

RELATIVE CLAUSES IN BAMBARA

CHARLES S. BIRD

This is a study of the formation of relative clauses in Bambara as spoken in the region extending from Bamako to Ségou. Included in the study will be a number of comparisons between the Bambara relative clauses and those of Maninka as spoken in the region of Kita.¹ In addition to Bambara and Maninka, all the dialects of the Mandekan language group have two types of relative clauses which will be called appositional and adjunctive. The appositional relative clause is similar in formation and in meaning to the non-restrictive relative clauses of Indo-European languages. The adjunctive relative clause is similar in function to the restrictive relative clause of Indo-European languages, but it is notably different in formation.

There are a number of important constraints that are placed on relative clauses in the entire Mandekan group. It will be shown that in Bambara, some of these constraints must be included in the grammar at the level of stylistic preference. In Maninka, on the other hand, the Bambara rules for preference have become obligatory, i.e. the speaker no longer has a stylistic choice between two alternatives.

The theoretical model used in this study is that proposed by Chomsky in *ASPECTS OF THE THEORY OF SYNTAX*.² Some of the major changes in the transformational model which Chomsky has proposed in this work are as follows:

1. The branching (phrase structure) rules are context-free. All context restrictions are now a function of the transformational rules.

2. All recursive operations such as embedding and conjoining are now introduced in the branching rules by allowing the symbol # S # (sentence) to reoccur in a line of derivation. By using the symbol # S # in this manner, all transformations are reduced to operations on single P-markers, i.e. there is no longer a distinction between simple and generalized transformations. In addition, when # S # occurs in the branching rules, the embedding and conjoining transformations are obligatory rather than optional as in the early transformational models. As a result, instead of having two major types of transformations: simple, operating on single P-markers; and generalized operating on two P-markers, there is now only one basic type of transformation. A P-marker may however be defined as simple or complex (generalized) depending on whether or not it contains an embedded # S # in its derivation.

3. Transformations may no longer effect the meaning of the sentence. Obligatory transformations describe operations necessary for the grammaticality of the sentence. Optional transformations are reduced to descriptions of syntactic paraphrasing or stylistic preferences.

One of the more interesting problems that arises with this model involves the use of context-restrictions in the transformations. The P-rules, being context-free, are often so powerful that they produce P-markers which do not represent grammatical sentences. The transformational rules act like a filter, blocking these P-markers. A P-marker that

¹ The great majority of information presented on the Maninka dialect has been supplied by R. P. Balenghien to whom the author is indebted.

² Chomsky, Noam, *ASPECTS OF THE THEORY OF SYNTAX*, MIT Press, Cambridge, Mass., 1964.

does not satisfy all the conditions for the operation of the transformations and still contains the embedded sentence boundary symbol (#) is not representative of a grammatical sentence.

As will be illustrated below, this point is particularly important in the description of relative clauses in Bambara and Maninka. In theory, every noun in every sentence is modifiable by a relative clause. In Maninka and to some extent in Bambara, there can only be one relative clause per base sentence. It becomes the function of the transformational rules to block any base P-marker which contains more than one sentence embedded as a relative clause.

The following simplified branching rules illustrate some of the deep structure of Mandekan sentences. They will be followed by a set of transformational rules which will describe the surface structure characteristics of Bambara and Maninka relative clauses.

$$1. S \rightarrow NP \widehat{\quad} VP$$

A sentence (S) is rewritten (\rightarrow) as a noun phrase (NP) followed by a verb phrase (VP)

$$2. NP \rightarrow \left\{ \begin{array}{l} \text{ProN} \\ \text{N} \widehat{\quad} \text{D} \end{array} \right\} \widehat{\quad} \text{Num} \widehat{\quad} (\# S \#)$$

A noun phrase may be rewritten as a pronoun (ProN) or as a noun (N) plus a determiner (D), both of which are followed by a number marker (Num). Both of these possibilities may be followed by an optional embedded sentence from which appositional relative clauses are derived.

$$3. \text{Num} \rightarrow \left\{ \begin{array}{l} \text{Sg} \\ \text{Pl} \end{array} \right\}$$

Number is rewritten as singular (Sg) or plural (Pl). The semantic contrast in Bambara seems to be in most instances marked plural as opposed to unmarked. The unmarked noun phrase is not necessarily singular, but can also be interpreted as generic, e.g.

mùso `ka nyi³ [- - -]

woman the is good

can be interpreted either as:

a) The specific woman is good

or

b) Women (in general) are good.

