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ASPECTS OF UNDERLYING REPRESENTATIONS IN
THE YORUBA NOUN PHRASE

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ABSTRACT OF THESIS

The transformational generative theory of grammar is used for a syntactic description of the Yoruba Noun Phrase. The emphasis of this study is on underlying representations which meet the goals of linguistic theory stated by Chomsky in Aspects of the Theory of Syntax. The description aims at providing underlying structures which will yield surface structure representations in which all the structural slots recognized for the surface representation of Yoruba NP's in Bamgbose 1966 and Afolayan 1968 are filled. It is observed that Bamgbose did not provide examples in which all the structural slots he recognized are filled simultaneously.

The present position in transformational generative grammar is reviewed, and we have to choose either the 'standard theory' of Chomsky, Fodor, Katz, Dougherty, Jackendoff etc., or the 'basic theory' of Lakoff, Ross, McCawley, Bach, Postal etc. as our syntactic model. The problem of choice rests mainly on one basic question: whether the relationships between pairs of Yoruba structural types could be correctly stated if only the purely syntactic deep structure of the standard theory were available. In works in the tradition of the basic theory, the usual argument is that there is no autonomous level P_1 of syntactic deep structure where all lexical insertion must take place in a block. The standard theory on the other hand maintains that all lexical insertion takes place in the deep structure, and furthermore, it is syntactically based in that it asserts that "the sound - meaning relation (P, S)" is "determined by Σ " (i.e. syntax).

The main point made with Yoruba examples in chapters III and IV and

parts of ~~Section~~ II is that greater generality in description is achieved and duplication of rule representation is forestalled if we violate the main condition on P_1 that it is the level where all lexical transformations have applied and from which true syntactic transformations start to operate. We find that when true syntactic transformations needed elsewhere in grammar (e.g. deletion, relativization, adjunction etc.) apply to the phrase structure representations of some 'basic' items before many of the 'lexical' items derived from them are inserted at P_1 great economy in description is achieved. The point on the achievement of economy in description is made for derived and gerundive nominals in chapter III. In a section of chapter III, the same observation is made for most proper noun derivations. In chapter IV, the point is also made for Yoruba vigesimal numerals which constitute "the class of words operating at 1" in the nominal group structure of Bamgbose 1966.

Areas of syntactic theory where duplication of rule representation is forestalled here include the use of categorial rules, the application of true syntactic transformations, the statement of subcategorization rules and selectional restrictions which would be relevant both before and after P_1 in the syntactic structure $\Sigma = (P_1, \dots, P_1, \dots, P_n)$ of the standard theory of generative grammar in an adequate syntax of the Yoruba noun phrase. This point is illustrated in chapter III.

Following Bach 1968, sentential derivation for common nouns as well as proper nouns is suggested in chapter III. The advantages of underlying sentences which use classifiers are noted in chapter IV where they account for underlying similarities between pairs of subclasses of syntactic elements which present great problems for syntactic analyses on the surface. Also, in chapter IV, we observe that when sentential derivation is done, and both categorial rules and true syntactic transformations apply to

underlying sentential sources for numerals, we do not have to insert an infinite number of numerals at P_1 since we now need only pure syntactic rules like $NP \rightarrow NP S$ before we derive an infinite number of numerals from a finite set consisting of only sixteen 'basic' numerals.

In chapter V, we suggest a common derivation of the main lexical categories of the nominal group of Bamgbose 1966 from a super-category since generality in syntactic description is achieved when this is done. We also make a case for the sentential derivation of Yoruba attributive adjectives.

Relativization conditions in the Yoruba noun phrase are stated in chapter VI, and we adopt a feature framework for the description of Yoruba articles for syntactic reasons. The procedure for structural representation is stated in the concluding chapter and examples of some derivations are given. Thus, in chapter VII, we have to bring together all the underlying sentential representations for those single lexical formatives used in the construction of sententially represented NP's.

This work does not totally depart from the standard theory since it principally uses the categorial rules and syntactic transformations available to people working in the standard theory tradition. Furthermore, it does not go far into areas where generative semanticists or proponents of the 'basic theory' normally operate. Hence, there are no discussions of presuppositions or related notions. But it is clear on one point, and on this, it is in agreement with generative semanticists: that the main lexical condition on P_1 in the standard theory does not make for descriptive adequacy in the syntax of the Yoruba noun phrase.

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PREFACE

This work deals with underlying representations in the Yoruba noun phrase. My interest in aspects of the Yoruba noun phrase started with my dissertation on Yoruba personal names in Leeds in 1967. While examining Yoruba personal names in 1967, and other Yoruba nominals later, I came to the conclusion that lexical items in the Yoruba noun phrase have complex internal structures, and this is compatible with the position of the generative semantic school of transformational grammar as stated in Ross 1971.

My course of study was financed through a study grant from the University of Ife, Nigeria, and I am grateful to Ife University for giving me leave of absence to do the study.

I would also like to express my gratitude to Professor John Lyons and Mr Keith Brown, my supervisors, for the thorough supervision of the work and for their helpful and constructive criticisms while the study was in progress.

I am indebted to Mrs Anne Aston who has carefully carried out the complicated typing of the thesis within a short period.

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INTRODUCTION

1.1

THE YORUBA LANGUAGE

Yoruba is one of the major languages of West Africa, and according to John Spencer, it "has had the benefit of more scholarly attention during the past century or so than most other languages in the area".¹ One can justify Spencer's claims by observing that Yoruba had been the subject of serious scholarly attention since the publication of Samuel Crowther's Yoruba Grammar in 1852, and that other aspects of Yoruba (apart from grammar) have been studied.

Among the major grammatical studies of Yoruba are: J.T. Bowen, Grammar and Dictionary of the Yoruba Language, 1858; J.B. Wood, Notes on the Construction of the Yoruba Language, 1879; Gaye and Beecroft, Yoruba Grammar, 1914; Yoruba Composition, 1922; S. Johnson, the chapter entitled "The Yoruba Language" in his book: The History of the Yorubas, 1921; Ida C. Ward, An Introduction to the Yoruba Language, 1952; Isaac O. Delano, A Short Grammar and Dictionary, 1958, and A Modern Yoruba Grammar, 1965; and R.C. Abraham, Dictionary of Modern Yoruba, 1958. A fuller annotated bibliography can be found in Bamgbose 1966. Outstanding among recent grammatical studies is that of Bamgbose, 1966, A Grammar of Yoruba. This is a description of Yoruba in terms of a 'Scale and Category' grammar (cf. Halliday 1961). Other works within Halliday's framework include that of Afolayan 1968, The Linguistic Problems of Yoruba Learners and Users of English.

The transformational generative framework has also been applied to the study of Yoruba syntactic structure. Awobuluyi in Afolayan ed. (forthcoming) presented a paper based on Awobuluyi 1967 on a trans-

1. John Spencer's Forward to Bamgbose 1966 in Bamgbose 1966: ix

formational generative analysis of the Yoruba verb phrase. Oyelaran has applied the principles of generative phonology to Yoruba, and the present writer has examined several aspects of the Yoruba noun phrase since he presented a dissertation entitled: The Grammar of Yoruba Personal Names: A Transformational Generative Analysis in Leeds in 1967.

An appraisal of previous grammatical studies¹ (before Delano 1965) is to be found in Bangbose 1966, and there is no need to repeat the criticisms where they could be justified or attack them where there may be reasons for rejecting them since we shall later refer to some of the earlier grammars including Bangbose's where they relate to the exercise being undertaken here. A criticism of Bangbose's grammar by a fellow systemic grammarian appears in Afọlayan 1970.

Apart from grammar, scholarly works have been produced in other areas of Yoruba studies in recent years. For instance, from Bangbose's bibliography,² one finds that ^{most of} ~~the~~ the publications of Bertha Siertsema that dealt with Yoruba directly treated various aspects of Yoruba phonology. There have been references to Yoruba phonological structure before Bangbose's monograph appeared and one particularly interesting

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1. It appears that some of the criticisms which Bangbose made about previous grammatical works also apply to some of "the rules governing the modifications which foreign words undergo before they are incorporated into the Yoruba language" in Lucas 1948, The Religion of the Yorubas, C.M.S. Bookshop Lagos, e.g. comments like: "The short "a" does not exist in the Yoruba language". However, since Lucas was interested in the accidents that befall foreign words that are borrowed into Yoruba rather than in a Yoruba syntactic description, Bangbose's criticisms will lose their force if applied to Lucas.
 2. Bangbose 1966, 175

publication that refers to Yoruba phonology is that of Ladefoged 1964 where both the consonants [l] and [n] were established as members of the same significant sound (i.e. phoneme) for Yoruba.¹ Ladefoged's suggestion is interesting not only because of the insight it gives into the parallel behaviour of certain Yoruba consonants but also because of the opposition it has aroused from many native speakers of Yoruba who are also linguists e.g. Afọlayan, Oyelaran and the present writer.²

The range of topics covered by scholars of Yoruba is in fact so wide that we can only say that the interest of scholars in the Yoruba language since the publication of A. Bamgbose's Grammar has now justified Spencer's declaration above. For instance, the areas of linguistic research covered by those who presented papers for the seminar on Yoruba Language and Literature at the University of Ife in December 1969³ include dialect studies (by Dr Adetugbo), loan words (by Dr Salami), sociolinguistics (by Dr Oke), lexicography (by the present writer), phonology and graphology (including the orthography) (by Dr Afọlayan) apart from several papers on syntax, most of which dealt with the verb phrase.

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1. Ladefoged, P. 1964 A Phonetic Study of West African Languages Cambridge University Press, Cambridge, pp. 23-4.
 2. In one Appendix of Afọlayan 1968, the suggestion that [n] and [l] do not contrast in Yoruba was attacked. Another attack of the suggestion appears in Appendix II of this work where we discuss the orthographic problems that beset Yoruba lexicographers.
 3. Papers from the seminar are to appear in a special publication of Odu, the journal of the Institute of African Studies, University of Ife in 1972. The present writer was the rapporteur at the seminar.

Only the present writer presented any paper on the Yoruba Noun Phrase.¹ So, from the seminar, one finds that the amount of linguistic interest the Yoruba language has for scholars is considerable. One should also note that other contributions to the seminar included papers on Yoruba literature, dealing with topics like Yoruba drama, poetry and fiction (both oral and written).

Yoruba, which has about twelve million speakers,² has been described in Bamgbose 1966 as 'a dialect continuum', but we do not discuss the status of Yoruba either as a language or just as a dialect cluster in this work. Also, its position among the Kwa group of languages in West Africa will not be discussed. For information about the latter, one can consult Sebeok ed. All we say on the question of dialects is that we describe standard Yoruba here, although Yoruba consists of many dialect areas like Egba, Ijebu, Ijesa, Oyo, Osun, Ondo, Ekiti, Ikale, Ilaje, Igbomina and several others. Lucas³ even included the Benins (Bini) among the Yorubas viz.

-
1. The preponderance of papers on the verb phrase and the relative absence of papers on the Yoruba noun phrase at the seminar does not imply that everything in the noun phrase had been done or that there is nothing left to be done there. As we shall see later in this work, the Yoruba noun phrase (e.g. the Yoruba numerals) actually present problems which have often been sidetracked in previous syntactic analyses of the Yoruba language.
 2. Bamgbose 1966:2 suggested that Yoruba is spoken by "about twelve million people in the area which covers Western Nigeria and Lagos, the Ilorin province of Northern Nigeria and the country Dahomey." Since Bamgbose's monograph appeared, the Ilorin province of Northern Nigeria has ceased to be a province, and it has become a part of the Kwara State, one of the twelve states established by decree in May 1967. Note that Bamgbose's suggestion that there are about twelve million Yoruba speakers makes the number of Yoruba speakers greater than the number of people in several West African countries including even Ghana.
 3. Lucas, J.O. 1948

Yorubaland... comprises the following tribes:
Yoruba proper, (i.e. Oyo - SAE), Ibadan, Egba,
Ijebu, Ekiti, Ondo, Ijesa, Ife, Ketu, Bini
Jekri, and Igara. 1948:7

Then he added:

"Some writers exclude the names of Bini, Jekri and Igara from the list, because these tribes are culturally inferior to most of the other tribes. The exclusion finds support in the attitude of the remaining tribes (i.e. dialect areas - SAE) who are so ignorant of their relation to the Igaras as to use the latter's name as a synonym for thieves or robbers. A study of the languages spoken by the other tribes, however, show that they are more or less remote dialects of the Yoruba language... 1948:7-8.

However, the above dialect area division was mainly although not entirely geographically determined and so it would be different from any dialect division that was based exclusively on syntactic, lexical and phonological patterning e.g. the one proposed by Adetugbo in a paper presented at the above named seminar. Some of the content and methodological problems that dialect areas created for the compilers of the proposed Yoruba monolingual dictionary were discussed by the present writer in a paper entitled "Thoughts on A Yoruba Monolingual Dictionary" at the seminar. An extract from the paper (the part dealing with orthographic representations) appears as Appendix II in this work.

A more detailed introduction to the Yoruba language, and to its people, can be found in Dr Lucas' volume (pp.1 - 30). On p. 22, it was suggested that the word Yoruba is made up of two distinct words Yo and ruba derived from ye and rpa, and is interpreted as "the living rpa" or "the creator of rpa". More information about interesting aspects of the Yoruba language and the Yoruba people can be obtained from Dr Lucas' book which was actually not a book on any linguistic topic, but one dealing with religion.

1.2 ON THE REPRESENTATION OF YORUBA EXAMPLES

1.21 SYMBOLS AND LETTERS USED

The following letters and symbols will be used:

(a) All the examples in the text are represented in the official orthography with minor variations which will be explained. Broadly speaking, the orthographic symbols are phonemic. The following consonant symbols are used:

b, t, d, j = /t̪/, k, g, gb, p = /kp/, m, n, f, s, ɕ = /s/;

h, l, r, w, y = /j/.

The symbols, broadly speaking, have their I.P.A. value, /gb/ is a voiced labio-velar stop, /kp/ is a voiceless labio-velar stop. A more detailed description of the consonants, can be found in Bamgbose 1966: 6-7. Some objections to his treatment of [n̩] and [l] as members of the same 'phoneme' appear in parts of Appendix II below.

(b) The oral vowels are: i, e, ɛ = /ɛ/, a, ɔ = /ɔ/, o and u.

Charts of the Yoruba oral and nasal vowels appear on page 7 of Bamgbose 1966.

(c) Nasal vowels are usually represented by the corresponding oral vowel followed by n thus in = /ɪ/, en = /ɛ/, un = /ũ/ which has the allophones [n̩] after velar stops e.g. okun [òkɪn] 'the sea' and [ũ] elsewhere, and an = /ã/ with two allophones - [ɔ̃] after labials and labio-velars and [ã] elsewhere. We shall follow the traditional orthography by indicating the phoneme /ã/ as ɔ after m and a after n. We shall also follow Bamgbose's method of putting tones on syllabic nasals when necessary. However, we shall not follow the traditional orthographic system of using an oral vowel to represent the third person pronoun object of a verb that ends in a nasal vowel. So, instead of the traditional mo kun u, we shall have mo kun un = /mo kũ ú/ = 'I paint it'. Thus, mo sin in = /mo sĩ í/ =

'I follow him', and mo tan an = /mo tã ã/ = 'I deceive him'. Note that Bamgbose adopted the traditional system (p. 72) except where the nasal vowel is on. In such cases he has to use on to distinguish the third person pronoun object from o the second person pronoun object. The implications of this practice for other aspects of the orthography are discussed in a footnote to Appendix II where further examples from Bamgbose 1965 and 1966 are discussed.

(d) Tones. High tone = (´), low tone = (˘), mid tone is not indicated. Compound tones are those used in Afolayan 1968 viz. low high (˘´), low mid (˘˘), mid high (˘´), mid low (˘˘), high low (˘˘) and high mid (˘˘). In this work, following a suggestion in the final paragraph of 1.22 below, we shall not indicate the compounding of the mid tone with other tones by diacritics. So, we make an exception in such cases and either refuse to indicate tones (following one suggestion of the Yoruba Orthography Committee), or adopt the vowel doubling system. The condition for vowel doubling is the existence of significant minimal contrasts e.g. má 'do not' versus máa 'going to; continue to'.

(e) Word Division. Word division in the traditional orthography is rather haphazard, and it is sometimes based on the substitution possibilities of single lexical items for the English translations of these items. Thus, when is nigbati = ní lgbà tí 'at time which', where is nibiti = ní ibi tí 'at place which', although is biotilejepe = bí ó tilè jé pé = (if it even is that), who = eniti = eni tí 'person who' etc. The deficiency of the traditional orthography on this count i.e. the

translation equivalence deficiency,¹ has already been recognized since we now have orthographic representations like gni tí in most recent

publications. For further remarks on the orthography of Yoruba, see Appendix I²

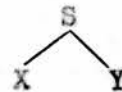
1.22 SYMBOLS AND DEFINITIONS
~~(X)~~ Symbols that will be used in the grammar.²

[] unlabelled brackets for the specification of features.

e.g. omugó = [+N, +Common, +Count, +Human...]. This symbol should not be confused with the same symbol when used for phonetic representation. The context of the brackets will show which one is being used.

[X Y]_S labelled brackets for dominated category symbols and terminals.

Thus S dominates X and Y in the illustrative example. There are now three uses of the square bracket. (a) - [irũ] - the phonetic representation, (b) - [+Feature... -Animate] = feature specification, and (c) - []_{NP} for dominated category symbols or for tree dominance. Labelled brackets should be interpreted as equivalent to Phrase Structure trees. Thus, for the above example, we have the tree:



() = optional e.g. in rules like NP --> N (S) where S is optional.

1. The translation equivalence deficiencies of traditional orthography in this respect are the results of the orientation of early descriptive works in Yoruba towards the provision of equivalence sets for what exist in English. Thus, even in a grammar, we have the following analysis: "The definite article "the" is rendered by na in Yoruba. It always follows the noun. Thus iwe na, the book. "A" or "an" is translated by "kan", a part of okan, which means one; e.g. a dog, aja kan. Gaye and Beecroft 1923, 7. One can extend this to the treatment of "although" in traditional orthographic practice. Thus, biotilejepe is a word because English although is a word. The authors' punctuation in the quotation, where many English translations of Yoruba examples are quoted whereas most of the Yoruba examples themselves appear as ordinary parts of a normal English prose is difficult to justify.
2. The symbols used are based on conventional practice in transformational grammar.

~~the phrase marker which is derived from the initial phrase marker~~
~~which is derived from the initial phrase marker and is complete in derivation~~
~~which is derived from the initial phrase marker and is complete in derivation~~
~~which is derived from the initial phrase marker and is complete in derivation~~

1.23

GLOSSARY OF TERMS GENERALLY USED

1, Analyzability: - the basic predicate in terms of which the theory of transformational grammar is formulated. X is analyzable as Y if and only if Y is a proper analysis of X (i.e. all the members of Y can be mapped onto X and all the members of X can be mapped onto Y). For instance, let P be a phrase-marker with terminals $t_1 \dots t_n$ and X a string $x_1 \dots x_m$ of category symbols and terminals, P is analyzable as X if (if and only if):

x_1 dominates $t_1 \dots t_p$


x_2 dominates $t_{p+1} \dots t_q$

.....

x_m dominates $t_r \dots t_n$ (where $1 \leq p < q \leq r \leq n$). See Aspects p.98

2, Category Symbol: - A category symbol is an element that can appear to the left of the rewriting arrow in an Aspects grammar. Category symbols are distinguished from terminals which are not rewritten in rules of grammar. See Aspects pp.64-74.

3, Deep Structure: - That syntactic level that provides the input to the semantic component of grammar or the syntactic level postulated 'for determining semantic interpretation of sentences' in an Aspects grammar. See Aspects pp.136 ff.

4, Dominate: -  X immediately dominates Y means Y is an immediate constituent of X. So, in the tree diagram here, the Y node

will come directly under the X node (see phrase-marker). A dominated symbol may not occur directly under the dominating category e.g. in 10 (II) below where A immediately dominates B and C but ultimately dominates other symbols like D, H, J and K.

5, Noun: - The lexical category that is "selectionally dominant in the sense that its feature composition is determined by a context-free subcategorization rule, its features being carried over by selectional rules to other lexical categories" - Aspects p.116. This feature of the noun is noticeable in Romance languages where other lexical categories like adjectives agree with their nouns in gender or number or case. See Lyons 1966 "Towards a Notional Theory of Parts of Speech" in Journal of Linguistics II, pp.209-236, for the suggestion that the noun is the main substantive universal of linguistic theory. Other parts of speech are not introduced here.

6, Phrase-marker: - A representation of the constituent structure assigned to a sentence. Lyons 1970: 121.

7, Rules: - The following rule types are discussed by Chomsky in Aspects.

(a) Under types of base rules pp.111-120, the following rules are discussed though they are not all necessarily distinct: branching rules, categorial rules, context-free rules, context-sensitive rules, rewriting rules, selectional rules, and subcategorization rules.

Some of these rules are subdivided into subclasses e.g. subcategorization rules are divided into context-free subcategorization rules - p.121, context-sensitive subcategorization rules - p.219, and strict subcategorization rules pp.95-100.

(b) Other rules - Semantic projection rules p.144, phonological redundancy rules pp.168-170, syntactic redundancy rules pp.168-170,

transformational rules in the base and in the transformational subcomponent of the syntactic component. Chomsky made a distinction between 'local' transformational rules in the base component and grammatical transformations. So,

a grammatical transformation ... typically applies to a string with a particular structural description. Thus application of such a rule to the last line of a derivation depends in part on earlier lines. A grammatical transformation is, in other words, a rule that applies to Phrase-markers rather than to strings of terminal and non terminal vocabulary of grammar.
Aspects: 89.

For a local transformation on the other hand, the rules that can be applied to form the next line σ_{n+1} in a derivation consisting of successive lines $\sigma_1, \dots, \sigma_n$, are independent of $\sigma_1, \dots, \sigma_{n-1}$, and depend completely on the string σ_n . (See transformational rules in 10 below.)

8, Structural Description:

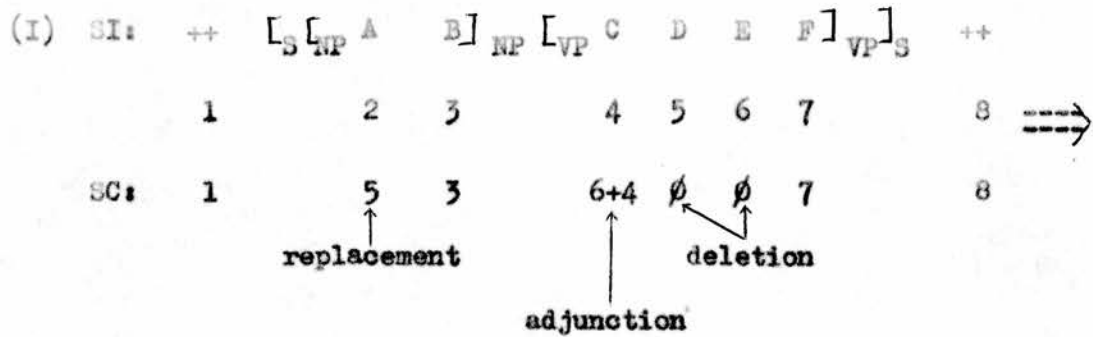
(a) Structure Index (SI): the structural form of a phrase marker before the operation of a transformational rule.

(b) Structure Change (SC): the form of a phrase marker after the operation of a transformational rule. Note that the derived structure from a SC could be the SI input of another T rule. Following the use of P's with subscripts in 1.51 above, P_2 is a structure change from P_1 .

9, Surface Structure: - That syntactic level that contains the last phrase marker P_n in the syntactic structure $\Sigma = (P_1, \dots, P_n)$ of a transformational grammar. It provides the input to the phonological component of a transformational generative grammar.

10, Transformational or T rules: - T rules map phrase-markers onto phrase-markers meeting the Boolean conditions of analyzability. Certain elementary transformations are generally used. The three elementary transformations that will be commonly used in this work are deletion,

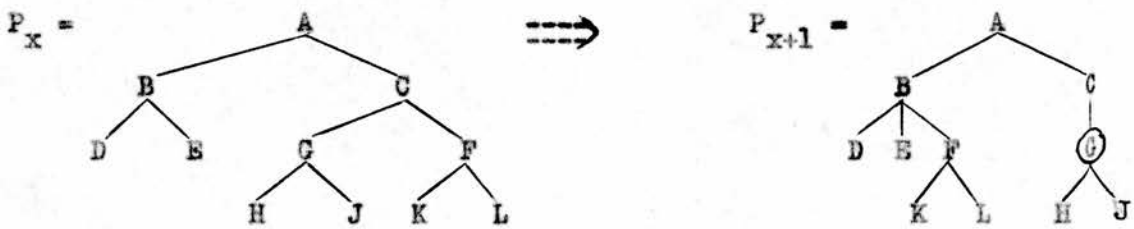
replacement and adjunction, e.g.



(where '++' = 'boundary symbol'), condition 2 = 5.

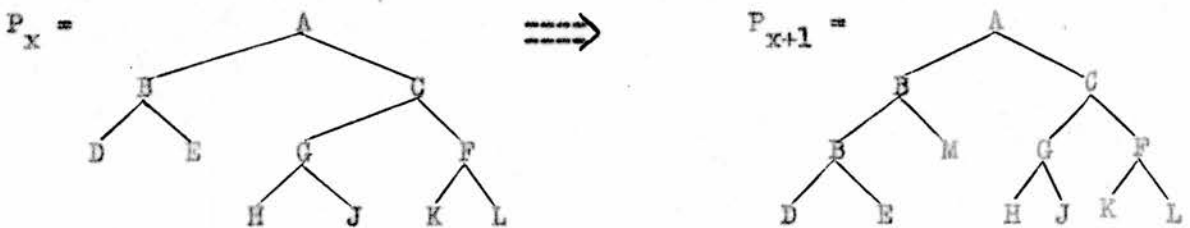
In the SC, we have a sister adjunction of 6 to the left of 4 since with 4 and 6 are sisters under the common dominance of the same VP node.

(II) Two other forms of adjunction are possible in transformational grammar. We shall illustrate them with tree diagrams: (a) Daughter Adjunction - Thus, adjoining a daughter of C (i.e. F) in P_x below to the right of B, we shall have the following derivation:



(where G is removed as a result of tree pruning ^{cf. trees 8 to 9 pp. 381-2} and the successive terminals will be: $P_x - D E H J K L$, $P_{x+1} - D E K L H J$.)

(b) Chomsky Adjunction - The copying of a node in another part of the phrase marker. Given the same P_x as in (a) above:



with successive terminals $P_x - D E H J K L$, and $P_{x+1} - D E M H J K L$.

Only syntactic transformations are illustrated in this work. For examples of lexical transformations, one can refer to Chomsky's discussion of these in Aspects: Chapters II and III.

11, Variables: - The late capitals like U, W, X, Y and Z are used to represent variables in structural description. They usually stand for all possible category symbols and terminals in the relevant structure index. Early capitals like A, B, C, D, E, F are used to represent category symbols as in the examples under 9 above. There used to be a distinction between category symbols and features in Aspects, but Chomsky in Jacobs and Rosenbaum 1970: 208 decided to eliminate the distinction between category symbols and features: "We might just as well eliminate the distinction of feature and category, and regard all symbols of grammar as sets of features." 1970: 208. The distinction between category symbols and features may be significant at a later stage of this work.

1.3

STRUCTURAL SKETCH OF YORUBA

Our main purpose in this subsection is to introduce the reader who has no previous knowledge of Yoruba to the Yoruba language, and in particular, to certain features of Yoruba that we shall have to use later

in this work. Hence, this subsection cannot contain a thorough analysis of the Yoruba language. Since the sentence is a concept we use throughout this work, it will be good to start this examination from it.

1.31

THE SENTENCE

As we are going to use the transformational generative framework, the terms we use e.g. S for sentence, N for noun, NP for noun phrase, CONJ for conjunction etc. should be understood within the theory of grammar we are using. Some brief comments on the grammatical model used here will appear in 1.5 below. A glossary of the syntactic terminology we employ will also appear there.

Bangbose 1966 suggested two requirements for any good grammar. First, "a proper description must be based on a linguistic theory"¹ and secondly, "categories cannot be assumed. They must be defined by reference to structures."² The present work has already satisfied the first requirement since it is based on the transformational generative theory of linguistic description. Before it can satisfy the second requirement, we should examine how Bangbose's Grammar met the requirement and then follow his example.

Bangbose described the sentence as "the highest grammatical unit in Yoruba" and added that "it can only be structurally defined in terms of its elements of structure."³ Since Bangbose used Halliday's 'Scale and

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1. Bangbose 1966: 5
 2. Bangbose 1966: 5. It seems Bangbose found the definitions of categories used so significant that he had to emphasize the principle "that a bad definition is better than no definition."
 3. Bangbose 1966: 28

Category Theory of Grammar'¹ in which unit is a technical term, it seems any direct reference to the theory underlying a descriptive grammar could help in the task of category definition. We shall take note of this technique when we define the categories used.

Another technique of category definition from Bangbose 1966 is to suggest that certain categories are determined only by surface structure sequence. For instance, he suggests the structure, n, j, l, k, d, t for 'qualifiers' of the 'head' noun where the six symbols respectively represent nominal, adjective, numeral, rank shifted, deictic, and post-deictic qualifiers. Thus, Bangbose had six "sequence determined secondary elements of structure"² in the "Nominal Group."³ Having listed the surface structure sequence of the six "secondary elements of structure", he was able to give definitions like these: "the class of words operating at d is deictic",⁴ "the class of words operating at t is post-deictic",⁴ and "the class of words operating at j is adjective".⁵ This second technique of definition fails to satisfy what Chomsky described as the condition of 'descriptive adequacy',⁶ since no reason or explanation can be given to show why the numerals are not adjectives or vice versa. As we shall note below (chpts IV - VI), it appears that Bangbose's 'numerals' are indistinguishable from his 'adjectives' since he has several examples where he analyzes what he calls numerals as

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1. Halliday 1961
 2. Bangbose 1966: 99
 3. Bangbose 1966: 98
 4. Bangbose 1966: 114
 5. Bangbose 1966: 112
 6. Chomsky 1965 Chapter 1.

adjectives although the two classes (i.e. numeral and adjective) are "sequence determined". Hence, this second technique of definition is inadequate, and it seems the only justification for it is the statement of principles quoted earlier that 'a bad definition is better than no definition'.¹ Our definitions here will generally refer to the theoretical framework we are using unless we use terms in peculiar ways, then we shall be expected to give our own definitions of the terms we use.

The sentence is what is ultimately dominated in the tree structure of a phrase structure grammar by a S node (where node, S, tree, dominated, and phrase structure have their conventional interpretations in transformational grammar). Bamgbose divided the sentence into (i) the single sentence structure,² (ii) the complex sentence structure,² and (iii) the compound sentence structure.³ Bamgbose's single sentence structure in transformational terms will be one in which no other sentence is embedded. An example is:

1. *okunrin yen yio lo si oko wa* (man that will go to farm our)

'that man will go to our farm.'⁴

So, a 'single sentence structure' is a S which contains no internal occurrence of another S node. The internal structure of S is usually NP VP where VP (i.e. verb phrase) may be rewritten as V NP, or V alone, or V NP ADV etc. This contrasts with Bamgbose's analysis where the NP

1. Bamgbose 1966: 5

2. Bamgbose 1966: 28

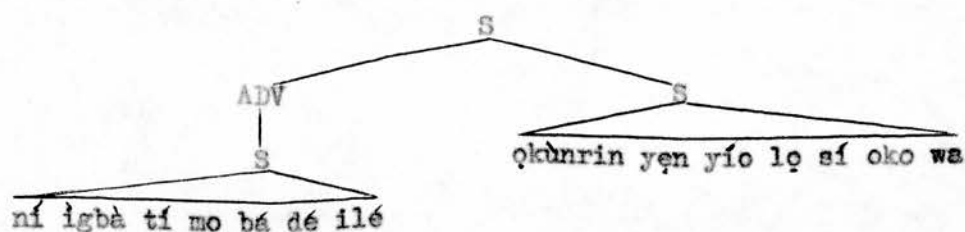
3. Bamgbose 1966: 29

4. Note the use of the round bracket and quotation marks for glossing from 1.21 above. Many Yoruba nouns are preceded by the plurality formative awon when they are in the plural. But in certain contexts, even when plurality is implied as in generic constructions, the plurality formative is not used. See chpt VI for the feature - 'genericness'.

object of the NP dominated by the VP is absent. Afọlayan 1968 has already pointed out that Bamgbose's 'SPA analysis' is wrong for the Yoruba language since Yoruba actually has surface structure objects.

A complex sentence structure is one in which some sentences are embedded, but some of these sentences are dominated by other non sentential elements like ADV = adverb, NP = noun phrase etc. e.g.

2.



= (at time which I happen arrive home, man that will go to farm our)
'whenever I come home, that man will go to our farm.'

A compound sentence structure is one in which one S node directly dominates more than one S node (and the dominated S nodes are linked by linking elements known as conjunctions).¹ The parenthesized part of this definition is actually unnecessary since the direct dominance of more than one S by a S often involves the occurrence of at least one linking element in underlying representations cf. S → and Sⁿ. Moreover, as one can note from 10 below, not all these linking elements will be represented by

1. The list of linking elements in Bamgbose 1966: 29 contains: sùgbón = 'but', tábí, àbí = 'or'. He decidedly rejected sì as a Yoruba conjunction and criticized earlier grammarians for calling sì a conjunction; p.3. But in his examples of compound sentences, he avoided any example that can involve sì since that formative does not precede the second sentence of two conjoined S structures as other conjunctions do e.g. sùgbón 'but' in 4. Hence, we provide example 3 where sì occurs between the auxiliary or future tense formative yíó 'shall/will' and the main verb gbìn 'plant/sow'. It is actually not the surface position of sì which determines whether it is a conjunction or not. Bamgbose failed to recognize sì as a conjunction because his grammar is strictly surface.

formatives in 'surface structure representations'.¹ Consider:

3. *okùnrin yẹn yío lọ sí oko wa, òun yío sì gbin àgbàdo níbẹ̀*
(man that will go to farm our, he will CONJ plant maize there)
'that man will go to our farm, and he will plant some maize there.'
4. *okùnrin yẹn yío lọ sí oko wa, sùgbón kò ní padà*
(man that will go to farm our, but not have-to return)
'that man will go to our farm, but he will never come back alive.'

In phrase structure (i.e. PS) terms, a compound sentence would derive from rules like:

5. S ----> S CONJ S.

But a complex sentence ~~is derived through~~ rules like 6 and 7:

6. S ----> ADV S

7. ADV ----> S

Note that when S is directly dominated by ADV as in 7, it is often preceded by an adverbial formative like *ní ǐgbà tí* (at time which) 'when', *ní ibi tí* (at place which) 'where', *tí* or *bí* 'if', *bí ó tilẹ̀ jẹ̀ pé* (if it even is that) 'although' etc. If S were dominated directly by NP, it could be preceded by elements like *pé* 'that' etc.

There are more involved structures where compound sentences occur within complex sentences or vice versa. Since examples of such involved structures will be used in chapter VI where we examine the relative, we will just give two examples now.

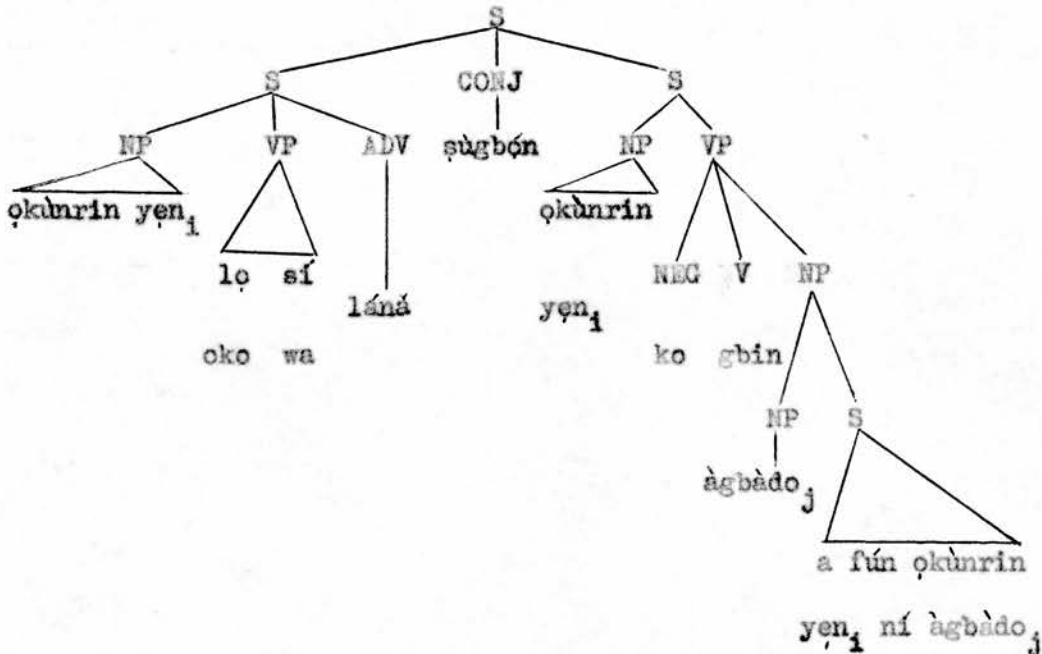
1. See 1.5 below for some reference to 'surface structure'.

8. ọ̀kúnrín yẹ̀n lẹ́ sí ọ̀kọ̀ wá láná, sùgbón kò gbin àgbàdọ̀ tí a fún un.

(man that go to farm our yesterday, but not plant maize which we give him)¹ 'that man went to our farm yesterday, but he did not plant the maize which we gave him.'

We can represent 8 by the tree diagram 9.

