is ruled out between a pronoun and a quantified NP or *wh*-phrase because these NPs do not refer. Any pronoun that is understood to be related to such an antecedent will be a bound variable. The hypothesis in (9) predicts that only *ɗum* and never *mo* pronouns will be able to take quantified NPs

or *wh*-phrases as antecedents. The available data confirm this. (10) illustrates the contrast for a quantified antecedent and (11) for a *wh*-phrase.

(10) hay gooto wiyaaka ø ne/*omo waawii soode puccam
even one tell.PSV.NEG RELF/he be.able buy horse.my
"No one$_i$ was told that he$_i$ could buy my horse"

(11) hol mo noddi sehil mum/*makko?
who call friend RELF/his
"Who$_i$ called his$_i$ friend?"

The examples show the neuter pronoun acting as a bound variable as required by (9). The class pronouns *omo* and *makko* are blocked under the hypothesis that the class pronoun may not be a bound variable. They are grammatical only with a disjoint interpretation. These examples do not bear on any requirement that *ɗum* pronouns only be bound variables, however. What they suggest instead is that the class pronouns may not be bound variables.

3.2 Focus with *only*

The bound variable and coreferential uses of a pronoun may yield different meanings with the focus particle *only* (Reinhart 1986). Even with a definite NP, (12) is ambiguous, with the two paraphrases in (13). While the bound variable reading is a claim about the relationship between people and their own horses, the coreferential reading is about the relationship between people and Bello's horse.

(12) Only Bello beats his horse

(13) a. Nobody except Bello beats his own horse (BOUND VARIABLE)
b. Nobody except Bello beats Bello's horse (COREFERENCE)

(9) makes a clear prediction that no Fula translation of (12) will be ambiguous. The example in (14) with the neuter pronoun will have only the bound variable meaning in (13)a and (15) with the class pronoun will have only the coreferent meaning in (13)b.

(14) ko Bello tan fiyata puccu mum
FCS Bello only beat horse REFL
"Only Bello beats his horse"
(predict only BOUND VARIABLE reading)

(15) ko kanko tan fiyata puccu makko
FCS he only beat horse his
"Only he beats his horse"
(predict only COREFERENT reading)

Since both examples are ambiguous, having both the bound and coreferential interpretations, these data are problematic for the proposal in (9).

3.3 Comparison ellipsis

A second context in which bound variable and coreferential interpretations are distinguishable is so-called ellipsis operations (Sag 1980, Reinhart 1983). Fula has an elliptical comparison construction illustrated in (16).

(16) Bello ɓurii Demmba yide debbo mum
Bello be.better Demmba like.INF wife REFL
"Bello likes his wife more than Demmba"
(lit. "Bello is better than Demmba at liking his wife")

(17) Bello_2 $[_{VP}$ ɓurii $[_{NP}$ Demmba] $[_{IP}$ t_2 yide debbo mum]]

I take the structure of (16) to be (17), assuming that the matrix verb *ɓurde* "to be better than" takes one NP complement and one clausal complement. The matrix subject is raised from the complement clause, leaving a trace. An interpretation procedure for such examples is to create a predicate by lambda abstracting on the subject of the clausal complement and apply this property to the subject and first complement of the verb. The property that lambda abstraction will create in (17) depends upon how the pronoun is translated. It is either 'x likes his wife', a coreferential use of the pronoun, or 'x likes x's wife', a bound variable use. For (17), we obtain two properties, in (18), depending upon the surface indexing of the anaphor. They are given with their corresponding meanings.

(18) a. λx(x like his_1 wife) (COREFERENCE with Bello)
Bello_1 likes his own wife more than Demmba_2 likes her

b. λx(x like x wife) (BOUND VARIABLE)
Bello_1 likes his own wife more than Demmba_2 likes his own wife

The hypothesis under evaluation predicts that only (18)b will be a possible reading since *mum* is strictly a bound variable. Again, this is an incorrect prediction. (16) has both meanings. The neuter pronoun is not just being used as a bound variable here; it clearly has coreferential capacity.