The lexical representative for singular is \emptyset . The symbol (\emptyset) stands for a morpheme which has no phonological features. The plural marker is rewritten lexically as the plural morpheme *u*. When, however, the numerals 'two' to infinity are present, the plural marker is erased, e.g.

tyè `fila [/ - -]

man Sp two (Sp = specific article)

'The two men'

den `mùgan [- - -]

child -Sp twenty (-Sp = non-specific)

'twenty children'

³ In this study, low tone words will be marked with a grave accent ` . High tone words will not be marked. For a description of these tones see Bird, 'Determination in Bambara', JWAL, 3.1, pp. 5-11.

The pronouns are also replaced by lexical items. Only the first and second person pronouns are introduced by the lexicon. The third person pronouns à 'he, she, it' and ù 'they' are introduced by transformation, replacing the noun and the determiner. The pronouns ne 'I' and e 'you' occur in the environment, - singular. The pronouns an ù 'we' and a ù 'you' can be chosen when the plural marker is present. The pronouns as cited above are the long or emphatic forms. In normal conversation, they are reduced in the following manner:

ne → N (homorganic syllabic nasal)
 e → i
 an ù → an
 a ù → a

It is interesting to note that in many Mande languages the third person plural pronoun is identical to the morpheme used to mark the plural. This phenomenon can be most adequately described by writing the pronominalization transformation so that the noun and the determiner are erased, leaving only the marker for number, e.g. in the sentence

n ye mùso ` ù ye
 I C woman the Pl see (C = completive aspect)
 'I saw the women'

the object noun mùso plus the definite article (̀) would be deleted, producing,

n ye ù ye
 I C them see
 'I saw them'

4. D → (#S#) [^] Art

The determiner is rewritten as an optional embedded sentence followed by an article. The embedded sentence is that from which nominal modifiers such as adjunctive relative clauses and adjectives are derived.

The article is rewritten by lexical replacement as specific or non-specific, low and high tones respectively. The effects of these tones on the sentence intonation pattern have been discussed in a previous article, cited above. Since that time however, some additional features of the determiner have been discovered and for that reason they will be outlined briefly below.

a) In a sequence of a high tone word followed by the non-specific high tone article followed by another high tone word, the two high tone words occur on the same level of pitch, e.g.

à te bara ' la [- - - -]
 he -C work -Sp at (-C = non-completive)
 'He doesn't work'

b) In a sequence of a high tone word followed by the non-specific high tone article followed by a low tone word, the low tone word will shift to a high-low pitch pattern. If the low tone word is monosyllabic, it will have a high falling pitch pattern, e.g.

à ma ku ' fère [- - - -]
 he C_{neg} yam -Sp sell
 'He didn't sell yams'
 à ma ku ' san [- - - \]
 he C_{neg} yam KSp buy
 'He didn't buy yams'

c) In a sequence of a high tone word followed by the specific low tone article followed by a high tone word, the second high tone word will be stepped down to a pitch level slightly lower than that of the first high tone word, e.g.

à ye wari ` bɔ̄ [_ _ - -]
 he C money the take out
 'He took out the money'

d) In a sequence of a high tone word followed by the specific low tone article followed by a low tone word, the low tone word will occur on a pitch level lower than the high tone word. The interval of the pitch drop is greater than in c). There is, in other words, a definite contrast between low tone and stepped-down high tone, e.g.

den ` kunu -ra [- - - -]
 child the awake C
 'The child awakened'
 den ` kùnu -ra [- - - -]
 child the swallow C
 'The child was swallowed'

e) In a sequence of a low tone word followed by the high tone non-specific article followed by a high tone word, the high tone word will occur on a level higher than the low tone word, e.g.