9.



where items with the same index are coreferential e.g. the three ọ̀kúnrín yẹ̀n₁, and the two àgbàdọ̀ⱼ representations in 9.

In the tree structure 9, the conjoined sentences occur immediately below the topmost S while the embedded sentence occurs towards the end of the tree diagram.

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1. There is usually nothing in the verb to indicate the tense of the verb phrase. But a time adverbial often shows whether we refer to the past or the present e.g. láná 'yesterday' in 8. For the future time, yíó 'will/shall' is sometimes used. At other times, the marker of continuity n = [ũ] or [ɲ] is used e.g. mọ nílo lóla 'I am going tomorrow'. The item tí is a relative marker. We may literally gloss it as wh- or which whether the referent is human or not.

However, it is possible for conjoined sentences to occur within a complex sentence i.e. not immediately dominated by the S node which is the topmost element in PS trees. An example similar to those we shall use later in chapter VI is:

10. ilé yín ni mo ti rí okúnrin tí ó lo sí oko wa, tí kò gbin àgbèdo wa, tí kò bá wa já kòkó wa, sùgbón tí ó fi ilá wa fún àgbònrín je.¹ (house your is I have see man which he go to farm our, which not plant maize our, which not for us pluck cocoa our, but which he give ocro our give deer eat)² 'it is in your house that I saw the man who went to our farm, who did not plant our maize, and did not help us to pluck our cocoa, but who used our ocro to feed some deer.'

In 10, there are four conjoined sentences each 'modifying' or saying something about okúnrin 'man' an element of a higher sentence in tree structure.

Structures like 10 cannot be described by Bamgbose's grammar since he defined a 'complex sentence' as one which 'consists of an α preceded by one or more β 's' where α is defined as 'the free clause element' (i.e. one S not dominated by categories like ADV, NP etc.), while a β is defined as 'the dependent clause element'³ (i.e. one S structure that is

-
1. In 10 we indicate the α clause of Bamgbose 1966: 28 by a single underscore and we use a double underscore to mark the first part of the β clause. Actually, the rest of the sentence is a part of the β clause since the four relativized sentences that follow the underlined parts of 10 modify okúnrin 'man' (and could be treated as 'rankshifted clauses' in Bamgbose's framework).
 2. The item fi...fún is discontinuous. It is synonymous with fún 'to give' hence we literally gloss it as (give...give).
 3. Bamgbose 1966: 28

dominated by non sentential elements like ADV etc.). Since his dependent clause element must precede his free clause element, his grammar can only account for $\beta\alpha$, $\beta\beta\alpha$, $\beta\beta\alpha+\beta\alpha$... structures and not any $\alpha\beta$ structure. Hence, his grammar can produce:

11. "ǹ̀k̀̀on t́́ e e sọ .yẹn / òótọ́ ní
thing that you say truth is
'what you say is true'¹ but not:

12. òótọ́ ní / ǹ̀k̀̀on t́́ e e sọ .yẹn
truth is thing that you say
'what you say is true' or 'what you say is the truth'.

Note that the 'dependent clause element' (i.e. ǹ̀k̀̀on t́́ e e sọ .yẹn) in 11 and 12 contains a noun ǹ̀k̀̀on 'thing' a relative clause marker t́́ 'which' which becomes t́́ through vowel assimilation and a sentence, the underlying form of which will look like e sọ ǹ̀k̀̀on yẹn (you say thing that) 'you said that thing'. Hence, it is an example of a S dominated by NP in tree structure, and at some stage during its derivational history, it is likely to have a rule like:

13. NP ----> N RM S where RM is a relative marker.

1.32 SOME GENERAL SENTENCE TYPES

There are some sentence types worth mentioning in this introductory chapter. They are: 'the declarative', 'the interrogative' and 'the imperative'. These three types which are recognized in transformational grammar are correct for Yoruba. Since we do not use any of those terms (e.g. 'declarative') in any sense that is different from its conventional

1. Example 11 is from Bamgboṣe 1966: 28. His transcription is retained in both 11 and 12.

usage and interpretation, it will be superfluous to hunt for language specific definitions of such terms. They actually belong to the theory within which we work.

All the sentences we have provided so far are examples of **declarative** sentences. For the interrogative sentence, some question words are used with the surface sentence e.g. ńjé and sé initially in sentence structure with bí and ndan finally. The question word will be represented as Qw (question word) in the literal translation of examples here e.g.

14. ńjé ọ̀kùnrin yẹn lọ sí oko wa lánǎ?

15. sé ọ̀kùnrin yẹn lọ sí oko wa lánǎ?

both 14 and 15 are (Qw man that go to farm our yesterday)

'Did that man go to our farm yesterday?'

16. ọ̀kùnrin yẹn lọ sí oko wa lánǎ bí?

17. ọ̀kùnrin yẹn lọ sí oko wa lánǎ ndan?¹

both 16 and 17 are (man that go to farm our yesterday Qw)

'Did that man go to our farm yesterday?'

The interrogative can also be realized through a tag e.g.

18. ọ̀kùnrin yẹn lọ sí oko wa lánǎ, tàbí kò lọ?

(man that go to farm our yesterday, or not go)

'that man went to our farm yesterday, didn't he?'

A sentence having the declarative structure generally functions in utterance as a statement. But when declarative sentences occur on high registers, they usually function as questions. However, both statements and questions are found on high or low registers in Yoruba so that the

1. The item ndan is hardly used nowadays, and it now appears archaic. Instead of ndan, bí is preferred. Bamgboye described bí and ndan as A i.e. 'adjunct question item.' 1966: 54. We shall merely refer to them as question words (Qw).

surface structure realization of underlying sentences having the declarative structure could ambiguously represent statements and questions when taken out of contexts. Thus Bamgbose observed:

It is observed in the text, however, that both statements and questions occur on normal as well as high registers. It is difficult to say accurately whether an affirmative clause is a statement or a question if it is heard in isolation. Bamgbose 1966: 54.

It seems the ambiguity between statement and question is a surface structure phenomenon since surface structure questions and surface structure statements would normally have different underlying representations. If we adopt Ross's suggestion "that every deep structure contains one and only one performative sentence as its highest clause,"¹ we can use the differences between the underlying performatives for statements and questions to handle such surface ambiguities.

The imperative has structures like:

19. Dìde 'stand up'

20. Fún mi ní owó yẹn (give me Trf money that)²

'give me that money'

The imperative may be a prohibition especially when it occurs in the negative, e.g. in:

21. Má fún mi ní owó yẹn (don't give me Trf money that)

'do not give me that money'

1. Ross 1970: 261

2. For ní, the transformational formative (Trf), see Awobuluyi 1969. It will be referred to throughout this work as Trf. Awobuluyi argued that ní his /lí/ is transformationally derived. It usually occurs between two nouns in the verb phrase. See the discussions preceding and following examples 36 to 38 under the verb phrase in 1.34 below. cf. "...all one need do is to have the particle introduced by transformation instead of recognizing it in the base component." 1969: 71.

Very little use will however be made of the distinctions discussed above in this work. Hence, we may examine one specific structural type that will be used often especially in later chapters.

1.33

EMPHATIC SENTENCE STRUCTURES

Emphasis can be described as two processes: the nominalization of the element to be emphasized and/or the clefting of this element. We discuss emphasis here for two reasons. First, we are working on the noun phrase, and so, nominalization is a part of our work. Since emphasis implies the nominalization of the emphasized element (as suggested above), emphatic structures which involve the nominalization of emphasized elements will be relevant to this work. Secondly, use is made of the concept of emphasis in discussions later in this work. For instance, the distinction between Bamgbose's deictic and post-deictic categories,¹ rests on the fact that, with the exception of nì 'that', all his deictic elements have direct nominal counterparts which can function as 'head' in his 'nominal group structures',² but none of his post-deictics can be nominalized, and hence, none of the post-deictics can be emphasized. Although nì 'that' appears to be an exception, there is actually a formative èyíni 'that one' which can be considered as its nominal counterpart notwithstanding the fact that èyí 'this one' which is the first part of èyíni is the nominal counterpart of yí 'this'. For the deictic nì it is èyíni that will be used as its

1. Bamgbose 1966: 114

2. Bamgbose 1966: 98. This distinction between surface deictics and post-deictics where one but not the other can be nominalized and consequently emphasized is discussed below in Chapters V and VI. The nominalization possibility rather than sequence seems to be a more plausible determinant of the deictic post-deictic distinction.

nominalized and emphatic form. (See chapter VI below for a discussion of Bamgbose's deictic elements.)

In the preceding paragraph, emphasis was described as the nominalization of the element to be emphasized and/or the clefting of this nominalized element. However, if the element to be emphasized is already a nominal, then it is not nominalized since the purpose of nominalizing emphasized elements is to obtain a form of that element that can be the surface structure subject of the verb ni 'is' which follows the emphasized elements in emphatic structures.¹ So, one can say that for nominals, only clefting takes place whereas for some other elements like verbs, both nominalizing and clefting must take place.

Since nominals undergo only the clefting process when they are emphasized, we can start the exemplification of emphatic structures with them. Suppose we have:

22. Ojo purọ mọ Aina ní Ede ní ìjẹta

(Ojo lie against Aina at Ede at day-before-yesterday)

'Ojo perjured Aina at Ede on the day before yesterday'

we can emphasize the names or nominals Ojo, Aina, and Ede by the clefting process only e.g.

23. Ojo ni ó purọ mọ Aina ní Ede ní ìjẹta

(Ojo is he lie against Aina at Ede on day-before-yesterday)

'Ojo is the one who perjured Aina at Ede on the day before yesterday'

1. It appears that the clefting process indicates the structure index of elements emphasized since only the elements that can undergo clefting can be emphasized - e.g. nouns, attributive adjectives and some phonaesthetic predicative adjectives, preposition phrases, adverbs, nominalizations from both verbs and predicative adjectives. Clefting is not possible for conjunctions, prepositions, verb auxiliaries and Bamgbose's post-deictic qualifiers, so these elements cannot be emphasized.

or 'It was Ojo who perjured Aina at Ede on the day before yesterday'¹

24. Aina ni Ojo puró mó ni Ede ní ìjẹta

(Aina is Ojo lie against at Ede on day-before-yesterday)

'It was Aina whom Ojo perjured at Ede on the day before yesterday'

Two options are available for the emphasis of both ní Ede and ní ìjẹta 'on the day before yesterday'. Both ní Ede and ní ìjẹta are preposition phrases containing the preposition ní 'at/in/on' and a noun or noun phrase.² For the emphatic construction, either the clefting of Ede or of ní Ede (the preposition phrase) is possible:

25. Ede ni Ojo ti puró mó Aina ní ìjẹta³

(Ede is Ojo has lie against Aina on day-before-yesterday)

(a) 'Ede was the place where Ojo perjured Aina on the day before yesterday'

or (b) 'It was at Ede that Ojo perjured Aina on the day before yesterday'

26. ni Ede ni Ojo ti puro mo Aina ni ijeta

(at Ede is Ojo has lie against Aina on day-before-yesterday)

'It was at Ede that Ojo perjured Aina on the day before yesterday'

The difference between 25 and 26 can be explained as the difference

-
1. For the translation of examples, we shall prefer forms like 'It was Ojo who...' to 'Ojo is the one who...' since the process of clefting is shown very clearly in the former translation, and as we shall note later, clefting is in fact the main emphatic process in Yoruba.
 2. Bamgbose 1966 described items like ní 'at/in/on' as post-verbs, but Afolayan 1968 and Awobuluyi 1971 have pointed out that such items are prepositions. The avoidance of terms like 'preposition' because of a willingness to provide entirely structural analyses is characteristic of grammars like Bamgbose's.
 3. For some reasons that need not concern us here, the 'perfective aspect' formative ti 'have' is obligatory in the emphatic structures 25 and 26. Hence, if it is absent, the derived structure e.g. *ní Ede ni Ojo puró mó Aina ní ìjẹta will be ungrammatical.

between an emphatic structure involving nominalization plus clefting (=25), and one which involves clefting alone (=26). For the first operation (i.e. nominalization and clefting), the nominal is extracted from a preposition phrase (PP) before clefting takes place. This is responsible for the ambiguity of 25 where the (a) interpretation reflects the emphasis of a nominal (the place - Ede), whereas the (b) interpretation, which is the only interpretation of 26, reflects only preposition phrase emphasis. For certain items like preposition phrases, adverbs and nominals, nominalization before clefting is not required. However, clefting is obligatory for all emphasized elements whether they are nominalized or not, and this makes clefting the main rule of emphasis for Yoruba.

When we consider verbs, we find that nominalization before clefting is obligatory e.g. if we have:

27. Ojo pàdé Aina ní Ede ní ìjẹta

(Ojo meet Aina at Ede on day-before-yesterday)

'Ojo met Aina at Ede on the day before yesterday'

we can nominalize the verb pàdé to pípàdé 'meeting' and derive:

28. pípàdé ni Ojo pàdé Aina ní Ede ní ìjẹta

(meeting is Ojo meet Aina at Ede on day-before-yesterday)

'it is meeting that Ojo met Aina at Ede on the day before yesterday'

For some verbs which can be called 'complex lexemes' (i.e. verbs which are derived from other verbs and other syntactic elements), it is possible for parts of these verbs to be emphasized e.g. given the puró 'to lie' = pa + iró of 22 to 26, we can extract iró 'a lie' and derive:

29. iró ni Ojo pa mọ Aina ní Ede ní ìjẹta

(lie is Ojo make against Aina at Ede on day-before-yesterday)

'it is a lie that Ojo uttered against Aina at Ede on the day before yesterday.'

Actually, we have not discussed the whole of the emphatic structure in Yoruba. Besides, we have not represented the Yoruba emphatic process described in generative syntactic rules of the usual form where a structure index could lead to a structure change that conforms to the Boolean condition of analyzability on which the theory of transformational grammar is based. On that account, it can be suggested that we have not produced a generative transformational syntax of Yoruba emphatic structures. However, since our aim here is just to make our intention and meanings clear when we talk of emphasis later (e.g. when we say that the 'pronouns' of Bamgbose cannot be emphasized whereas his 'pronominals' can be¹ or that his 'deictics' have nominalized forms that can be emphasized whereas his post-deictics do not have such characteristics),² it will be unnecessary for us to go into any further details on emphasis.

1.34

SOME ASPECTS OF THE YORUBA VERB PHRASE

The discussion of the verb phrase here will be very elementary. We wish to make it elementary because there are still many unsolved problems in the Yoruba verb phrase.³ Moreover, our only interest in the verb phrase here is in the use we can make of the verb phrase in the description of the noun phrase. Hence, the discussion will be rather utilitarian,

1. Bamgbose 1966: 105-108

2. Bamgbose 1966: 114. Also see 6.2 below.

3. Only very few of the problems of the Yoruba verb phrase were actually discussed in the Ife University seminar on Yoruba language and literature (Afọlayan Ed. forthcoming) although three papers based on three different Ph.D. theses on aspects of the Yoruba verb phrase were presented at the seminar. The problems in the Yoruba verb phrase are so enormous that it was even decided at the end of the session on syntax that a special seminar on the Yoruba verb phrase will be necessary at a later time. The latter seminar took place in April 1971 and proceedings of the seminar have already been published.

and it will be determined by the relevance of the items discussed to the Yoruba noun phrase.

An elementary Aspects rule for a typical Yoruba verb phrase could look like:¹

30. VP ----> (NEG) AUX V (NP) (PP) (ADV)²

where the obligatory elements in the verb phrase are V (verb) and AUX (the auxiliary).

The AUX is regarded as obligatory in 30 because the surface absence of tense indication for several Yoruba verbs might have been caused by an AUX deletion transformation (cf. rule 3.2221(33) below). This decision is a difficult one to make since there is a class within the VP which has often been treated as 'qualitative verbs' (e.g. by Bangbose, Awobuluyi, Delano, Ida Ward, Abraham, Oke etc.) but which Afolayan described as 'predicative adjectives'.³ In surface structure representations, the indication of tense is not always possible for this class of 'predicative adjectives' or 'qualitative/stative verbs'. The class contains items like ga 'to be high', gùn 'to be tall', dára 'to be good', gbón 'to be wise' etc.

However, Postal once remarked:

-
1. Aspects is an abbreviation for Aspects of the Theory of Syntax - Chomsky 1965.
 2. PP is the preposition phrase, but many ADV's (i.e. adverbs) also consist of preposition + NP structures. Hence, the distinction between the PP and the ADV is actually difficult to make. Since we limit our discussions to Aspects type of base or underlying rules here, we shall not consider any post Aspects suggestion that Auxiliaries could be main verbs.
 3. See Afolayan 1968: 253-310 for the suggestion that the 'problematic formatives' as he calls them are actually 'predicative adjectives' and not 'qualitative' or 'stative verbs'.

...the fact that an element is present in the surface form does not mean it was present in the deep structure and, conversely, absence from the surface form does not necessarily entail absence from the deeper aspect of grammatical structure. Postal 1970a: 58.

So, the absence of some tense formatives for 'predicative adjectives' in surface structures does not necessarily entail absence from underlying representations. It will be an error to think that the adverbials with double underscore are the only indicators of tense in sentences like:

31. Ojo ti gbón rí, sùgbón kò gbón mó

(Ojo have wise before, but not wise again)

'Ojo has been wise in the past, but he is no longer wise'

Actually, the aspect marker ti 'have' also participates in tense indication. Note that certain auxiliaries like the future tense marker yíó 'shall/will' can be used with 'predicative adjectives' in some contexts e.g.

32(a) Ojo yíó ga tó baba rẹ ní odún yí

(Ojo shall tall equal father his in year this)

'Ojo will be as tall as his father this year'

(b) Ojo máa tó gbón

(Ojo going-to right-time-to-be wise)

'Ojo will soon be wise'

(Note that the tó of 32(b) interpreted as 'be adequate' in Abraham 1958 is different from the tó 'be equal' used in comparative constructions e.g. in 32(a) above and 47 and 48 below.)

We now give some examples of VP structures which use parts of 30 although rule 30 is not the only possible expansion of VP. The VP will be underlined in the examples. Where AUX has no surface structure realization, we will not indicate it in our illustration of the surface structure

manifestations of the VP beside the Yoruba examples:

Although rule 30 is not the only possible expansion of VP, we give some examples of VP structures which use parts of 30 e.g.

33(a) Ojo kò lọ sí ilé VP = NEG V PP (with the VP underlined)

(Ojo not go to house)

'Ojo did not go home'

(b) Ojo kò tí lọ sí ilé VP = NEG AUX V PP

(Ojo not have go to house)

'Ojo has not yet gone home'

(c) Ojo kì yío lọ sí ilé lóla VP = NEG AUX V PP ADV

(Ojo not shall go to house tomorrow)

'Ojo shall not go home tomorrow'

The verb is sometimes discontinuous in surface structure representations e.g. fi...fún in example 10 above. At other times, it seems reasonable to suggest that there are actually two different verbs on either side of the VP dominated NP e.g. in 34 and 35 below where we cannot say that the VP expansion is that of 30.

34. Ojo kò mú Aina lọ sí ilé láná VP = NEG V NP V PP ADV

(Ojo not take Aina go to house yesterday)

'Ojo did not take Aina home yesterday'

35. Ojo kò mú Aina wá sí ilé láná VP = NEG V NP V PP ADV

(Ojo not take Aina come to house yesterday)

'Ojo did not bring Aina home yesterday'

The difference in meaning between 34 and 35 suggests that there may be two different verbs rather than a discontinuous verb in those structures. It is possible to argue that all discontinuous verbs are series of two verb structures in the verb phrase, but we shall not engage in any argument concerning the verb phrase in this work.

In 30, we had only one NP in the verb phrase. It is actually possible to have more than one NP there, and these NP's need not be conjoined. If they were conjoined, they would be derived from the single NP in 30, but if no conjoining were possible, then two VP dominated NP's would be possible. In such cases, there is a transformationally inserted formative ní between the two NP's¹ e.g.

36. Ojo fún Aina ní owó VP = V NP Trf NP

(Ojo give Aina Trf money)

'Ojo gave Aina some money'

37. Ojo gbá Aina ní etí VP as in 36

(Ojo slap Aina Trf ear)

'Ojo slapped Aina (or Aina's ear)'

38. Ojo tẹ Aina ní esè VP as in 36

(Ojo step Aina Trf leg)

'Ojo stepped on Aina's legs'

From 36 to 38, it is noticeable that it is not necessary for there to be a connection between the two NP's in the VP. They may be direct and indirect objects, or they may even have genitival relationships² (e.g. in the 'inalienable possessive' relationship existing between the two NP's in each of the VP's of 37 and 38). All further comments about the transformationally inserted formative are beyond the scope of this work, and hence we may end its discussion here.

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1. See example 20 above for Trf - the transformationally inserted formative. Examples 36 to 38 may have a complex derivation.
 2. See Zwicky, Arnold M. "Naturalness Arguments in Syntax" in CLSP 1968: 94-102 for some references to the various classes of the genitive like 'the inalienable possessive, the alienable possessive, the objective possessive, the subjective possessive and the partitive genitive.' cf. p.99

We shall illustrate only one more feature of the Yoruba VP. This will be the comparison of adjectives and verbs. A brief discussion of verbal and adjectival comparisons will be useful to us in this work since 'comparisons' can be used to discuss the relationship between verbs and adjectives (or 'predicative adjectives') at certain stages in derivation. For instance, Yoruba attributive adjectives are never compared. But their predicative counterparts are compared like verbs. Hence, Delano 1965 who did not recognize a class of predicative adjectives nevertheless had a chapter entitled "Comparison of Adjectives" in which what were compared were his verbs.¹ Since Delano recognized those items (i.e. Afolayan's 'problematic formatives') as verbs, the title of his chapter should have been: "The Comparison of Verbs", and there, he could have treated both verbal and adjectival comparisons together.

Other Yoruba grammarians like Ward also recognize the predicative adjective class as a class of verbs, e.g. "In Yoruba, the quality of a thing is frequently expressed by a verb".² We shall not enter into the controversy on whether what we have are verbs or adjectives since the ultimate decision is relative to several other factors. For instance, in a syntactic analysis reminiscent of Bach's in Bach and Harms 1968, where NP, A, and V are represented as 'contentives' in underlying representations, the distinctions between 'adjectives' and 'verbs' are irrelevant whereas in an Aspects type base structure (e.g. that of Chomsky 1965), the distinctions between N (noun), A (adjective), and V (verb) will be significant, and so the status of the 'problematic formative' will be relevant.

1. Delano 1965: 123-4

2. Ward 1952: 70

Two items ju and lo are used for comparisons. For the comparative degree (in its conventional and traditional sense), ju and lo are discontinuous, but for the superlative degree they occur together as one lexical item e.g.

39. Ojo tóbi ju Aina lo
(Ojo big exceed Aina beyond)¹
'Ojo is bigger than Aina'
40. Aina gbón ju Ojo lo
(Aina wise exceed Ojo beyond)
'Aina is wiser than Ojo'
41. Aina lè puró ju Bose lo
(Aine can lie exceed Bose beyond)
'Aine can lie more than Bose'
42. Aina lè sísé ju Ojo lo
(Aina can work exceed Ojo beyond)
'Aina can work more than Ojo'
43. Ojo ni ó tóbi jùlo
(Ojo is he big exceed-beyond)
'Ojo is the biggest'

1. The items ju and lo have verbal homophones. For instance, ju also means 'older than' e.g. in Aina ju Ojo lo (Aina exceed Ojo pass) = 'Aina is older than Ojo'. It seems the basic meaning of ju will be 'exceed' or 'surpass' Ward 1952: 3, and the context will determine the specific meaning in different environments. Also, there is one lo which means 'to go' or 'to go away'. In the CMS Dictionary (CMS 1913: 154), one lo was glossed as an adverb meaning 'more than' while the other lo was a verb meaning 'go'. The gloss of lo as an adverb meaning 'more than' is not satisfactory since lo alone cannot be used in comparisons. This contrasts with ju alone in Aina ju Ojo (Aina exceed Ojo) 'Aina is older than Ojo'. On the other hand, Abraham 1958 had nine meanings for lo most of which are related to 'go', but the one closest to the idea expressed by the comparative there is 'pass'. For this work however, we shall gloss it as beyond since that gloss will be more satisfactory than 'pass' for the meaning of the superlative degree. In spite of our gloss of lo as 'beyond', we recognize that it is verbal and may be described as a 'verbid' following Ansre 1966.

44. Aina ni ó gbón jùlọ

(Aina is she wise exceed-beyond)

'Aina is the wisest'

45. Niji ni ó lè se ìmélé jùlọ nínú gbogbo wọ̀n

(Niji is he can do laziness exceed-beyond among all them)

'Niji is the laziest of them all'

The examples in 39 to 45 cover both verbs and 'predicative adjectives' and also both the comparative and superlative degrees. Although no modal auxiliaries (e.g. lè 'can') appear with the predicative adjective examples, it is possible to have examples in which auxiliaries occur with the predicative adjective examples. Such structures will be rare e.g.

46. Ojo méea tóbi ju Aina lọ lálpe yí

(Ojo going-to big exceed Aina beyond soon this)

'Ojo will soon be bigger than Aina'

Two other forms of comparison exist but only the type we have already discussed above will be relevant in this work. We may just provide examples of the other forms. These two forms were described as the "comparative of equality" and the "comparative of inferiority" by Gaye and Beecroft.¹ An example of the first type is:

47. Aina tóbi tó Ojo

(Aina big equal Ojo)

'Aina is as big as Ojo'

and an example of the second type will be a negation of the first e.g.

1. Gaye and Beecroft 1923: 16. The first edition of Gaye and Beecroft was published in 1914. The one referred to here is the 1923 edition.

48. Aina kò tóbi tó Ojo

(Aina not big equal Ojo)

'Aina is not as big as Ojo'

Note that the negation of the earlier examples in 39 to 45 will not constitute a 'comparison of inferiority' in this sense e.g.

49. Aina kò gbón ju Ojo lọ

(Aina not wise exceed Ojo beyond)

'Aina is not wiser than Ojo'

In 49, it is possible for Aina to be as wise as Ojo, but the possibility of equality is ruled out for 48. Since comparisons of 'equality' and 'inferiority' have only marginal significance for us here, we can leave comparisons as well as the verb phrase alone at this stage and make a few comments on the connection between Yoruba phonology and syntax since it will be difficult to interrupt this work at different stages just to discuss phonological points as they come up.

~~It is possible for Aina to be as wise as Ojo, but the possibility of equality is ruled out for 48.~~

~~In Yoruba, it can be said that the phonology is often governed by~~

~~the syntax, but it will not be right to say that the syntax completely~~

~~1.4~~

THE YORUBA NOUN PHRASE

1.4

AN ELEMENTARY SURFACE STRUCTURE ANALYSIS

1.41

Although this work is primarily concerned with underlying representations, it will be helpful to look at some surface structure of ^{NPs} Yoruba at this stage.

A very simple Yoruba NP may contain only a single lexical item, e.g.

1. okùnrin = 'man'

A NP like (1) can be found in generic structures, e.g.

2. okùnrin kò lè burú ju obínrin lẹ

(man not can bad exceed woman beyond) 'men cannot be worse than women'.

It is actually difficult for unqualified NP's to occur in Yoruba sentences so that single element NP's are rare. They are found mostly in generic environments like (2) and in cleft sentences like those discussed under emphasis in 1.33 above.¹

Before we provide the next set of examples, it will be useful to set out the qualification pattern within the surface structure NP of Yoruba. For our starting point, we can make use of the one Bangbose set up.

Bangbose 1966, using Halliday's theoretical framework,² had an hq (head - qualifier) structure for the NP. And he defined the 'head' as "that element which can operate in a nominal group of only one element".³ So, okùnrin in (1) above is the head of a Yoruba NP. Then his q consists

1. cf. Ward 1952: 46 - "...it is not very usual to have a noun alone as subject of a verb, the sentences in which such a usage is natural are few: these are mainly general statements."
2. Halliday 1961 - "Categories of the Theory of Grammar" in Word 17.
3. Bangbose 1966: 98. His 'nominal group' is similar to our NP.

of "sequence-determined secondary elements of structure."¹ The secondary elements of structure are:

3. n - (nominal qualifier), i - (adjective qualifier), l - (numeral qualifier), k - (rankshifted qualifier), d - (deictic qualifier) and t - (post-deictic qualifier).

A modification of Bamgbose's hq structure to mhq (where m = 'modifier') was suggested in Afọlayan 1968. Afọlayan used a later version of Halliday's theory of grammar² to suggest that Yoruba 'nominal groups' can be pre-modified. In Halliday's grammar, whatever precedes the 'head' is a 'modifier' and whatever comes after the 'head' is the 'qualifier' in group structure. The main point in Afọlayan's suggestion is to deny Bamgbose's thesis that whatever occurs initially in any surface NP is the head of that NP. It appears Afọlayan's analysis is nearer the point than Bamgbose's since Bamgbose's decision to make whatever comes first the head forced him to suggest head status for many items that fail his only criterion for 'headship' - viz. ability to operate in a Yoruba "nominal group of only one element."³

For instance, the preposition nípa 'about/in respect of' was made the head of the NP in:

-
1. Bamgbose 1966: 99
 2. Halliday 1967. The mhq analysis is also applied to the 'predicator' of Halliday's system. The predicator is not equivalent to the VP of transformational grammar since the VP of TG includes noun phrases and sometimes preposition phrases and adverbs whereas in Halliday's grammar NP's dominated by VP's are outside the predicator and regarded as complements. Then preposition phrases and adverbs are called adjuncts.
 3. Bamgbose 1966: 98

4. "nípa / oló.run baba / oló.run omo / àtoló.run èmí mímó
 (H) (n)

in respect of God father God Son and God spirit holy

'About God the Father, God the Son and God the Holy Ghost'¹

whereas neither nípa 'in respect of' nor the whole of (4) can constitute a Yoruba 'nominal group' of only one element. There is no Yoruba NP - nípa 'about' or 'in respect of'. Moreover, it is difficult to construct a Yoruba sentence in which the whole of (4) would constitute a NP or 'nominal group' since (4) cannot be the subject of a real Yoruba sentence,² and the only definition of 'nominal group' is "the class of the group that operates at S in clause structure" (where S stands for 'subject' and the other members of the clause are P - 'predicator' and A 'adjunct').³

Combining Afolayan's mhg proposal, on our top line of 5 below, and 3 or Bamgbose's expansion of g on the bottom line of 5 below, we shall have the following configuration:

5.	m	h	q					
		n	j	l	k	d	t	

For the m position in the examples below, we shall use the plurality formative àwon and the universal quantifier gbogbo 'all' (although the

1. Bamgbose 1966: 124
2. It is necessary to qualify 'sentence' with 'real' since most of the items that are not NP's, and consequently cannot be subject of Yoruba sentences, but which can be emphasized e.g. adverbs and preposition phrases (like the ní Ede 'at Ede' of 1.33 example 26 above) can be the surface subjects of the emphatic particle ni. Similarly, 4 could be the surface subject of the emphatic particle, but of no other Yoruba verb. Thus, only NP's can be underlying subjects. On the other hand items that are not NP's can be surface subjects, but they can only be subjects of the emphatic particle ni 'is' and its negation ko (not) or ko ni (not is) 'is not'.
3. Bamgbose 1966: 31 and 98

relationship of plurality to the 'head' is not actually one of 'modification' or 'qualification' if used in the systemic sense).¹

The newly introduced qualifying element will be underlined in each of the following examples. So, in 6, it is the n or 'nominal qualifier' that is underlined, in 7, it is the 'adjective qualifier' that is underlined while in 8 the 'modifier' awon is underlined etc.

6. okùnrin olólá
(man honourable-person) 'honourable man'
7. okùnrin olólá dáradára
(man honourable-person good) 'good honourable man'
8. àwon okùnrin olólá dáradára
(plur man honourable-person good) 'good honourable men'
9. àwon okùnrin olólá dáradára méwá (mewa = 'ten')
'ten good honourable men'
10. àwon okùnrin olólá dáradára méwá tí a rí láná
'ten good honourable men whom we saw yesterday'
11. àwon okùnrin olólá dáradára méwá tí a rí láná wònyen
'those ten good honourable men whom we saw yesterday'
12. àwon okùnrin olólá dáradára méwá tí a rí láná wònyen ná
'even those ten good honourable men whom we saw yesterday'

In case there are doubts about the modification status of àwon, we can add gbogbo 'all' to 12 and obtain:

13. gbogbo àwon okùnrin olólá dáradára méwá tí a rí láná wònyen ná²

-
1. The term 'universal quantifier' is taken from the vocabulary of the predicate calculus. The universal quantifier contrasts with the existential quantifier - (\exists) = 'there exists one'. The syntactic status of the plurality formative àwon is discussed below in chpt.VI.
 2. In example 13, both gbogbo and àwon are underlined since we regard them as functioning within the same class of items.

The whole of 13 can occur in a Yoruba sentence like:

14. Njé o mò pé gbogbo àwón okùnrin olólá dárádára mēwá tí a rí láná
wònyen ná ní kò lè sọ Gẹ̀sì?

(Qw you know that all plur man honourable-person good ten which we see
yesterday those even is not can speak English)

'Do you know that even those ten good honourable men whom we saw yesterday
could not speak English?'

Example 13 is one of the most complex ones that can be expected in Yoruba surface NP's since it contains lexical items for each of the 'primary' and 'secondary' places of 'structure' when Afọlayan's mhg model is combined with Bangbose's expansion of g. Structures like 13 are however very difficult to obtain. The difficulties in obtaining Yoruba NP's with lexical items in each of the eight surface structural places (containing m, h, n, j, l, k, d, t) are really noticeable in grammatical analyses like Bangbose's which are based on recorded dialogues. For instance, out of Bangbose's forty examples of nominal group structures,¹ there is none in which more than four structural places are filled. He had one example for one structural place, (that of 'head'), fifteen for two structural places, fifteen also for three structural places and nine for four structural places. Moreover, it appears that the adjectives and numerals are mutually exclusive in those examples so that the adjective - numeral dichotomy could be called into question if one scrutinizes his analysis further.

1. Bangbose 1966: 124-5. It was not stated that those examples were themselves taken directly from the recorded text on which Bangbose's grammar is based. But there was also no indication that some of the examples used in the whole grammar were not constructed (or generated by rules of some sort).

There is, however, one justification for Bamgbose's analysis, and that justification is found in examples 9 to 14 here, where more than four surface structure positions in the Yoruba NP are represented with formatives. The greatest justification for his q analysis is found in examples 12 to 14 where the six structural places for his q (i.e. n, j, l, k, d, t) are represented with formatives.

Note that it is possible for one structural place to be filled by more than one element of the same subclass e.g. example 10 in section 1.31 above where four embedded sentences (or 'rankshifted qualifiers' in systemic terms) qualify okunrin 'man'.

1.42

THE SURFACE NP PYRAMID

If the examples in ^{1.41}~~2.42~~ were to be arranged in a series of consecutive lines without intervening remarks or translations, a pyramidal configuration with example 1, i.e. okunrin as apex is likely to be the result. The pyramidal pattern of NP modification is going to be exploited here to show certain characteristics of the surface Yoruba noun phrase.

Judging from examples 1, 6, and 7 to 13 in ^{1.41}~~2.42~~ above, one is likely to conclude that only the noun could be the 'head' in surface noun phrases. However, so called 'nouns' may be absent in Yoruba surface noun phrases. In ^{1.41}~~2.42~~, we went through a pyramid starting from the apex to the base. We wish to do the reverse process here in order to show the inadequacy of an indirect surface structural approach to the underlying representation of the Yoruba noun phrase. We shall start from example 12 which will be recognized as 15 for convenience. Then, each succeeding structure will be formed by deleting an element that represents a structural position in the preceding example. So, in order to derive 16, the item representing h in 15 will be deleted. To form 17, the next item which represents n

in 15 will be deleted from 16. To form 18, what represents j in 15 will be deleted from 17 and so on. 12 will now be:

15. àwọn okùnrin olólá dárádára méwá tí a rí láná wònyen nâ
'even those ten good honourable men whom we saw yesterday'
16. àwọn olólá dárádára méwá tí a rí láná wònyen nâ
'even those ten good honourable people whom we saw yesterday',¹
17. àwọn dárádára méwá tí a rí láná wònyen nâ
'even those good people whom we saw yesterday'
18. àwọn méwá tí a rí láná wònyen nâ
'even those ten people whom we saw yesterday'
19. àwọn tí a rí láná wònyen nâ
'even those (people) whom we saw yesterday'
20. àwọn wònyen nâ
'even those people'
21. àwọn nâ
'even they'.

The first inference one can make from 15 to 21 is that the surface structure representations of certain examples do not give full information about what they actually represent. For instance, when the two nouns that refer to human beings okùnrin 'man' and olólá 'honourable person' have already been deleted, succeeding structures still refer to human beings.

1. Although okùnrin 'man' is deleted, 16 actually has the reading with 'people' substituted for 'men'. The only difference between 15 and 16 is that the referents of 16 could be male or female whereas those of 15 must be 'men'. From 17 downwards, there is still reference to 'people' although all lexical items that refer to human beings, i.e. okùnrin and olólá have been deleted. The reading with 'people' obligatorily applies if no other noun is used. Hence, 18 could not mean 'ten animals' or 'ten pencils' unless nouns referring to those items are used. Thus, 'people' is implied if there is no surface noun.

They cannot refer to 'animals' or other things unless those other things are specified. Consequently, it is right to believe that there should have been a level of representation where the reference to human beings would have been stated overtly and explicitly. This level of representation cannot be the surface structure as one can note from the surface structure examples from 17 downwards. Hence, a surface structure grammar of the Yoruba noun phrase cannot adequately account for a very common phenomenon in the language, and so it cannot satisfy any of Chomsky's conditions of adequacy.¹ From this observation, the need for a study of underlying representations in the Yoruba noun phrase becomes significant if we want to have Yoruba grammars that can reach the level of 'descriptive adequacy' at least.