We have seen various arguments that *ɗum* pronouns are not only bound variables in Fula. They may enter into coreference relationships as well. This is perhaps not surprising in that it has been recognized that anaphors do not simply function as bound variables (Sells, Zaenen, and Zec 1987, Reinhart and Reuland 1993). In the following section, I propose an alternative account. The important facts to be covered are given in (19).

(19) *Fula pronoun distribution*
a. both series of pronouns may be bound variables or corefer
b. neuter pronouns are anaphoric while class pronouns are not
c. a class pronoun may never be the antecedent for the neuter pronoun
d. when the antecedent c-commands the pronoun,
i. a class pronoun is used when the antecedent is a class pronoun
ii. the neuter pronoun is used with all other antecedents

4 LDA as a Bound Pronominal

If we consider the main claim of the bound variable/coreference analysis, it is that there is a neat, transparent correspondence between the pronominal elements in Fula and their semantic function. A direct mapping exists from one lexical item to a bound variable use and from another lexical item to a coreferential use. We saw that this simple correspondence could not be maintained. The analysis below explores a more complex but still systematic relationship between morphology and semantic function. First, I show that the two types of pronouns are alike in both being pronominal and governed by the same component of the Binding Theory: Condition B. The antecedent restrictions are independent of the pronouns' binding-theoretic behavior. I attribute them to a basic lexical property of whether or not a syntactic antecedent is required, stipulated as a feature [±independent reference].

4.1 (Bound) pronominals

Although Condition A anaphors typically prefer a bound variable interpretation (Chomsky 1981, Reinhart and Reuland 1993), pronominals are not so restricted, suggesting that we approach *ɗum-* and *mo*-series pronouns as [+pronominal]. The data below support the claim in (20).

(20) *ɗum-* and *mo*-series pronouns are [+pronominal] with respect to the Binding Theory

4.1.1 Subject to condition B

Both pronoun series have the distribution of Condition B pronouns in that they must be free in the minimal NP or IP containing them. When the antecedent is outside of the governing category, coreference options are not restricted, modulo the antecedent conditions. In (21), either pronoun is ruled out in object position if it is intended to be coindexed with the subject. This is a straightforward Condition B violation.

(21) *Beeto yiyii ɗum/mo
Beeto see REFL/him
("Beeto saw himself")

In (22) and (23), one level of embedding makes the sentences grammatical because the pronouns are no longer bound in the minimal IP. The coreference options are different because of the antecedent restrictions in (19)c and d.

(22) Daouda sikkii ko Beeto yiyii ɗum
Daouda think that Beeto see REFL
"Daouda$_i$ thought that Beeto$_j$ saw him$_{i,*j,*k}$"

(23) a. Daouda sikkii ko Beeto yiyii mo
Daouda think that Beeto see him/her
"Daouda$_i$ thought that Beeto$_j$ saw him$_{*i,*j,k}$"

b. o sikkii ko Beeto yiyii mo
he think that Beeto see him
"He$_i$ thought that Beeto$_j$ saw him$_{i,*j,k}$"

4.1.2 Same distribution in topicalization

If both pronoun series are [+pronominal], they should have the same distribution; the antecedent restrictions should not exist. For reasons to be discussed later, a lack of complementarity is found in topicalization structures, where either pronoun may resume a topicalized phrase.[2] (24) shows object topicalization. Topicalization of a subject or possessive is also possible. The resumptive pronoun for the topic may be either the agreeing class pronoun or the *ɗum*-series pronoun and the antecedent restrictions are not in effect: the definite noun phrases may be the antecedent for either pronoun.

(24) rawaandu ndu, Aali jaggii ndu/ɗum Sylla 1979:168
dog the Aali catch it/REFL
"The dog, Aali caught it"

Multiple topicalized phrases anaphorically related to the same pronoun are permitted, as in (25). Coindexation here would also violate the antecedent restrictions since a full noun phrase would be coindexed with a class pronoun and an emphatic pronoun would be coindexed with *ɗum*.