à ma mùso ' ye [- - - -]
 he C_{neg} woman -Sp see
 'He didn't see a woman'

f) In a sequence of low tone word followed by the high tone non-specific article followed by a low tone word, the second low tone word will have a high falling pitch, e.g.

a ma sò ' sà̄n [- - - \]
 he C_{neg} horse -Sp buy
 'He didn't buy a horse'

g) In a sequence of low tone word followed by the low tone specific article followed by a high tone word, the low tone word will have a rising pitch and the high tone word will be stepped down, e.g.

mùso ` kunun - na [- - - -]
 woman the awake C
 'The woman awoke'

h) In a sequence of a low tone word followed by a low tone specific article followed by a low tone word, the initial low tone word will have a rising pitch and the final low tone word will occur on a lower pitch level, e.g.

mùso ` kùnu -na [- - - -]
 woman the swallow C
 'The woman was swallowed'

Again note that there is a definite contrast between low tone and stepped-down high tone, as illustrated in g).

5. VP → Asp (NP) V

A verb phrase (VP) is rewritten as aspect (Asp) followed by an optional noun phrase (NP) followed by a verb (V). If the noun phrase is selected, the verb phrase will be transitive. The noun phrase functions as the object of the verb. If the noun phrase is not selected, the verb phrase is intransitive. Verbs must be assigned a lexical feature which indicates whether they can occur with a preceding noun phrase. The great majority of Bambara verbs can occur in transitive verb phrases, but a limited number such as *ta* 'go' never occur with an object noun phrase.

The aspect markers will be rewritten by lexical replacement. Some of the aspect markers included in the lexicon are as follows:

<i>be</i>	non-completive, affirmative	à <i>be ta</i> 'he is going/goes'
<i>te</i>	non-completive, negative	à <i>te ta</i> 'he isn't going/doesn't go'
<i>ye</i>	completive, affirmative	à <i>ye bara `ke</i> 'he has worked/worked'
<i>ma</i>	completive, negative	à <i>ma bara `ke</i> 'he hasn't/didn't work'

When *ye*, the completive, affirmative aspect marker, is followed immediately by a verb, i.e. in an intransitive verb phrase, a transformation is required to shift the aspect marker to a position immediately following the verb and to replace it with *-ra*. The tone of *-ra* is always that of the verb to which it is attached. In fact *-ra* operates like another syllable of the verb itself, e.g.

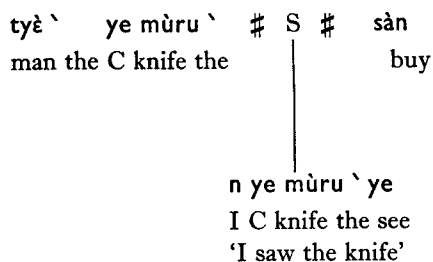
à <i>nà - ra kunu</i>	[/ - - -]
he come C yesterday	
'He came yesterday'	(In Bambara <i>-ra</i> becomes <i>-na</i> after a nasal, e.g. <i>a- na-na</i>)
à <i>nà-ra bì</i>	[/ - -]
he come C today	
'He came today'	

Note that the aspect marker *-ra* remains low tone when followed by the high tone word *kunu* 'yesterday', but is shifted to a high pitch when the low tone word *bì* 'today' is following. This is precisely the same phenomenon that occurs with the last syllable of a low tone word.

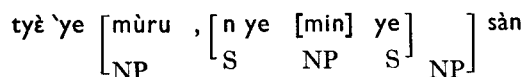
Nouns and verbs will also be rewritten by lexical replacement rules. The lexical categories of nouns and verbs are not relevant to this study.