Secondly, the determination of what the 'head' is becomes more and more difficult as we reduce 15 further so that from 17 downwards, one is compelled to say that àwon (the plurality formative) is the 'head' since there are no nouns left for it to pluralize in the structures that follow. But from the discussions in the preceding paragraph, we find that the real 'head' in 17 to 21 is not the plurality formative àwon, but 'persons'. Since àwon is also the third person plural pronoun,² it is possible to

1. Chomsky 1965: 24-7.

2. Several àwon formatives were recognized in Afolayan's table of pronouns. In Afolayan 1968, the honorific use of àwon 'they' for the third person singular pronoun was also recognized.

In underlying representations, it is possible that there is only one àwon formative with a noun in apposition with it. Note that most of these variously recognized àwon's share many features. It seems all Yoruba àwon's have the features [-I, -II] i.e. 'third person' since all àwon formatives exclude both first and second persons. Note that the plural marker too can only be used of third persons. Hence, àwon omodé (plur child) 'children' excludes both speaker and hearer. If the hearer were included, we would have èyin omodé (you child) 'you children'. Then when the speaker is included, the normal realization is àwa omodé (we child) 'we children'. So there may be only one àwon formative after all. The main discussion of àwon and other pronouns takes place in Chapter VI below.

suggest that it is the 'head' in 21, but in the other structures (i.e. 17 to 20), where àwọn qualifies the unrealized 'person' formative, thereby indicating that this 'person' is in the plural, we cannot call it the 'head' of the NP. Hence, 17 to 20 can be considered as examples of noun phrases which have no 'heads' since their common head - 'persons/people' has no surface structure realization.

On the other hand, we may decide to have only one formative àwọn with optimally, a noun in apposition with it. The appositive noun can then be deleted before the level of surface structure. But this is possible only when there is another level of representation apart from surface structure.

Consequently, a surface structure grammar of Yoruba will force one to assign wrong structural information to items in structure since one is compelled to call one item the 'head' justifiably or unjustifiably as a preposition nípa 'about/in respect of' was assigned headship status in the noun phrase or 'nominal group' in Bangbose 1966: 124. Let us now consider another aspect of the surface structure NP.

1.43 THE CONCEPT OF LINEARITY IN THE SURFACE STRUCTURE NP

We have conducted the argument in the two preceding subsections under the assumption that the linear structure for the surface NP found in diagram 5 of ^{1.41}~~24~~ is correct. However, we shall just examine one structure now, but we shall not discuss it since it is fully discussed in Chapter IV. In 5 of ^{1.41}~~24~~, we had m, h, q on the top line; and in the expansion of q, we had n, j, l, k, d, t. If these two facts are brought together, we can have something like the single line representation:

24. m, h, n, j, l, k, d, t.

Now from 24 it is clear that l obligatorily comes between j and k.

However, let us consider the analysis of one NP using the model:

25. egbèrin ajá dúú ó lé kan

(800 dog black it increases-by one) '801 black dogs' (where the underlined part of 25 constitutes a sentence).

Using Bamgbose's analysis, we shall have egbèrin as h, ajá as n, dúú as j and ó lé kan as k (the rankshifted qualifier). So for 25, Bamgbose's grammar will give us the structural description hq where q is realized as njk i.e. 25 is hnjk. But we know that what we actually have there is a numeral, an adjective, and a noun. In the structural description now, there is no mention of the 'numeral' at all. Note that the type of inadequacy being pointed out now actually occurs in Bamgbose's structural description 1966: 114.

If we use Afolayan's analysis, what we shall have instead is mhq where egberin (800) will be the m, ajá will be the head, dúú will be the adjective, and ó lé kan will be the rankshifted qualifier. This will now give us - mhjk. Note that this mhjk is preferable to the earlier hnjk since it, at least, gives us the information that the head of the NP is ajá 'dog' and not egbèrin '800'. However, like Bamgbose's analysis, it fails to tell us that there is any numeral at all in the NP. So, none of the systemic models available has actually dealt with the problem of describing the numeral in the NP adequately. Hence, we can assume that until Chapter IV in this work, no serious efforts have been made to provide an adequate and generative structural description which indicates the right place that the numeral occupies in the Yoruba NP. Moreover, from our discussions in the preceding paragraph, we can come to the conclusion that the linear NP structure of the systemic grammarians is difficult to justify if established as the only structural model for the Yoruba Noun Phrase.

There are more structural types that can be examined, but in this

section, we shall not go into any further details since our main interest here now is just to show that we are not using a new theory to rework other people's grammars, and that not very much has actually been done so far in the Yoruba Noun Phrase.

1.5 SOME REMARKS ON THE CONNECTION BETWEEN PHONOLOGY AND SYNTAX

In Yoruba, it can be said that the phonology is often dependent on the syntax, but it will not be right to suggest that the syntax completely

determines the phonology.¹ One of the distinguishing characteristics of Yoruba sentences is the presence of a (phonological) high tone between the subject NP and the following VP. In other words the knowledge that there exist NP's and VP's is relevant to tone assignment in some cases. In many published works e.g. Delano 1965, this phenomenon is described and used to prove that Yoruba 'predicative adjectives' are 'verbs'. Here we may say that the high tone junction between NP's and VP's only indicate that what follows the junction could be a VP and not necessarily a verb. There are actually certain exceptions that are difficult to explain. For instance, this phonological high tone does not occur if the first element in the VP is the NEG formative kò 'not' or if it is the future tense formative yíó 'will/shall' although it occurs before the perfective aspect formative tí 'have'. The environment of the exception is difficult to state since both yíó and tí could be called auxiliaries,

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1. Chomsky 1964 argued vehemently against autonomous phonology. His points could be summarized as: 'the knowledge of syntactic structure representations helps in phonological descriptions so that phonology is not completely independent of syntax,' In 1965, he set up an autonomous level of syntactic deep structure which determines semantic representations with a surface structure which determines phonological representations. In 1965, therefore, syntax became so central that it determines semantic and phonological representations. We shall refrain from holding to this strong deterministic position when discussing the relationship of syntax to any of the other components of grammar here.

Syntactic determinism has come under attack recently and an extermination of syntactic determinism is anticipated in Fillmore's conclusion in 'The Case for Case': "If it is possible to discover a semantically justified universal syntactic theory along the lines I have been suggesting... then it is likely that the syntactic deep structure of the type that has been made familiar from the work of Chomsky and his students is going to go the way of the phoneme." Fillmore 1968: 88.

Syntactic determinism will be mentioned below. It states that "the syntactic component specifies and infinite set of abstract formal objects each of which incorporates all information relevant to a single interpretation of a particular sentence." 1965: 16.

and while the exception holds for one, it does not hold for the other.

The main purpose of the exercise is to show that to a very large extent, the distinctions that are normally made in syntax are also reflected in Yoruba phonology. We shall use the example of the distinction which Bangbose made between his 'pronominals' and his 'pronouns' for this discussion.¹ Bangbose called the 'pronominals' - 'a closed system subclass of nouns which are pronoun substitutes'.² One fact that suggests that 'pronominals' and nouns are similar is that monosyllabic verbs ending in low tones change their tones to mid whenever they precede 'pronominals' and nouns, but retain their low tones if they precede 'pronouns'.

In the examples below, we use object pronouns in 50, object pronominals in 51 and object nouns in 52. We shall mark the mid tone on the verb since that is what we wish to call attention to. The item ná at the end of every sentence means also. It is not to be confused with the homophonous determiner ná 'the'.

- 50(a) ó lù mí ná (he beat me also) 'he beats me also'
(b) ó lù ó ná (he beat you also) 'he beats you also'
(c) ó lù ú ná (he beat him/her/it also) 'he beats him/her/it also'
(d) ó lù wá ná 'he beats us also'
- 51(a) ó lu èmi ná (he beat I-myself also) 'he beats me also'
(b) ó lu íwo ná 'he beats you also'
(c) ó lu òun ná 'he beats him also' (i.e. him/her/it)
(d) ó lu àwa ná 'he beats us also'

1. See Bangbose 1966: 105-108. The pronoun/pronominal dichotomy is taken up later in 6.2 below.

2. Bangbose 1966: 107

- 52(a) ó lu Titi ná 'he beats Titi also'
(b) ó lu Jòkè ná 'he beats Jòkè also'
(c) ó lu Ojo ná 'he beats Ojo also'
(d) ó lu ọ̀kúnrin yèn ná 'he beats that man also'

52(a) to (d) could be either surprise or additional information.

We may note that the low tone on the verb lù is retained when it precedes pronouns in 50, but this low tone is changed to mid elsewhere i.e. before nouns and 'pronominals'. In 52, the first three examples show that the tone on the following noun can be high, mid or low. The example in 52(d) is intended to show that the following noun need not be a personal name. A determiner yèn is inserted between ọ̀kúnrin and ná in 52(d) lest ná be interpreted as the determiner 'the'. This is done to complete the symmetry started from 50(a) when all ná's are interpreted as 'also'.

A second observation about the phonological evidence for grouping pronominals with nouns is found in the behaviour of 'conjunctive pronouns' (i.e. Bamgbose's 'pronouns') that occur before VP's. Earlier, we stated that there is a high tone junction between subject NP's and the following VP's, but there is an exception in the case of pronouns. Any pronoun that precedes a VP retains its tone:

- 53(a) mo rí ọ (I see you) 'I see you'
(b) o rí mi 'you see me'
(c) ó rí wa 'he sees us'

It is likely that the retention of the tone is necessary in the case of pronouns as a disambiguating phenomenon between the second and third person singular pronouns. Note that the third person singular pronoun has a high tone in 53(d), whereas the second person singular pronoun has a mid tone. If the NP tone junction rule applies to pronouns, then there



will be some ambiguity between the second and third person singular pronouns when they function as subjects in syntactic structures.

The third piece of phonological evidence we intend to give here is that all nouns in Yoruba are polysyllabic. This fact is used in the discussion of non self dominance in Chapter III below. All abbreviated forms of nouns are also polysyllabic. So, even when personal names are abbreviated, the abbreviated forms must be polysyllabic. Thus, there is no abbreviated form of any Yoruba personal name that is monosyllabic. Here, we find that Bamgbose's pronominals too behave like nouns since all of them are polysyllabic. But all pronouns like some articles are monosyllabic.

There is in fact syntactic evidence for grouping pronominals with nouns, but in this section, our main interest is in the significance of syntax for phonology, and it seems that with the pronoun-pronominal examples, the points that are necessary have been made.

2.0

CHAPTER II

SYNTACTIC METHODOLOGY

2.1 TRANSFORMATIONAL GENERATIVE GRAMMAR - THE PRESENT POSITION

The syntactic framework that will be used in this work is that of 'transformational generative grammar' which was originally proposed by Chomsky in Syntactic Structures (1957), and which has been subject to certain far reaching modifications ever since. A fundamental assumption of transformational grammar in its present form (hereafter TG) is that a grammar of language is a system of rules that expresses the correspondence between sound and meaning in this language in a language independent way.¹ This grammar is also assumed to specify an infinite class of

1. Chomsky 1971: 183 and Lakoff 1971: 232

surface structures,¹ each of which is mapped onto a phonetic representation by a system of phonological rules (in a phonological component of grammar). Furthermore, this grammar contains a system of grammatical transformations mapping phrase markers onto phrase markers such that each transformation defines a set of well-formed pairs of successive phrase markers P_{i-1} and P_i . And the system of grammatical transformations defines an infinite class K of finite sequences of phrase markers, each such sequence P_1, \dots, P_n meeting the following conditions:

"1. (i) P_n is a surface structure

(ii) Each P_i is formed by applying a certain transformation to P_{i-1} in a way permitted by the conditions on grammatical rules^{a, 2}

(iii) there is no P_0 such that P_0, P_1, \dots, P_n meets conditions (i) and (ii)."

The acceptability of conditions (i) to (iii) by transformationalists is not in dispute since both Chomsky 1971 (setting up the views of the interpretive semanticists)³, and Lakoff 1971 (explaining the generative semanticists' position) accept and assume the validity of conditions (i) to (iii). Hence, (i) to (iii) will be our fundamental assumptions here.

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1. See definition of terms like 'surface structure' in 1.52.
 2. Chomsky 1971: 183-4. Chomsky's footnote a on (ii) is left out since it is just an elaboration on the conditions on grammatical rules e.g. some specific ones, and the general ones like the principle of the transformational cycle in the sense of Chomsky 1965.
 3. The interpretive semanticists are the linguists who believe that semantics merely interprets what has already been fully specified at another level of representation known as the 'deep structure'. Their system of grammar is known as the 'standard theory' and the standard theory is in opposition to the generative semanticists' 'basic theory' on some matters like the relationship between syntax and semantics, the existence of a level of representation called the 'deep structure' and on some other matters of details which need not concern us here.

Another fundamental assumption of present day transformational grammar is that the grammar contains a lexicon which is "a class of lexical entries each of which specifies the grammatical (i.e. phonological, semantic, and syntactic) properties of some lexical item."¹ A lexical entry may be considered as "incorporating a set of 'transformations' that insert the item in question (i.e. the complex of features that constitutes it) in phrase markers"² along the lines suggested by Chomsky in Aspects. Thus:

- 2, a lexical transformation associated with the lexical item I (e.g. man) maps a phrase marker P containing a substructure Q (represented in Aspects by Δ) into a phrase marker P' formed from P by replacing Q by I (i.e. man).

A lexical transformation can therefore be considered as a 'well-formedness constraint'³ on classes of successive phrase markers P_i and P_{i+1} for any i where the only difference between P_i and P_{i+1} is that P_i contains a substructure Q, which is a set of features, whereas P_{i+1} contains the lexical items associated with Q.

Various versions of present day transformational grammar accept the possibility of lexical transformations defined by 2 although they differ in the conditions on Q, e.g. where in the grammar lexical transformations apply, whether they apply in a block and all lexical items are inserted into phrase markers before any non-lexical transformations (i.e. 'true

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1. Chomsky 1971: 184. Note that 'grammar' is used here as it is defined in Chomsky 1965, and so it includes semantics, syntax and phonology. Chomsky 1965 is often referred to as Aspects in this work.
 2. Chomsky 1971: 184.
 3. The term 'well formedness constraint' is used in the sense of Lakoff 1971.

syntactic transformations') apply as in Chomsky's condition 3,¹ or whether non-lexical transformations occur both before and after lexical insertion so that the existence of an autonomous (and deterministic) level of syntactic 'deep structure', the level after which all lexical insertions have already taken place but before which any non lexical transformation ever applies is denied. One version of transformational grammar (TG) that accepts the possibility of all lexical insertion in a block before any non-lexical transformation is called the 'standard theory', while the other version of TG that denies this possibility is the 'basic theory' (although the labelling is not intended by the proponents of the theories to confer some unique conceptual or empirical status to the former, or to suggest that there is anything ontologically, psychologically or conceptually 'basic' about the latter). Consequently,

- 3, a standard theory specifies, for each sentence, a syntactic structure $\Sigma = (P_1, \dots, P_i, \dots, P_n)$ (where P_i is the deep, and P_n the surface structure), a semantic representation S , and a phonetic representation P . It asserts furthermore, that S is determined by P_i and P by P_n under the rules of semantic and phonological interpretation, respectively. More generally, the theory is 'syntactically based' in the sense that it assumes the sound-meaning relation (P, S) to be determined by Σ . Chomsky 1971: 185.

On the other hand, the level P_i of 3 does not exist in a 'basic theory' and the basic theory abrogates syntactic 'determinism', my expression for the most important characteristics of the theory which assumes that "the sound-meaning relation (P, S) " is "determined by Σ ."

1. Chomsky 1971: 184 - condition <3> : "given (P_1, \dots, P_n) in K , there is an i such that for $j < i$, the transformation used to form P_{j+1} from P_j is lexical, and for $j \geq i$, the transformation used to form P_{j+1} from P_j is non-lexical. ^b Footnote b of Chomsky 1971: 184 describes non-lexical transformations as 'true syntactic transformations'.

Observe that the differences between the 'standard theory' and the 'basic theory' as presented here appears to be only differences caused through disagreement on a single suggestion viz. - that lexical insertion should occur in a block before any non lexical transformation applies. Simply put, this is the main difference. However, the difference itself is not one that can be easily resolved since the position of the standard theory cannot be easily changed because it is dictated by a major attitude to linguistic description which has always characterized all works in the standard theory tradition, and which was originally proposed in Syntactic Structures for TG as:

- 4, only a purely formal basis can provide a firm and productive foundation for the construction of grammatical theory. Chomsky 1957: 100.

Since the version of TG to be used here will tend more towards the basic theory than the standard theory, it will be necessary to discuss the objections to the 'standard theory' that could justify any adoption of the basic theory in a work like this one. Note that those working within the basic theory do not actually constitute a unified school since various systems of analysis e.g. McCawley's indices and Bach's contentives are found in recent underlying representations of noun phrases. However, they all agree on the non existence of a level of deep structure which is defined as condition <3> of Chomsky 1971.

In the quotation in the paragraph before the last (i.e. in 4), not only does Chomsky contrast form with meaning (i.e. syntax with semantics), but he also stated as an instrument of policy, the direction in which future research in transformational grammar should take (i.e. towards the one observed in 3 earlier where everything linguistic is determined by 'form' i.e. Σ = syntax). Thus, it had been stated already in Syntactic Structures that whatever is included in future extensions of TG should

have 'only a purely formal basis'. Hence, in Aspects, when semantics was first officially¹ recognized as a subject for linguistics to describe, its only function was to interpret what had previously been fully specified in the 'purely formal' omnipotent syntactic component since "the syntactic component specifies an infinite set of abstract formal objects, each of which incorporates all information relevant to a single interpretation of a particular sentence".² (italics supplied).

However, recent attacks on the standard theory are directly referable to the requirement (4) above that "only a purely formal basis" is needed for the construction of a grammatical theory and the deterministic definition of the syntactic component in Aspects. For instance, since the syntactic component specified an infinite set of abstract formal objects, and since each of these objects contains all information needed for the interpretation of any 'sentence', there is bound to be a duplication of information in the semantic component if the semantic component itself were developed as a system of (projection) rules. Hence, one duplication of effort is that noted by Weinreich whereby there is a dictionary in the semantic component and a separate lexicon in the syntactic component. Thus, "in an integrated theory, the existence of a lexicon separate from

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1. Semantics was first recognized as a proper area of TG studies by Fodor and Katz in "The Structure of a Semantic Theory" in Fodor and Katz 1964: 479-518. But one may say that its official recognition came only with its incorporation into the general framework of TG in Katz and Postal 1964 and Chomsky 1965.
 2. Chomsky 1965: 16. This definition of the syntactic component is the original Aspects statement of 'syntactic determinism' and Chomsky's definition of the standard theory represented as 3 earlier is a later restatement of the deterministic philosophy. In 3, Chomsky was unequivocal in asserting that "the sound-meaning relation (P, S)" is "determined by Σ " (i.e. by syntax).

the dictionary is a vestigial absurdity, but one which can be removed without difficulty.^{b" 1} It is a vestigial absurdity because the duplication was originally caused by the reliance of linguists on " a conception of linguistic theory as a whole which did not anticipate a semantic component;"² (that is the conception of a 'purely formal' linguistic theory).

So, objections to the standard theory arise as a result of the lack of simplicity and generality entailed by a duplication of efforts in both the 'interpretive' semantic component and the 'deterministic' syntactic component. For instance, there are other objections that have been noted by transformationalists. One such is the fact that the base of an Aspects standard theory generates many deep structures which are blocked by restrictions on the application of transformational rules and consequently have no surface structure realizations. This same filtering effect of transformations must be duplicated in some ways at least in the semantic component. Another duplication occurs in the existence of semantic selection restrictions in the semantic component postulated by Fodor, Katz and Postal vis - a - vis the syntactic selectional restrictions of Chomsky 1965. A different sort of duplication is the existence of syntactic features like Human and Animate which are not completely distinct from semantic features having the same names.

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1. Weinreich in Sebeok 1966, reprinted in Steinberg and Jakobovits 1971. The quotation is from p.312. Weinreich's footnote b reads: "Katz and Postal (1964: 161) postulate a 'lexicon' (distinct from the dictionary!) which presumably specifies the phonological form of morphemes. Chomsky (1965) has the underlying phonological shape of morphemes specified by the same component - the lexicon - as the syntactic features."
 2. Weinreich 1966.

Apart from duplication, the standard theory as formulated in Chomsky 1971 makes the status of semantic representation more indeterminate than previously. In pre-1971 standard theory (i.e. in Aspects), the deep structure was set up only to determine semantic interpretations while the surface structure (a less significant level of representation at that time) determines only phonological interpretation. In the revised standard theory of 1971, there are three significant shifts of position although the first two are related.

First, the reconstructed theory gives P_n = surface structure (or rather 'the structure determined by phonological interpretation of P_n , with intonation assigned')¹ more power than the deep structure since it is capable of determining both phonetic representation and parts of semantic representation, whereas P_1 , - the deep structure, determines only the remaining part of semantic representation. Thus, the significant level of representation now is the surface structure which is necessary for both semantics and phonetics.

Secondly, it was only the projection rules of Fodor and Katz 1963 and Katz and Postal 1964 that function in the semantic component, but we have a different situation in the reconstructed standard theory of 1971 i.e.²

- 5, $\langle 11 \rangle$ base: (P_1, \dots, P_1) (P_1 the K-initial, P_1 the (deep) structure which is a member of K)
transformations: (P_1, \dots, P_n) (P_n the surface structure; $(P_1, \dots, P_n) \in K$)
phonology: $P_n \dashrightarrow$ phonetic representation
semantics: $(P_1, P_n) \dashrightarrow$ semantic representation
(the grammatical relations involved being those of P_1 , that is, those represented in P_1).

1. Chomsky 1971: 213

2. Chomsky 1971: 213. I shall refer to the earlier standard theory of 1964-5 as the Aspects theory, and the 1971 version as the 'standard theory' although, as we shall observe later, there is very little difference between them.

In 5, Chomsky's final formulation of the standard theory, the (syntactic) phrase markers at P_1 and P_n including the grammatical relations represented in P_1^1 also participate in the determination of semantic interpretation, although it is not clear whether they are syntactic converses of, or actual replacements for semantic projection rules. Lakoff (1971: 269) actually assumes that the phrase markers (P_1, \dots, P_n) in the standard theory are replacements for the projection rules A_m, \dots, A_o in the Aspects theory. It is likely that Lakoff has misinterpreted the standard theory notation since both Chomsky and Lakoff used the same formula, the 'syntactic structure' (P_1, \dots, P_n) for entirely different purposes. Lakoff stated:

Given a syntactic structure (P_1, \dots, P_n) we define the semantic representation SR of a sentence as $SR = (P_1, PR, Top, F, \dots)$, where PR is a conjunction of presuppositions, Top is an indication of the 'topic' of the sentence, and F is the indication of the focus of the sentence.^a"²

As far as Chomsky was concerned, all P's with subscripts are in syntax, and there is no P_1 in semantic representation SR e.g. in:

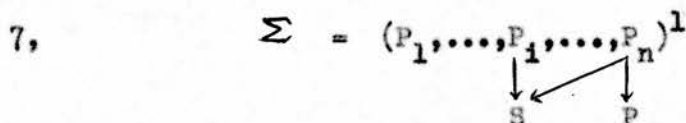
$$6, \quad = " \langle 32 \rangle \quad \Sigma = (P_1, \dots, P_1, \dots, P_n)"$$

$\downarrow \quad \quad \quad \downarrow$
 $S \quad \quad \quad P$

(where the S and P on the lower line respectively represent semantic representation and phonetic representation). In the final version of the standard theory (i.e. in 5 above), the only necessary change from the

1. Note the parenthesized information following 'semantic representation' in 5 or Chomsky's $\langle 11 \rangle$. This does not suggest that P_1 determines semantic representation, but that the grammatical relations represented in P_1 , the first phrase marker for lexical transformations, are the relations involved in P_1 , the deep structure.
2. In footnote a of Lakoff 1971: 269, he suggests the possibility of eliminating topic and focus and representing them in the presuppositional part of the sentence. Perhaps this can make for simplicity in description when it is done.

Aspects theory is that there is another arrow from P_n leading to S giving:



Thus, the only clear difference between the Aspects theory represented as 6 and the latest standard theory 7 is that there is another arrow leading from P_n to S. If the vertical arrow from P_1 to S in both 6 and 7 is interpreted as 'projection rules', and the vertical arrow from P_n to P as 'phonological rules', the diagonal arrow (representing 'surface structure interpretation rules') cannot be interpreted as 'projection rules' (which are vertical, and which do not rely on phonological information like intonation from P_n) or as 'phonological rules' (which are also vertical, but which do not lead to semantic representation). Perhaps a comprehensive and comprehensible formulation of 'surface structure interpretation rules' may later clarify the position of the diagonal arrow and the way it operates. Nevertheless, the schemata 6 and 7 still show that the standard theory has not yet abolished projection rules although it has abandoned the strong position in Katz and Postal 1964 and Chomsky 1965 that only the deep structure determines semantic 'interpretation'.

Hence, until the proponents of the standard theory give a full specification of the diagonal arrow in 7, it will be rash to suggest that the standard theory had abolished Katzian semantics. Thus, Lakoff's account

1. Note that 7 is the statement of the standard theory presented in Chomsky 1971. There are however corollaries of 7 e.g. the suggestion in Chomsky that "it is quite possible that other terms in the syntactic structure (P_1, \dots, P_n) are also relevant for semantic representations." Since this suggestion will only increase the number of diagonal arrows, its discussion will be postponed till we have finished dealing with the problem of one diagonal arrow.

of the standard theory (1971: 269), and his reformulation of the standard theory in a full derivation (1971: 264-5) may be incorrect.¹ All one can say is that the semantic component of the standard theory is a nondescript since it is no longer the vertical projection rule arrow (of 7) alone which directly determines semantic representation, but this vertical projection arrow plus a diagonal arrow which could even interpret items like presuppositions which are not represented directly in any part of P_n .²

The third shift of position in the standard theory is the assumption that it is possible for "other terms in the syntactic structure (P_1, \dots, P_n)" to be "relevant for semantic interpretation."³ Apart from dwarfing the deep structure still further, if it has not yet technically eliminated it,

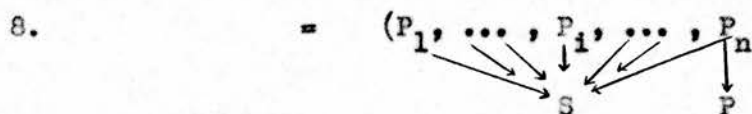
-
1. It is actually unlikely that Chomsky could have formulated the integrated standard theory the way Lakoff formulated it since the part from P_0 to P_n in Lakoff's reformulation (p.265) violate condition 1(iii) of Lakoff 1971, and Chomsky 1971 that:

"(iii) there is no P_0 such that P_0, P_1, \dots, P_n meets conditions (i) and (ii)."

Thus, assuming that Chomsky has abandoned Katzian semantics, he is unlikely to incorporate a P_0 which violates one of the conditions he set up into the revised standard theory.

2. Note that one of the implications of surface structure interpretation rules is that the surface structure could determine the semantic representation of structurally available formal objects like 'focus' (in normal intonation) and structurally unavailable formal objects like 'presuppositions', whereas the deep structure could determine only the semantic 'interpretation' of available formal objects like 'complex symbols'. Observe that presuppositions cannot be assumed to be structurally available the way the main verbs of sentences are. Hence, the surface structure is even more significant than the deep structure in the latter's only field of operation - that of semantic representation. This means that the only important reason for postulating a level of deep structure (viz. for determining semantic interpretation) is not really cogent since the surface structure which can use both structurally available and structurally unavailable information for determining semantic interpretation is now more powerful than the deep structure in its only task. So, the surface structure interpretation rules might be a boomerang. It is likely to have some adverse effects even on the deep structure of the standard theory.
3. Chomsky 1971: 213.

this assumption allows semantic 'interpretation' to be multiply determined by an unspecified number of possible 'terms' in (P_1, \dots, P_n) and some of these possible terms could be identical with some derivational constraints in the basic theory like subject raising, predicate lifting, psych-movement, quantifier lowering etc. In other words, both syntactic and lexical transformations affect meaning so that there can now be many diagonal arrows leading to S from P_1 to P_n in 7 above. If every part of syntax can now affect meaning (as the reconstruction of the corollary of 7 indicates in 8 below), then one is justified to doubt the necessity of a syntax/semantics distinction since semantics can now be relevant at every stage in the syntactic component as suggested by:



So, the third shift of position in the standard theory looks like a subtle move towards the basic theory position although the statement of principle from Syntactic Structures that "only a purely formal basis" (where 'purely formal' is interpreted now as 'syntactic') "can provide a firm and productive foundation for the construction of a grammatical theory"¹ will always make the standard theory proponents resist the basic theory position (in theory but not in actual practice).

One can note at this stage that Chomsky actually criticized and rejected what was variously referred to as "a 'semantically based' theory of generative grammar"² and "a 'semantically based grammar,'"³ because

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1. Chomsky 1957: 100
 2. Chomsky 1971: 196
 3. Chomsky 1971: 197

"what one believes, realizes, etc.,^a depends not only on the proposition expressed, but also on some aspects of the form in which it is expressed."¹ However, his general interpretation of 'based' e.g. when 'syntactically based' means that the 'sound - meaning relation (P, S)' is 'determined by Σ '² (where Σ = 'syntax') will make it difficult for his criticism to be justly applicable to the basic theory. For instance, the basic theory did not state that the deep structure - phonetic representation relation (P_i, P) is determined by semantics. Hence, the basic theory is not 'semantically based' in the sense in which the standard theory is 'syntactically based', and so, the real criticism of the basic theory from the proponents of the standard theory is yet to come.

The framework to be used in this work is therefore going to be in the tradition of the basic theory. Apart from our observations on the standard theory above, there are reasons to suggest that the basic theory will help us in obtaining a more satisfactory solution to the problems attacked than the standard theory. For instance, we wish to propose a sentential derivation not only for Yoruba noun phrases in the manner of Bach 1968,³ but also for elements within the noun phrase like nouns, numerals and adjectives.⁴ One of the advantages of sentential derivation for forms

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1. Chomsky 1971: 197. His footnote a is omitted here. It is fair to suggest also that what one believes, realizes, etc. does not depend solely on the 'form' in which it is expressed (or its 'syntax').
 2. Chomsky 1971: 185
 3. Bach in Bach and Harms 1968 - 'Nouns and Noun Phrases'.
 4. See Bangbose 1966: 99 for the surface forms of these elements. Bangbose had 'a further differentiation of the primary element Q into sequence determined secondary elements of structure' which include what were variously called the nominal, adjective, numeral, rankshifted, deictic and post-deictic qualifiers (where Q = qualifier, and defined as it is in Bangbose 1966).

like the vigesimal Yoruba numeral system (in chpt IV) is that we are able to provide a common underlying form for different classes of numerals (e.g. cardinals, ordinals, distributives etc.) although in most Yoruba descriptions of the numeral system, only the cardinal can be produced beyond a certain low limit. If the rule postulated by those Yoruba grammarians who cared to discuss the numeral adequately for generating ordinals were applied beyond the one hundred and eighty fourth position (184th), only ungrammatical, unacceptable and uninterpretable forms would be obtainable e.g. *èkògòsánlémárùn for the 185th position. It is only through the type of sentential representation suggested here that the productive capacity of the Yoruba numeral system can be adequately accounted for.

But one implication of sentential derivation for parts of noun phrases is that syntactic rules like syntactic transformations would have applied to the suggested underlying representation of these parts of noun phrases in order to derive the single lexical item that is ultimately inserted in the appropriate parts of the noun phrase. For instance, èkerinlélógòsán (the 184th position) could be derived from:

9. ipò tí ó jé ogòsán ó lé èrin

(position which it is 180 it plus 4) 'the 184th position'

through some true syntactic transformations like deletion, and it is the derived structure èkerinlélógòsán that is inserted as a lexical item in the P_1 or deep structure of the standard theory.

The underlying similarity of '184th' to '185th' could be shown in a representation for '185th' that follows the pattern of 9 e.g.

10. ipò tí ó jé ogòsán ó lé àrún

(position which it is 180 it plus 5) 'the 185th position'

The difference between '184th' and '185th' will then be a derivational

rather than an underlying one since only 9 can later develop into ekerinlelogosán through a series of syntactic transformations like the deletion of ipò tí ó jé (position which it is), the sister adjunction of lé 'plus/increase' to the right of èrin 'four' giving èrinlé, the adjunction of ní - (the transformational formative - Trf of 1.32 above) to the left of ogósán '180' giving ní ogósán ----> lógósán and the sister adjunction of the derived èrinlé to the left of lógósán giving the numeral form èrinlélogósán. From this numeral form, the cardinal forms: èkerinlélogósán 'the 184th' or kerinlélogósán '184th' could be derived. If instead of the ipò 'position' of 9 and 10, we had used iye 'amount' we would have now derived mèrinlélogósán '184' which is the cardinal form. Some of the derivational processes are omitted in this discussion e.g. the nominalization of kerinlélogósán to èkerinlélogósán or ikerinlélogósán, and the phonological ones like tone and vowel deletion or assimilation etc., but the main point is that all Yoruba ordinals are similarly represented at a certain stage before P_1 , and that true syntactic transformations apply to some low ordinals at this stage and convert them into the forms normally inserted at P_1 . Thus, without violating the Boolean conditions of analyzability, true syntactic transformations like adjunction, sister adjunction, and deletion could even apply before P_1 , the stage which must precede all syntactic transformations (or 'upward - toward - the - surface cyclical transformations') in the standard theory.

Since true syntactic transformations like deletion and adjunction would have already applied before we reach ' P_1 ', the main condition on P_1 , that it precedes all post-lexical i.e. syntactic transformations is violated. But if we do not violate this condition (and thereby reject the deep structure as defined in the standard theory), we will be unable to state the similarity between the '184th position' and higher positions

i.e. (from the 185th to infinity) which are similarly represented in underlying representations as demonstrated partly in the preceding paragraph and in more detail in chapter IV below. Moreover, unless we violate the condition on P_1 and provide sentential representation for parts of NP's like numerals, we will be unable to prove that the Yoruba can actually generate and conceptualize the 185th position and positions with higher figures since there is no single formative representing '185th' (the way ekerinlelogosan represents '184th') which can be inserted at P_1 . As suggested in chapter IV below, the Yoruba can actually conceptualize the 185th position, but when he does so, it is through a sentential representation (e.g. 10), and it is this type of sentential representation that is suggested for all numerals in this work.

Consequently, the abandonment of the standard theory for the basic theory in this work is necessary if we intend to provide a reasonably satisfactory description of the Yoruba noun phrase. This does not mean that the basic theory is totally correct while the standard theory is incorrect. In fact, the basic theory too may be wrong in some of its assumptions since it is still in the formative stages. Nevertheless, since the publication of Lakoff's article on 'instrumental adverbs',¹ one common and significant style of argument in linguistic research by transformationalists had been to show that the relationships between some pairs of sentence types could not be correctly stated if only the purely syntactic deep structure of the standard theory were available. The suggestions about the Yoruba numerals in the three preceding paragraphs also follow this general trend. And

1. Lakoff, George - "Instrumental Adverbs and the concept of deep structure" in Foundations of Language IV, 4-29 (1968).

whether the basic theory were basically correct or not is irrelevant provided it can make for greater generality and simplicity in description in places where the standard theory would make the statement of generalizations impossible.

2.2 THE OPERATION OF SYNTACTIC TRANSFORMATIONS BEFORE P_i

It is assumed that the phrase marker P_i of the syntactic structure $\Sigma = (P_1, \dots, P_i, \dots, P_n)$ of the standard theory in present-day transformational grammar refers to the 'autonomous' level of syntactic deep structure, and is described as:

- 1, given (P_1, \dots, P_n) in K , there is an i such that for $j < i$, the transformation used to form P_{j+1} from P_j is lexical, and for $j \geq i$, the transformation used to form P_{j+1} is non-lexical.

The principal implication of 1 is that there is a certain level P_i between P_1 and P_n which is the level from which all true syntactic transformations start to operate. In ~~1.51~~^{2.1} above, it was suggested that certain similarities in underlying representations are very easily statable only if we have sentential derivations for some parts of Yoruba noun phrases, and that true syntactic transformations would have applied in such derivations even before we derive the lexical items that are later inserted at P_i . A sketch of this proposal is given below. It is worked backwards from P_i , the level of syntactic deep structure, in the sense that the phrase

1. Chomsky 1971: 184 - condition <3> - quoted with its footnote b in 1.51 above. The members of K are the syntactic structures generated by the grammar (i.e. transformational grammar). The system of grammatical transformations determines an infinite class K of finite sequences of phrase-markers, and each sequence P_1, \dots, P_n meets the three conditions stated in 1.51 earlier. P_1 is regarded as a K-initial phrase marker.

markers are numbered P_{i-1} , P_{i-2} etc. The numbering is done this way because we make no assumptions about what the representation at P_1 (the K - initial phrase marker) is, but we assume that the phrase markers from P_{i-1} to P_{i-6} in the representations below would have occurred between P_1 and P_i .