(25) a. puccu ngu, maggu, cukalel ngel aynat ngu/ɗum Labatut 1986:20
horse the it(EMPH) child the care.for it/REFL
"The horse, it, the child will take care of it"

We can better understand such examples by considering the nature of the construction. Following Vallduvi (1990), the topic signals what the sentence is about. It is an address pointer indicating where the hearer is to associate the oncoming information. Topicalization can be viewed as a predication relation between the nominal topic(s) and the following commentary. Regarding such predication structures, it is standardly assumed that nominal predicates are not coindexed with their arguments, for example in *Ron$_i$ is an actor$_j$*. Safir (1986) gives such an analysis for non-restrictive relative clauses, arguing that the head of the relative clause and the relative operator are not coindexed until a level of representation beyond LF. At this point, an operation reindexes the two constituents, setting their indices equal. The crucial claim is that at surface structure

[2] This construction most closely resembles English left dislocation.

the relevant elements, here the topic and resumptive pronoun, are not coindexed.[3] Without coindexation, coreference is purely pragmatic or accidental. What the topicalization data illustrate is that, once the antecedent restrictions are removed, the two series of pronouns have the same distribution.

4.2 Anaphoric (in)dependence

If we accept that both pronoun series are pronominal, then a different account of the anaphoric restriction on *ɗum* is needed. One approach found in the literature (Thráinsson 1991, Reinhart and Reuland 1993) is to invoke a feature [±independent reference]. This feature captures the fact that some pronouns require an antecedent without, at the same time, restricting them to a specific structural relationship with that antecedent. A noun phrase specified positively for [independent reference] will be able to pick out its antecedent from the discourse. A noun phrase that is not so specified will be unable to do so, even if the intended reference is clear. What the feature captures is whether or not the pronoun is dependent on the existence of a linguistic antecedent.

Hankamer and Sag (1976) independently point out that we must distinguish between syntactically- and pragmatically-controllable anaphora for other kinds of anaphora in English. Syntactically-controlled anaphora corresponds to [-independent reference], where a syntactic antecedent is required, and deictically-controlled anaphora is [+independent reference]. They show that there are two types of anaphoric processes which differ along the fundamental line of whether or not they allow pragmatic control. One of their contrasts is in (26). With the given the state of affairs, sentential *it* anaphora may be discourse or non-linguistically controlled but *so* anaphora cannot be. The latter must have a linguistic antecedent.

(26) [Sag succeeds in ripping a phone book in half]
a. I don't believe it. (sentential *it* anaphora)
b. #I don't believe so. (*so* anaphora)

This parallels the situation with class pronouns and neuter pronouns in Fula. Both are anaphoric processes in the most general sense; the latter has a restriction that it must have a linguistic antecedent. The question remains whether this difference has any semantic or syntactic basis. As a featural analysis, it is a stipulation on the lexical property of the anaphor.

The new feature differs from [±anaphor], which is used to indicate an NP which must be bound in some local domain. On the other hand, the two are not unrelated since an NP which must be bound according to Condition A will never have a chance to pick out an independent referent; [+anaphor] entails [-independent reference]. This feature conflict prevents the proliferation of pronoun types that might seem to arise with the introduction of another Binding Theory feature. A noteworthy characteristic of this feature system is that it separates the specification

[3] This conclusion is also derivable from the analysis of resumptive pronouns in Chao and Sells (1983). They argue that resumptive pronouns are never bound variables in some languages. Instead, they are interpreted as coreferent. Given Reinhart's assumptions about the interpretation of pronouns, the resumptive pronoun in a topicalization example will not be coindexed with its antecedent but will bear a distinct index.

of dependence properties from the specification of binding domain properties. I take this to be a necessary step. In the former binary system, a pronoun could be referentially dependent if and only if it was governed by Condition A. Similarly, Condition B and [+pronominal] entailed referential independence. Thus, the system admitted three types of overt nominals: reflexives, pronominals, and R-expressions. These are the types of nominal objects found in English. The types of expressions that are found in natural languages, however, are more varied (Enç 1989, Koster and Reuland 1991 and references cited therein). Fula *ɗum* pronouns instantiate the [-anaphor, +pronominal, -independent reference][4] feature specification. They are subject to Condition B domain restrictions, but are also referentially dependent, requiring an antecedent. Class pronouns are [-anaphor, +pronominal, -independent reference]. The two pronominal series differ in their ability or inability to independently refer. Thus, class pronouns are specified as [+independent reference] and the neuter pronouns are marked [-independent reference]. This accounts for the anaphoric nature of *ɗum* pronouns isolated in (19)b. The antecedent restrictions are analytically separate.