The formation of appositional relative clauses derived from the embedded sentence in Rule 2 is similar in many respects to the English relative clause. The transformational rule requires a matching of the antecedent noun phrase with the noun phrase in the embedded sentence and a subsequent replacement of the embedded noun phrase by the

relative clause marker *min*. For example, the branching rules will produce a complex P-marker represented by the following diagram:



The antecedent noun phrase *mùru `* is matched with the embedded noun phrase *mùru `*, after which the latter is replaced by the relative clause marker *min*. The derived P-marker can be represented by the following diagram:



In Bambara, the sentence

tyè `ye mùru ` , n ye min ye sàn
 man Sp C knife Sp, I C which see buy
 'The man bought the knife, the one which I saw'

is acceptable as it stands. However, the great majority of speakers prefer shifting the appositional relative clause to sentence final position, e.g.

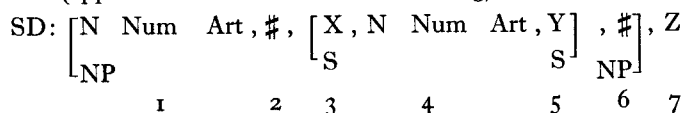
tyè ` ye mùru ` sàn, n ye min ye
 man Sp C knife Sp buy, I C which see
 'The man bought the knife, the one which I saw'

In Kita Maninka, Balenghien reports that the shift of appositional relative clauses to the rear of the sentence has become obligatory. The problems that arise in treating this shift as obligatory are acute. In the first place, only one appositional relative clause can occur at the end of a sentence, yet the branching rules must allow every noun to be modified by an appositional relative clause. This is one of the cases where the transformational rule must block any P-marker containing more than one appositional relative clause. In Bambara, there can be any number of appositional relative clauses, but only the last one can be rear shifted.

In order to find the most general set of rules which will account for the deep structure common to the language group and at the same time to account for dialectal differences in surface structure, the rules for embedding appositional relative clauses have been ordered in the following manner.

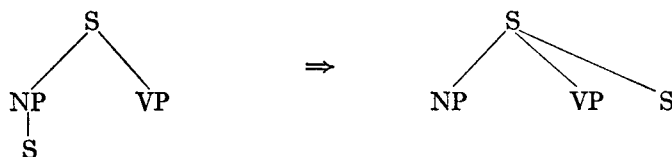
As stated above, all noun phrases in the branching rules may include appositional relative clauses. The first transformation embeds the relative clause within the noun phrase:

T₁: (appositional relative clause embedding)



rear-shifted, but it cannot be rear-shifted if there is already a relative clause in that position. The rule cannot thus operate. The P-marker does not pass through the transformational rules and thus does not represent a grammatical sentence.

It is of interest to note that the rear-shifted appositional relative clause is no longer immediately dominated by the noun phrase, but by the sentence. This shift in dependency can be illustrated by the following branching diagrams:



A few additional examples of rear-shifted appositional relative clauses are as follows:

à ye mùso `fò / i ni min bɔ -len nyɔɔn `fè

he C woman Sp greet you and which come -ed together the with
'he greeted the woman, the one who looked like you'

sira `be ta kùtyala / min be fara kini bolo `fè

road Sp -C go Koutiala / which -C turn rice hand Sp with
'the road goes to Koutiala, the one which turns to the right'

Adjunctive relative clauses are derived from the embedded sentence dominated by the determiner in branching rule 4. As will be illustrated in detail below, there are a number of important differences between appositional and adjunctive relative clauses. A brief summary of these differences is as follows:

1. There is no restriction concerning the nature of the article in the formation of appositional relative clauses, i.e. the modified noun in the base sentence may be specific or non-specific. With adjunctive relative clauses, the article must be specific.

2. In the formation of appositional relative clauses, after the matching of the antecedent noun phrase with the noun phrase in the embedded sentence, the embedded noun phrase is replaced by *min*, the relative clause marker. With adjunctive relative clauses after matching the two noun phrases, the relative clause marker replaces the article in the embedded sentence and the antecedent noun phrase is erased.