Let us assume that in the Yoruba sentence:

2. Ojo wà ní ipò kerinlélogójò

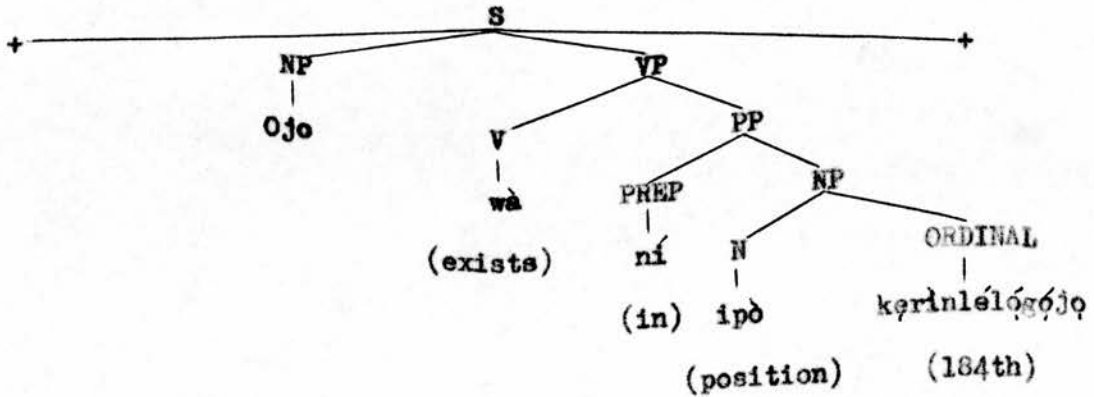
(Ojo is in position 184th) 'Ojo is in the 184th position',

the item kerinlelogojo '184th' occurs as a single lexical item which is an ordinal at the level of syntactic deep structure. Let us further assume that this single lexical item was derived only through lexical and morphological rules, and that it has not yet been operated upon by any syntactic transformational rule. If our assumptions were correct, then the derivational history of kerinlelogojo from smaller elements would not violate condition 1 above, and so, it would guarantee the existence of the autonomous level of syntactic deep structure.

However, only one of our assumptions is correct. And the correct one is the first assumption that kerinlelogojo occurs as a single lexical item at the level of P_1 of syntactic deep structure. The incorrectness of the second assumption is demonstrated through the following derivations which will typically represent the derivations for numerals in underlying representations.

At the level of syntactic deep structure, we can have a simplified tree representation like 3 for 2.

3.

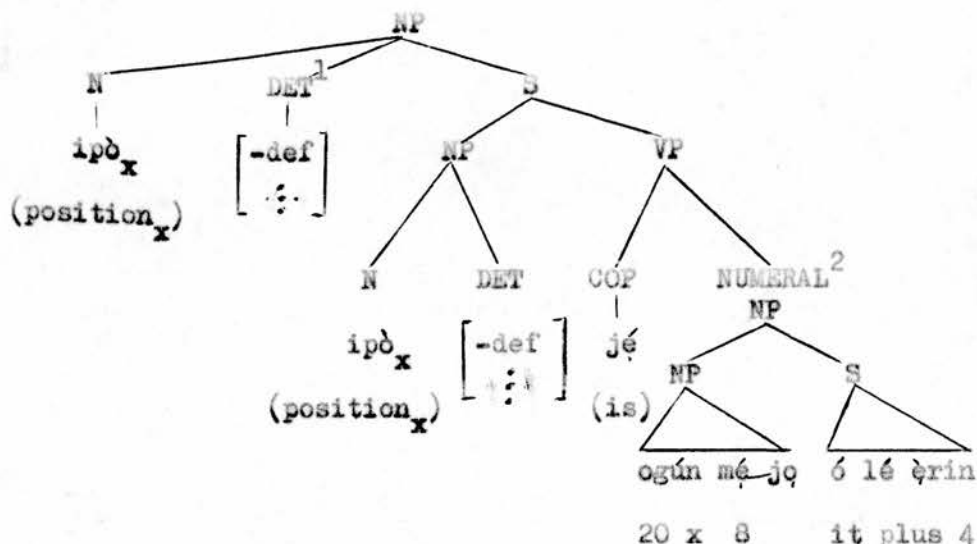


3 represents a typical tree representation for 2 at P_i after lexical insertion, that is, after all lexical transformations have applied so that there is no 'complex symbol' representation or any Aspects representation on the trees. We shall leave the deep structure representation as it is in 3 and now operate at another stage before P_i .

Suppose at P_{i-6} , we concentrate only on the NP that was dominated by PP (preposition phrase) at P_i , i.e. in 3. Then, at that level we can disregard other parts of 3 except the last NP = ipò kerinlelógójò on the assumption that there is no change in the syntactic structure of the disregarded parts of 3 throughout the derivation from P_{i-6} to P_i . Thus, although we apply transformational rules on NP representations from 4 below, the complete structure index on which such transformational rules operate is a sentence like 3.

Hence, at P_{i-6} , we can expect the lowest NP of 3 (the NP dominated by PP) to be represented as 4.

4 = P_{i-6}

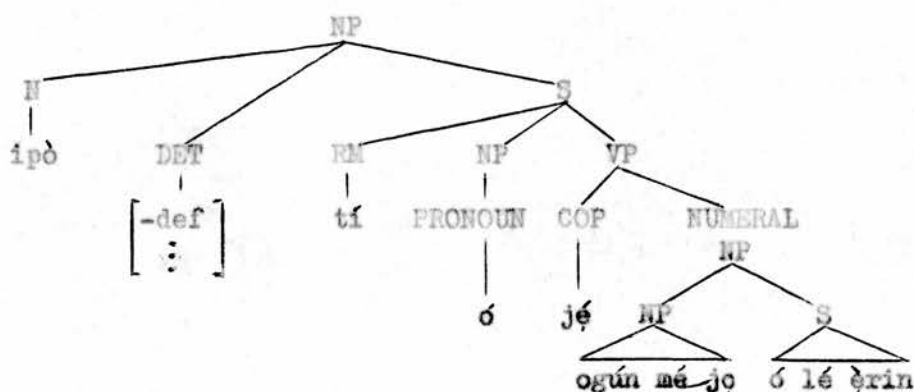


literally (position a (position a is twenties eight it increased-by four)),
'the 184th position'.

We assume for convenience that the final forms of the lexical items used could be represented on the trees as in 4. Note the similarity of 4 to the underlying structure Bach proposed for noun phrases in general in Bach 1968. From 4, through a relativization transformation, we could derive 5, the phrase marker P_{i-4}, (assuming that the two similarly indexed items ipò 'position' in 4 are coreferential):

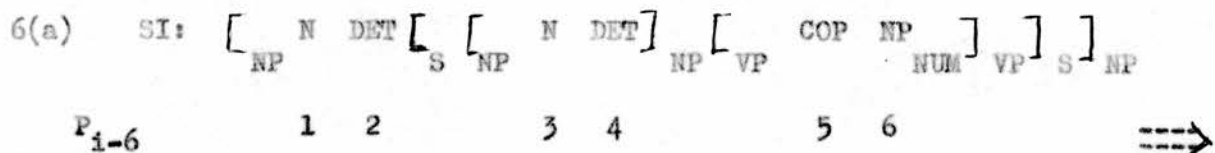
1. As we have not yet set out how different parts of the NP will be handled, we cannot provide truly explicit trees yet. A feature analysis is suggested for the determiner in Chapter VI below, and the pronoun is treated under the determiner node there. But at this stage we cannot make full use of such information. Hence, we do not give details on how the Pronoun in 5 happens to descend from the NP or why we represent the descendant of the DET node with features in 4.
2. The NP dominated by PP in 3 is also a numeral form although it is the NP that is dominated by VP in 4 that we labelled the Numeral NP. The difference between the two NP's is that the latter represents the general numeral forms described as 'nouns' in Bamgbose 1966: 113, footnote 72, whereas the former represents the actual subclass of the numeral, e.g. the whole of 4 is the ordinal, since it is the ordinal form that uses the 'classifier' ipò 'position'. The cardinal would have used another classifier iyé 'amount'. The term 'classifier' is given some detailed treatment in Chapter III below.

5 = P_{i-4}

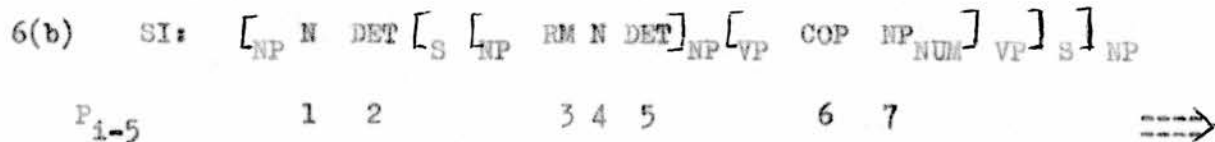


literally (position which it is 160 it increases-by 4) 'the position which is 164'.

The derivation of P_{i-4} from P_{i-6} (i.e. 5 from 4) involves two processes. First, we have the relativization process which involves the adjunction of the Relative Marker (RM) to the left of the second occurrence of ipò_x in 4. Then, we have the pronominalization¹ of this second ipò_x. Both the relativization and pronominalization processes involved in the derivation of P_{i-4} from P_{i-6} are respectively represented as 6(a) and 6(b):



Conditions: 1 = 3 and 2 = 4



Conditions: 1 = 4, 2 = 5, and 6(a) has applied

The output of 6(b) is tree diagram 5 above which represents the P-marker P_{i-4}.

1. This derivation is not intended to suggest any assumptions or beliefs about the nature of pronouns.

Note that both the relativization rule 6(a) and the pronominalization rule 6(b) are true syntactic transformations which should normally occur after P_1 , the level of syntactic deep structure, but now, we find them operating from P_{i-6} to P_{i-4} (i.e. before P_1 , the level from which true syntactic transformations should start to operate). Observe that the boundary symbol '+' is not used in the derivations from 4 downwards since the NP being described is no longer the whole of the sentence in 2.

Next, we wish to consider P_{i-3} , and at this stage we intend to expand the Numeral NP i.e. the 6 of the structure index of rule 6(a) above. Since other parts of 6 (and 5) will remain unchanged in the derivations that follow, we shall concentrate only on the numeral NP now. So, we have reduced the structure index twice. First, we limited description to the NP that is dominated by a PP in 3, and now, we intend to limit description to the Numeral NP that is dominated by VP in the structure index of 6 or in both P_{i-4} and P_{i-6} .

7. = Numeral NP at P_{i-3}

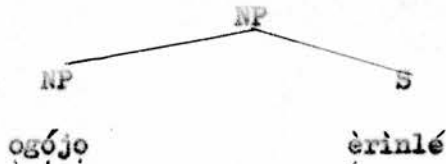
SI:	[_{NP} NP [_S PRON V N] S] _{NP}
P_{i-3}	1 2 3 4 \implies
SC: P_{i-2}	1 \emptyset \emptyset 4+3

(where the 2, 3 and 4 of the SI constitute the expansion of 6 (i.e. ó lé èrin) in examples 4 to 6(a), and where the Numeral NP at P_{i-3} is the 6 of the SI of rule 6(a) or the 7 of rule 6(b)). One stage in derivation has been omitted, the one from P_{i-4} to P_{i-3} . ~~Stage P_{i-4} to P_{i-3} is reserved for the derivation of ogójo (20x8) '160' from ogún ó jé ènà m'jó (20 it is times 8) ~~expanded to a complex structure by the operation of rule 6(a) at P_{i-4} and rule 6(b) at P_{i-3} .~~~~ ~~It is the ~~structure~~ derived ogójo at P_{i-3} that will be dominated ultimately by the NP represented~~

by 1 in the structure index of 7.

The transformational operation in 7 is the conversion of P_{i-3} to P_{i-2} through the sister adjunction of the verb lé 'exceed/increase by' to the right of èrin, the 4 of the structure index. After the operation of 7, we now have a tree like:

8.



and this becomes the structure index at the next stage in derivation where P_{i-2} is transformed to P_{i-1} . The next major operation is the permutation of the two remaining elements in 8, but a prepositional element ní¹ occurs between èrinlé and ogójo after their permutation. Suppose the adjunction of ní to the left of ogójo takes place during the mapping of P_{i-2} onto P_{i-1} , and the permutation of ní ogójo and èrinlé takes place during the transition in derivation from P_{i-1} to P_i . Then at P_i , we can have èrinlé ní ogójo which later becomes èrinlé ní ogójo after the operation of the necessary phonological adjustment rules outside the syntactic component (i.e. after P_n). We shall however use the final form erindlelogojo in our discussions here. But this does not imply that phonological rules can apply within the syntactic component. The form, erindlelogojo '164', will

1. Abraham 1958: 440 treated this prepositional element ní as the ní which occurs after some verbs like kúrd 'leave'. With verbs like lé in erindlelogojo (160 + 4) '164' or dín 'less' in erindinlogojo (160 - 4) '156', it appears the formative ní is a contraction from ní ori ---- lóri 'on top of' for lé and ní inu ----> nínú (in stomach of) 'inside of' for dín. Hence, an alternative way of expressing erindlelogojo '164' and erindinlogojo '156' is to use èrin ó lé lóri ogójo (four extra on top of 160) for the former and èrin ó dín nínú ogójo (four less from within 160) for the latter.

be the general numeral form, and from it, the ordinal forms kerinleloxojo '164th' and ikerinleloxojo 'the 164th', and the cardinal form merinleloxojo '164' could be derived morphologically as suggested in 1.51 above. What one finds is that true syntactic transformations have to apply between P_{i-6} and P_i , and unless some syntactic transformations could also be called lexical transformations, this derivation will have grave consequences for condition 1 above which draws a strict line between lexical transformations needed before P_i , and nonlexical transformations from P_i to P_n .

However, in an effort to save the concept of syntactic deep structure and guarantee the autonomy of P_i , one can propose an alternative derivation. For instance, judging that a prepositional element had to be introduced between erinle and ogójo after their permutation, one may propose underlying structures for erinleloxojo which will put erin before ogójo and give underlying representation to the prepositional element. In fact, this is a possible way out of the problem.

Thus, we can have the following representation as a replacement for the Numeral NP at P_{i-3} i.e. 7 above:

9. èrin ó lé lórí ogójo

(four it increases on-top-of 160) = 4 + 160 = '164'.

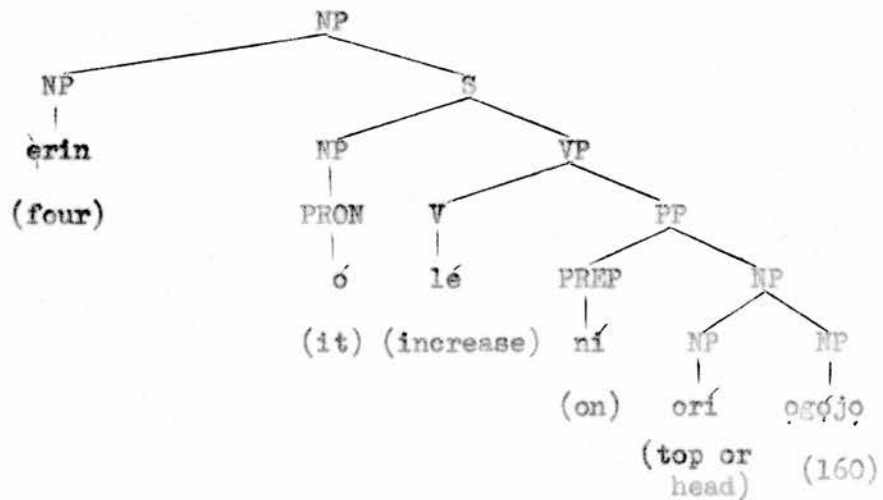
A counterpart of 9 for the representation of numerals subtracted from groups of tens between 20 and 180 will be:

10. èrin ó dín nínú ogójo

(four it decreases from-within 160) = 4 from 160 = '156'.

A tree for 9 will look like 11:

11.



i.e. (four, it increases on the-head-of 160) = 'four added to one hundred and sixty' or 'one hundred and sixty four'.

From 11, we may allow the deletion of ó 'it' and orí 'head' to take place before P_1 ; and after the operation of all necessary phonological adjustment rules in the phonological component, we have èrínlélọ̀gọ̀jọ̀. We shall modify the labelling of P_{i-3} of 7 above to P_{i-1} since a smaller number of P-marker mapping is required for this derivation. This means that corresponding adjustments of earlier P's will be necessary so that the P_{i-6} of the earlier derivation is the P_{i-4} of the present one. Different stages of this derivation may then have the lexical representations in 12:

- 12(a) èrín ó lé ní orí ọ̀gọ̀jọ̀ at P_{i-2}
 (b) èrín lé ní orí ọ̀gọ̀jọ̀ at P_{i-1} and
 (c) èrín lé ní ọ̀gọ̀jọ̀ at P_1 which becomes
 (d) èrínlélọ̀gọ̀jọ̀ after P_n in the phonological component.

Note now that deletion is the only syntactic rule employed. In order to guarantee the autonomy of P_1 , all we have to do now is to suggest that deletion is also a lexical rule. This suggestion is necessary since we actually have deletion operations in 12(b) and 12(c) rather than the phonological rule of assimilation which is excluded from syntax. For

instance, assuming that the pronoun ó were assimilated into èrin in 12(a) it would change the tone on èrin to èrín as indicated in the representation 12(b). This is the only possible surface form of 12(b) since èrin with the mid tone on the second syllable will sound odd there. But if what we have in 12(b) had been real assimilation, then, this modified tone pattern on èrin will be retained on the final form èrinlélóóóíó. On the other hand, there are two low tones on the grin of èrinlélóóóíó, and this shows that the pronoun ó was not really assimilated and that the operation in 12 is syntactic and not phonological. The deletion of orí 'head' at P_{i-1} however, can hardly be disputed since it had no phonological effect on surrounding items at P_i the next stage, which is the level of syntactic deep structure. Thus, it appears that some radical changes about the concept of lexical and syntactic transformational rules (e.g. the labelling of 'deletion' as both a syntactic and a lexical transformational rule) may have to be done in order to guarantee the autonomy of P_i , the level of syntactic deep structure.

Note, however, that the above discussion has been based on what happens to the Numeral NP from P_{i-2} to P_i , and nothing was said about the levels P_{i-4} and P_{i-2} (corresponding respectively to the former P_{i-6} and P_{i-4}) where a relativization transformation was used to map P_{i-4} onto P_{i-2} . It is unlikely that relativization would be recognized as a lexical transformation so that whatever happens at that level is hardly going to help in the maintenance of the level of syntactic deep structure.

The only way out of the dilemma posed by the P_{i-6} of the first proposal (or P_{i-4} of the second) for proponents of an autonomous P_i level is to repudiate it and suggest that there is no such phrase-marker as P_{i-6} and no such transformational derivation as example 6 above. But the purpose of P_{i-6} and P_{i-4} is to show the similarities in the underlying representations of subclasses of the numeral like ordinals, cardinals and distributives.

These subclasses of numerals are different to the extent that they use different 'classifiers'¹ in the place of the ordinal classifier - ipò 'position' in P_{i-6} , and they are similar in that all other parts of their underlying representations are identical. For instance, the only difference between the ordinal èkerinlélógójo 'the 164th' and the cardinal mérinlélógójo '164' is that the former uses the classifier ipò in the tree representations 4 and 5 above whereas the latter will use the classifier ive 'amount' in the same place in 4 and 5. An abandonment of P_{i-6} and P_{i-4} of the first proposal in order to guarantee the autonomy of P_i implies that generalities and similarities concerning subclasses of elements in the Yoruba NP will become unstatable.

So, one finds that the alternative derivation suggested in order to guarantee the autonomy of P_i and safeguard condition 1 above still fails to exclude the operation of true syntactic transformations before P_i . There are reasons to reject the alternative derivations e.g. the dissimilarity in underlying representations between the low numerals (i.e. those below two hundred) and the higher numerals (those above '200') which 11 and 12 imply, or even the treatment of 'deletion' as a lexical transformation, but it seems there is no need to discuss the inadequacies of this alternative solution since it does not solve the problems of an autonomous P_i level.

The type of derivational rule used in this section will be suggested for the underlying representation of parts of surface noun phrases like

1. 'Classifiers' are used to distinguish subclasses of elements in the underlying representations of the Yoruba noun phrase here. Later, the person classifier eni will be used for the underlying representations of personal nominals and nominalizations e.g. the Yoruba personal names.

the nominal, adjective, numeral and rankshifted qualifiers of Bamgbose 1966. A feature analysis will be suggested for the determiner system for reasons discussed later in Chapter VI. And the type of underlying representation which whole surface noun phrases, (that is, the head plus all the 'qualifiers' of Ayo Bamgbose 1966 and Adebisi Afolayan 1968) will have will be given in the concluding chapter i.e. Chapter VII below. So, in the discussions that follow in Chapters III to V, we shall concentrate on the form of the underlying representation for parts of surface noun phrases.

The link between Chapters I and II and the following ones will be provided in Chapter III where one other mechanism of the standard theory proponents, the lexicalist hypothesis,¹ is applied to the derivation of Yoruba nouns. It will be demonstrated there that the maintenance of the absolute lexicalist position for Yoruba will necessitate another duplication of effort since it will complicate the 'base' as expected by all lexicalists, but with no corresponding reduction of complication in the transformational component. Note that the inevitable recognition of true syntactic transformations like deletion, adjunction and relativization as lexical transformations by proponents of the autonomous level of syntactic deep structure in the phrase markers discussed earlier in this section is also tantamount to a base complication without a corresponding removal of complication in the transformational component.

1. The main defining statement on the lexicalist and transformational hypotheses was provided by Chomsky in Jacobs and Rosenbaum 1970: 188 - "...We might extend the base to accommodate the derived nominal directly (I will refer to this as the "lexicalist position"), thus simplifying the transformational component; or alternatively, we might simplify the base structures, excluding these forms, and derive them by some extension of the transformational apparatus (the "transformationalist position")." The choice between these two alternatives is relevant only when there is an intermediate level P_i where all lexical insertion must have taken place. Otherwise, the question of choice is purely academic.

CHAPTER III

3.0 SOME YORUBA NOUN DERIVATIONAL PROCESSES AND
ULTIMATE NON SELF DOMINANCE

3.1 DERIVATIONAL MORPHOLOGY IN SYNTAX

The last verb phrase in Aspects - 'remains an open question'¹ ironically sums up the conclusions of many of the crucial syntactic discussions in that book. Where Chomsky has not explicitly kept some questions open, one can find certain locutions that can be interpreted as ways of keeping the questions open; and where such locutions cannot be found, post Aspects generative literature has reopened several topics from Aspects. Without repeating any of the open questions already mentioned in preceding chapters e.g. the autonomous level of syntactic deep structure, and while ignoring other equally significant problems e.g. the centrality of syntax, the problem of selectional restrictions, the syntactic relevance of case categories, the representation of grammatical relations in underlying structures,² the filtering power of transformations, we shall reopen the question of derivational morphology with special reference to the Yoruba noun phrase, and suggest that another type of duplication (apart from those discussed in ^{2.1} ~~IV.1~~) is inevitable in Yoruba syntactic structure if the controversial requirement that lexical insertion takes place in a

1. Chomsky 1965: 192

2. In Chomsky 1971: 191, it was suggested that rules mapping case systems C_1 and C_2 onto the deep structures of 'John opened the door' and 'the key opened the door' respectively can be interpreted as rules of semantic interpretation. This suggestion calls into question the representation of case categories in syntactic representations. Chomsky 1971: 191 footnote a similarly rejected what he called the "equally specious" "view that grammatical relations must be 'directly represented' in underlying structures."

block makes us list certain classes of derived nominals in the lexicon.

The listing of derived nominals in the lexicon is symptomatic of one restrictive condition on rules which was stated in Aspects as:

1(a) "Once a subcategorization rule has been applied to a certain symbol σ no branching rule can be applied to any of the symbols that are derived from σ ."¹

The restrictive condition represented as 1(a) also occurs as:

1(b) "Once a subcategorization rule has applied to form a complex symbol, Σ , no branching rule can later apply to Σ ."²

Both 1(a) and 1(b) will be referred to as condition 1.

The implication of condition 1 is that derivational morphology is prohibited in syntax. Since branching rules³ will be needed for deriving 'horrid' and 'horrify' from 'horror' etc.,⁴ such derivations must not take place because complex symbols like [+N], [+Common], and [-Count] must have been derived from the category symbol N through subcategorization rules before one gets horror, and once the first subcategorization rule has applied, no branching rule can again apply. Hence, all derived lexical items must be listed in the lexicon. The main reason for listing them is that they are quasi-productive and besides, they will complicate the transformational subcomponent of the grammar.

1. Chomsky 1965: 112.

2. Chomsky 1965: 113. The earlier form of this condition will be the preferred one here for notational reasons. Since we have already used the symbol Σ for the syntactic structures (P_1, \dots, P_n) of transformational grammar, we shall refrain from using the same symbol for 'complex symbols'. Since 1(a) and 1(b) are different ways of stating the same condition, this notational preference creates no differences in empirical consequences.

3. See Chomsky 1965 for branching rules which are the rewriting rules of the categorial subcomponent of grammar.

4. Chomsky 1965: 186.

At this stage, we may just state that a branching rule is a rule in which a category symbol like NP, V, N, VP etc. occurs on the right hand side of the rewriting arrow '---->' e.g. S ----> NP VP; and one type of branching rule excluded by condition 1, which is discussed in 3.3 below is Personal Name ----> S or Personal Name ----> NP. Since the personal name will be specified as the feature complex (or complex symbol) [+N, -Common, -Count, +Human], no branching rule can develop S or NP from such features by condition 1. A subcategorization rule on the other hand has complex symbols or sets of specified syntactic features on the right of the rewriting symbol (which is still an arrow in Aspects). Hence, a subcategorization rule "forms or extends a complex symbol."¹

The position represented by condition 1 was however recognized as being too severe: "This restriction may be a bit too severe, and we must apparently

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1. Chomsky 1965: 112. See Chomsky p.112 for the definition of branching and subcategorization rules.

The problems of the use of rules to derive related lexical items like "horror, horrid, horrify; terror, (*terrify), terrify; candor, candid, (*candify); or telegram, phonograph, gramophone, etc." are discussed in Chomsky 1965: 186-9. It seems the syntactic and semantic idiosyncracies of the English derived nominals which were discussed by Chomsky and by Stockwell et al. in UESP could make the lexicalist proposal admissible for English. The problems of semantic idiosyncracies actually exist for a few derived nominals in Yoruba e.g. aséwó = a-sé-wó (Nominalization-formative change money) 'prostitute' where the semantic content of the derived aséwó is not a summation of the meanings of the lexical items (sé -change, and owó 'money') used in the derivation. But on the question of productivity, the derived nominals discussed are unlike those of English.

Thus, in this work, we are actually not disproving the lexicalist hypothesis generally, but we are suggesting that there are reasons for not drawing the sharp distinctions which Chomsky and the lexicalists generally draw between gerundive nominals and derived nominals in the Yoruba language. Consequently, for Yoruba, it seems unnecessary to examine the defects of Chomsky's \bar{X} (or X - double bar) proposal as Stockwell et al. have done in Stockwell 1968: 1-9.

weaken it slightly."¹ This weakening took place later when the restriction was stated to "hold only above the level of the word";² and also when it was recognized that problems of derivational morphology even extend beyond the word level.³ However, this weakening of condition 1 was reversed by the establishment of the lexicalist hypothesis. The lexicalist hypothesis, which was stated earlier in ~~2.2~~^{2.2} will be repeated here as condition 2 for convenience. It implies that 'derived nominals' (as opposed to 'gerundive nominals') must be entered in the lexicon. viz.

2. We might extend the base rules to accommodate the derived nominal directly (I will refer to this as the "lexicalist position"), thus simplifying the transformational component; or, alternatively, we might simplify the base structures, excluding these forms, and derive them by some extension of the transformational apparatus (the "transformationalist position").⁴

The main suggestion in Chomsky's lexicalist paper was that a lexicalist framework (involving a list in the lexicon) could be proposed for 'derived nominals' while the transformationalist position could be adopted for 'gerundive nominals'.⁵ since there exist three principal differences between gerundive nominals and derived nominals which justify the solution. The first principal difference concerns the matter of productivity where "the

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1. Chomsky 1965: 112
 2. Chomsky 1965: 189
 3. Chomsky 1965: 190
 4. Chomsky 1970: 188. Chomsky 1970 will be referred to as the 'lexicalist paper'.
 5. In the last three paragraphs of the lexicalist paper (Chomsky 1970: 214-5), the discussion was extended to nominals of a third category with some peculiar properties e.g. 'the growing of tomatoes' which Chomsky labelled 'the "mixed" forms' p.215. The lexicalist solution was half-heartedly proposed for the mixed forms. Later in this work, the term 'derived nominal' will be used to include gerundive nominals also.

transformation that gives gerundive nominals applies quite freely"... but "there are... many restrictions on the formation of derived nominals."¹ On the productivity question, the Yoruba examples to be examined here fail to justify Chomsky's separate treatment for gerundive nominals and non gerundive (or 'derived') nominals. The second main difference deals with the idiosyncratic character of the relation between the derived nominal and the associated verb,² and the third principal difference between gerundive and derived nominals is that "only the latter have the internal structure of noun phrases;"³ through their occurrence with the full range of determiners, their ability to pluralize, their inability to contain aspect etc. However, in the Yoruba language, as we shall soon observe, there is no special class of gerundive nominals markedly distinguished from other derived nominals along the lines established above by Chomsky (probably for English alone) since the Yoruba gerundive nominal derivational processes are not always clearly distinguishable from the derivations of other forms of derived nominals e.g. the àì + VP (or àì + V) nominalization which derives both negative gerundive nominals and negative abstract nouns as in:

3(a) àìsùn 'not sleeping' or 'waking ceremony'⁴ from sùn 'to sleep'

1. Chomsky 1970: 188

2. Chomsky 1970: 189

3. Chomsky 1970: 189

4. The 'waking ceremony' is the name given to a ceremony whereby nobody sleeps throughout the night whether in the celebration of grand funerals or in the observance of traditional and religious festivities.

It is possible to suggest that the examples given in 3 have the characteristics of Chomsky's gerundive nominals when they have the gerundive 'interpretation' and the characteristics of his derived nominals when they have the abstract noun 'interpretation'. The suggestion actually has little of empirical consequences to offer in support of a lexicalist solution for Yoruba 'derived nominals' (whether derived nominals now include or still exclude the gerund), and so, it will not be examined any further.

3(b) àilèsùn 'not being able to sleep' or 'sleeplessness' from lè sùn 'can sleep' and

3(c) àìgbòrán 'disobedience' from gbòrán 'to obey'.

Thus, the anti-lexicalist suggestions we intend to make for Yoruba derived nominals (where 'derived nominals' include 'gerundive nominals') are based on very productive syntactic derivational processes. And besides, it has even been observed that similar productive derivational processes could be found in several West African languages. For instance, Lyons 1966 recorded his indebtedness to E.K. Brown and P.M. Postal for bringing to his attention "the fact that, in a number of West-African and American-Indian languages, the majority of nouns appear to be derived from verbs by means of productive syntactic processes."¹ (italics supplied).

As a first step in this exercise, we shall examine the derivations of several Yoruba nominals and nominalizations in 3.2. There, we intend to set up three groups of derived nominals and examine the merits or demerits of a lexicalist solution for each group. In 3.3 we shall extend the discussion to Yoruba personal name derivational processes which are not totally dissimilar to the derived nominals of 3.2 so that a lexicalist solution to Yoruba derived personal names will have the disadvantages of a similar solution in 3.2. In 3.4, we shall examine three alternative solutions to the problems observed from 3.2 and 3.3 within a standard theory framework (i.e. one in which all lexical insertion takes place in a block at the level of syntactic deep structure), and in 3.5, we shall suggest a solution compatible with the one in ^{2.1} ~~Fig 2.1~~ and ^{2.2} ~~Fig 2.2~~ where the intermediate level of syntactic deep structure remains undefined. It is this proposed solution

1. Lyons 1966: 232 footnote 8.

that will be used in later chapters.

In the sections that follow, we are therefore going to make the following assumptions:

4(a) That the English examples used by Chomsky for the discussion of derivational morphology at word level in Aspects and for the 'derived nominals' of the lexicalist paper are quasi-productive and so could have justified an imposition of condition 1. But that the Yoruba examples that will be discussed here, like Chomsky's 'gerundive nominals' in the lexicalist paper are very productive, and are covered by generalizations used elsewhere in Yoruba grammar for the nominalization of sentences.

4(b) That although it is sometimes possible to choose between complicating the base or complicating the transformational subcomponent¹ while working with Chomsky's English examples in the lexicalist paper; in the Yoruba examples here, if we assume the Aspects lexicon, it is only possible to choose between complicating the base or not complicating it, and neither choice reduces the burden on the transformational subcomponent.

Consequently, for Yoruba noun derivational morphology, the absolute lexicalist position will complicate the base as expected, but there will be no corresponding removal of complication from the transformational subcomponent.

Note that the fact that pure syntactic rules like deletion and adjunction will be needed even for the derivation of derived nominals is not mentioned as one of our assumptions now since that fact provides independent evidence against the use of a lexicalist framework for Yoruba noun

1. Chomsky 1970: 188. In this work, we constantly use 'subcomponent' for what was described as the transformational 'component' in Aspects since it is a part of the syntactic 'component' of grammar.

derivational morphology. It seems we shall ultimately arrive at the conclusion that there is no possibility of a solution within the standard theory framework (lexicalist or otherwise) that could prevent the duplication of purely syntactic transformations in the lexicon (i.e. between P_i and P_i) and in the transformational subcomponent of the syntactic component (i.e. between P_i and P_n) for Yoruba noun derivational morphology. The arguments that will lead to this conclusion will be developed in the following sections.

3.2 THE DERIVATION OF YORUBA NOMINALS

3.21 BASIC AND DERIVED NOUNS

No Yoruba noun is monosyllabic and most Yoruba verbs are monosyllabic. This fact immediately suggests that the number of syllables in a word may be relevant in a syntactic discussion of the Yoruba noun, but very little will be made of the fact in our discussion here. It is actually relevant only for the question of productivity and for distinguishing between basic and derived nouns. No lengthy discussion on those two points is required since the productivity of the Yoruba noun derivational processes is generally recognized. cf. Ward's comment that "Yoruba has an almost unlimited power of making nouns from other words."¹

In a syntactic discussion of Yoruba nouns like this one, it may sometimes be necessary to exclude loan nouns since borrowed nouns are not expected to have had the phonological and syntactic characteristics of native Yoruba nouns before the borrowing, but even with borrowed monosyllabic nouns, it appears that they become disyllabic in Yoruba e.g. gólù 'gold', péni 'pen', and tírè 'tray'. Those that appear to violate the condition

1. Ward 1952: 179

that borrowed monosyllabic nouns become disyllabic e.g. the Yoruba borrowed variants of tea, key, and tie (which have no extra consonant e.g. the final consonants of the preceding loan words that can be syllabified) have an obligatory tonal glide which distinguishes them from monosyllabic verbs. This tonal glide is also obligatory even for the abbreviated forms of loan nouns and loan personal names, and considerations about the inherent polysyllabicity of Yoruba nouns could be used by advocates of multiple vowel representations in orthographic representations to suggest that Yoruba does not have tone glides, but rather multiple vowels. This point can justifiably be made, and it will not be disputed. However, without even examining Afolayan's attempt to prove that Yoruba has gliding tones,¹ the fact that multiple vowel representations create more problems than they are set up to solve² is enough to counter whatever advantages (typological, graphological, or otherwise) one can derive from one's taking advantage of the polysyllabicity of all borrowed monosyllabic nouns.

In this discussion, we divide Yoruba nouns into basic and derived ones. The basic ones are those that are not derived or whose derivational histories are shrouded in obscurity while the derived ones (i.e. derived nominals) are all those that are derived whether they are gerundive or not. Most basic nouns are either disyllabic or trisyllabic, and it is very rare to have basic nouns that are four syllables long. Those that occur at this level e.g. arúgúdu 'confusion' and kòbòkòbò 'someone speaking an unintelligible language' probably have obscured derivations. For instance, it is claimed that kòbòkòbò is used to refer to certain non Yoruba speakers who pronounce

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1. See Afolayan's article on the graphological and phonological system of Yoruba in Afolayan Ed. Odu forthcoming.
 2. See Appendix II below for these problems.

kobo [kóbò] 'penny' as kobo [kóbò]. How kòbòkóbò could be derived from this is difficult to state in a general way although the derivation is plausible. Since our arguments here are actually weighted against basic nouns which can be listed in the lexicon, wherever there is any benefit of the doubt as in cases like kòbòkóbò, we will decide in favour of the defence (i.e. the basic nouns) since all such decisions and concessions have little if any adverse effects on our principal suggestions for Yoruba noun derivational morphology.

3.22 STATEMENTS AND RULES OF NOUN DERIVATION

3.221 DERIVATION BY DUPLICATION

In the derivations that follow, the following abbreviations will be used although some of them have already been listed in 1.2 above:

C = consonant, Vw = vowel, V = verb or 'predicative adjective', VP = verb phrase, the labelled brackets [...] _v will be used for dominated elements while unlabelled brackets [...] will be used for phonetic realizations and feature specification.

3.2211 GERUNDIVE NOMINALIZATION BY DUPLICATION¹

The process of gerundive nominalization by duplication can be stated thus: Double the initial consonant² of a verb and insert the vowel [i] on a high tone between the double consonants e.g. from tiro 'limp, stand on tiptoe' obtain ttiro by doubling the first consonant; and, by inserting the vowel, obtain títiro 'limping, standing on tiptoe'. The process of

1. Some people will use the term 'reduplication' for our term 'duplication'.

2. The double articulation gb is a single consonant sound in Yoruba as indicated in 1.2 earlier. So, we do not just double the g in gb but gb e.g. gbígbé 'carrying' from gbé 'to carry'.

gerundive nominalization can be stated as a rule:

$$5. N = C_1 t [C_1 Vw(CVw...)]_V.$$

Since no Yoruba verb starts on a vowel, this is the only rule needed.

So, given a verb tíró, the rule says that the derived noun $N = t\acute{í}$ [tíró]_V where $t = C_1$, and the item tíró is ultimately dominated in a tree structure by the category symbol $V = \text{verb}$. Note that rule 5 also applies to monosyllables when the syllables in the optional brackets are not taken. It is also rule 5 that is used for the derivation of attributive adjectives from their predicative counterparts although no significant use will be made of that information until Chapter V below. So, rule 5 applies generally.