4.3 Antecedent restrictions

The restrictions we are concerned with are repeated below.

(19) c. a class pronoun may never be the antecedent for the neuter pronoun
d. when the antecedent c-commands the pronoun,
i. a class pronoun is used when the antecedent is a class pronoun
ii. the neuter pronoun is used with all other antecedents

A reasonable approach to (19)c might be as a clash in syntactic agreement features. If a class pronoun such as *mo* had the specification [PERSON: 3, NUM: sing, CLASS: mo] and a *ɗum* pronoun had the features [PERSON: 3, NUM: sing, CLASS: ɗum], then the impossibility of coreference would follow as a feature conflict. However, it is problematic to say that *ɗum* pronouns are their own class. There are no nouns that inherently belong to this class. More seriously, when the antecedent is not a pronoun, it can be of any class. This should also constitute an agreement conflict. To illustrate, the antecedent is of the *ndu* class in (27). The class of the nominal is registered on both the noun (in a form that depends on the phonological shape of the root) and in the definite article.

(27) fow-*ru ndu* ñaamii teew mum
hyena the eat meat REFL
"The hyena ate his own meat"

Assuming that the NP *fowru ndu* "the hyena" has agreement features [PERSON: 3, NUM: sing, CLASS: ndu], the neuter pronoun *mum* cannot have the features [PERSON: 3, NUM: sing, CLASS: ɗum] because this would result in a clash. Only if a *ɗum* pronoun is unspecified for class is coreference allowed. The restriction cannot be reduced to an agreement problem, at least at this simplistic

[4] Another example is Greek *o idhios* (Iatridou 1986).

level.[5] I leave the prohibition unexplained. It is interesting because it is such a strong restriction in the language, independent of structural configuration or discourse considerations. It indicates that pronouns in Fula are in some way different from other noun phrases in how they are interpreted. It is not clear whether the issue is semantic, relating to how pronouns get their referent, or whether it is syntactic, pronouns being structurally different from other NPs. The issue deserves further investigation.

The approach to the antecedent restrictions in (19)d is a pragmatic strategy in the spirit of Reinhart (1983). (28) reminds us that a *ɗum* pronoun may not be used when it is not c-commanded by its antecedent. In such cases, the class pronoun is used. The example clearly illustrates that we cannot account for the restriction by unilaterally disallowing coreference between a name, or other noun phrase, and a class pronoun. What, then, rules it out in the earlier example, in (29)?

(28) sehil Beeto noddii mo/*ɗum
friend Beeto call him/REFL
"Beeto$_i$'s friend called him$_i$"

(29) Beeto noddii sehil *makko/mum
Beeto call friend his/REFL
"Beeto$_i$ called his$_i$ friend"

An obvious difference between (28) and (29) is c-command; c-command holds in the latter but not the former. I take this to be significant and the basis for the above contrast. Once there is c-command, the interpretation that *makko* is intending to express in (29) can be achieved with *mum*, which will unambiguously force this interpretation because of its [-independent reference] specification. The claim is that coreference with the class pronoun is ruled out precisely because the more explicit anaphor is available. The idea of one mechanism in the grammar *blocking* a second, less explicit one is not new. It is best known from the phonological work of Kiparsky (1982) and the Elsewhere Condition. It has been appealed to for the lexicon (Horn 1978), morphology (Aronoff 1976), and lexical complementation (Farkas 1992). The strategy crucially requires that we approach language as an entire system.