3. The appositional relative clause is rear-shifted. The adjunctive relative clause is front-shifted and the empty noun phrase position in the base sentence is filled by the pronoun *ò* 'that one, the latter'.

Balenghien reports in an oral communication that, as with appositional relative clauses, the front-shifting of adjunctive relative clauses is obligatory in Maninka. Again, if the front-shifting is obligatory, there can only be one adjunctive relative clause per base sentence. In Bambara, the front-shifting is definitely optional. There are many cases where the adjunctive relative clause is left nested in the base sentence, thus allowing any number of nouns in the base sentence to be modified by adjunctive relative clauses, only the first of which can be front-shifted. Nonetheless, at the level of stylistic preference, the great majority of Bambara speakers use sentences with only one adjunctive relative clause and they generally prefer to front-shift it.

In a performance test with a group of Malian English teachers, when asked to translate into Bambara the English sentence:

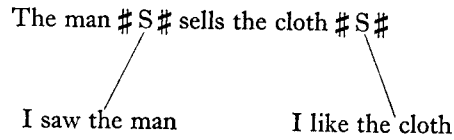
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a) 'the man that I saw sells the cloth that I like'
 the great majority restructured the dependencies so that there would be only one adjunctive relative clause per base sentence. They produced Bambara sentences equivalent to the English sentence:

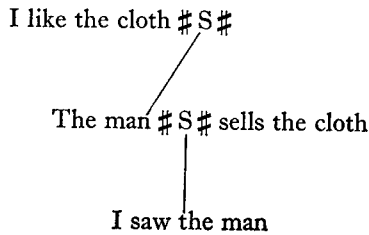
b) 'I like the cloth that the man that I saw sells'.

The difference in structure between these two sentences can be illustrated by the following diagrams.

Sentence a)



Sentence b)



In sentence a), two relative clauses are embedded in one base sentence. In sentence b, there is only one relative clause per base sentence.

In Bambara, sentence b) is as follows:

b₁) n ye tyè mìn ye, ò be fini mìn fère, ò ka di n ye
 I C man wh- see, that -C cloth wh- sell, that is nice to me.

In the above sentence,

i. n ye tyè ` ye
 I C man the see
 'I saw the man'

is embedded in the sentence,

ii. tyè ` be fini ` fère
 man the -C cloth the sell
 'The man sells the cloth'

The embedded sentence i) is then front-shifted to produce the complex sentence

iii. n ye tyè mìn ye, ò be fini fère
 I C man wh- see, that -C cloth the sell
 'The man that I saw, he sells the cloth'

The complex sentence iii) is then embedded in the sentence

iv. fini ` ka di n ye
 cloth the is nice to me
 'I like the cloth'

After the embedded complex sentence is front-shifted sentence b₁) is produced.

When the restructuring of the sentence was pointed out to the subjects, they produced the sentence,

- v. n ye tyè mìn ye, ò be fini mìn ka di n ye fère
 I C man wh- see, that -C cloth wh- is nice me to sell
 'The man that I saw, he sells the cloth that I like'

In the above sentence, both sentences i) and iv) are embedded in the base sentence ii). The embedded sentence i) has been front-shifted while sentence iv) has been left nested in the base sentence.

Multiple nesting, i.e. nested sentences containing nested sentences are apparently ungrammatical in Bambara. Native speakers do not produce such sentences and when confronted with one, they do not hesitate to reject it. For example, the sentence,

- *vi) à ye $\left[\begin{array}{c} \text{mùso mìn be} \\ \text{S} \end{array} \left[\begin{array}{c} \text{fìni mìn ka di n ye} \\ \text{S} \end{array} \right] \text{fère} \right] \text{fùru}$

contains the sentence fini `ka di n ye 'I like the cloth' nested in the sentence, mùso `be fini `fère 'the woman sells the cloth'. This complex sentence is then nested in the sentence, à ye mùso `fùru 'he married the woman'. Sentence vi) is consistently rejected by native speakers, and it is only understandable to them after considerable explanation. When the complex embedded sentence is front-shifted, the speakers accept it readily as a grammatical sentence, e.g.