When 5 applies to monosyllabic verbs, we have examples like:

6. lílò 'going' from lò 'to go', rírí 'seeing' from rí 'to see', sísé 'doing' from sé 'to do', bíbò 'coming' from bò 'to come', rírù 'carrying' from rù 'to carry' etc. for all monosyllabic verbs.

If 5 applies to disyllabic verbs, we can have:

7. yíyàgàn 'being barren' from ya àgàn 'become a barren person' dídúró 'standing' from dúró 'to stand up', kíkúró 'leaving' from kúró 'to leave', jíjókò 'sitting down' from jókò 'to sit down' etc.

When 5 applies to trisyllabic verbs (most of which are derived) we can have examples like:

8. pípilèsè 'laying the foundation' from pilèsè 'to lay the foundation' etc.

However, when the verbs used are also derived, there is the option of separating parts of the derived verb and applying the rule to the mainly verbal portion of the separated items e.g. from jalè 'to steal' = ja olè (fight thief), we can have olè jíjà 'stealing', and this form is preferred to jíjalè 'stealing'. Similarly, iró pípa (lie manufacturing) 'lying' is preferred to pípuró 'lying' from puró 'to lie' where puró is derived from pa iró 'to utter falsehood'.

Rule 5 is however a productive gerundive nominalization rule, and we need not make a case for its transformational derivation since it is not excluded from transformational derivation in Chomsky's lexicalist paper.

3.2212 OCCUPATIONAL NOMINALIZATION BY DUPLICATION

This process of duplication is simple to state in rule form. It is called occupational nominalization because the derived nominal names professions, and members of such professions perform the act stated by the verb. This nominalization is not very productive since it applies mainly to derived disyllabic verbs and the number of occupations or professions that can be named is also limited.

The nominalization rule can be stated as:

9. $N = VV$ (condition V is polysyllabic).¹

Since all Yoruba verbs start with consonants, no phonological adjustment rule for the handling of vowel assimilation is needed. Hence from iaḡun = ia oḡun 'fight battle', ḡbenà = ḡba onà 'carve embroidery', kólé = kó ilé 'pack house', paná 'extinguish fire', ḡbómo = ḡbé omo 'steal child' we can use 9 to derive the respective occupational nominals:

10. iaḡuniaḡun 'soldier', ḡbenàḡbenà 'carpenter', kólékólé 'burglar', panápaná 'member of the fire brigade', and ḡbómoḡbómo 'kidnapper'.

Note that most derived nouns that use rule 9 are four syllables long since they involve the doubling of disyllabic verbs.

1. It is an idle task to argue whether the duplicated item is a V or a VP although the exclusion of monosyllabic verbs and the possibility of segmenting the items concerned into a V plus following noun suggest that it is probably a VP contracted into a single lexical item. Whatever decision is ultimately taken on the status of the duplicated item will have little effect on the productivity of the nominalization however.

3.2213 INDEFINITIZING AND PEJORATIVE NOMINALIZATION
BY DUPLICATION

This nominalization derives nouns from other nouns. So, it is unlike the previous ones used for deriving nouns from verbs. For the nominalization, a noun is doubled and /k/ is inserted between the doubled nouns. If the noun starts with a consonant, a /k/ + consonant cluster is prevented through the obligatory insertion of a vowel, usually /i/,¹ between /k/ and the second part of the doubled noun e.g. from aso 'cloth' one can derive asokáso = aso + k + aso 'any cloth' but from pánù 'plate/pan' one must derive pánùkípánù = pánù + k + pánù 'any plate'.

The nominalization rule can be stated as:

$$11. N_2 = N_1 + /kí/ + N_1$$

Thus, without any real phonological change, rule 11 will adequately take care of all N_2 derivations whenever N_1 begins with a consonant. Then, when it begins with a vowel, we have the following ordered phonological adjustment rules:

$$12(i) \quad [i] + \overset{\vee}{V}w_1 \quad \text{--->} \quad \overset{\vee}{V}w_1 / \underline{\quad} CVw_2 \dots]$$

$$(ii) \quad [i] + \overline{\overline{V}}w_1 \quad \text{--->} \quad \overset{\vee}{V}w_1$$

where $\overline{\overline{V}}w$ = vowel on any tone, $\overset{\vee}{V}w$ = vowel on the mid tone, and ' \ ' and ' / ' indicate low and high tones respectively. In the examples below, as

- The other vowel that sometimes occurs after /k/ i.e. [u] is never inserted between /k/ and a following consonant. Only in a few cases do we have the vowel i of the second noun changed to [u] e.g. isokúso 'careless talk' from *iso from so 'to talk', isekúse 'recklessness' from ise 'deed' from se 'to do' and ifekúfé 'libido, lust' from ifé 'love' from fé 'to love'. But these are just exceptions since we have [i] retained in other examples e.g. ifekife 'any tumbler' from ife 'tumbler', itánkítàn 'any story' from itàn 'story', ijákijà 'any quarrel' from ijà 'quarrel' from jà 'to fight' etc.

suggested in 1.2, the mid tone is not represented by any diacritical mark.

By 12, the tone change on the first vowel of the second N_1 in 11 is treated as tone assimilation from the deleted [i]. When 12(i) operates on nouns in which both Vw_1 and Vw_2 have the low tone, the tone on Vw_1 changes to mid e.g. in àsàkàsà 'bad habit' from àsà 'custom', òròkòrò 'bad talk' from òrò 'word, speech', ilùkílù 'any drum' from ilù 'drum', àtùpàkàtùpà 'any lamp' from àtùpà 'lamp' etc. But when Vw_1 and Vw_2 are not both on the low tone, the tone on Vw_1 is changed to high e.g. in ìbònkíbò 'any gun' from ìbò 'gun', òwúkòwù 'any cotton' from òwù 'cotton', ìnòkíno 'any situation' from ìpò 'position', state, situation', ilúkílù 'any town, bad town' from ilù 'town', ilékilé 'any house' from ilé 'house' etc. No Yoruba word starts with a vowel on a high tone.

Noun derivations using rule 11 not only indefinitize the noun used in the derivational process, but can also express a pejorative sense of the said noun. In some cases, ambiguity is avoided simply because of the difficulty of making any sense out of one interpretation of the nominalization; otherwise, 11 creates potentially ambiguous nominals e.g.

13. omò + kí + omò = omokómo 'any child' or 'a useless child' from 'omò 'child'¹.

Disambiguation of structures like 13 actually takes place in contexts e.g.

14. omokómo ni Ojo (useless-child is Ojo) 'Ojo is useless'

15. omokómo tí mo bá rí níbè yío je ìyà (any-child who I happen see there shall eat punishment) 'whoever I find there will be punished'.

1. The term omò 'child' is actually applied to those who are not mere children, e.g. adolescents or teenagers. Hence, in several contexts, it will be more appropriate to interpret omokómo as 'any person' rather than 'any child'.

Rule 11 is very productive and it can apply to almost any noun except personal names, gerundive nominals, and nouns derived through the application of rule 11. Hence, we can have:

16. ilékílé 'any house' from ilé 'house', bàtáíbàtá 'any shoe' from bàtá 'shoe', íbonkíbon 'any gun' from íbon 'gun', olékólè 'any thief' from olè 'thief', íagun íagunkí íagun íagun 'any soldier' from íagun íagun 'soldier' which is also derived from íagun = íá ogun (see 10 above) etc., but we do not normally have:

17. ?Adéíbísíkádéíbísí 'any Adebisi', *íílokííílo '?any going' *ilékílékílékílé (*any any house) etc. While it is possible to provide contexts of admissibility for personal names when indefinitized (and depersonalized) as in the case of Adebisi here, it is impossible to create contexts where a recursive application of rule 11 as in *ilékílékílékílé is permissible.

One fact that emerges from the above discussion is that a lexicalist analysis for nouns derived through an extremely productive rule like 11 cannot be adequate since it suggests that generalizations do not exist. Note that 11 applies even to derived nominals as stated earlier. Hence, although it does not look like a transformational rule, it has some grave forebodings for a grammatical theory which suggests that derived forms like ilékílé (in 16) should be inserted at the same syntactic level P_1 together with the forms from which they are derived e.g. ilé 'house'.

3.222 THREE NOMINALIZATION DERIVATIONS FROM VERB PHRASES

The three nominalizations discussed now have one thing in common. On the surface, they contain a nominalization prefix attached to a verb phrase. So, they can be called nominalizations from verb phrases if emphasis were put only on surface structure appearance. In more abstract

underlying representations however, they are likely to be represented as full noun phrases containing embedded sentences which incorporate the surface structure verb phrases that give this section its title.

We can start this examination by observing a summary of the relevant Yoruba nominalizations from Afolayan 1968. Afolayan stated:

- 18(i) For example, any verb, adjective, predicate phrase, clause or clause complex in Yoruba can be nominalized and negated by adding the morpheme àí- as a prefix to the nominalized element.¹ (italics supplied)

and then he added:

- (ii) Again the use is made of á-, à-, and ì- and some features of reduplication to nominalize almost any verb, adjective, predicative phrase, clause or clause complex in Yoruba.²

18(i) and (ii) can be considered as the surface structure description of the nominalizations we intend to discuss now. 18 is actually not strictly correct since it is an overstatement. For instance, 18(i) states that "any ... adjective ... can be nominalized and negated by adding the morpheme àí- as a prefix to the nominalized element." It is difficult to see how this statement can be true for all attributive adjectives noting that Afolayan (1968) actually recognized the distinction between attributive adjectives like ńlá 'big' and predicative adjectives like tóbi 'to be big'. For instance, by 18(i), it is possible for us to have àítóbi 'not being big' where tóbi is presumed to be nominalized and negated, but there is no nominalization derivation *àíńlá in the Yoruba language. Also, when the attributive adjective could be supposed to have a derivational relationship to its predicative counterpart (by using the same nominalization rule that derives gerundive nominals from verbs in 3.2211(5) above), e.g. gbígbóná

1. Afolayan 1968: 449
2. Afolayan 1968: 449

'hot' from gbóná 'to be hot', we can have àlgbóná 'not being hot' but not *àlgbígbóná. Moreover, when reference is made to the predicate phrases, Afolayan failed to consider examples of obligatory deletion that would take place in predicate phrases (i.e. VP's) containing auxiliaries like yíó 'will/shall' or the item indicating continuity, the '-ing' progressive formative = /í/. Thus, in a predicate phrase:

19 (i) ń lẹ sí ilé (-ing go to home) 'going home',

we can only have the derived nominal:

(ii) àllosilé 'not going home' with the [í] 'ing' deleted but not:

(iii) *àlínlosilé.

Furthermore, it appears the inclusion of 'clause' and 'clause complex' in Afolayan's summary in 18(i) is intended to handle cases like:

20. ailosile Ojo (not-going-home of-Ojo) 'the not going home of Ojo' or 'Ojo's failure to go home'.

But if 20 were to be a nominalization of a 'clause', one possible clause nominalized by 20 could be the negative:

21. Ojo kò lẹ sí ilé (Ojo not go to home) 'Ojo did not go home';
and not the affirmative:

22. Ojo lẹ sí ilé (Ojo go to home) 'Ojo went home'.

So, 18(i) does not both nominalize and negate a nominalized element in 20, but merely nominalizes a negative 'clause'. The reason for this suggestion is that 20 like all àl nominalizations implies the prior negation of the action mentioned in the surface VP that follows surface àl in the underlying representation. Thus, àlgbóná 'not being hot' suggests 'something was not hot' and not that 'something was hot' and the àl nominalization both nominalizes and negates this. Hence, the inclusion of clause and clause complex in 18 does not really explain much. Thus, it is not certain whether the clause example like 20 is a special case of the predicate phrase example

in which the nominalization from the predicate phrase is later 'qualified' by a genitival 'Ojo', or whether 20 is the nominalization of an underlying 'clause' (i.e. 'sentence' in our framework). Note that the two options are possible if a predicate phrase nominalization is supposed to be different from a clause nominalization in 18.

For the moment, we ignore some dialectal variants found in Ekiti dialect area where the negative formative kò can even occur after àì in 'surface' representations e.g. àìkòlòsílé which is still not semantically distinct from normal àìlòsílé although a negation of kò ought to imply the affirmation of the action described in the VP.

Besides, 20 itself is even ambiguous. Thus, it could imply the nominalization of 21 or the nominalization of:

23. enì kan kò lẹ sí ilé Ojo (person one not go to house of-Ojo) 'the failure (of someone) to go to Ojo's house'.

It is actually not necessary for the extra vowel that indicates possession to occur between ilé and Ojo on the surface structure realization in either interpretation since 'Ojo's house' could be ilé e Ojo or ilé Ojo.

Other examples of the inherent ambiguity of structures like 20 can be found with certain verb forms like nání 'care for/have regards for'¹ e.g.

24. àlnání Ojo 'the not caring of Ojo' or 'the not caring for Ojo' where the interpretations of 24 would come respectively from:

25. enì kan kò nání Ojo (someone not have-regard-for Ojo) 'the failure (of someone) to have regard for Ojo' and

1. The representation nání is what Bamgbose represented as náání in Bamgbose 1965: 9 (see Appendix II). It is true that we have a long a in the word, but that is not enough reason for a double vowel representation since the same representation is never adopted for panu [péánù] 'plate' or Jesu [jéésù] although the vowels a and e are long in the appropriate places in those words.

26. Ojo kò nání enikéni (Ojo not have-regard-for anybody) 'Ojo's failure to respect anybody'. (Note that enikéni is derived from eni 'person' through the application of rule 11 above).

Hence, the inclusion of clause and clause complex in Afolayan's summary merely shows that the summary may not actually be dealing with underlying representations although the advantages Afolayan's general thesis had over Bamgbose's (i.e. Bamgbose 1966) for Yoruba syntactic structure rests mainly on the assumption that Afolayan's analysis had the advantage of a deep - surface grammar distinction in the Hallidayan framework both of them used whereas Bamgbose's grammar was constrained to remain within the surface structural framework of Halliday 1961.❶

3.2221

PERSONIFYING NOMINALIZATION

The surface structure rule of the person nominalization can be stated as the prefixing of the person formative /a/ to a VP (or a predicate phrase cf. 3.222(1811) above). This can be stated as:

27. N = /a/ + VP (condition AUX is deleted in the expansion of VP, and V = verb or 'predicative adjective').

By applying 27 to VP structures like:

- 28 (i) bá eléja yan ún (help fishmonger fry it)
(ii) pa èniyàn (kill people)
(iii) sé owó (change money)
(iv) sòrò má gba èsì (speak don't accept replies)
(v) gba ejó rò (accept cases defend)

- (vi) rí ti eni mò ọ́n wí (see of one's know it say) 'know how to gossip about others'.

one can derive their respective nominalizations thus:

29 (i) abéléjáyán 'one who offers unsolicited help by assuming full responsibilities over another person's property temporarily'

(ii) apàniyàn 'murderer'

(iii) aséwó 'prostitute'

(iv) asòromágbèsi (usually erò asoromágbèsi where erò is 'machine' for 'the radio')

(v) agbejoro 'lawyer'

(vi) aritenimówí 'one who sees only the faults of others, but not his own'

The nominalization has often been treated as the agentive nominalization (cf. Ward 1952: 180) and Abraham (1958: 1). But the nominal does not always indicate agents. For instance, Abraham (1958: 1) included asé 'strainer' (from sé 'to strain') and abé 'razor' (from bé 'to cut') with this agentive nominalization, however, asé and abé are actually not agents but instruments since human agents are needed before asé can be used for processing (or 'straining') ground maize etc., and before abé 'razor' can be used for 'shaving'.

Another objection to the agentive labelling is that the derived nominal has no agentive characteristics when the 'predicative adjective' is used e.g. in

30 (i) akilápá = /a/ + [ki ní apa] VP (/a/ + stout on shoulders)
'one who has thick muscles'.

(ii) adúlójú = /a/ + [dú ní ojú] VP (/a/ + black on face)
'one who has a dark face'. (This is now a personal name.)

(iii) adumádán = /a/ + [dú maa dán] VP (/a/ + black being bright)
'one whose darkness makes him shine'.

In 30, the nominalization indicates attributes of the persons concerned, and it is inconceivable that any of the examples in 30 could be interpreted as agentive.

Furthermore, even when certain verbs are used in the VP, the resulting nominalization is still attributive rather than agentive e.g. in:

31 (i) abórí from /a/ + [bó orí]_{VP} (/a/ + peel head) 'one who has scars on the head'

(ii) apárí from /a/ + [pá orí]_{VP} (/a/ + be-bald on-head) 'a bald headed person'

(iii) ajísafé from /a/ + [jí se afé]_{VP} (/a/ + wake-up do leisure) 'one who lives a leisurely life'.

Thus, it does not appear that what we have in 3.2221 is completely an agentive nominalization. It is difficult to assert that it is a person nominalization since the possibility of Abraham's asé 'strainer' detracts from the totality of the personal element characteristics of the nominalization. We have therefore taken the middle way of recognizing the limitations of both the agentive and person labelling by calling it the personifying nominalization. Note that something that is personified does not necessarily become a person, so, in the case of asé or asòròmágbèsi the object in question is still not a person although one can say that it performs an action, e.g. 'straining' or 'speaking' when a human agent cooperates with it. Note that what speaks is not the 'radio' (èro asòròmágbèsi) on its own accord, but human beings.

At this stage, it is worth pointing out that the a nominalization could refer to both the person who does something and the person to whom something is done (when human beings are involved). This is clearly observable in personal name examples where for some names e.g.

Aboyade = eni tí ó bá Oya dé 'one who comes with Oya', we have the type of

examples we have been examining so far, but for others like Abiòdun = eni tí a bí nínú òdún 'one who is born during the festival' and all abi- names, we have the person concerned in the passive. What this suggests is that - for underlying derivations, the passive transformation needed for deriving eni tí a bí nínú òdún from a deeper form (eni kan₁ S(eni kan₁ bí eni kan₁ nínú òdún)) etc., should precede the /a/ + VP nominalization rule. Since passive is a cyclic rule occurring between P_i and P_n in the syntactic component of the standard theory, it is inescapable that the 'passive' transformation is also one of those rules that will be duplicated at stages before P₁ in underlying representations for the Yoruba language.

We referred to 27 earlier as a surface structure rule. Actually, from the interpretation of each of the nominalizations, it is possible for one to deduce that these nominalizations have more underlying forms that look like:¹

32 (i) eni tí ó bá ẹlẹja yan án (person who he help fishmonger fry it) = 29(i).

(ii) eni tí ó pa ẹniyan (person who he kills people) i.e. 'a murderer' = 29(ii) etc.

Note that the representations in 32 actually give the meanings of their counterparts in 29. For instance, a murderer is a person who kills people etc. However, since there are examples of a + VP nominalizations which do not refer to 'persons' e.g. asé 'a strainer', and asòròmágbèsì for 'the radio',

1. The underlying forms we represent here are not necessarily the deepest forms possible. Hence, when we say 'more underlying forms', we recognize that there could still be deeper forms than these. For instance, the pronoun form án 'it' (objective after the án of yan) in 32 might have been derived from a more underlying or a deeper structure than 32. To what extent that is true will not be examined here.

to replace the classifier N rather than the NP which is the 3 of the structure index because the whole structure constitutes a NP rather than a S. If a were allowed to replace 3 instead of 1, the structure change will suggest that the derived structure is a sentence rather than a noun phrase since the 3 to 6 of the structure index constitute a sentence. Note that the type of distinction one can make between choosing a replacement of 1 or a replacement of 3 in the structure change is not possible for 27 since 27 never explains. It merely states the surface structure position, and that is all.

Furthermore AUX deletion is unstatable in rules like 27 whereas in 33, it is accounted for in a natural way. Thus, if we fail to notice the parenthesized information in 27, we would generate ungrammatical NP's like *ańpànyàn which is similar to the *ańńlosílé of 3.222(19iii) above or *ayíolosílé *aólosílé = /a/ + shall go home (where yío or ó = 'shall/will').

It appears that AUX deletion is obligatory for structures like 33 in order to prevent a confusion of the /a/ nominalization with /a/ - the first person plural pronoun 'we' since aólosílé will normally stand for the sentence a ó lo sí ilé 'we shall go home'. So, for surface rules like 27, where the AUX deletion is difficult to state, there is no way of showing that the /a/ of /a/ + VP is not the first person plural pronoun.

There may be some minor adjustments to 33 to account for 'predicative adjectives' which do not normally take the '-ing' formative, but the important point about 33 is that pure syntactic transformations which normally do not apply before P_1 in the syntactic structure $\Sigma = (P_1, \dots, P_1, \dots, P_n)$ of the standard theory of generative grammar apply even before many of the lexical items normally inserted in a block (like apànyàn) can be derived.

It will be necessary to point out at this stage that there are two

simple corollaries of 33 or 27. Thus, /a/ sometimes changes to ò and sometimes to ò̄ = [ò̄], e.g. in

35(i) òrókùnrindòrí = eni tí ó n rí okúnrin dí òrí (person who he/she -ing see man become shea-butter) 'one (usually a girl) who melts like shea-butter on seeing men' or 'a girl who is too fond of men' and

35(ii) ògbóríefòn = eni tí ó gbé orí efòn (person who he carry head of-buffalo) = 'the person who carries the head of a buffalo'. Although one may say that there is vowel harmony in 34 and 35, it is not every time the first vowel of the VP is ò or ò̄ that this change takes place since we do not have the change from /a/ to /o/ in abórí in 31(i) above. It is sufficient to observe the possibility of vowel harmony influencing a change of the nominalization formative /a/, but discussion can only go thus far, it cannot be final.

3.2222 THE NEGATIVE ABSTRACT/GERUNDIVE NOMINALIZATION

We shall state other rules in surface forms like 27 since our main task in restating 27 as 33 is just to show that there is at least one noun derivational rule which uses purely syntactic transformations before the derived lexical items are inserted at P_1 . Hence, there will be no more prolonged discussions to stress the point we have already made in 3.2221.

The negative abstract/gerundive nominalization rule (which is roughly equivalent to 18(i) above) is:

36. N = àì + VP (where AUX is deleted in the expansion of VP if it is n '-ing' or yíq, ó 'shall/will', and very often, a NEG formative kò 'not' is optionally deleted in the expansion of VP). The condition stated does not imply a total AUX deletion since items like máa 'going to' can appear undeleted in surface structures got from an application of 36, e.g.

37. àimáfetísilè = àì + maa fi etí sí ilè (ai + going-to put ear on ground) 'not listening every time' where fetísilè is 'listen'.

36 is a very productive process in Yoruba which must defy a lexicalist analysis. We do not want to discuss its productive capacity however since this has been generally recognized, and Afolayan in 18(i) above did not recognize that there could even be any Yoruba VP, verb, adjective, clause or clause complex that will fail to have an àì nominalization counterpart.

What we wish to discuss under the present nominalization is the internal structure of the VP used for the derivation. In this nominalization, and in the one that follows in 3.2223 below, normal selectional restrictions operate among the elements that occur within the VP.

Furthermore, categorial violations are observable when they occur. Thus, given the VP's:

- 38 (i) fi owo ro ori ku (use hand support head die) 'to die peacefully'
(ii) gbò èdè (hear language) 'understand the language'.
(iii) fi esè kan dé ilé (use leg one arrive home) 'to call at home temporarily'.
(iv) fèràn owó (love money) 'to love money'.
(v) gbò òran (hear matter) 'obey'.

we can use 36 to derive the respective nominalizations:

- 39 (i) àifowóríkú 'dying violently'
(ii) àìgbèdè 'ignorance of the language'
(iii) àìfèsèkandélé 'not calling at home'
(iv) àìfèràn owó 'not loving money'
(v) àìgbòrán 'disobedience'.

However, by violating some rules of selectional restrictions in 38, we can have anomalous VP's like:

- 40 (i) *fi ojú rọ orí kú (*use eye to support head die)
(ii) *fi ọwọ rọ esè kú (*use hand support leg die)
(iii) *gbọ ìran (*hear sight)
(iv) *fi ìlú kan dé ilé (*use one town to arrive home) etc.;

and by violating categorial and subcategorization rules of Chomsky 1965, we can have anomalous VP's like:

- 41 (i) *fi tètè rọ orí kú (*use quickly support head die)
(ii) *fẹràn gbọ (*love hear)
(iii) *sùn owó (*sleep money) etc.

And since 40 and 41 are impossible owing to selectional restriction and categorial plus subcategorization violations respectively, there is no counterpart of 39 using 36 for 40 and 41. So there are no Yoruba expressions like:

- 42 *àìfọjúrọríkú = 'not using the eye to support the head while dying'.

Thus, normal restrictions observable in Yoruba VP's are even relevant for the VP's used for the nominalization derivation of lexical items like 37, 39 and 19(ii) above before these lexical items are inserted at P_1 , the level at which all lexical insertion should take place in the standard theory.

It is even possible to suggest that phonological rules which do not normally operate before P_n , the level of surface structure, have operated on structures like 38 before the lexical items in 39 are derived from them. Note that vowel assimilation would have taken place before 39(i), (ii), (iii), and (v) are derived from 38(i), (ii), (iii), and (v) respectively. However, the phonological argument will not be stressed here although we call attention to it.

Observe that 36 actually covers cases where only the verb occurs in

the verb phrase since we assume all the expansion possibilities of the VP in our rule. Hence, with intransitive verbs too, we can have ai nominalizations e.g.

43 (i) àllo - 'not going' from lo 'to go'

(ii) àisbón - 'not being wise' from sbón 'to be wise'.

Thus, if it were decided that the àì rule should occur only after P_i together with true syntactic transformations, we would find that strong points could be made for its occurrence before P_i for intransitive verbs from which negative abstract/gerundive nominals are derived. So, the àì rule must be duplicated if the level P_i exists as proposed in the standard theory.

Moreover, from our latest discussion on selectional restrictions, the selectional and categorial statements stated in the categorial subcomponent of the base component of an Aspects grammar must also be duplicated in the lexicon for the derivation of all nouns using rule 36. Note that the same argument applies to nouns using the /a/ + VP rule of 27 and 33 above as well as the affirmative abstract noun rule that will be discussed presently.

So, it seems a complete separation of levels does not actually reflect the reality of the situation. Chomsky 1964 has shown the unreality of autonomous arguments for phonology; and it appears that there is hardly any part of grammatical description, semantic, syntactic or phonological¹ which is totally independent of the other parts. Within syntax itself (granted that the lexicon is still a part of syntax), we have now found that information and processes from the categorial section of the 'base

1. Grammar is used here in its widest sense when it includes semantics, syntax and phonology.

component' and from the transformational subcomponent of grammar must be repeated in the lexicon of a standard theory. And if we make more detailed examination of parts of grammatical structure in Yoruba, we are likely to discover that the greater the number of autonomous levels established for grammatical description, the greater the tendency to repeat information in different autonomous subparts of grammar. Thus, one of the advantages of an abandonment of the autonomous P_i level will be that information repetition is reduced. Such reduction in information repetition had already been found with the extermination of the philosophy of autonomous phonology, and it appears the arguments used for phonology are not unsuitable for syntax. The reduction of information repetition is significant since it is difficult to foresee how whatever could be gained by the universal maintenance of the autonomous level of syntactic deep structure would justify the duplication of categorial rules and true syntactic transformations in the lexicon of any particular language.

3.2223 THE AFFIRMATIVE ABSTRACT NOUN NOMINALIZATION

This nominalization may imply gerundive nominalizations sometimes. But the real gerundive nominalization is the duplication rule of 3.2211(5) above. The present one is only an abstract noun nominalization. It can be stated as:

$$44. N = \dot{i} + VP$$

Note that the three main nominalizations from VP's can be summarized as:

$$N = \left\{ \begin{array}{l} /a/ \\ /ai/ \\ /i/ \end{array} \right\} + VP$$

since the three of them have the condition that certain auxiliaries must be deleted. The main problem with this generalized surface statement of the

rules is that à allows some forms of the auxiliaries which the others reject, and that each time à is followed by máa 'going to' which the other prefixes exclude, the formative for continuity n '-ing' is permitted between máa and the rest of the verb phrase, e.g. we can have:

- 46 (i) àfowóroríkú = 39(i) above
(ii) àimáafowóroríkú 'not dying peacefully'
(iii) àimáanfowóroríkú 'not dying peacefully continually'
(iv) ifowóroríkú by rule 44 = 'peaceful death' or 'dying peacefully'
(v) ffowóroríkú by rule 5 of 3.2211 'dying peacefully'

but not:

- 47 (i) *imáafowóroríkú, (ii) *imáanfowóroríkú
(iii) *fimáafowóroríkú and (iv) *fimáanfowóroríkú

where máa and máa + n are inserted in the appropriate parts of 46(iv) and (v). Since there is no Yoruba nominalization afowóroríkú using the /a/ + VP rule in 27 above, no reference is made to the a form in 46; but it is not unlikely that such a nominalization might be possible in future if the act of dying peacefully becomes as significant as that of murdering etc. to merit a personifying nominalization.

By using rule 44, Yoruba nouns and complex nominals are derived e.g.
48 ifé 'love' from fé 'to love', imò 'knowledge' from mò 'to know',
ijà 'quarrel' from jà 'to fight', idè 'bondage' from dè 'to bound', ipín
'share' from pín 'to share', to divide', ironú 'thoughtfulness' from ronú
'think', igbóràn 'obedience' from gbóràn 'obey', isèlè 'an occurrence, an
earthquake' from selè 'to happen', ipilèsè 'foundation' from pilèsè 'to
found', imotaraeninikan 'selfishness' from mo ti ara eni nikan = (know of
self one's alone) - 'look after one's own affairs only' etc.

While it is possible to list the simple derived disyllabic nouns like ifé 'love' in the lexicon denying that the l + VP rule exists there, it is

difficult to use the solution for very complex ones like ìmotaraenìnikan 'selfishness' where all the complexities in the VP e.g. the reflexivization leading to ara eni 'one's self' are observable. Then unless reflexivization were also recognized as a lexical rule to prohibit forms like:

49 *ìmotaraelòmírànnìkan '*knowing only matters relating to another's self' (where elòmíràn 'another person' is substituted for eni 'person' of ara eni 'one's self'),

it will be difficult to account for the similarities in the internal structures of the VP's of such derived nominals and other VP's that occur elsewhere in the Yoruba language. Moreover, since one has to state the selectional restriction and transformational possibilities in VP's only once (i.e. only in the appropriate component) when a failure to do so will imply an unnecessary repetition of information, one must allow the ì + VP rule to operate where its occurrence will not necessitate an unnecessary repetition of information. But so far, if there is an autonomous P_1 level, the ì + VP rule must be triply represented in the lexicon for the derivation of nouns like ìfé 'love', in the categorial subcomponent of the base where the selectional restrictions of the VP's in forms like ìfowóroríkú of 46(iii) are stated, and then in the transformational subcomponent where the relevant information about the reflexive transformation in the VP of ìmotaraenìnikan is available. The burden of proof that this triplication of rule representation is the ideal now rests on those who maintain that the level P_1 of syntactic deep structure is the only one where all lexical insertion must take place.

3.223

A NOMINALIZATION DERIVATION FROM NOUNS

The only nominalization derivation from nouns discussed so far was the indefinitizing and pejorative nominalization by duplication of 3.2213 above.

It is very productive like the present one which can simply be stated as oní + N (where oní = eni tí ó ní 'one who has'). This is the usual analysis of this nominalization and Gaye and Beecroft, Ward, Abraham, and Bangbose agree that the nominalization indicates the 'possessor of' or 'one who has'.¹

The rule for this nominalization can be stated as:

$$50 \quad N_2 = /oní/ + N_1$$

and can be supplemented with the following context-sensitive phonological adjustment rule:

$$51 \quad (i) \quad /oní/ \longrightarrow oní \quad / ______ (i) C \dots$$

where $\bar{I} = [i]$ on any tone, or generally $\bar{Vw} =$ vowel on any tone.

$$(ii) \quad /oní/ \longrightarrow Vw_1 l \acute{V}w_1 \quad / ______ \bar{V}w_1 C \dots$$

condition $Vw_1 \neq [i]$,

$$(iii) \quad \acute{V}w_1 Vw_1 \longrightarrow \acute{V}w_1$$

Rule 50 and the phonological adjustment rule 51 will be used to derive nouns like:

- 52 (i) onírìbá 'one who bribes',
(ii) onísu 'one who has yams, a yam seller',
(iii) onígàgbó 'one who believes, a Christian',
(iv) aláta 'one who has pepper, a pepper seller',
(v) elése 'one who has sins, a sinner',
(vi) olójòjò (dialectal) 'one who has sickness, a sick person',
(vii) olókòbó (dialectal) 'a liar'
(viii) ològbón 'one who has wisdom, a wise person'

respectively from other nouns like:

1. Gaye and Beecroft (1923: 70-2), Ward (1952: 181), Abraham (1958: 475), and Bangbose (1966: 104).

- 53 (i) ribá 'bribes', (ii) isu 'yam', (iii) ìgbàgbó 'belief'
(iv) ata 'pepper', (v) èsè 'sin' (vi) òjòjò 'sickness'
(vii) òkòbó 'lies' (viii) orún 'wisdom'.

Rule 51 can be considered as ordered. It states that oní remains unchanged when it precedes a word that starts with i like isu in 53(ii) or a consonant like ribá in 53(i) giving us onísu and onírìbá respectively. Rule 51(iii) reduces onísu to onísu. The same is true of oní+ìgbàgbó ----> oníìgbàgbó ----> onígbàgbó in 52(iii). For initial vowels that are different from i, rule 51(ii) applies changing oní to alá in front of ata (53iv), to elé in front of èsè (53v), to oló in front of òjòjò etc. Then, when 51(iii) applies, aláata, elésè, olóòjòjò ... are changed to aláta, elésè, olóòjòjò ... respectively. Note that rule 51 is stated here just to show how 52 is derived from 53. It ought to occur as a rule of the phonological component.

It seems the expansion of oní as eni tí ó ní 'one who has' - Gaye and Beecroft (1952: 70), and Bamgbose (1966: 104), or owner - Ward (1952: 181), or 'possessor of' - Abraham (1958: 475) is actually a rule of thumb. While in many cases, possession can be established as the relationship between the person and the object of reference, this is not always the case. It seems eni tí ó ní is really a variant of a more abstract underlying form eni tí ó ní nkan se pèlú 'one who is closely connected with' since it indicates close connection between the N_2 and N_1 of 50 rather than a possession relationship. Hence, while the possession relationship is possible for some of the examples above, we find that only the close connection relationship is possible for many others. And moreover, this close connection relationship is also possible for all the forms for which the possession relationship is possible e.g. onísu, aláata, elésè, and olóorún in 52. An interpretation of oníjàngbón i.e. eni tí ó ní jàngbón (person

who he has troubles) as 'one who has troubles' i.e. 'a troubled person' is wrong since oníjàngbòn is not the sufferer 'a troubled person', but the cause of the suffering, or the cause of the troubles 'a troublesome person'. Similarly, onísàngó 'Sango worshipper' is one who is closely connected with Sango rather than 'one who has Sango'; elèwòn 'prisoner' is one who is closely connected with prisons as an inmate rather than 'one who has prisons' i.e. 'the government'; elému is one closely connected with palm-wine, and this refers to both the seller of palm-wine and a drunkard etc.

3.23

TYPES OF NOMINALIZATION RULES

From 3.22 above, we have observed three types of nominalization rules. First, we noted those that refer specifically to AUX in the expansion of the VP. And we saw that in such rules, e.g. 27 (or 33), 36 and 44, the conditions and restrictions that apply to the VP's used for deriving nouns inserted at P_i are also requisite for the derivation of nominals after the lexical items that constitute parts of these nominals have been inserted at P_i . Furthermore, in 33 at least, we saw that these rules can be stated in the form of normal syntactic transformations with SI's and SC's meeting the Boolean conditions of analyzability. Moreover, most of these nouns, especially the /a/ + VP types of 27 have full NP paraphrases as demonstrated in the discussion leading to the representation 33. It appears that this class of nominalizations would only create difficulties for any one who maintains that some derived nouns or nominals should be listed in the lexicon while others which use precisely the same rules should be accounted for in the transformational subcomponent. The lexical list will complicate the 'base' as expected, but it will not remove any complication from the transformational subcomponent since the rules will still be repeated there anyway. A better suggestion would have been to recognize that a duplication of rules

is essential in both the lexicon and the transformational subcomponents. At least, this will account for the fact that it is the same rule (i.e. /a/ + VP which derives the complex aritenimówí of 3.2221(29vi)) that derives Abraham's asé 'strainer'. However, it is this type of duplication that we argued against in chapters I and II, and it is preferable to a lexicalist analysis of derived nouns. Note that while a lexicalist approach will involve the denial of a generalization that /a/ + VP operates both before and after P₁, a duplication of the /a/ + VP rule in both the lexicon and the transformational subcomponent of a deep structure grammar does not deny this generalization.

Secondly, we noticed that within the nominalizations that are based on VP's, the normal selectional restrictions and categorial and subcategorization rules of the categorial subcomponent of the syntactic component of an Aspects grammar actually operate even when the derivational rules themselves cannot be expressed in the form of 33, e.g. the ì + VP rule. The possibility of ìmotaraeninkan of 3.2223(48) vis-a-vis the inadmissibility of *ìmotaraelòmírannikan of 3.2223(49) suggests that a lexicalist treatment of such nominals cannot but be tantamount to a rejection of explicitness in grammatical description in favour of convenience for almost inexplicable reasons.

Finally, we discussed the nominalizations that are not seriously affected by selectional restriction possibilities in their inner structures e.g. the /oní/ + N nominalization, the indefinitizing and pejorative duplication nominalization $N_2 = N_1 + /kí/ + N_1$, and the occupational nominalization $N = VV$. But at least, the first two of these are very productive, and it seems there is nothing to suggest that a lexical list could in any way be half as profitable as their statement as rules. After all, most Yoruba nouns that are more than two syllables long are derived

through such rules. Hardly anything is gained by rejecting their statement as general rules when new nominalizations that have not yet occurred can even be based on them.