4.3.1 Pragmatic strategies

Pragmatic approaches to anaphora are familiar from Reinhart (1983). The fundamental idea is that the choice of lexical NP, pronoun, anaphor, or zero element follows from Grice's (1975) principles of conversation. The use of one type of nominal over another is aimed at optimizing conversational efficiency. Consider first the pragmatic strategy from Reinhart, in (30).

[5] Culy (1993) gives a highly-articulated, agreement-oriented proposal that accounts for the restriction but which space considerations do not allow me to develop here. It differs from the above in fundamental ways. In his analysis, the types of elements that pronouns may or may not enter anaphoric relations with are stated as part of their semantic feature structure. The proposal handles an impressive array of dialectal data but is incompatible with the pragmatic account of the data in this section.

(30) *Reinhart's (1983:167) pragmatic strategy*
Given two syntactic structures A and B, such that A allows variable binding but B does not, use A to signal coreference (unless there is some reason to avoid bound variable anaphora). If the bound variable option is avoided, coreference was not intended.

The intuition behind (30) is that bound variable anaphora is the most explicit method for indicating coreference and should normally be the preferred method. (30) cannot account for the Fula facts, however, because both pronouns can be bound variables. The relevant contrast between the two Fula pronoun series is the feature [independent reference]. A [-independent reference] should be pragmatically preferred because it reduces the possible antecedents to those that are linguistically available. A more general pragmatic approach is developed in Levinson (1987) based on Grice's maxim of Quantity:

(31) *Grice's Maxim of Quantity*
Make your contribution as informative as required.

The maxim can be understood to mean that a speaker should not make a statement that is less informative than his knowledge of the world permits. For the hearer, the understanding is that the speaker will make the most informative statement consistent with what he knows. The maxim contributes to conversational understanding by eliminating possible meanings of a speaker's utterances. It introduces an implicature in the form of the negation of a more informative proposition with the reasoning that if the more informative statement were intended, it would have been used. With respect to (pro)nominal reference, anaphors are more informative than deictic pronouns since, beyond agreement features, pronouns such as *he* are free in reference. When they are used, their assigned referent is less restricted. One way that pronouns can be made more informative is by assigning them a coreferential interpretation, as in the preferred reading for *His friend called Beeto.* Nevertheless, they are still less explicit than anaphors which must be interpreted this way. Levinson cites various arguments showing the less-informative nature of free pronominals over anaphors and I will assume that this is correct.

It should be evident that such implicatures will arise only when there is a possible alternation between a more informative and a less informative expression. Specifically, Levinson (1987) develops the idea that they are restricted to clearly defined contrast sets: equally lexicalized linguistic expressions 'about' the same semantic relations. For our purposes, it is sufficient to recognize that pairs of pronouns with overlapping reference potential will form a relevant contrast set.

The account of the complementarity in (29) runs as follows. *ɗum* and *mo* form a contrast set. Although both pronouns are in principle available to express the coreferential or bound variable meaning, *mo* alone can be deictically interpreted to yield a different, disjoint meaning. The availability of this option makes it less informative than the use of *ɗum*, for which a non-linguistic antecedent is ruled out. If the speaker uses the less informative class pronoun it indicates that the stronger claim using the more informative anaphor is not appropriate. Consequently, only the *ɗum*-series pronoun is used when coindexing is intended.

The pragmatic account of the distribution facts in (19)d relies on the existence of two competing pronominal strategies for expressing an anaphoric relation with a noun phrase. When one strategy is unavailable or there is no difference in informativeness, the pragmatics are no longer in force and the antecedent restrictions are expected to disappear. This follows from the fact that a contrast set will not exist for the desired meaning and, thus, an implicature of disjointness is not generated. This result seems to be borne out in the three cases below. First, we have already seen an illustration of it with the *mo/ɗum* antecedent prohibition. Since a *ɗum* pronoun independently cannot take a *mo* pronoun as an antecedent, in this situation, a *mo* pronoun is allowed in its place. (4)a should be compared to (29) where the antecedent is a non-pronoun and coreference is again impossible.