- vii) mùso mìn be fini mìn ka di n ye fère, à ye ò fùru
 woman wh- -C cloth wh- is nice to me sell, he C that marry
 'The woman who sells the cloth that I like, he married that one'

In order to account for the Bambara speaker's reactions to sentences vi) and vii), the front-shifting rule will be obligatory when the embedded sentence dominates a relative clause. In all other cases it would be a preferred, but still optional transformation.

In Maninka, the front-shifting rule is obligatory. Neither sentences vi) or vii) would be grammatical. As with the appositional relative clauses, the adjunctive relative clause front-shifting rule will be marked optional for Bambara and obligatory for Maninka. When the remaining nested relative clause has been front-shifted, the sentence becomes:

- viii) fìni mìn ka di n ye, mùso mìn be ò fère, à ye ò fùru
 cloth wh- is nice to me, woman wh- -C that sell, he C that one marry
 'The cloth which I like, the woman that sells it, he married that one'

The transformational rules which formally describe the embedding and front-shifting of adjunctive relative clauses are as follows:

T₃: adjunctive relative clause embedding

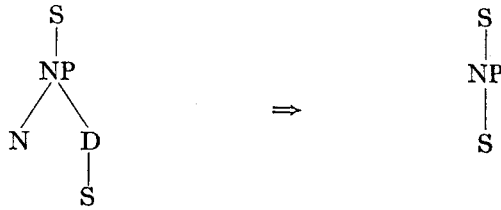
SD: X, $\left[\begin{array}{c} \text{N} \\ \text{NP} \end{array} \right] \left[\begin{array}{c} \# \\ \text{D} \end{array} \right] \left[\begin{array}{c} \text{Y, N, `} \\ \text{S} \end{array} \right] \left[\begin{array}{c} \text{Z} \\ \text{S} \end{array} \right] \left[\begin{array}{c} \# \\ \text{D} \end{array} \right] \left[\begin{array}{c} \text{Num} \\ \text{NP} \end{array} \right] \text{Q}$
 1 2 3 4 5 6 7 8 9 10

SC: X, $\left[\begin{array}{c} \text{Y, N, min, Z,} \\ \text{S} \end{array} \right] \left[\begin{array}{c} \text{S} \\ \text{NP} \end{array} \right] \text{Q}$
 1 4 5 7 10

Cond: X, Y, Z, and Q are variables which do not contain sentence boundary markers (#).

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After matching the antecedent noun (2) with the embedded noun (5), Rule T₃ erases the antecedent noun. The specific article (6) is replaced by the relative clause marker *min*. The specific article and the number marker (9) of the base noun phrase are erased, as are the sentence boundary markers (3 and 8). All that remains of the base noun phrase after the transformation is the embedded sentence. The embedded sentence is shifted from domination by the determiner node to direct domination by the noun phrase node. This shift can be illustrated by the following diagrams:



The operation of this transformation can be shown with the following strings, representing P-markers.

- ix) tile `tùn ka góni tùmá # S # `la
 sun the Past is hot time at
 ù se -ra bàmakò tùmá `la
 they arrive C Bamako time the at

The complex string ix) is transformed by rule T₃ to:

- x) tile `tùn ka góni ù se -ra bàmakò tùmá min na
 sun the Past is hot they arrive C Bamako time Wh- at
 'The sun was hot when they arrived in Bamako'

- xi) à nye `sin -lèn be bara # S # kàn
 it eye the direct -ed is work the on
 parti `be à fè ù kà bara `kè
 party the -C it with they to work the do

String xi) becomes by transformation:

- xii) à nye `sin -lèn be parti `be à fè
 it eye the direct -ed -C party the -C it with
 ù kà bara min kè kàn
 they to work wh- do on
 'It is about the work that the party wants them to do'