3.3 ONE YORUBA PERSONAL NAME DERIVATION RULE

The main reason for bringing in the Yoruba personal name derivational processes into this work is to show how Yoruba personal name derivations supplement the point we have already made in 3.2. Otherwise, it will not be necessary to discuss the personal name per se since it is not yet certain whether personal name derivations could be allowed to operate within the normal syntactic processes of languages.

For Yoruba, one can say that most personal names are either sentences or noun phrases like the noun phrases of the personifying nominalization section in 3.2221 above. There are some exceptions to this generalization. For instance, the names given to children born in unusual circumstances which are not freely generated can be listed in the lexicon; but these names, about twenty in number, are so few, fixed, and unproductive that we cannot let them destroy the generalization. As Chomsky has already noted, "the general rules of a grammar are not invalidated by the existence of exceptions."¹ Hence, those exceptions (which are also not monosyllabic) do not invalidate the generalization that Yoruba personal names (YFN)² can be generated through two rules Name \rightarrow S and Name \rightarrow NP, and that these rules are very productive.

1. Chomsky 1965: 218 footnote 28.

2. An Aspects type grammar of Yoruba personal names was presented as a dissertation by the present writer in Leeds in 1967. A later development from the grammar is the treatment of the Yoruba personal name as a finite language in the manuscript "The Grammar of a Finite Language" bibl.

We shall handle both the Name ----> S and the Name ----> NP rules together although our emphasis later will be on the Name ----> NP rule since we are here dealing with the syntax of the NP. Perhaps underlying performatives can be suggested for the Name ----> S rule. All we shall say about the Name ----> S rule here is that its statement as rule is preferable to a lexical list. We take this stand because the system of Yoruba personal names is productive. Thus, on the basis of existing names (which will be the analogue of the primary linguistic data for linguistic description), more new names which have never occurred can be constructed. Thus, given the names:

54(a) Eyitayo = [èyí tó ayò] _S 'this is enough joy'

(b) Oladimeji = [ọlá dí méjì] _S 'honour is doubled'

(c) Osakua = [òrìṣà kú ìwà] _S 'orisa (the idol) is really cultured'

we can derive the following by merely changing the subject NP of the underlying sentence for the names in 54:

55(a) Iletayo = [ilé tó ayò] _S 'the home is enough joy'

(b) Omodimeji = [ómọ́ dí méjì] _S (child becomes two)

(c) Olukua = [Olú kú ìwà] _S 'the Lord is really cultured'.

The names in 55 are new, and it does not appear they have ever occurred.

Only a derivation by rule can ^{account for} ~~justify~~ their occurrence in case they come up in future, and their coming up cannot be ruled out since they do not violate the condition of naming in Yoruba which is stated as

ilé ni a n'wò kí á tó so ọmọ lórúko - 'the condition of the home determines a child's name'.

Secondly, when we consider the sentence names, one finds that the three Yoruba mood systems: interrogative, declarative, and imperative have representatives within the Yoruba personal names. For instance, we have the following Yoruba names:

- 56(a) Ogunjulugbe = [ògún kò jú lù gbé] _S 'Ogun cannot be cheated'
(b) Fagbemi = [ifá gbè mí] _S 'Ifa favours me'
(c) Matanni = [iwọ, má tàn mí] _S 'You, do not deceive me'
(d) Tanimowo = [ta ni mò ọ̀n wò] _S 'Who can protect him/her?'
(e) Adekanabi = [adé kàn mí bí] _S 'Is it my turn to reign?'

In 56, the (a) and (b) structures like the structures in 54 and 55 earlier are in the declarative, the (c) structure is in the imperative, and both the (d) and (e) names are in the interrogative moods.

A third point deals with the question of selectional restrictions. We need derivation by rule because describable selectional restrictions occur within the elements used in personal name construction, and it is a derivation by rule rather than a lexical list that can enable us to explain selectional restriction possibilities. For instance, in the new names in 55 above, we cannot substitute òkúta 'stone' for Olú in 55(c) since for the VP kú iwà 'is really cultured' only animate or functionally animate subjects are possible. A functionally animate noun is one like Olu 'the Lord', Olórun 'God' or òrisà 'the idol' to which the qualities - human and animate - are attributed by the Yoruba.

The fourth point in favour of derivation by rule is connected with the possibility of segmenting parts of personal names for syntactic operations like questioning or emphasis e.g. both the question kí ni ó tún dé? 'what comes again?', and the clefting emphatic structure ayò ni ó tún dé 'it is joy that comes again' are possible operations on the Yoruba personal name Ayotunde 'joy has come again'.

A fifth point is that a derivational analysis prevents the incongruity that will arise if the same syntactic operations (e.g. those dealing with categorial and selectional restriction rules) found with the nominalizations of 3.2 are also possible for personal names; but while for nominalizations

they are representable as derivational processes, for names on the other hand, they are inaccessible since names enter the lexicon merely as a lexical list.

Perhaps the final point, which will deal mainly with sentence names, is that verbs normally select nouns as subjects and objects, but they do not normally select sentences for such purposes although many names and many Yoruba sentences are really not phonologically distinct. For instance, a sentence name is:

57 Olayemi = olá yé mí (honour befits me)

and a normal Yoruba sentence is:

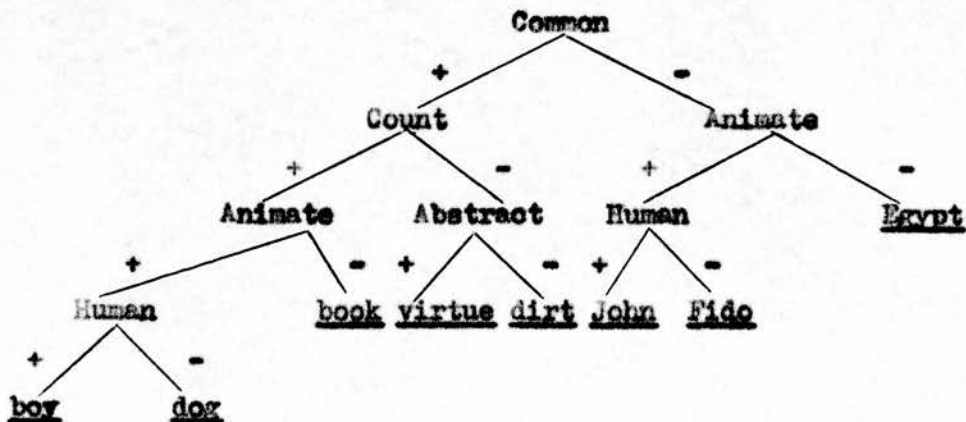
58(a) Olayemi fẹ̀ràn ìjò 'Olayemi loves dances'

but we do not have:

58(b) *Olá yé mí fẹ̀ràn ìjò (*honour befits me loves dances).

The implication of the above discussion is that it will be profitable to allow two category symbols S and NP to replace John in the 'branching' diagram (21) of Aspects¹, (represented as 59 here), thus violating condition 1 in 3.1 above. Otherwise a denial that generalities exist becomes inevitable.

59 = (21) of Chomsky 1965:



1. Chomsky 1965: 83

Although we did not discuss the Name ----> NP rule, this conclusion follows since the NP concerned actually has representations similar to those of 33 and 34 in 3.2221 above. Rule 33 of 3.2221 can be stated once, and it will generate both personal names and personifying nominalizations. No reduction of complication in the transformational subcomponent of grammar could be achieved by listing all the names using the NP rule in the lexicon just because they are names since rule 33 will still be in the grammar anyway. Note that we can have NP names corresponding to /a/ + VP nominalizations e.g. in 60 and 61 below where the examples in 60 represent the names while those in 61 stand for the nominalizations. In 60 and 61, a hyphen is used to separate the lexical items corresponding to N - PM - NP - VP (i.e. 1, 2, 3, and 4+5+6) in the structure index of 33 above.

- 60(a) Atayero = eni - tí - ó - tún ayé rọ 'one who repairs the world'
(b) Aduloju = eni - tí - ó - dú ní ojú 'one who is dark of the face'
(c) Afolayan = eni - tí - ó - ní fí olá yan 'one who strides honourably'
(d) Abosede = eni - tí - ó - bá òsè dé 'one who arrives on Sunday'
- 61(a) apaniyan = eni - tí - ó - pa ènìyàn 'a murderer' - (3.2221(2911))
(b) asiwere = eni - tí - ó - ní sè wèrè 'a mad person'
(c) akilapa = eni - tí - ó - kí ní apá 'one who has thick muscles'
(d) asewo = eni - tí - ó - ní sẹ owó 'a courtesan' - (3.2221(2911))

Thus, the fact that Name ----> NP is a rule to be recognized in Yoruba is inescapable. When we consider other manifestations of the Name ----> NP rule e.g. in structures like:

- 62 Enilolobo = eni tí ó lọ ní ó bọ 'the person who left is the one who came back'

where there is a relative structure (see 6.1 below), and the relative even appears in the surface structure representation thereby confirming and justifying the possibility of underlying relatives like those proposed

for the names in 60 and their corresponding nominals in 61, we find it difficult to ignore the Name \rightarrow NP rule. A non recognition of the fact does not reduce the burden of any of the components of grammar. And a recognition of the fact brings to the surface the problems of derivational circularity through a violation of the condition of ultimate non self dominance in rewriting systems. This problem will now be examined in 3.4.

3.4 NON SELF DOMINANCE AND YORUBA NOMINALIZATION RULES

In 3.2 and 3.3 above, we noticed that the requirement that there should be a level P_i of syntactic deep structure where all lexical items must be inserted implies either the repetition of certain Yoruba nominalization rules in different subcomponents of grammar or the denial that generalities exist. In this section, we intend to look at the implications that the nominalization rules described earlier have on the rewriting condition of ultimate non self dominance which was stated in Postal 1964 as:

63 "If A is expanded into B in some context, there are no contexts such that B is expanded into A or into anything which is expanded into anything which is expanded into A etc."¹

By 63, A cannot ultimately dominate itself i.e.

A \rightarrow B \rightarrow C \rightarrow A is impossible, hence 63 is the condition of ultimate non self dominance (UNSD), and it was proposed by Postal purposely to prevent base permutation through the use of queer rules like:

"R6 Noun \rightarrow Modal in Modal" and "R7 Modal \rightarrow Noun in Modal "²

In our discussion of 63 or UNSD, the main interest here is not the old problems of base permutation but the problems of derivational circularity.

1. Postal 1964: 15

2. Postal 1964: 15

Derivational circularity implies going in a circle repeatedly from a category symbol back to itself. This is possible if ultimate non self dominance were violated and pursued to its logical conclusion or if immediate non self dominance were violated giving respectively:

64 $A \longrightarrow B \longrightarrow C \longrightarrow A \longrightarrow \dots \longrightarrow A$ for a UNSD violation or

65 $A \longrightarrow A \longrightarrow \dots \longrightarrow A$ for a violation of immediate non self dominance. Immediate non self dominance (INSD) is the condition that a symbol is not rewritten as itself.

Observe that the condition of UNSD has actually been relaxed since the time of Aspects when generalized transformations were abolished and recursion on the right of the rewriting arrow was introduced (Chomsky 1965: 137). So, rules like $NP \longrightarrow NP\ S, \text{ or } S \longrightarrow S$ and $S, \text{ or } S \longrightarrow NP\ VP$ where $NP \longrightarrow N\ DET\ S$ are now permitted although they were prohibited at the time of Constituent Structure. We recognize that UNSD in its strongest form is no longer a problem of rewriting systems, but some of its corollaries (e.g. the prohibition of base permutation) are still upheld. Thus, ultimate non self dominance is still a relevant condition in linguistic theory.

It is the violation of UNSD and not that of INSD that is possible if

one were to take advantage of the ambiguity of the rewriting arrow in Aspects¹ in order to have odd representations like:

66 NP \rightarrow N \rightarrow [+N] \rightarrow [-Common] \rightarrow [+Animate] \rightarrow [+Human] \rightarrow NP.

Note that only the first \rightarrow in 66 refers to branching or phrase structure rules, and all the other arrows except the last introduce specified syntactic features. 66 tells the derivational history of personal names ^{derived through} ~~NP rules~~ NP rules like 33 above, ~~NP rules like 33 above~~ but one consequence of the ambiguous use of the arrow is that one is able to ignore the fact that what is rewritten as the rightmost NP in 66 is not only the [+Human] on its left, but all the feature complexes [+N -Common +Animate +Human] i.e. Personal Name.

However, by condition 1 of 3.1 (which was set up in Chomsky 1965), 66 is not permissible since the rightmost NP, a category symbol, cannot be introduced from complex symbols. 66 is not allowable just because Chomsky set up a condition to prohibit it, but this does not mean that it is impossible. The only serious objection to 66 is that it misleads one into assuming that what is rewritten as the rightmost NP is just one feature

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1. The rewriting arrow in Aspects is ambiguously used for representing branching rules and subcategorization rules. In Aspects, both branching and subcategorization rules are introduced as rewriting rules:

"All rewriting rules are of the form

(60) A \rightarrow Z / X W

The branching rules are those of the form (60) in which neither A nor Z involves any complex symbols. A subcategorization rule, on the other hand, introduces syntactic features, and thus forms or extends complex symbols." Chomsky 1965: 112. But earlier, when Chomsky wanted to introduce subcategorization rules using the feature notation to handle problems of cross classification, he stated: "But if the subcategorization rule is given by rewriting rules... the other will be unstatable in the natural way." Chomsky 1965: 79-80 (italics supplied). It is certain from the two different uses of 'rewriting rules' on pp. 112 and 79-80 that 'rewriting rule' is being used ambiguously, otherwise one is likely to say that the arrow normally used for 'rewriting rules' in (60) of Chomsky 1965 is meaningless, or assume that it can be misused freely as in the representation 66 here.

rather than a complex of features. In order to make this discussion apply generally to all nominalizations, we shall add one other rule which clearly violates UNSD although it does not violate 3.1(1):

67 NP ----> N ----> NP

Since no complex symbol appears in any part of 67, the rule there, which is not even our rule, cannot be prohibited by 3.1(1), and so, it is less objectionable than 66. Suppose the leftmost NP in 67 is what appears on the surface as the apànyàn 'murderer' of apànyàn ní ó (murderer is you) 'you are a murderer'. We find that this apànyàn is also a N (noun) since rules like NP ----> N exist everywhere. In a lexicalist framework, this N can only be developed into a complex symbol. Thus, the lexicalist can never go beyond NP ----> N although the N, apànyàn, must have been derived through the processes described in 3.2221 from a NP that is expanded as N RM S for eni tí ó ní pa ènyàn 'one who kills people'. From our discussions in 3.2 and 3.3, it seems this N actually comes from an underlying NP so that apànyàn 'murderer' is never inserted at any level P_1 , but is derived through the normal syntactic processes of the Yoruba language from basic lexical items like pa 'kill' and ènyàn 'person'. But if one still insists on the existence of a level P_1 where all lexical insertion must take place, one cannot escape having a rule like 67 in order to show the relationship of surface apànyàn to eni tí ó ní pa ènyàn.

The representation 67 is one which most clearly violates 63, and it seems the violation must be allowed if we do not want to deny that generalities exist while retaining P_1 . For instance, apart from the points already given in 3.2 in favour of the derivation of forms like apànyàn from underlying NP structures containing embedded sentences, more evidence of a different sort is available.

Thus, we noted that AUX was deleted in the expansion of VP in

3.2221(27 and 33). One can use the AUX deletion to account for the surface ambiguity of derived nouns like apàniyàn. For instance, apàniyàn could be:

68(i) eni tí ó (ń) pa èniyàn 'one who constantly kills people; a professional assassin' which is synonymous with panipani 'professional murderer' derived through the occupational nominalization rule 9 of 3.2212 from pani = pa eni (kill person). In 68(i), the bracketted AUX [g] '-ing' is deleted in a structure change which looks like 3.2221(33) above. And apàniyàn could still be:

68(ii) eni tí ó na èniyàn 'one who kills once, but who is not a professional assassin' (without the AUX) or

68(iii) eni tí ó maa na èniyàn 'one who is likely to murder' (where maa 'going to' is deleted through the use of rule 33). The three different interpretations of apàniyàn in 68 are respectively observable in contexts like:

69(i) apàniyàn yen tún ti se isé owó rẹ (murderer that again have do work hand his) 'that murderer has struck again'

69(ii) apàniyàn nà kò pa enikéni rí (murderer the not kill anybody before) 'the murderer has never murdered before', so, he is not a professional assassin.

69(iii) Bí o bá kórira eni kejì rẹ, apàniyàn ni ó (if you happen hate person second your, murderer is you) 'if you hate your neighbour, then you are a murderer'.

In 69(iii), no killing or murdering has ever taken place although apàniyàn 'murderer' is used. This usage is common in Yoruba where

70 apàniyàn ni ó 'you are a murderer'

may even be said as a joke to a trickster who has never murdered anybody.

It is the type of derivation suggested in 3.2221(33) that can account

for the three senses of apàniyan which are discussed in the preceding paragraph since the differences in meaning are accounted for through the deletion of different auxiliaries in underlying representation. One can note that only the personifying nominalizations that have the attributive rather than the agentive interpretation e.g. akiláná, adulóju, adumáadén of 3.2221(30) and abórí, apárá of 3.2221(31) lack the type of distinction characteristic of the first and second senses of apàniyan in 63(i) and (ii) respectively. Hence, the type of surface ambiguity mentioned here is not unique to apàniyan. It is found in almost all other a + VP derivations that are interpretable as agentive. Hence, apiwàrè 61(b) is 'one who behaved madly only once' or 'one who is always mad', or 'one who has never run mad, but who has so misbehaved that he was referred to as a mad person'; Afolavan 60(c) is 'one who continues to stride or march around with honour' or 'one who is expected to march around with honour although he has never done so, and he may even refuse to do so'. On the other hand, Abosede 60(d) is not so ambiguous since the person concerned could only be born once (i.e. on Sunday for 60(d)), and no one is born repeatedly. Note that the person who is born is not an agent in this case.

So, from the above discussion, rule 67 must be recognized in Yoruba syntactic structure when the level P_i is defined as in Chomsky 1971. Its recognition however has nothing to do with the ambiguity of the rewriting arrow mentioned earlier since \bar{N} was never rewritten as the feature $[N]$ before it was rewritten as NP. Thus, derivational circularity is inevitable since 67 justifiably violates the condition of ultimate non self dominance.

In a standard theory framework, it seems there are three plausible methods of meeting the challenge posed by both 66 and 67. The first method which will be considered as the first proposed solution to the problems is

one which suggests that category symbols like S and NP could reappear after complex symbols have been developed thereby violating condition 1. This solution has already been mentioned in our discussion of the personal name where S and NP could replace John in tree diagram (21) of Aspects. As there is no formal way of stopping reintroduced category symbols from developing into complex symbols from which category symbols could reemerge, this solution will soon come to difficulties. And besides, it will call the relationship between category symbols and complex symbols into question since the distinction will now appear unjustifiable if one could move from category symbols to complex symbols to other category symbols to other complex symbols etc. Hence, this first solution cannot be perfected without some redefinition of relationships within the standard theory.

The second proposed solution which we have also observed earlier is the repetition of rules which appear elsewhere e.g. categorial rules like $NP \rightarrow N \text{ RM } S$ or true syntactic transformations like deletion and adjunction in the lexicon (i.e. before the level P_1 of the syntactic structure $\Sigma = (P_1, \dots, P_1, \dots, P_n)$ of the standard theory). As pointed out earlier, a failure to repeat such rules in the lexicon involves a denial that generalities exist. But the fact that repetition of information is inevitable suggests that the framework itself may have something to contribute to this inevitable untidiness in description. Thus, if rules that are normally recognized after P_1 also occur in precisely the same forms before P_1 , and if, on independent grounds, the reality of the existence of P_1 has been called to question, the existence of P_1 may have something to do with the untidiness created by syntactic rule repetition in the lexicon. Thus, this second solution exposes the weak points of the autonomous level P_1 of syntactic deep structure.

The third proposed solution will be one which destroys the distinction

between category symbols and syntactic features and regards all symbols of grammar as complexes of features as Chomsky has done in the lexicalist paper: "We might just as well eliminate the distinction of feature and category, and regard all symbols of grammar as complexes of features."¹ This solution looks like an answer to the problem of the relationship between category symbols and complex symbols (or features) raised by the first solution. The artificiality of the distinction between category and feature was recognized by Chomsky as a legacy "from structuralist syntactic theories, which regarded a grammar as a system of classes of elements derived by analytic procedures of segmentation and classification."² The mixture of the structuralist legacy with the feature system led to some obvious repetition of information in Aspects through the interpretation of lexical categories "both as categories of the base (N, V, etc.) and as features of the lexicon (+N, +V, etc.)."³

The third proposed solution appears to be the best and least arbitrary within the standard theory framework not only because of the elimination of the notion of category "even for the base",⁴ but also because the types of elements occurring within the lexicon (i.e. between P_1 and P_i) are also the types occurring outside it (between P_i and P_n) viz. "sets of features". So, if rightly developed, the third proposal will also solve the problems of the second one by removing P_i altogether thereby bequeathing to us a variant of the basic theory of generative grammar that is not encumbered with the problem of defending the status of the autonomous level P_i of

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1. Chomsky 1970: 208
 2. Chomsky 1970: 208
 3. Chomsky 1970: 208
 4. Chomsky 1970: 208

syntactic deep structure. However, Chomsky merely adopts the notion that all the symbols of grammar are sets of features, but he never abandoned P_1 so that this third solution has been deprived of its ability to solve the problems discussed in this section.

It may be suggested that both categories and features should occur only before P_1 so that the elimination of the distinction between them will have nothing to do with the status of P_1 . One effect of this suggestion will be the acceptance of the inevitability of rule repetition both before and after P_1 , and an admission of the impossibility of any solution to the problems observed from 3.2 to 3.4 within a standard theory framework. And the only advantage of the elimination of the distinction between category and feature will be a reduction of triplication of rule representation in the categorial subcomponent, the lexicon, and the transformational subcomponent for the i + VP rule etc. as noted during the discussion of the derivation of ìfẹ́ 'love', ìfowóróríkú 'dying peacefully' and ìmotaraenínìkàn 'selfishness' for the affirmative abstract noun nominalization in 3.2223 above. Since only the distinction between category and feature is destroyed, the categorial subcomponent and the lexicon become one and we now have a mere duplication of rule representation before and after P_1 .

However, it is believed that the third proposal could lead towards an acceptable solution if the P_1 barrier were removed, and that is why we have adopted a feature solution for the description of the Yoruba determiner system in chapter VI below. Since the P_1 barrier remains for the third solution, and since it implies a duplication of rule representation in different subcomponents of grammar, we shall now abandon the position of this third solution in favour of one in which the level P_1 remains undefined. We have already looked at the new proposal in 1.5 and 2.4 above,

and we wish to apply it to Yoruba nominalizations in 3.5 below.

3.5 UNDERLYING SENTENTIAL DERIVATION FOR NOUNS

In this chapter, we made a distinction between basic and derived nouns. The basic nouns are defined negatively as nouns that are not derived from other lexical items or those whose derivational histories are obscure. The derived nouns are those in which some of the nominalization rules in Yoruba have already operated.¹ So far, emphasis has been placed on derived nouns which feature prominently in our discussions from 3.2 to 3.4 above. Now, we wish to consider both the basic and derived nouns together. And we intend to start this examination by recalling a proposal which Bach has already made for all common nouns.²

Bach made a case for deriving all common nouns (basic and derived) from relative clauses, and indicated that such derivations make for simplicity and descriptive adequacy. He decided "to postulate that all nouns (at least common nouns) are derived in one way, namely from structures of roughly the form

(71)(i) Det + one + S

where S is further developed into a sentence of the form

(71)(ii) Det + one + Aux + be + Predicate Nominal."³

The numbers (71)(i) and (71)(ii) are mine. From 71, one could derive structures like:

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1. In this work, we merely concentrate on productive nominalizations. There are some apparent nominalizations and noun derivational processes that are totally unproductive e.g. many of the derivations in Gaye and Beecroft 1923: 73. A treatment of such apparent derivations syntactically seems inadvisable.
 2. Bach in Bach and Harms 1968
 3. Bach 1968: 92

72 Det + one + NM(relative marker) + Aux + be + Predicate Nominal
the same way as the relative structure P_{1-4} of 2.2(5) was derived from
 P_{1-6} of 2.2(4) earlier. Thus, suppose the predicate nominal in 71(i)
were to dominate a lexical item like 'anthropologist' ultimately, the NP,
'the anthropologist', will be derived from an analogue of 72 which looks
like:

73 the one who is an anthropologist
assuming that the mapping of 71 onto 72 had already taken place. So,
from Bach's proposal, common noun structures will have underlying structures
that look like 71 and 72. Thus, the surface forms:

74(a) the man, (b) the teacher, (c) the ornithologist, (d) the school,
(e) the pen, (f) the idea....

would be derived respectively from:

75(a) the one who is a man
(b) the one who is a teacher
(c) the one who is an ornithologist
(d) the one which is a school
(e) the one which is a pen
(f) the one which is an idea etc.

The general form of Bach's argument cannot be discussed here. The
fact that it can be criticized is not denied and in fact Dougherty's
adverse criticism of Bach's proposal is discussed below in chapter V.

When Bach's proposal is adopted for Yoruba, there will be a common
underlying treatment for both basic and derived nouns. Note that at least
two of the English nouns in 74 and 75 are derived. Thus, 'a teacher'
could be 'one who teaches' while 'an ornithologist' could be 'one who is
closely connected with ornithology'. But in the representation 75, there
is no distinction in the underlying representation of derived nouns like

'teacher' and basic ones like 'man'. Hence, if Bach's proposal were used for Yoruba, we would have representations like:

76(a) èyí tí ó jé èniyàn (the-one wh- he is person) 'the one who is a person'

(b) èyí tí ó jé ọ̀kúnrin 'the one who is a man'

(c) èyí tí ó jé akòwé 'the one who is a clerk/writer'

(d) èyí tí ó jé agbẹ̀jórò 'the one who is a lawyer'

(e) èyí tí ó jé apàniyàn 'the one who is a murderer'

(f) èyí tí ó jé ilé 'the one which is a house'

In the representation 76, no distinction is made between basic and derived nouns. In order to show the difference between derived and basic nouns, the derived nouns after je 'to be' could be represented with their proposed underlying forms in the representation 76 e.g.

77(a) èyí tí ó jé eni tí ó n kọ̀ iwé (the one wh- he is person wh- he ing write book) 'the one that is a person who writes books'

(b) èyí tí ó jé eni tí ó n pa èniyàn (the one wh- he is person wh- he -ing kill people) 'the one that is a person who kills people'

for 76(c) and 76(e) respectively.

If the type of representation in 77 were used for derived nouns while basic nouns have only the type of representation in 76, it will be possible to have underlying sentential representation for all Yoruba common nouns while still maintaining the distinction between basic and derived nouns. First, the basic nouns will be those that are introduced directly by the verb 'to be' from structure (71)(ii) while the derived nouns will be those formed from the NP representations that are introduced by the verb 'to be'. In other words, for the basic nouns, the verb 'to be' directly introduces lexical items which are nouns, whereas for the non basic or derived group, it is the NP structure (or Predicate Nominal) from which these derived nouns

are derived that is introduced by the verb 'to be'.

Secondly, when the NP structures that stand for derived nouns in underlying representations are expanded, there are some verbal elements (e.g. verbs or 'predicative adjectives') which occur directly in the final forms of derived nouns e.g. pa 'kill' in apàniyàn 'murderer' ko 'write' in akòwé 'writer, clerk', dú 'be black' in Aduloju 'one who is dark on the face' etc. The verb 'to be' on the other hand does not occur in the final forms of the nouns that have it in underlying representations e.g. the nouns that follow je 'to be' in each of the representations in 76. Thus, one difference between derived and basic nouns illustrated by the representations 76 and 77 is that basic nouns are commonly introduced in underlying representations by eyí 'the one' plus the verb 'to be' both of which disappear in the final form of the lexical items, whereas in addition to this, the derived nouns also have their internal structures represented there. In particular, nouns and nominals that are derived from verbs and verb phrases have the verbal elements that later occur in their surface forms represented as verbs in underlying representations.

In order to make this second observation general, nominalizations that do not come directly from VP's would have to be given representations that have internal structures e.g. the use of

78 eni tí ó ní nkan se pèlú N - 'one who is closely connected with N' (where N is a noun) - for the eni + N construction - as suggested in the final paragraph of 3.223 or representations like:

79 èniyàn tí kò jò èniyàn - {eniyankeniyàn} = (person wh- not resemble person) 'a person who does not look like a real person' i.e. 'a useless person'

or any appropriate representation for the pejorative sense of nominalizations using rule 11 of 3.2212 viz $N_2 = N_1 + /kí/ + N_1$ etc.

For the negative abstract/gerundive nominalization of 3.2222, one could propose forms that look like:

80 àyè pé kí a má gbóràn - {àìgbóràn} = (state indicating that we don't obey) 'disobedience'.

For the affirmative abstract noun rule of 3.2223 and the gerundive nominalization by duplication rule of 3.2211, it is likely that a common underlying structure could be proposed since both nominalizations are negated by the negative abstract/gerundive nominalization that has representations like 80 above. A possible representation is:

81 àyè pé kí a máa gbóràn - {ìgbóràn} 'obedience', gbìgbóràn 'obeying' } = (state indicating that we continue-to obey).

For other nominalizations, plausible underlying representations could be proposed, and for different nominalizations that are likely to have common underlying forms e.g. those represented by 81, ways of making minute distinctions could be found when necessary. But it is not always necessary to make such distinctions. For instance, in one of their senses, nouns derived through the /a/ + VP nominalizations (3.2221(27) and (33)) could be synonymous with occupational nominalizations by duplication (3.2212(9)) e.g. the occupational sense of apàniyàn in 3.4(68i) above. Note that it is when apàniyàn 'murderer' has the occupational sense of 68(i) that it can really be replaced with its occupational nominalization counterpart panipani or pàniyànpàniyàn 'professional killer'. A similar proposal can be made for jagun 'professional soldier' derived through 3.2212(9) and ajagun 'one who fights battles' derived through 3.2221(27) and (33). It seems a more detailed analysis of all nominalizations along these lines could be undertaken in syntactic descriptions that are wholly devoted to nominalizations.

So, we find that common nouns could be sententially derived as suggested

by Bach. We also saw that this can even be done without losing sight of the distinction that exists between Yoruba nouns that are derived through very productive syntactic processes and those that are basic. It seems the same suggestion could be made for Yoruba proper nouns, and we may direct our attention only to the Yoruba personal names discussed in 3.3. For names which are derived through NP's, we can have representations similar to those of 77 while one that looks like 76 can be proposed for the few exceptions which are given to children born in unusual circumstances (e.g. Ajavi - the name given to a child born face downwards). Sentence names can also come from representations that look like 77 such that the surface sentences have already been dominated by NP's at certain stages in derivation.

It may be noted however, that some place names are also derived e.g.

- 82(a) Ogunremi = ògún rẹ mí (Ogun comforts me) 'Ogun comforts me'
(b) Ekundayo = Èkún dí ayò (sorrow becomes joy) 'sorrow is turned into joy'
(c) Akinvele = akín yé ilé (bravery befits home) 'bravery befits the home'
(d) Wasimi = wá simi (come rest) 'come and rest'

and NP names like:

- 83(a) Ibadan = èbá òdàn (vicinity savana) 'the vicinity of the savana'
(b) Abeokuta = abé òkúta (underneath stone) 'the underneath of the rock' -
the city under the Olumo Rock
(c) Ilesa = ilé òrìsà (home idol) 'the home of the gods'
(d) Ogbomoso = ògbóríelémèsó (cf. the ò corollary of the /a/ + VP nominalization of 3.2221 above) = eni tí ó gbé orí Elémèsó (person who he carry head Elemeso) 'the carrier of the head of Elemeso'.

Some of the town names were personal names originally e.g. 80(a), (b), (c), and 81(d). The town names which are identical with sentence personal names still remain as personal names. Nevertheless, it appears that Bach's

proposal for common nouns can also be suggested for town names although we refrain from discussing town names here. Thus, the town names which are NP's can have representations that look like 77 while those that are sentences could have had the sentences dominated by NP's at earlier stages in derivation. For town names that are neither NP's nor sentences e.g. Èko- 'Lagos', one could propose underlying representations that are analogues of 76.

It is possible to suggest from the similarity of many place names to personal names as indicated in the representations 82 and 83 that no distinction should be made between personal names and other proper nouns in description, but it appears that in use (or on the performance level) Yoruba people make certain noticeable distinctions between them. For instance, all truly abbreviated Yoruba personal names are disyllabic e.g. Túndé 'comes again', Délé 'arrive home', Kólé 'build house', Wándé 'looks for me at home', Opé 'gratitude, thanks', Tóyìn 'is praiseworthy', Ayò 'joy' etc., whereas place names are not abbreviated even when they are identical with personal names. Thus, Ogunremi - personal name - can be abbreviated as Ogun or Remi, but when it is a town name as in 82(a), it is never abbreviated. Note that what appear to be trisyllabic abbreviated personal names e.g. Delumo for Adelumo 'royalty unites', Folahan for Olufolahan 'God displays His honours' etc. are not really regarded as abbreviations since such abbreviated forms (if they can be so called) are often regarded as full names. Thus, Folahan as a full name will mean 'display your honours' while Kayode will imply 'bring joy home' rather than Olukayode 'God brings joy home' etc.

Another distinction between personal names and town names is that the former refers to objects specified in an Aspects type grammar as [+Human] whereas this specification does not apply to place names. Hence, there

may be reasons for discussing personal names and place names separately, especially with regard to the selection of classifiers.

At this stage, we can examine the types of underlying distinctions already made for Yoruba nouns. All nouns are introduced in underlying representations by classifiers where a classifier system can be defined as:

84 "The system of noun-classification for the purpose of enumeration and individuation."¹

As pointed out by Lyons, "some of the classifiers are very general and may be regarded as semantically empty. Others are specific to certain classes of nouns, and they may even be used themselves elsewhere as nouns."² Lyons illustrated the specific classifiers by suggesting the possibility of using English words like thing, person, tree etc. the way classifiers are used in many languages of south east Asia.

The distinction between general and specific classifiers is actually present in the representations above. For instance, only èyí 'the one' in 76 has been used as a general classifier for all common nouns so far. Note that the èyí in 76 is used for all classes of common nouns e.g. human, non-human, abstract etc.. Hence, to some extent, it may be regarded as being semantically empty, and it may even be replaced with 'common noun' if this system of representation were to be generalized. On the other hand, enì 'person' and ipò 'position' (in 2.1 and 2.2) are specific. While enì can only be used for 'human beings' or objects regarded as 'persons', ipò can only be used for 'positions'.³ But while it will be interesting

1. Lyons 1968: 288

2. Lyons 1968: 288

3. The use of ipò 'position' as an example here will be clear later in chapter V where we suggest that all Yoruba numerals are nouns in underlying representation.

to explore the distinctions between general and specific classifiers and the way they can be utilized in any syntactic analysis like this one, it will be enough merely to suggest for further speculation the opinion that classifiers might have been 'inserted' at an earlier stage in derivation than the final lexical items they introduce in structures like 76 and 77 above. Thus, it is possible that classifiers actually exist in the underlying representations of all languages (and the senses and syntactic contents of these classifiers are fairly equivalent to the sets of specified syntactic features e.g. [+Human], [-Abstract] etc. found in an Aspects type deep structure analysis). However, the further development of the classifier system within a universal syntactic framework can only be left for speculation since the discussion here can only be suggestive. It cannot be conclusive.

Before we close this chapter, we may summarize the types of classifier conscious underlying representations observed for nouns in Yoruba syntax. For all common nouns, we had structures that use a general classifier èyí 'the one' and the verb 'to be'. Let us represent the verb 'to be' as COP (copula) in this summary. Then all common nouns have one or two representations:

85 èyí ...COP N or

86 èyí ... COP NP

where 85 introduces basic nouns while 86 introduces derived nouns and the NP in 86 is further developed in one of the possible ways for the nominalizations of 3.2. For instance, for those that refer to human beings, the NP could start with eni 'person' for the /a/ + VP nominalizations of 3.2221(33) giving representations like:

87 èyí ... COP eni ... V ...

87 can be generalised as:

88 GC ... COP SC ... V ...

where GC = 'general classifier', SC = 'specific classifier' and V could be a verb or a 'predicative adjective'.

The generalization in 88 is necessary since representations like 78, 79, 80 and 81 actually show that specific classifiers may vary a lot. For 80 and 81, we used the classifier àyè 'state', and for 78, the oni + N nominalization, only eni 'person' was used.

However, in structures like 79, there may even be no common classifying element apart from general terms like 'noun' since almost any common noun can acquire the pejorative sense or be indefinitized. Hence, since the second classifier in structures like 88 (vis-a-vis structures like 85 which have no second classifiers) also show that we deal with derived nouns, we may then decide that the second classifier should be called the derived nominal classifier - DNC, and modify 88 to:

89 GC ... COP DNC ... V ... where GC may be non distinct from DNC.

The DNC is then any classifier that introduces any derived noun, and it may be identical with the general classifier.

When 89 is stated in the normal form for transformational grammar, variables will be used instead of '...', and 89 can be combined with 85 in a general rule for the underlying derivation of nouns viz.

90 [GC U COP { $\begin{matrix} N \\ DNC \end{matrix}$ Y V Z }]_{NP}

where GC and DNC are as defined earlier, and U, Y, and Z are variables (see 1.52).