(4) a. o noddii sehil makko
he call friend his
"He$_i$ called his$_i$ friend"

4.3.2 Split antecedents

It is well known that anaphors generally cannot take split antecedents, as (32)a illustrates for English (Lebeaux 1985). This contrasts with the behavior of English pronominals which can take split antecedents, (32)b.

(32) a. *Tammy told Jim about themselves
b. Tammy told Jim that the *National Enquirer* slandered them

A split antecedent will be allowed only for a pronoun that can be deictically interpreted since there can be no coindexation between the pronoun and its antecedent. [-independent reference] pronouns should not be able to have split antecedents because a single (constituent) linguistic antecedent will not be available. (33) illustrates the impossibility of a split antecedent for Fula *ɗum* pronouns. The plural form of the anaphor cannot refer to Takko and Demmba even though individually there is c-command between the antecedents and the pronoun.

(33) *Takko wii Demmba mi yiyii ɗumen
Takko told Demmba I saw REFL(pl)
("Takko told Demmba that I saw them")

As expected, if the two nominals are conjoined, they can serve as the antecedent to the anaphor since it is a single noun phrase.

(34) Takko e Demmba ne nganndi mi yiyii ɗumen
Takko and Demmba PROG know I saw REFL(pl)
"Takko and Demmba know that I saw them"

The pragmatic strategy leads us to expect that (33) can be expressed with the class pronoun precisely because the anaphor is not possible. This is what we find:

(35) Takko wii Demmba mi yiyii ɓe
Takko told Demmba I saw them
"Takko told Demmba that I saw them"

4.3.3 Topicalization revisited

The pragmatic strategy is also cancelled when there is no difference in informativeness in using one pronominal form over another. The topicalization construction in section 4.1.2 illustrates this point. The example repeated below shows that either pronoun could resume for a left-dislocated nominal. The expected implicature of disjointness with the class pronoun does not arise.

(24) rawaandu ndu, Aali jaggii ndu/ɗum Sylla 1979:168
dog the Aali catch it/REFL
"The dog, Aali caught it"

For complementarity to appear in (24), a contrast in informativeness would need to exist between the two pronouns *ndu* and *ɗum*. There would need to be a potential difference in meaning between the two possibilities and, in particular, the class pronoun would need to express a meaning unavailable with the anaphor. For this to obtain, (24) would need to have a meaning where the pronoun is not linked to the topic: "as for the dog, Aali caught it (some other thing of the *ndu* class)". Earlier assumptions about coindexation in topicalization structures rules out this option, though. In the interpretation of (24) the indices on the topic *rawaandu ndu* and the resumptive pronoun *ndu* will be set equal. The initially-unexpected lack of complementarity in the topicalization construction is a consequence of there being no issue of relative informativeness between the two pronouns.

5 Concluding Remarks

This paper has made two primary claims about the account of Fula pronominals that might be extended to the analysis of long-distance anaphora in general. The analysis of Fula supports the 'universalist' approach to anaphora outlined in Safir (1993) and references cited therein. This position maintains that the lexical properties of anaphors and their interactions with other 'universal' principles of the grammar are what determine their distribution. In particular, the Binding Theory is not parametrized for various languages and pronoun domains.

The analysis is also closely aligned with the discussion of long-distance anaphora in Reinhart and Reuland (1993). They too propose that LDAs are fundamentally like pronouns with respect to the Binding Theory, which they revise to apply to only strictly local reflexivization. The difference they also isolate as a contrast in referential ability. An important claim is that the anaphoric properties of a pronoun are not tied to its syntactic distribution. This contrasts with the standard Binding Theory in (1) in which syntactic distribution is tied to deictic capacity. The independence of these two characteristics was captured using the two features [pronominal] and [independent reference]. What we would want to ask, in the spirit of the 'universalist' approach, is what morphological property lies behind this latter feature if it is not to be left as a stipulation on individual anaphors. I leave this for future research.

Lastly, the data revealed an unusual restriction on the Fula LDA: the anaphor may not have a class pronoun as its antecedent. Although no explanation could be offerred, the issue is worth further investigation for the light it may shed on the analysis of pronouns and their interpretation.

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