T₄: Bambara obligatory front-shifting

SD: #, [X, [S, [NP, [Y N min Z], S], S], Q]

1 2 3 4

SC: # [S, [S, [Y N min Z], /, X, [NP], S], Q]

1 3 2 4

Cond:

1. X does not contain min (i.e. a relative clause)
2. Y or Z contains min (a relative clause)

Rule T₄ obligatorily shifts the embedded adjunctive relative clause (3) to sentence initial position if that embedded relative clause dominates another relative clause, as stated in Condition 2. However, if there has already been a relative clause shifted into sentence initial position the rule will block the P-marker from becoming a sentence. When all the conditions are satisfied, the embedded relative clause is front-shifted, a clause intonation marker (/) is inserted between the relative clause and the base sentence, the noun phrase slot in the base sentence is filled with the pronoun ò 'that one', and lastly, the relative clause is shifted from domination by the noun phrase node to domination by the sentence node.

T₅ adjunctive relative clause front-shifting
 optional in Bambara
 obligatory in Maninka

Rule T₅ is the same as T₄ except for Condition 2. If the relative clause does not dominate another relative clause, it may remain nested or it may be shifted to sentence initial position. In Maninka, it must be shifted.

The operation of rules T₄ and T₅ can be illustrated through the following diagrams:

- xii) n ye tyè # S # ` dɔn
 I C man | the know
- xiii) tyè ` be so # S # ` dyɔ
 man the -C house | the build
- xiv) n ye so ` ye
 I C house the see

Starting with the most deeply embedded sentence, Rule 3 embeds sentence xiv) into sentence xiii), producing,

- xv) tyè ` be n ye so mìn ye dyɔ
 man the -C I C house wh- see erect
 'The man is building the house that I saw'

Rule 3 then embeds the complex sentence xv) into sentence xii), producing,

- xvi) n be tyè mìn be n ye so mìn ye dyɔ dɔn
 I-C man wh- I C house wh- see erect know
 'I know the man who is building the house I saw'

Sentence xvi) is not acceptable as it stands since it contains multiple nested relative clauses. Rule 4 obligatorily shifts the complex relative clause to sentence initial position, e.g.

- xvii) tyè mìn be n ye so mìn ye dyɔ, n be ò dɔn
 man wh- -C I C house wh- see erect, I -C that know
 'The man who is building the house that I saw, I know him'

Sentence xvii) now represents a grammatical sentence in Bambara, but not in Maninka.

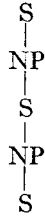
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The remaining nested relative clause is by preference shifted with T₅ to front position in Bambara, and by necessity in Maninka, e.g.

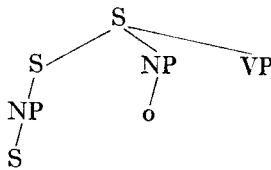
- xviii) n ye so mìn ye, tyè mìn be ò dyɔ, n be ò dɔn
 I C house wh- see, man wh- -C that erect, I -C that know
 'The house that I saw, the man who is building it, I know that one'

The modifications of the structural relations from sentence xvi) to sentence xviii) can be illustrated by the diagrams below.

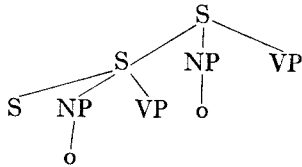
Sentence xvi)



Sentence xvii



Sentence xviii



Even though there is a decided preference for using adjunctive relative clauses as opposed to appositional relative clauses, it is quite interesting to note that in much of the Bambara used on Radio Mali, the opposite is true. The most likely reason for this shift in emphasis is that speakers on the radio write their material in French and translate as they read from a French text. It is obvious that once one has started a sentence, it is quite impossible to incorporate a front-shifted relative clause. For this reason, the speakers, if they are Bambara, will use a nested adjunctive relative clause or an appositional relative clause. The Maninka speakers are obliged to use the rear-shifted relative clause.