The way surface NP's are derived from structures like 90 or Bach's representations like 71 is not examined here although it will involve series of deletion and other transformational operations. Since this work merely deals with underlying representations, the comments we make about

surface structure realizations are actually incidental rather than deliberate or essential.

Earlier, it was suggested that the GC and DNC of both 89 and 90 may be non distinct. What constitutes a DNC for some classes of common nouns may be a GC for proper nouns. For instance, all place names can have ibi 'place' as their general classifier (GC) while all personal names could have eni 'person' as their GC since all personal names ^{are primarily applicable} ~~refer~~ to 'persons' (even if these names are later applied to dogs, cats, horses or places). Thus, personal names may even have underlying representations in which two eni forms occur if the first were interpreted as the GC and the second as the DNC in the manner of 89 and 90.

Moreover, when other relevant information enters into the underlying representations, it is possible to have more abstract representations than 90 suggests. For instance, if the information that the condition of the home determines a child's name were to be integrated into the underlying representation of personal names at a stage earlier than the one we deal with here, it is possible to have more abstract underlying NP representations like:

91 eni tí ìtàn ilé rẹ̀ fihàn pé òun jé eni tí ó n fí ọ̀láyàn (person whose story home his shows that he is person who he -ing use honour stride) 'one whose home condition shows that he is a person who marches about with honour' for Afolayan in 60(c) above.

Note that the two eni representations already suspected for personal names earlier actually occur in 91, and it is even possible to substitute 91 for 60(c) in many linguistic environments. Although it may be profitable to examine what further developments in underlying representations are still possible, we intend to end the speculation here with the observation that Bach's proposal for common nouns can in fact be developed in conjunction

with an integrated classifier system, and applied to all classes of nouns and nominalizations in the Yoruba language.

CHAPTER IV

THE NUMERAL IN THE YORUBA NOUN PHRASE

4.1 SENTENTIAL DERIVATION FOR THE NUMERALS.

It is almost impossible to find complete Yoruba grammars from which the Yoruba numeral is completely omitted. Gaye and Beecroft¹ devoted almost ten pages to it and treated it under titles like 'cardinals', 'ordinals', 'distributives', 'adverbial numerals' etc. Ida Ward, who stated that her book "does not pretend to be a complete study of Yoruba" but only "a tentative sketch to be of immediate use to the learner..."², and whose main interest was in "a brief sketch of Yoruba number formation"³ discussed some aspects of the numeral although the only class of numeral she named was the ordinal.⁴ Abraham devoted a whole section of his introduction to the Yoruba numeral system, and he seems to have done even more than most grammarians in providing useful, clear, detailed and explicit (though 'taxonomic') accounts of the Yoruba numeral system as far as practicable.⁵ Bangbose not only recognized that the numeral is one of the sequence-determined secondary elements of structure operating within the Yoruba 'nominal group' (i.e. the NP),⁶ but also classified numerals into four subclasses,⁷ and gave many useful examples of numeral representations in his exemplification of nominal group structures.⁸

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1. Gaye and Beecroft 1923: 19-27
 2. Ward 1952: 1
 3. Ward 1952: 155
 4. Ward 1952: 156
 5. Abraham 1958: xxxii-xli
 6. Bangbose 1966: 99
 7. Bangbose 1966: 113-4
 8. Bangbose 1966: 124-5

Thus, the importance of the numeral in the Yoruba noun phrase has often been recognized, and so, this is not the first time that it has been handled in Yoruba syntactic structure.

We are going to discuss the Yoruba numeral here, not just because it is conventional to do so in actual syntactic analyses of the Yoruba language, but also for four other reasons. First, we intend to show that the type of sentential derivation proposed for the underlying representation of nouns in the preceding chapter can be suggested for other elements that occur within the Yoruba noun phrase e.g. the numerals.

Secondly, we want to demonstrate that a uniform underlying treatment can be given to subclasses of numerals in Yoruba if numerals are sententially derived. The differences between subclasses of numerals e.g. cardinals, ordinals, distributives etc. will then be only a difference in the classifier selected for the sentential derivation of each class of numerals.

Thirdly, there are difficult problems of surface structure representation for numerals which have often been avoided by Yoruba grammarians, but which are easily solved when underlying sentential derivations which use classifiers are employed. For instance, there is usually an m-k-alternation used to distinguish cardinals from ordinals in surface structure representations. Thus, we have:

1. omo méta (child three) 'three children'
2. omo keta (child third) 'the third child'
3. omo mérinlá (child fourteen) 'fourteen children'
4. omo kerinlá (child fourteenth) 'the fourteenth child'
5. omo mewá (child ten) 'ten children'
6. omo kewá (child tenth) 'the tenth child'

But the possibility of using this alternation to distinguish cardinals from ordinals is limited since the alternation does not exist for numerals which are multiples of ten (excluding ten - of. 5 and 6 above), and it does not exist for numerals that are higher than (184). For multiples of ten, there are no m- and k- prefixes at all. So we have only ogún 'twenty' ogbon 'thirty' etc. To distinguish 'the twentieth child' from 'twenty children', we need representations like:¹

7. ogún omo (twenty child) 'twenty children' and
8. omo ogún (child twenty) 'the twentieth child'.

For numerals that are higher than (184), the surface k- ordinal form does not exist. Hence, we have:

9. omo mérinlélogósán (child (184)) '184 children'
10. omo kerinlélogósán (child (184th)) 'the 184th child' and
11. omo ogósán ó lé márún (child (180) it increases by (5)) '185 children'

But there is no analogous representation for the ordinal indicating the '185th' position since 12, 13 and 14 are impossible representations for 'the 185th child'.

12. *omo kogósán ó lé márún
13. *omo ogósán ó lé karún
14. *ogósán ó lé márún omo. (Note that the surface structure representation for the cardinal in 11 is similar to that of the ordinal in 8. This shows the unreliability of surface structure representations. There is another

1. In this work, the numbers of examples are not represented within parenthesis. Hence, in this section where we shall have two types of numbering, the parenthesized items or those included within single quotation marks will refer to numerals while the others (or the plain ones) will refer to examples. E.g. (4) or '4' refers to the numeral 'four', while 4 is example 4 i.e. omo kerinlá 'the fourteenth child'.

surface representation for 11 where the noun modified by the numeral is inserted between the main part of the numeral like ogósán '180', and the addition (or subtraction) on it like: o lé márún 'it increases by (5) giving representations like ogósán omo ó lé márún (180 child it plus 5) '185 children'. It is this latter form that is usually encountered from igba '200' upwards, and so, it will be discussed later.)

However, the impossibility of a surface form for the '185th' position similar to the '184th' position does not imply that the Yoruba cannot conceptualize the '185th' position or positions using higher numerals. Actually, the Yoruba speaker has an alternative way of representing all numerals i.e. positions, amounts, distributives etc. For this alternative representation, numerals have sentential representations similar to the ones proposed for nouns in chapter III above. The underlying form for 'three' for instance will contain the basic numeral form èta 'three'¹ which becomes the cardinal méta 'three' when we employ the classifier for cardinals (e.g. ive 'amount' in ive^{2.1} above), or keta 'third' if we employ the classifier for ordinals, or métaméta 'groups of threes' if we employ the classifier for distributives etc. for lower numerals (i.e. numerals below '184').

On the other hand, for most of the numerals that are higher than (184), it is only this alternative sentential representation that is possible in the surface structure representations of subclasses of the numeral like ordinals. But for lower numerals, the m- k- types are also possible

1. See Abraham 1958: xxxii for the distinction between the numeral form èta 'three' and cardinal forms like méta 'three'.

just because the Yoruba generally use lower numerals more frequently than higher ones,¹ and the frequency of use (a performance phenomenon) can be the main factor for the possibility of occurrence of numeral forms of the usual sort, in which cardinals and ordinals are distinguished through the addition of the m- and k- prefixes to base numeral forms e.g. èta 'three' for méta 'three' and kéta 'the third' in 1 and 2 above. Thus, one reason for our discussion of the numeral at length here is that we intend to solve one of the 'mysteries' in the Yoruba vigesimal numeral system which most Yoruba grammarians might have recognized, but which everyone of them either ignored or avoided.

If we examine previous Yoruba grammatical undertakings on Yoruba numerals, we will find that those who care to discuss the ordinals at all find difficulties in making surface representations beyond certain limits. For instance, Gaye and Beecroft produced pairs of cardinals and ordinals to seventy;² put an etc. under the ordinal representing the '70th' position, and then continued with cardinals alone after that. By this practice, the authors have implicitly assumed that cardinals and ordinals can be put

1. It is likely that human beings generally use lower numerals more frequently than higher ones especially in day to day activities like shopping, selection of channels on the television set, the paying of prices for concert shows, dances, and theatrical performances, discussions involving the numbers of objects often used like books, plates, cups, knives, pencils etc. We will make no assumptions about other linguistic communities, but it appears this observation is true of the Yoruba community where the habit of bargaining still exists in local shopping centres. During bargaining, the usual habit is the pricing down of the shoppers prices for articles, and this implies the use of lower and lower numerals. Even in very exceptional circumstances, e.g. in bazaars, where pricing is upwards, there are still upper limits beyond which sane people stop pricing upwards. Hence, a cultural phenomenon appears to influence certain syntactic realizations in the Yoruba language.

2. Gaye and Beecroft 1923: 16-20

into a one to one correspondence, but they never examined the difficulties this implication involves. Thus, they left unanswered the impossibility of:

15. *èkògòsánlémárùn - 'the 185th position' vis-a-vis ogòsán ó lé márùn '185' (cf. 11 above), or

16. *èkédégbèjò 'the 1500th position' vis-a-vis édégbèjò '1500'.

Abraham 1958 on the other hand tried the pairing of cardinals and ordinals till he reached the point where the rules used previously for generating ordinals will start producing ungrammatical sequences. Then he too applied the popular etc. face-saving device, and abandoned the ordinals at that stage.¹ Since, he neither stated the reason why he stopped producing ordinals nor admitted that he had stopped generating ordinals after the '184th', one can say that he too has refused to handle the problem of the ungrammaticality of '185th' as

*ek + ogòsán ó lé márùn = *èkògòsánlémárùn like other grammarians.

Unfortunately, later grammarians adroitly (and perhaps prudently) avoided the problem. Bamgbose (1966) concentrated on the head non-head relationships of elements in the Noun Phrase, and he was more concerned with a morphological 4 - type classification of Yoruba numerals² than an

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1. Abraham 1958: xxxv - under Section E - Numerals 45-184. His final example was "ajàkèrìnlélogòsón the 184th dog." The transcription is Abraham's.
 2. One may infer the position taken by Bamgbose (1966) from his lists. Although we indicate that he did not provide an answer to the problem Abraham encountered while describing the Yoruba ordinals, there is evidence that he accepts that there is no limit to the productivity of the 'k-' form ordinals. For instance, while treating 'elided consonant initial' items (p. 100), he suggested that his taxonomy there was the complete or 'full list', and ended the list with ".kini 'first', .ke.ji 'second', .ke.ta 'third', etc.". If what he gives is a full list, then technically one should not have an etc. there since that suggests that the reader can complete the list without further assistance. However, the occurrence of 'etc.' in his list shows that all the ek- or k- ordinal forms are possible (e.g. *èkògòsánlémárùn etc.). But this is not correct as we have already observed.

examination of the limits of productivity.¹ Since the emphasis of Ida Ward's description is on the phonetic and tonal aspects, one cannot expect her to explore this problem. Moreover, Ward's book appears pedagogical so that her main interests in the section on numerals are what the European learner would not find "difficult to remember and use ... in the early stages."² Hence, she did not exceed the number ten in her ordinal forms. Afolayan's work is mainly concerned with contrastive analysis so that his statements on numerals are not actually relevant to his work, and hence he could not have been expected to solve Abraham's problem adequately. Thus, only Bangbose could have solved the problem Abraham encountered before he stopped producing ordinals, but Bangbose merely directed the reader to Abraham's work for the most comprehensive account of the Yoruba numeral.³ Hence, it is unlikely that any other Yoruba grammarian would examine the problem since Abraham's account has generally been taken as the most complete descriptive work on the numeral.

The fourth reason for the examination of the numeral is that we intend to eliminate the numeral as a category of the underlying representation of the Yoruba noun phrase later. We use 'category' in its non technical sense here so that it is not identical with the category symbols that Chomsky eliminated from the base in the lexicalist paper.⁴ We wish to suggest that Yoruba numerals are subclasses of nouns in underlying representations, and that the different subclasses of numerals like cardinals, ordinals etc. are surface manifestations of what we call the

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1. Bangbose 1966: 113-4
 2. Ward 1952: 155
 3. Bangbose 1966: 113
 4. See 3.4 above.

base numeral noun (BNN). A detailed account of a category that will be eliminated from underlying representations is not unreasonable.

At this stage, it is worth noting that there is a form of the numeral from which the others are derived, and that this form has always been recognized as a noun by those Yoruba grammarians who are not afraid to take risks.¹ This form is used for counting. cf. Bamgbose:

"The series of items for naming the figures 1, 2, 3, etc. and for counting e.g. óókòṣ '1'; ééjì '2'; ééta '3'; enì 'one', èjì 'two', èta 'three' are nouns.²

It is only the noun form of the numerals that exists in underlying representations if numerals like nouns are sententially derivable.

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1. Several Yoruba grammarians never state the part of speech of the base numeral noun. Ida Ward (1952) appears to be the most cautious since she completely avoided terms like 'noun', 'adjective', etc. in her discussion of the numeral. Hence, she merely called the base numeral noun - 'for counting' - p. 155, and for the cardinal form which Abraham discussed under 'Used as Adjectives', Ida Ward merely suggested that it is a numeral form that is 'used after the noun' - p. 155. Only the ordinal is called by name in Ward's description. But note that the term ordinal is never used for indicating parts of speech.
 2. Bamgbose 1966: 113 fn. 72. The transcription in the quotation is Bamgbose's. His transcription for the long forms of the numeral (e.g. óókòṣ) shows one of the difficulties that detailed tonal representations on Yoruba lexical items create. Usually, the tone on the initial two vowels of Bamgbose's representations should be mid plus high not high plus high. Thus, it should be òókòṣ instead of óókòṣ etc. (we do not discuss other transcription problems like the use of on for an this time).

It seems Bamgbose's representation for those numeral forms is rarely found in ordinary parlance. It is only used for teaching children to read probably because it sounds musical. It actually offends against one significant phonological rule in the Yoruba language since no Yoruba polysyllabic word can start with an oral vowel on a high tone. This has generally been recognized, and it is one of the reasons why the formative indicating continuity [ń] or [ǔ] '-ing' (though not an oral vowel) is now generally written separately from the word it goes with since it is a high tone vowel, and by joining it to any other word, one will be suggesting erroneously that that word starts with a vowel on a high tone. We do not know why this restriction fails to apply to nasal vowels where one could have ńlá [ńlá] 'big' etc. Perhaps the exception for nasal vowels shows that the oral/nasal dichotomy is psychologically real in Yoruba.

One may just note at this stage that Yoruba numerals are so similar to Yoruba nouns that they even share 'formation' (or morphological) rules. For instance, Abraham discussed a formation process for numerals indicating "groups of so and so many".¹ When the numeral has no m- cardinal form e.g. for multiples of ten (excluding ten), and when we have the numeral one, he stated that one should double the word for the numeral, eliding the second vowel and doubling the third vowel.² From this statement, his ogooṣun '20 by 20' was derived from oṣun '20' etc. But this same rule is used for derivations in the noun e.g.

(c)(1) The system of formation mentioned above is applicable to all nouns when doubled, not merely to double numerals ... ṣgbà ... ṣgbàṣgbà okunrin middle aged men, ... abá ... a n ṣii ní ababá we're removing it (x rubber) in layers. Abraham 1958: xli.

Thus, facts that could be used in the replacement of the numeral by the noun in the underlying representations of the Yoruba noun phrase have even been provided by scholars like Abraham. We shall return to this discussion below in chapter V.

Now, we intend to set out the Yoruba vigesimal numeral system that will be discussed in later subsections not only because this will help one to understand the complexity of the numeral system we shall soon eliminate from the underlying representation, but also because the morphological processes involved can be accounted for syntactically if the type of sentential derivation advocated here were to be used. For a full description of the Yoruba numeral system, Abraham's treatment appears fairly satisfactory but for the inadequacies we have already observed which are actually characteristic of other grammatical analyses.

1. Abraham 1958: xli

2. Abraham 1958: xli

4.2 THE YORUBA VIGESIMAL NUMERAL SYSTEM

4.21 NUMERAL CLASSES

As a detailed taxonomic account of the Yoruba numeral system is found in Abraham's dictionary, we will not give detailed taxonomic descriptions of the numeral system here. In 4.22, we shall merely state the principle of computation in the numeral system while in 4.3, we shall look at the position of the numeral in the NP structure of the Yoruba language. Detailed information on the subdivision of the numeral into cardinal, ordinal, distributives etc. can be obtained from Abraham 1958: xxxii - xli. In 4.4, we shall provide an integrated account of the numeral operators and discuss some principles of structural representation.

In the section on computational principles in 4.22, we shall concentrate mainly on the main form of the numeral, the base numeral noun (BNN). One may just note that the cardinal is usually formed by prefixing m- to the BNN while the ordinal is sometimes formed by prefixing k- or ik- or ɔk-. The m- form of the cardinal can be used as the principal element in a noun phrase, and it is this use that Abraham interpreted as its use as a noun.¹ For the ordinal, the k- form can only modify other elements of structure. It cannot be the 'head' or principal element in any noun phrase. If one wants an ordinal as the 'head' of the NP, the k- form of the ordinal will be nominalized through the i + VP abstract noun rule of 3.2223(44) above, giving iketa 'the third' from keta 'third'. This rule has no exceptions when numerals which have the k- form of the ordinal are

1. Abraham 1958: xxxii - "When a numeral is used as a noun to denote "how many" (but not in a series contrasted with other numerals) then the forms from Column 3 are employed. Thus:- mo rí méjì I saw two."

used. The i- prefix of the nominal form of the ordinal has the variant è and e (which are dependent on vowel harmony). Thus, ìketa = èketa 'the third', ìkarún = èkarún 'the fifth', but ìkeji = èkeji 'the second'.

The distributive is formed by doubling the cardinal provided it starts with the prefix m- e.g. from méjì 'two' we derive méjíméjì 'two each, groups of two's'. According to Abraham, when the numeral has no m- prefix, the distributive is formed through the doubling of the word for the numeral, the elision of the second vowel, and the doubling of the third vowel such that Abraham's ogogún '20 by 20' is derived from ogún, ogboogbò from ogbò '30' etc. The derivational process for ogogún will then be:
(ogún + ogún) ----> (ogún ogún) ----> (og ogún) ----> (ogogún).

Abraham's rule can be quoted as:

17. "Where there is no ma- form, we double the word for the numeral, eliding the 2nd vowel and doubling the 3rd vowel."¹

However, Abraham's derivational process is difficult to follow, and it is not as general as he suggests. For instance, no distributive is formed from '200', '400', and odd multiples of '100'. Thus, there are no distributive forms:

- 18. *edeedegbeta from édégbèta '500'
- 19. *odoodunrun from òdúnarín '300'
- 20. *edeedegbeje from édégbèje '1,300'
- 21. *igbiigba from igba '200'
- 22. *irinrinwo from irínwó '400'

although the numerals in 18-22 have no m- or 'ma-' forms.

1. Abraham 1958: xli

Moreover, the formation process for numerals without m- forms in Abraham is divided into three parts. First, one should double the numeral e.g. obtain ogún ogún from ogún '20', then elide (or delete) the second vowel ún giving og ogún, and finally double the third vowel to derive og og gún = ogogún. But one can note that after the second operation, the elision of ún, what was formerly the third vowel (which is the first vowel of the second ogún) has now become the second vowel. Hence, if one were to follow his directions strictly, one would have derived ogogúnún since ún is now the third vowel.

Furthermore, the formation process merely accounts for phonetic facts - the lengthening of one vowel in the derivation. But this lengthening is really not significant since the two consecutive o's of Abraham's ogogún are not necessarily phonetically longer than the single initial o in the same lexical item.

A simpler method of stating the derivation will be:

23. 'Double the initial two syllables of the numeral, and assimilate the second vowel into the third.'

Thus, given ogún, double it to ogúnogún (since it is disyllabic), and assimilate ún into o giving either ogogún (when the lengthening is immaterial) or ogogogún (when the lengthening is accounted for). Or, if we were given egbèta '600', double the initial two syllables to egbè egbèta, assimilate è into e giving either egbegebèta or egbeegbèta in the phonetic realization. Since phonetic criteria are not considered as solid foundations for Yoruba orthographic principles here,¹ we shall discard the phonetic variation between long and short vowels in the appropriate places

1. See ~~Yoruba~~ Appendix II

in this derivation. After all, it is not true to say that all Yoruba speakers speak so slowly that they have to drag on the second syllable of egbegbèta and similar derivations. Besides, the tone on the deleted (or assimilated) vowel has no effect on the remaining vowel. So, for our derivation, we can modify 23 to:

24. "Double the initial two syllables of the numeral, and delete the second vowel."

24 can be written in rule form as:

25. $[Vw_1 C_1 Vw_2 \dots]$ Numeral_(BN) \rightarrow $[Vw_1 C_1 Vw_1 C_1 Vw_2 \dots]$ Distributive

Rule 25 applies to numerals which have no m forms because they all begin with vowels. The distributive would have gone through an intermediate stage viz. the doubling of the initial two syllables of the Numeral so that it should have been represented as:

$[Vw_1 C_1 Vw_1 C_1 Vw_2 \dots]$ before the first Vw_2 was deleted.

From 24 and 25, our derivation will look like:

26. ogún '20' \rightarrow ogúnogún \rightarrow ogoún '20 by 20' or groups of 20¹.

27. egbèrún '1,000' \rightarrow egbègbèrún \rightarrow egbegbèrún 'groups of 1,000'

Although we took some pains to discuss Abraham's formation rule for the distributives, we will not discuss distributives in the sections that follow. The proposal made for cardinals and ordinals will be adequate for all other classes of the numeral since the only difference between one numeral class and the other is that different classifiers are chosen for them in the

1. The arrow in 26 and 27 is not the rewriting arrow, and it is not a transformational arrow since there are no dominating category symbols in the representation. For specificity in representation, another symbol may have to be used. But what we discuss leading to the representations 26 and 27 is actually not directly related to underlying representations. // ~~See~~ See pp. 248 - 251 for the BNA of rule 25.

appropriate places in underlying representations. Hence, the fact that there are no surface distributives for '200', '400', and odd multiples of '100' as demonstrated in 18 - 22 above does not imply that such distributives fail to exist in Yoruba syntactic structure. They are only absent in surface structure representations for reasons we do not really know; but, like the ordinals for higher numerals, they can be conceptualized by the Yoruba speaker-hearer of his language. This point rarely needs to be made since the possibility of distributives for numerals that are higher than '200', '400' and several odd multiples of '100' e.g. that for '1000' in 27 above shows that the surface structure absence of distributives like those in 18 - 22 is accidental.

So, only the cardinal and the ordinal will be used in later discussions. A general formula for representing any other subclass of the numeral in underlying representations could be the use of the word or technical term indicating the subclass itself as the classifier in underlying representations. E.g. we can just say that what exists in the underlying representation is paraphrasable as:

- 28 (i) the cardinal which is _____
(ii) the ordinal which is _____
(iii) the distributive which is _____
(iv) the noun which is _____
(v) the adjective which is _____ etc.

If we want to state 28 in a form that is covered by rule 90 of 3.5, we can have representations like:

- 29 (i) the numeral that is a cardinal which is _____
(ii) the noun that is a personal name which is _____ etc.

When the elimination of the numeral from underlying representations takes place (as we shall soon note in chapter V below), 'the numeral' in 29(i)

can be changed to 'the noun'.

And if more detailed and more abstract underlying representations analogous to the ones used in 3.5(91) were to be incorporated into representations like 28 at stages earlier than the ones we are dealing with in this work, it is possible to replace 3.5(91) with a very abstract underlying form paraphrasable as:

30. 'the noun that is a personal name which refers to the person whose home condition shows that he is a person who marches about with honour'.

We shall not discuss representations like 30 any further. The main interest now is the harmonization of the distinct 'sequence-determined secondary elements' of surface structure in the underlying representation. But first of all, we shall account for the computational processes of the Yoruba vigesimal numeral system.

4.22

NUMERAL COMPUTATIONAL PROCESSES

The basic numeral forms are:

The numbers from 'one to ten' represented in the long and short forms thus:

1. oókan or òkan/ení 'one', eéjì or èjì 'two', eéta or èta 'three', eérin or èrin 'four', aárún or àrún 'five', eéfà or èfà 'six', eéje or èje 'seven', eéjọ or èjọ 'eight', eésàn or èsàn 'nine', eéwá or èwá 'ten', and
2. the numbers: ogún 'twenty', ogbòn 'thirty', igba 'two hundred', òdúnrún 'three hundred', irínwó 'four hundred' and òké 'twenty thousand'.

The numbers in 1 and 2 will be referred to as the basic numerals since they are not constructed from other numerals.

Next, we consider multiples of ogun '20', igba '200', egbá = egbèwá = igba mēwá (200 x 10) '2,000', and òké '20,000'. The multiples of these items are used for the derivation of other numerals like

odd multiples of ten etc. in Yoruba. Hence, in order to derive '87', one would first start from the next higher multiple of 'twenty' above '87' provided that '87' is greater than the next lower multiple of '20' by '5' and above. This multiple is ogórùn = osún mārùn (20 x 5) '100'. From it, we derive ǎdórùn (the èdín of ogórùn) = '90' where, for the moment, èdín is interpreted as 'that which is subtracted from', and from '90' we derive:

3. ètàdínlǎdórùn = (ètà (3) - dín (less) - ní ǎdórùn (from '90')) = '87'.

Similarly, in order to derive '499', we start from the next higher multiple of igba '200' =

4. egbèta = igba méta (200 x 3) '600'.

From egbèta, through a process to be discussed below, we derive

5. ǎdegbèta = (edin of egbèta) '500', and from 5 we derive:

6. ǎdegbèta ó dín kan (500 it minus (or less) 1) '499'.

Derivations for numbers within multiples of '200' is not like that for numbers within multiples of '20'. Usually, between multiples of '200' e.g. between irínwó '400' and egbèta '600', ǎdegbèta '500' is rarely used for the derivation of intermediate numerals. We usually find that ǎdegbèta is used only for numbers that are very close to it e.g. ǎdegbèta ó dín méta (500 - 3) = '497'. Otherwise, from '400' to '600', the multiples of '20' are:

7(a) okólénirínwó = (okó (20) lé (exceed) ní (on top of) irínwó (400)) = '420';

(b) òjílénirínwó = '440' (where òjí is the abbreviated form of ogójí '40');

(c) ètálénirínwó = '460' (ètà represents ogóta - '60');

(d) orinlenirinwo = '480' (where brin is the proposed version of ogórin '80');

(e) ǎdegbèta = '500' (600 - 100);

- (f) òrìndínlégbèta = '520' (600 - 80);
- (g) òtádínlégbèta = '540' (600 - 60);
- (h) òjídínlégbèta = '560' (600 - 40); and
- (j) okódínlégbèta or egbèta ó dín ogún = '580' (600 - 20).

Multiples of ogún '20', igba '200' etc. like the esbèta '600' of 4 above are even multiples of '10'. They are the most significant Yoruba numerals after the basic numerals from which they are constructed since they are necessary for the Yoruba vigesimal system. Hence, we shall call them the principal vigesimals.

Then, the principal vigesimals together with the odd multiples of '10' derived from them can be mapped onto a decimal system like that of the English numerals. Since this mapping is possible, we shall call all the multiples of '10' the decimals.

The above will constitute the terminology employed in this section. So, the principal vigesimals are even multiples of '10', the decimals are all multiples of '10' while the basic numerals are those in 1 and 2 which are not constructed from other numerals. Note that some basic numerals like ogún '20', igba '200' and òké '20,000' are also principal vigesimals while all principal vigesimals are decimals. The terminology adopted here is not exclusive, but it will be useful for reference purposes later.

4.221

NUMERAL OPERATORS

There are three numeral operators which can be indicated as èdín - the subtraction formative, elé - the addition formative (or that which is added) and ònà - the multiplication formative. Only the above three numeral operators are needed for the derivation of any Yoruba numeral from the basic ones. We shall first illustrate numeral derivation with the multiplication formative ònà 'times'.

4.2211

THE MULTIPLICATION FORMATIVE

There are three possible processes for numerals constructed through the use of the multiplication formative òná and the three processes are illustrated in:

- 1(a) ogún òná mérin ('20' times '4') '80'¹
(b) ogún mérin ('20' '4' i.e. 'four twenties') '80'
(c) ogórin '80'

At the first stage, òná 'times' appears in the surface structure representation. For some numerals as we shall see later, this is the only type of representation possible. Note that (a) - (c) are alternative surface forms although (c) is preferred to the other two.

At the second stage (represented by 1(b)), this òná is deleted leaving us with two surface numerals - the multiplicand (ogún) and its multiplier (mérin). If the multiplier were a multiple of ten (excluding ten), it would precede the multiplicand in surface structure representations e.g. in:

2. ádóta òké = (50 bags) or (50 x 20,000) = '1 million'.

Otherwise the multiplier follows its multiplicand in surface structure representations as in 1(b) above.

At the third stage, we have a contraction involving both the multiplier and the multiplicand as in 1(c). Some of the examples where contraction takes place include:

- 3(a) ogún òná méjò = ogún méjò = (20 x 8) = ogójo = '160'

1. If cardinal forms like mérin '4' were to be excluded in underlying representations, 1(a) would occur as ogún òná eérin. This will be similar in representation to ogún òná ádóta ('20' times '50') where there is no m- form for the multiplier. But we shall not insist on any particular form of representation here.

- 3(b) $igba \grave{o}n\grave{a} m\acute{e}rin = igba merin = (200 \times 4) = \underline{egb\acute{e}rin} = '800'$
- (c) $igba \grave{o}n\grave{a} m\acute{e}je = igba meje = (200 \times 7) = \underline{egb\acute{e}je} = '1,400'$
- (d) $igba \grave{o}n\grave{a} m\acute{e}w\acute{a} = igba mewa = (200 \times 10) = \underline{egb\acute{e}wa/egb\acute{a}} = '2,000'$ ¹
- (e) $igba \grave{o}n\grave{a} m\acute{e}j\acute{i}dinl\acute{o}g\acute{u}n = igba mejidinlogun = (200 \times 18) = \underline{egbejidinlogun} = '3,600'$;
- (f) $igba \grave{o}n\grave{a} m\acute{a}r\acute{u}nd\acute{i}nl\acute{o}gb\grave{o}n = igba mar\acute{u}nd\acute{i}nl\acute{o}gb\grave{o}n = (200 \times 25) = \underline{egb\acute{e}d\acute{o}gb\grave{o}n} = '5,000'$ ²
- (g) $egb\acute{a} \grave{o}n\grave{a} m\acute{e}jo = egb\acute{a} m\acute{e}jo = (2,000 \times 8) = \underline{egb\acute{a}jo} = '16,000'$
- (h) $egb\acute{a} \grave{o}n\grave{a} m\acute{e}w\acute{a} = egb\acute{a} m\acute{e}w\acute{a} = (2,000 \times 10) = \underline{egb\acute{a}w\acute{a}} = '20,000'$.

In 3, we find that the three processes take place for the derivation of many primary vigesimal (i.e. even multiples of '10'). The decimals (i.e. odd multiples of '10' e.g. ǎd\acute{o}ta '50') are derived from the primary vigesimals through a process that will be discussed under the subtraction formative in 4.2212 below. Note that primary vigesimals which are also basic numerals e.g. og\acute{u}n '20', igba '200', irinw\acute{o} '400' are exceptions to this observation.

Not all classes of numerals can go through the three multiplication processes since not all numerals can be in the primary vigesimal set consisting of members of the infinite set: $\{20, 40, 60\dots\}$. Some

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1. In the numeral egb\acute{a} for '2,000', the last vowel ends in a low-high tone. But all the multiples of egb\acute{a} have low mid tones in the same place. Following our decision on tone representations in chapter II - where vowel doubling could be undertaken only when there is a compounding of the mid tone with the other tones, and where this vowel doubling should be adopted "for indicating existing significant minimal contrasts between lexical items" and nothing else, egb\acute{a} will have the single vowel - ǎ -, and its multiples will have the double vowels - ǎǎ -. Since egb\acute{a} is not the same lexical item as any of its multiples, there is nothing wrong with this representation.
 2. Alternative representations involving ǎr\acute{u}nd\acute{i}nl\acute{o}gb\grave{o}n '25' which is also ǎd\acute{o}gb\grave{o}n '25' and ǎr\acute{u}nd\acute{i}nl\acute{o}g\acute{u}n '15' which is also ǎd\acute{o}g\acute{u}n '15' are mentioned in 4.2212 below.

numerals go through two of the processes. Here, we shall mention òké (bag). Since a bag of cowries contains 20,000 cowries, òké (bag) is an alternative realization of egbàawá '20,000' in 3(h) above. So, for numerals that go through two multiplication processes, we have:

4(a) òké ònà méfà = òké méfà = (20,000 x 6) = '120,000'.

(b) òké ònà ádóta = ádóta òké = (20,000 x 50) = '1,000,000' cf. 2 above.

Then, for numerals that go through the first process only, we use multiples of egbàawá '20,000' (the synonym of òké '20,000') viz.

5(a) egbàawá ònà méfà (20,000 times 6) '120,000'

(b) egbàawá ònà ádóta (20,000 times 50) '1 million'

As from '20,000', the computation of Yoruba numerals is actually done with òké 'bag' instead of egbàawá since the former could be treated as the noun òké 'bag' qualified by a numeral.¹

However, when the items in 4 are used to qualify a noun there are some interesting phenomena. If the multiplier of òké were one of the numerals which could have the m- cardinal prefix (e.g. non multiples of ten), then ònà deletion will be impossible. But when òké is multiplied by multiples of ten, ònà deletion is possible. Hence, we must expect:

6. òké ajá dúdú ònà méfà (20,000 dog black times six) '120,000 black dogs',

7. egbàawá ajá dúdú ònà méfà '120,000 black dogs'

8. ádóta òké ajá dúdú (50 x 20,000 dog black) '1,000,000 black dogs'.

1. Perhaps the greater frequency of òké than egbàawá in numeral computation is responsible for the reduction possibilities observable in 4 where ònà could be deleted whereas egbàawá which is less frequently used for computing higher numerals does not have such reduction possibilities for its multiples. Note that this point is similar to the one made earlier in 4.1 where the greater frequency of use makes the lower numerals possess a m- k- distinguishing feature for cardinals and ordinals whereas higher numerals from '184' upwards do not have such distinguishing characteristics.

9. òkẹ́ ajá dúdú ònà ádóta (20,000 dog black times 50) '1 million black dogs'
10. egbàawá ajá dúdú ònà ádóta (20,000 dog black times 50) '1 million black dogs' (i.e. 8 and 9 above)

but we do not have:

11. *òkẹ́ méfà ajá dúdú (for 6 above)
12. *egbàawá méfà ajá dúdú (for 7 above)
13. *ádóta egbàawá ajá dúdú (for 8, 9 or 10 above).

Examples like 11 to 13 are impossible first because ònà deletion is impossible for multiples of egbàawá and secondly because the m- forms of the numeral do not precede the nouns they qualify in surface structure representations. Note that the numerals in 6, 7, 9 and 10 are discontinuous. These discontinuous numerals will be discussed in 4.32 below.

4.2212

THE SUBTRACTION FORMATIVE

The subtraction formative is èdín (that which is subtracted from) cf. dín 'be less by'. The addition formative that will be discussed in 4.2213 below is èlé (that which is added to) cf. lé 'to exceed by'. Two of the three numeral operators - the multiplication and subtraction formatives have three possible surface structure forms. In 4.2211, the three possibilities for the multiplication formatives were examined. Here, and in 4.2213 below, the three possibilities for the subtraction formative will be considered. In 4.2213, one will note that the addition formative shares two of the three possibilities with the subtraction formative.

The subtraction formative could be given sentential representation, or be preposed, or it could be both preposed and contracted. The preposed and contracted èdín formative will be referred to as èdín₁. It has no èlé counterpart. The one that is merely preposed will be èdín₂, and the

one given sentential representation will be èdín₃. Both èdín₂ and èdín₃ have élé counterparts. The numbering of the three èdín formatives based on surface structure representations is influenced by the significance of each of them for the numeral system as a whole. For instance, èdín₁ is the most important of them since it is used for the derivation of odd multiples of ten, hundred, and one thousand respectively from the even multiples of ten, hundred and one thousand. Thus, an èdín₁ operation is needed to convert the Yoruba vigesimal system into a decimal system.

Moreover, èdín₁ has different interpretations for the different classes of the numeral. The different classes are:

Class I - multiples of ten (excluding ten) below '40'

i.e. ogún '20' and ogbòn '30',

Class II - multiples of twenty (from '60' to '180'), '40' is excluded.

Class III - multiples of two hundred (excluding '400') from '600' to '2,000', and

Class IV - multiples of two thousands from '4,000' to '20,000'.

For class I, èdín₁ means '-5', for class II, it means '-10', for class III, it means '-100', and for class IV, it means '-1,000'.¹

The exclusion of '400' from class III is accidental since irínwó '400' is a basic numeral and it is not computed through the use of the numeral operators from igba '200' as other multiples like ogbèta = igba méta (200 x 3) '600' etc. are computed.

Similarly, the exclusion of '200' from class II is accidental since igba '200' is a basic numeral and it is not computed through the use of the numeral operators from ogún '20' like ogósán = ogún méésán (20 x 9) '180'.

1. See Gaye and Beecroft 1923: 24 for the polysemy of our edín₁.

But the exclusion of '40' from class II is inexplicable since ogóji '40' is computed like ogóta '60' from ogún '20'.

The above observation can be illustrated with examples of èdín₁ operations from the four numeral classes. Thus we have:

14(a) Class I - èdógún = (20 - 5) = '15'; èdóbòn = (30 - 5) = '25'.

The two class I èdín₁ numerals have èdín₂ counterparts -

àrúndínlógún = '15' and àrúndínlóbòn = '25'.¹

14(b) Class II - èdóta = (60 - 10) = '50'; èdóje = (140 - 10) = '130'; èdósán = (180 - 10) = '170'. Since '200' is excluded from class II, '190' is derived from it through the use of the sentential èdín₃ representations e.g. igba ó dín mewa = (200 - 10) = '190'.

So, Gaye and Beecroft are wrong for including '190' among the "odd multiples of 10" in which "ad ... means 10 less." There is no *ádówá or *ádígba for '190' = (200 - 10).²

14(c) Class III - èdégbèta = (600 - 100) = '500'; èdégbèjo = (1,600 - 100) = '1,500'; èdégbèwá = (2,000 - 100) = '1,900'.

14(d) Class IV - èdégbàata = (6,000 - 1,000) = '5,000'
èdégbàajo = (16,000 - 1,000) = '15,000'.

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1. The possibility of èdín₂ counterparts for class I èdín₁ numerals shows the significance of subtraction in numeral computation. Hence, for any series of ten consecutive numerals in the appropriate places (e.g. from '15' to '24' or '25'), numbers are computed as: (20 - 5, 20 - 4, 20 - 3, 20 - 2, 20 - 1, 20, 20 + 1, 20 + 2, 20 + 3, 20 + 4, 30 - 5 etc.). There is no (20 + 5) or (30 + 5). So there is no àrúnlélógún (for 25) or àrúnlélógóta (for 65), but only àrúndínlâdórín (70 - 5). The greater significance of èdín (the subtraction formative) over èlé (that which exceeds) (i.e. the addition formative) will be observed in table 18 in 4.2213 below where there is no èlé counterpart for èdín₁, and where for every èlé form, there is always a corresponding èdín counterpart.
- The appropriate places referred to in the preceding paragraph are those places where we can have èdín₁ or èdín₂ but not èdín₃, since there is little restriction on addition or subtraction rules for èdín₃.

2. Gaye and Beecroft 1923: 24.

The èdín₁ series cease operating from ogbhawá '20,000' since computation in òké '20,000' starts from that stage. And there is neither an èdín contraction nor an èdín preposing on òké '20,000' since òké is primarily a common noun referring to 'a bag', and it does not lose its noun features when used as a numeral. Consequently, although there is èdégbàawá for '19,000', there is no *èdóké since there is no èdín contraction on common nouns.

The èdín₂ process of preposing alone is common to both èdín (the subtraction formative) and èlé (the addition formative). Moreover, the èdín₃ process of sentential representation is common to both èdín and èlé. Hence we shall treat the two remaining processes together under the subtraction and addition formatives in 4.2213. Furthermore, for convenience, the terms èdín₂ and èdín₃ will be used to indicate both èdín and èlé counterparts of the same operation (i.e. preposing or sentential representation). Hence, for the operation of preposing alone, èdín₂ refers to preposed èdín and preposed èlé formatives, and for sentential representation, èdín₃ will refer to both èdín and èlé forms.

4.2213 THE SUBTRACTION AND ADDITION FORMATIVES

The preposing process is found in the following derivations. The sentential forms of the numerals (i.e. the èdín₃ counterparts) will also be given:

- 15(a) erindinlogun i.e. ogún ó dín mérin = (20 it less 4) = '16'
- (b) etalelogun i.e. ogún ó lé méta = (20 it plus 3) = '23'
- (c) arundinlogota i.e. ogóta ó dín mārūn = (60 it less 5) = '55'
- (d) erinleladota i.e. ádóta ó lé mérin = (50 it plus 4) = '54'
- (e) okanlelogosan i.e. ogósan ó lé òkan = (180 it plus 1) = '181'
- (f) ejidinladosan i.e. ádósan ó dín méjì = (170 it less 2) = '168'...

- 16(a) ojidinnirinwo i.e. irínwó ó dín (og)óji = (400 it less 40) = '360'¹
(b) oñilelúgba i.e. igba ó lé (og)óji = (200 it plus 40) = '240'²
(c) orinlenirinwo i.e. irínwó ó lé (og)órin = (400 it plus 80) = '480'
(d) orindinlegbèta i.e. egbèta ó dín (og)órin = (600 - 80) = '520'.

In 15 and 16, examples involving the preposing of both èdín and blé are provided. Numerals from '16' to '184' can be derived through the use of èdín₁ for the derivations of odd multiples of '10' like ádósán '170' from the relevant even multiples, and through the use of èdín₂ for the derivations of intermediate figures that are not multiples of '10' e.g. ètádínlâdôta (50 - 3) '47'. Note that both èdín₁ and èdín₂ operate in examples 15(d) and 15(f). Thus, an èdín₁ operation is needed for the derivation of ádósán '170' from orósán '180' while an èdín₂ operation later leads to the derivation of èjidínlâdósán '168' from ádósán '170'.

One notes from 16 that only multiples of '20' from '20' to '80' are preposed to multiples of '200'. Hence, there is no:

17. *erindínlegbèta for egbèta ó dín mérin (600 it less 4) '596'.

Thus one can infer from the acceptable and unacceptable representations in 17 that any time it is impossible for one to use either èdín₁ or èdín₂, one has to use èdín, which is the sentential representation. It is only èdín, that is possible for derivations like egbèta ó dín mérin '596' in 17 above. One should also note that the èdín₂ operation on multiples of '200' in 16 exclude odd multiples of '100' from their domain of operation. Hence, there is no èdín₂ derivation on édégbèta '500' (thereby excluding *òjidínlêdégbèta for édégbèta ó dín ogóji (500 - 40) or òtálénírínwó

-
1. The abbreviations òji, òtà, and òrin for ogóji '40', ogéta '60' and ogórin '80' respectively are used when these multiples of '20' are preposed to multiples of '200' in the derivation of numerals. If '20' were to be preposed (e.g. for the derivation of '220'), one would have to use oko. So '220' is okólélúgba rather than *ogúnlélúgba.
 2. There is an abbreviation of òjilélúgba as òjilúgba '240'. This abbreviation cannot be generalized.

(400 + 60) '460'. We shall recall this observation later when we discuss the underlying sentential representations for surface èdín forms in 4.42(7) and 4.42(8) below.

We can now give the general characteristics of the subtraction and addition formatives in tabular form. Examples of numerals will be numbered a, b, c, ... in 18 such that a numeral numbered 'a' in the table will have the interpretation 'a' in 19:

18.

Features	<u>èdín</u> ₁	<u>èdín</u> ₂	<u>èdín</u> ₃
(i) surface manifestations -	preposing and contraction	preposing alone	sentential representation
(ii) major characteristics -	change of meaning within numeral classes	No meaning change, but change of form for (20, 40, 60 and 80) when preposed	No meaning change. Can constitute alternative representations for <u>èdín</u> ₁ and <u>èdín</u> ₂ forms.
(iii) where applicable -	To primary vigesimal: 20, 40, 60 ... 180 and 600, 800, 1,000 ... 20,000	To multiples of '10' from '20' to '180' and to multiples of '200' to '1,000'	To all numerals above '14' in underlying representations. The gaps in the <u>èdín</u> ₁ and <u>èdín</u> ₂ charts are filled by <u>èdín</u> ₃ in surface structure representations.
(iv) typical derivations -	<p>èdógún (a)</p> <p>ádóta (b)</p> <p>èdégbèta (c)</p> <p>èdégbàata (d)</p>	<p>èrìndínlógún (e)</p> <p>àrúndínládóta (f)</p> <p>òjídínlégbèta (g)</p> <p>—————</p>	<p>igba ó dín mēwǎ (h)</p> <p>irínwó ó dín mēwǎ (j)</p> <p>egbèrún ó dín ogún (k)</p> <p>egbàarún ó dín ogórún (l)</p>
<u>èlé</u> counterparts of examples	—————	<p>èrìnlélogún (m)</p> <p>ètálsíládóta (n)</p> <p>òjílélégbèta (o)</p>	<p>igba ó lé mēwǎ (p)</p> <p>irínwó ó lé mēwǎ (q)</p> <p>egbèrun ó lé ogún (r)</p> <p>egbàarún ó lé ogórún (s)</p>

There is no arúnlé corresponding to the àrúndín of 18iv(f). Note that

there is also no definite upper limit for èdín_2 preposing although we indicate that the upper limit is '1,000' in row (iii) of the èdín_2 column in 18. However, all èdín_2 forms have èdín_3 counterparts so that wherever there is any doubt about èdín_2 possibilities, the èdín_3 counterpart can be used.

The translations of examples (a) to (s) in 18(iv) are given respectively as (a) to (s) in 19:

- | | |
|----------------------------------|-----------------------------------|
| 19(a) (20 - 5) '15' | (b) (60 - 10) '50' |
| (c) (600 - 100) '500' | (d) (6,000 - 1,000) '5,000' |
| (e) (20 - 4) '16' | (f) (50 - 5) '45' |
| (g) (600 - 40) '560' | (h) (200 it less 10) '190' |
| (j) (400 it less 10) '390' | (k) (1,000 it less 20) '980' |
| (l) (10,000 it less 100) '9,900' | (m) (20 + 4) '24' |
| (n) (50 + 3) '53' | (o) (600 + 40) '640' |
| (p) (200 it plus 10) '210' | (q) (400 it plus 10) '410' |
| (r) (1,000 it plus 20) '1,020' | (s) (10,000 it plus 100) '10,100' |

In 18, we have a table which can be considered as a summary of the characteristics of the addition and subtraction formatives. Actually, only the addition, subtraction and multiplication formatives (i.e. the numeral operators) described in this chapter are needed for the construction of all Yoruba numerals from the numerals '1' to '10' and from multiples of '20'. Note that many multiples of '20' are also derived through the operation of the multiplication formative on '20' itself. So, one can now state a generalization that all non basic Yoruba numerals are derived through the application of numeral operators on the basic numerals of 4.22.

There are no exceptions to the above generalization since those multiples of '20' which are not computed directly from ogún '20' are basic numerals e.g. òdúnrún '300', irínwó '400' and òké '20,000' while others

can be computed from multiples of '20' just as egbèfà '1,200' is derived from ígbà '200'.

Also, the numbers òkànlá '11' to èrìnlá '14' are not exceptions to the generalizations since they are derived from the numbers òkàn '1' to èrìn '4'. Two derivational sources have been suggested for '11' to '14'.

Thus, we can either have:

From 11 to 15 (exclusive) the numerals are obtained by adding lá, a form of nlá, large or great; thus, okanlá means 1 great after 10. Gaye and Beecroft 1923: 23.

or

Numerals 11 - 14. The Long Form precedes the word lää: this word lää is a contraction of léwää which ... loses its -w- : léwää is derived from lé wää 'is additional to 10'. Abraham 1958: xxxiii.

Note that Abraham treats '11' - '14' as numerals using the élé preposing rule whereas Gaye and Beecroft's suggestion can only lead to confusion since the inclusion of '15' édóún or àrúndínlógún which has no lá form and their use of the word 'exclusive' are inexplicable. Abraham's suggestion is preferable to Gaye and Beecroft's. However, the significant fact about the above quotations is that there is agreement on the fact that '11' to '14' are derived so that they do not belong to the class of basic numerals in this work.¹

Before we leave numeral computation, we may give more examples of

-
1. Strictly speaking, some basic numerals like the numbers '1' to '5' have a greater functional load for the derivation of other numerals than other basic numerals like '6' to '10'. The latter numbers are significant only for multiplication purposes and for èdín representations. They do not pattern at all in èdín representations. Moreover, some basic numerals like ogbòn '30' and òdúnrún '300' are never multiplied for the derivation of higher numerals. But they are still useful for the derivation of numerals like èìdínlógbòn (30 - 2) '28' or òdúnrún ó lé méta (300 it plus 3) '303' etc.

constructed numerals from the Yoruba vigesimal system:

- 20(a) egbèta ó dín òkànlélogbòn (600 it less 31) '569'
(b) egbèta ó dín òkàndínlogbòn (600 it less 29) '571'
(c) édégbèta ó dín òkan (500 it less 1) '499'
(d) édégbèta ó lé òkan (500 it plus 1) '501'
- 21(a)(i) édégbàajì i.e. egbàajì (4,000) + èdín₁ (4,000 - 1,000) '3,000'
(ii) egbédógún i.e. igba médógún (200 x 15) '3,000'
(b)(i) édégbàata i.e. egbaata (6,000) + èdín₁ (6,000 - 1,000) '5,000'
(ii) egbédógbòn i.e. igba médógbòn (200 x 25) '5,000'
- 22(a) egbèjìdínlogún ó dín ogórún (3,600 it less 100) '3,500'
(b) egbèjìdínlogún i.e. igba méjìdínlogún (200 x 18) '3,600'
(c) egbòkàndínlogún ó dín ogórún (3,800 it less 100) '3,700'
(d) egbòkàndínlogún i.e. igba mókàndínlogún (200 x 19) '3,800'
(e) egbàajì ó dín ogórún (4,000 it less 100) '3,900'
(f) egbàajì i.e. egbá méjì (2,000 x 2) '4,000'
(g) édégbàata or egbédógbòn '5,000' (see 21(b) above).
(h) egbàata i.e. egbá méta (2,000 x 3) '6,000'
(j) egbàata ó lé òkan (6,000 it plus 1) '6,001'
(k) egbàata ó lé èwá (6,000 it plus 10) '6,010'

23 édégbàawá ó lé òjìdínlégbèta ó dín òkan (20,000 minus 1,000) it increases by ((600 - 40) it decreases by 1)) i.e. (19,000 + (560 - 1)) '19,559'.

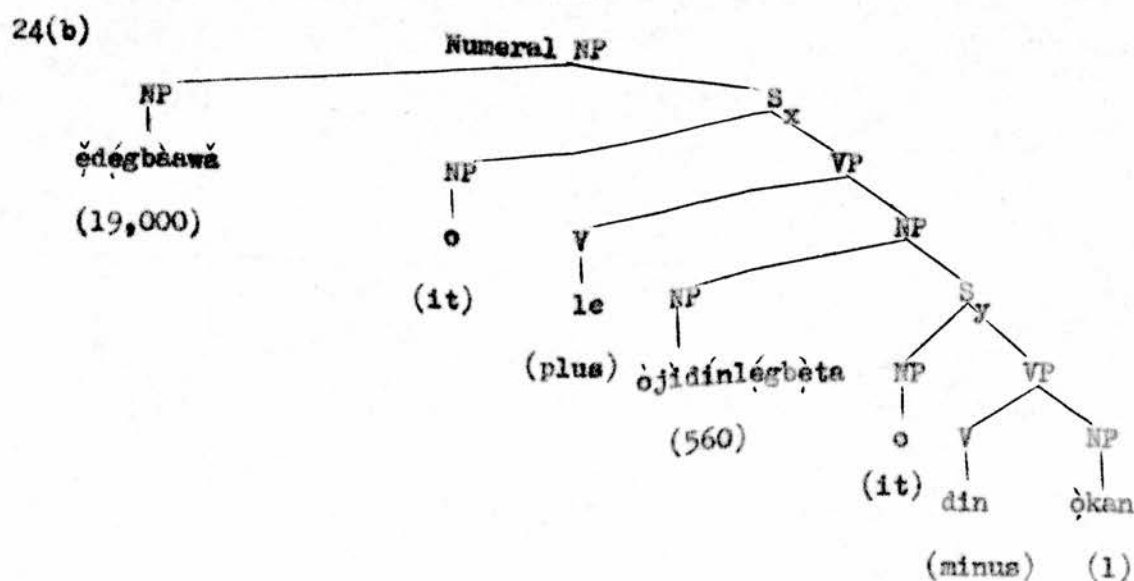
To obtain 23, we start from the thousand series. The nearest primary vigesimal from which '19,000' can be obtained is '20,000' - egbàawá. By applying èdín₁ to '20,000' we derive édégbàawá '19,000'. The rest of the numeral will then be sententially represented as ó lé X (it plus X) where 'X' represents the rest of the numeral. To analyze 'X' or '559' in this case, we start from the primary vigesimal from which it

can be obtained (which is egbèta '600') and then we use èdín₂ to derive òjídínlégbèta '560' from egbèta '600'. The rest of the derivation is sententially represented. So, we finally arrive at èdégbàawá ó lé òjídínlégbèta ó dín òkan '19,559'.

Examples of recursive numerals like 23 are not covered by Abraham's analysis because they are complex. A recursive numeral is one (like 23) in which the sentential representation of a numeral form is completely embedded in another sentential representation. The system of bracketing in the literal gloss of 23 above shows that the sentence 'it decreases by 1' is completely embedded in the one which starts with 'it increases by ...'. If we label the sentences as S_x and S_y , the embedding process can be clearly represented as:

24(a) $\text{èdégbàawá } [S_x \text{ ó lé } \text{òjídínlégbèta } [S_y \text{ ó dín } \text{òkan}] S_y] S_x$
 (19,000 it plus (600 - 40) it minus 1)

24(a) will have the tree representation 24(b).



The principle governing recursion in the numeral system is that recursion is possible only in èdín₂ representations since èdín₂ is the only one that is represented as a sentence both in underlying structures and on

the surface. A later proposal in 4.42 will make this principle insignificant.

One fact worth observing about the Yoruba numeral system is that it presents a lot of difficulties to those who are not very good in subtraction work and multiplication exercises. It is to bring about this fact that we have provided example 23 where there are three subtraction exercises (20,000 - 1,000), (600 - 40) and (560 - 1) and two multiplication exercises (2,000 x 10) for egbà mewá or egbàawá and (200 x 3) for igba méta or egbèta to only one addition exercise: (19,000 + 559).

Another observation that can be made is that certain high numerals e.g. '3,000' and '5,000' in 21 have dual representations. The duality of the representation is caused by the freedom of igba to have multipliers that exceed the number '10' in contractions of multiples of '200'.

Usually, in the vigesimal system, the multiplier never exceeds '10'.

For instance, the highest numeral multiple derivable from ogún '20' is ogósán (20 x 9) '180', the highest from egbà '2,000' is egbàawá i.e.

egba mewá (2,000 x 10) '20,000'. In neither case does the multiplier

of the primary vigesimal exceed '10'. But for igba '200', we do not have

this restriction since it is possible to have the multiplier as édóogún '15'

in 21(a) or édógbòn '25' in 21(b) above. We can continue increasing the

multiplier of igba e.g. in:

25 egbèjídínládójo i.e. igba méjídínládójo (200 x 148) '29,600' and

26 egbèrìnlélógósán i.e. igba mérìnlélógósán (200 x 184) '36,800'.

25 and 26 can be considered as 'competence determined' derivations since in actual practice (or in 'performance') people rarely derive such high numerals. However, the rules of numeral computation allow both derivations.

The only restriction on the free use of multipliers on igba '200' is that the multiplier must have an g- form of the numeral. Hence, all multiples

of '10' (excluding '10', i.e. plural decimals) are excluded as multipliers of igba '200'. Note now that multiples of '10' excluding '10' seem to share many characteristic features just because they have no m- form of the numeral.

A third point that can be made now is that some of the surface characteristics of the numeral are determined by certain basis requirements of linguistic communication like the avoidance of ambiguity or equivocation. For instance, we noticed from 4.2212(14) that èdín₁ contraction ceases from operating from egbaawá '20,000', and we also observed from 4.2213(17) that only multiples of '20' are used in èdín₂ preposing on multiples of '200' so that while we have òrindínlégbèta '520' we do not have *èrindínlégbèta (for egbèta ó dín mérin '596'). We can exclude the *èrindínlégbèta of 4.2213(17) on the ground that èrin '4', a unit, is not in the èdín₂ orbit of egbèta '600' which is a multiple of igba '200'. However, when we consider higher numerals like ádóta òké '1,000,000', we find that èdín₂ preposing is completely absent there partly because if it were present, we shall consistently have ambiguous representations e.g.

27. ajá dúdú méjídínládóta òké (dog black 2-off-50 20,000)¹

In 27, méjídínládóta òké can be interpreted as:

(2 off 50) x 20,000 i.e. (48 x 20,000) '960,000' or

2 off (50 x 20,000) i.e. (1,000,000 - 2) '999,998

Thus, the free use of èdín₂ beyond the ten multiple of '200' will cause an ambiguity of bracketing in higher numerals. Hence, the ways to express the two senses of 27 are:

1. The ambiguity can also be illustrated when the preposed item is a multiple of '20' e.g. òrindínlégbèta òké is either (80 off 600) x 20,000 i.e. (520 x 20,000) '10,400,000' or 80 off (600 x 20,000) '11,999,920'.

28(a) ajá dúdú ònà òké méjìdínlâdóta (dog black times bag 48) or

(b) òké ajá dúdú ònà méjìdínlâdóta (bag dog black times 48)

both 28(a) and (b) = '960,000 black dogs' and

29. ǎdóta òké ajá dúdú ó dín méjì (50 bag dog black it less 2)

'999,998 black dogs'.

In the literal gloss of 28 and 29, we use 'bag' for òké '20,000' because we want to bring out another type of ambiguity usually avoided in surface structure representations. Thus, in the surface structure, when there is only one 'bag' of 'dogs' (for 'bag' = '20,000'), we normally have:

30. egbàawá ajá dúdú (20,000 dog black) '20,000 black dogs' rather than

31. òké ajá dúdú - either '20,000 black dogs' or 'a bag of black dogs' (if it were possible to enumerate dogs in bags).

For numerals that are higher or lower than '20,000', this ambiguity does not always arise because one of the three numeral operators is often present in the surface structure representation. Hence, we may use òké in:

32. òké ajá dúdú ó lẹ kan (bag dog black it plus 1) '20,001 black dogs'

33. òké ajá dúdú ònà méjì (bag dog black times 2) '40,000 black dogs' and

34. òké ajá dúdú ó dín ogórùn (bag dog black it less 100) '19,900 black dogs'.

(Note that the three Yoruba numeral operators are underlined in 32 to 34.)

Thus, it is only in cases where numeral operators are not used that it is possible to confuse òké 'ordinary bag or sack' with òké '20,000', and this makes Yoruba people prefer using the numeral operators even when it is possible to dispense with them as in:

35(a) ǎdóta òké ajá dúdú (50 bag dog black) '1,000,000 black dogs'

(b) ogún òké ajá dúdú (20 bag dog black) '400,000 black dogs'

(c) egbàrùn òké ajá dúdú (1,000 bag dog black) '20,000,000 black dogs'.

For the structures in 35, one often finds forms like:

- 36(a) òké ajá dúdú ònà ǎdóta (bag dog black times 50) = 35(a)
(b) òké ajá dúdú ònà agún (bag dog black times 20) = 35(b) and
(c) òké ajá dúdú ònà egbèrún (bag dog black times 1,000) = 35(c).

So, when the multiplier of òké is a multiple of '10' (or plural decimal), there is a tendency to confuse òké 'bag' with òké '20,000' since no numeral operators appear in the surface structure representations. And the need to disambiguate òké makes forms like 36 appear although they are not really distinct from òké numeral representations like 35. We shall return to the numeral operators later in 4.4. Now, we want to consider the position of the numeral in the Yoruba NP.

4.3 THE NUMERAL IN THE YORUBA NOUN PHRASE

4.31 THE CLASSIFICATION OF NUMERALS IN SYNTAX

In this section we give some syntactic reasons for the subclassification of Yoruba numerals into ordinals, cardinals, distributives etc. Hence, although we stated earlier in 4.21 that we shall concentrate only on cardinals and ordinals in further discussion, we can allow an exception to that statement of policy in our present discussion.

The subclassification of numerals into ordinals etc. has so far been assumed in the manner of many previous Yoruba grammarians, and it seems the only types of justification ever explicitly made for subclassification are principally morphological,¹ while the sacrosanctity of the division into classes is assumed.

We shall first consider possible syntactic reasons for subclassifying cardinals separately from distributives and later we shall consider syntactic

1. Bangbose 1966: 113.

reasons for classifying cardinals and ordinals separately.

It is possible for the numeral (irrespective of subclass) to be the only element in a surface Yoruba NP. So, a numeral can constitute a Yoruba NP of only one element (i.e. the head¹ of Bangbose's Nominal Group):

1. méta kí lésekésè (three die immediately) 'three died immediately'
2. íketa kí kí íkèrin tó dé (the-third die before the-fourth can arrive) 'the third died before the fourth appeared'
3. métaméta ní kí ẹ lọ (three-each is that you go) 'you should go in groups of threes'

(where we used the cardinal méta 'three' in 1, the nominal form of the ordinals i.e. íketa 'the third' and íkèrin 'the fourth' in 2 and the distributive métaméta 'three each' or 'threes' in 3.)

In 1, it is the same surface form that occurs in 'head' or 'modifying' positions for cardinals. In 2, only the nominal form íketa 'the third' can occur in the head position, the modifier form keta 'third' cannot occur in such places. In 3, the distributive can only occur as an emphatic element, and it must be followed by the emphatic particle ní 'is' (which is not distinct from the Yoruba copulative verb ní 'is'). So far, it seems that the differences among them may be considered as minor since they are all dominated in a tree diagram by the symbol NP.

However, observe the following:

4. Mó ní kí wọ́n lọ ní métaméta 'I ask them to go in threes'
5. *Mó ní kí wọ́n lọ ní méta '*I ask them to go in three'.

The distributive but not the cardinal can be the only NP in a preposition phrase. This preposition ní 'in/on' should not be confused with the ní

1. Bangbose 1966: 98

in 1.33 which was called the transformational formative (Trf). The Trf is sometimes used to separate two surface objects in VP's e.g.

Olúwa fún mí ní ayò (God give me Trf joy) 'God gives me joy', ó fọ mí ní orí (he break me Trf head) 'he breaks my head' etc. In examples like these, it is possible to have ní + Cardinal e.g. o fún mí ní méta (he give me Trf three) 'he gave me three', but the ní + Cardinal construction there is not a preposition phrase.

The cardinal can be the direct object of a verb, but the distributive can only be an object of verbs of saying or quoting. So while 6 is ambiguous (because of the two meanings of ní there), 7 is not. Hence:

6. mo ní méta = (i) 'I have three' and (ii) 'I say "three"', but

7. mo ní méta méta 'I say "groups of threes"' is unambiguous.

The usual form of the distributive in the VP position is often that of 4 where it is the complement of a preposition. In 7, one can hardly say that the distributive is in its natural syntactic environment since almost anything that is quoted could be the complement of a verb of saying. For instance, a quoted verb can be the complement of ní 'say' in:

8. mo ní "lo" 'I say "go"'

although lo 'go' is not a NP.

Moreover, in 3 above, we say that the distributive must be followed by the emphatic particle ní 'is' (or its negation kó 'not/not is') e.g. in:

9. méta méta kó (threes not) 'it is not groups of threes'.

This is the only way in which it can occur initially in surface sentence structure since it can never be the subject of a verb though the cardinal can be. Thus, we have:

10. méta kú lésèkèsè (i.e. 1 above) but not

11. *méta méta kú lésèkèsè (threes die immediately) 'groups of threes die immediately'.

Perhaps the adverbial lèsèkèsè 'immediately' may contribute to the ungrammaticality of 11. So, we may exclude the adverbial and obtain:

12. *metameta ku (threes die) 'groups of threes die'.

We note that 12 is still ungrammatical. So it seems that métaméta or the distributive cannot be the subject of a real Yoruba verb. In order to express the idea in 12, we need a representation like:

13. wón kú ní métaméta (they die in threes) 'they died in groups of threes' where another item wón 'they' actually functions as the subject of kú 'die'.

Before métaméta (or any distributive) can occur initially in sentence structure, it must not precede a verb directly as in 12, but it must be emphasized like 3 above where it occurred before the emphatic particle ní 'is', and another nominal é 'you' preceded the verb lo 'go' there. For the distributive in 13 to occur initially, we must have the representation as:

14. métaméta ní wón kú (threes is they die) 'it was in groups of threes that they died'.

Note that the subject of kú 'die' in 13 (i.e. wón 'they') still remains as the subject of kú in 14 although métaméta now occurs initially. In general, the distributive (like some examples involving adverbs and preposition phrases in 'Emphatic Sentence Structures' in 1.33 above) can only be the subject of an emphatic particle like ní 'is' or kó 'not is'. This restriction does not apply to cardinals and ordinals (cf. 1 and 2 above).

Some syntactic evidence can be used for classifying cardinals and ordinals separately. It is possible to use the type of modification in which both items participate or the type of items they can be answers to as criteria for classifying them separately. Semantic reasons can also be found for the classification, but no details will be given of any of these processes here. Hence, we shall just provide a brief account of the

syntactic differences between cardinals and ordinals.

First, we shall consider the types of questions which cardinals and ordinals answer. When the interrogative item is definite as in èwo 'which' or 'which one', the cardinal cannot be used as an answer, but the ordinal can be e.g.

15. Èwo ni? 'which one is it?'

(a) *méta ni (three is) 'they are three'

(b) *òkùnrin méta ni (man three is) 'they are three men'

16. Èwo ni? 'which one is it?'

(a) ìketa ni (the-third is) 'it is the third one'

(b) òkùnrin keta ni (man third is) 'it is the third man'

But when the question word is indefinite e.g. in èlò 'how many', the position is reversed since the cardinal is now allowable while the ordinal is excluded e.g.

17. Èlò ni? 'how many are they?'

(a) méta ni (three is) 'they are three'

(b) òkan ni (one is) 'it is one' and

(c) òkùnrin méta ni (man three is) 'they are three men'.

18. Èlò ni? 'how many are they?'

(a) *ìketa ni (the-third is) 'it is the third one'

(b) *ìkíní ni (the-first is) 'it is the first one' and

(c) *òkùnrin keta ni (man third is) 'it is the third man'.

The interpretation of èlò ni varies in different contexts. In a buying-selling situation, it is used to ask for the price of articles e.g.

èlò ni? 'how much is it?', but in its reply, the ordinal is still excluded since the price of an article cannot be pónùn keta 'the third pound' but pónùn méta 'three pounds'. So, this restriction still applies given the other interpretation of èlò ni.

Other types of question examples can be used for this discussion but we have already excluded detailed discussions of specific points. So, we may briefly examine the types of modifications in which cardinals and ordinals pattern.

The ordinal can follow the cardinal in surface structure representations, but not vice versa. Hence, while we have:

19(a) àwọ̀n ilé méta kejì tí mo kó (plur house three second which I build)
'the second set of three houses which I built'

we do not have:

(b) *àwọ̀n ilé kẹ́ta méjì tí mo kó (plur house third two which I build)
'*the two third houses which I built'.

This point is similar to, but not identical with Bamgbose's distributional statement that "Type 4 (i.e. the ordinal) ... can occur after any of the other three subclasses"¹ since it does not occur after his type 2 numeral (cf. 30 and 31 below).

The cardinal can occur alone with the plurality marker àwọ̀n in a surface NP but when the ordinal is used the noun which the plurality formative limits in underlying representations is not deleted on the surface. So, while we have:

20(a) àwọ̀n kan (plur one) 'a certain group of people'

(b) àwọ̀n ènìyàn kan (plur people one) 'a certain group of people'

(c) (?)àwọ̀n ènìyàn kíní (plur people first) '(?) the first people'

we do not have:

(d) *àwọ̀n kíní (plur first) for 20(c).²

1. Bamgbose 1966: 113 (italics supplied)

2. Some people will accept 20(d) with the interpretation 'the first set', but I will not accept or produce it for any interpretation.

A cardinal can be inserted between àwon and kan in 20(a) to show the number of people in the group, but an ordinal cannot be inserted there.

Thus we have:

21. àwon méta kan wá e dé ilé láná (plur three one seek you to house yesterday) 'a certain group of three people looked for you at home yesterday'.

Observe that the cardinal méta in 21 cannot be replaced with the ordinal keta. So, we do not have:

22. *àwon keta kan wá e dé ilé láná (plur third one seek you to house yesterday) '*a certain group of third looked for you at home yesterday'.

Generally, ordinals specify single objects or sets of objects identified as unitary or singular. Hence, one of the reasons for the ungrammaticality of 22 may be connected with the plurality of àwon since the cardinal which occurs before àwon and kan in 21 must also be plural. Hence, we do not have:

23. *àwon kan kan wá e dé ilé láná (plur one one seek you to house yesterday) '*a certain group of one person looked for you at home yesterday'.

So, it is difficult to say whether the restriction in modification possibilities between cardinals and ordinals is entirely syntactic or whether it is both syntactic and semantic (if the distinction between syntax and semantics still exists). This observation brings us to the next point dealing with the semantic considerations for subclassification. We shall say very little about it.

It seems an ordinal implies the existence of other members of the ordinal class. Hence, we do not have ilé kefà 'the sixth house' unless we are sure of the existence of ilé kǐní 'the first house' to ilé karún 'the fifth house'. So, given a sentence:

24. mo fe ko ilé kefà (I want build house sixth) 'I want to build the sixth house',

one assumes I have already built five houses or that five houses have already been built or are about to be built though not necessarily by me. However, the use of a cardinal in syntactic structure has no presuppositions about the existence of other members of the nominal class that the cardinal modifies. Thus, given a sentence:

25. *mo fe ko ile mefa* (I want build house six) 'I want to build six houses' there is nothing to suggest that I have ever built a single house or that any house has ever been built anywhere. There is also nothing to suggest that I have not yet built more than six houses. So, from 25, I could have built hundreds of houses or none, but when 24 is produced, it is wrong to assume that no house has so far been built either by me or by someone else since ordinals imply ordered series, and in an ordered set, we do not reach non initial members of such sets until we have gone through preceding members of the set.

We have considered semantic reasons for classification here just because it is not always possible to separate syntactic reasons from semantic considerations as we have already discovered in our discussion of 19 to 23 earlier.

At this stage, it seems obvious that the traditional classification of Yoruba numerals into cardinals, ordinals, distributives, and Bangbose's Type 2 numeral¹ have some syntactic functions. We do not discuss the type 2 numeral (e.g. *meteta* 'all the three', *mewewa* 'all the ten') here because it is an unproductive set. "This series is limited to 2 - 10".² Nevertheless,

1. Bangbose 1966: 113

2. Bangbose 1966: 113. Although we agree with Bangbose that his Type 2 numeral is unproductive, we are ^{not} convinced that it is limited to 2 - 10 since many Yoruba speakers accept *metetala* 'all the thirteen' and several other examples from us.

we do not deny its syntactic significance. For instance, since totality or allness is implied in the type 2 numeral (métèta 'all the three'), it does not enter into partitive constructions. Thus, we can have:

26. méta nínú wa gba èyè (three among us receive honour) 'three of us (i.e. from the midst of us) are honoured' but neither

27. *métèta nínú wa gba èyè (all-three among us receive honour) '*all the three from the midst of us are honoured' i.e. with some left over; nor

28. *gbogbo nínú wa gba èyè (all among us receive honour) '*all from the midst of us are honoured'.

However, it is enough to show that the criteria for classifying numerals are not just morphological as one might feel on studying the criteria of classification in Bangbose,¹ nor only functional or utilitarian as implied by Ward's classification into 'for counting', 'used after the noun' etc.,² but they can also be syntactic. We took the sacrosanctity of this classifying process for granted in our earlier discussion, but we decide to justify it now since we use classifiers not only for the derivation of nouns but also for that of the numeral.

In preceding paragraphs of this section, we observed that the main criteria for classifying Yoruba numerals in the works of Bangbose and other grammarians are morphological. However, although the main criterion for classifying numerals in Bangbose is morphological, he also stated that types 1 - 3 are mutually exclusive and that type 4 (i.e. the ordinal can occur after any of the other three subclasses).³ One may say that this is a distributional statement, but the statement may sometimes mislead one.

1. Bangbose 1966: 113

2. Ward 1952: 155

3. Bangbose 1966: 113

For instance, if we have:

29. ile méjíméjì kejì (house two-each second)

where the distributive is followed by the ordinal, the ordinal does not modify (or qualify) the distributive (although it follows it). 29 is not *the second two each houses but the second group of the groups of two houses i.e. houses are grouped in twos, and the second of this group is referred to. So, it appears there are instances of surface deletion in 29 which are not immediately apparent. And what the ordinal modifies is actually deleted on the surface. (As Bangbose worked with a syntactic theory that has no deep-surface dichotomy (i.e. the theory of Halliday 1961), this inadequacy is inevitable.)

However, as we have already observed, the ordinal cannot follow his type 2 numeral métèta 'all the three'. So, we do not have:

30. *ilé métèta keta ni mo lq (house all-three third is I go) *I went to the third all the three houses or

31. *mètèta keta nínú wa gba èyè (all-three third among us receive honour) *the third all the three of us were honoured.¹

On the other hand, if we were to accept the idea of one type of numeral following another on the surface as a sufficient basis for setting up classes (or subclasses), we would be compelled to group the two cardinals that follow each other in 21 - àwón méta kan 'a certain group of people' as two different numeral classes. After all, we have 21 but not *àwón kan méta.

1. It will be an error to think that the only problem with Bangbose's distributional statement is the absence of a deep-surface distinction in the syntactic framework he used. Actually, Afolayan who benefited from the incorporation of a deep grammar into Halliday's systemic grammar also used examples like 29 to suggest that numerals are recursive. Hence, Afolayan's grammar will generate the ungrammatical structures in 30 and 31 although it is not a surface grammar.

If we do so, we would be beset with innumerable difficulties since the construction in 21 is only possible when àwon is present on the surface. If any noun unaccompanied by àwon were used, the construction, e.g. ṣilé nṣwá kan will not be readily acceptable. So, we can say that the morphological statement is correct for classification purposes, but syntactically, the distributional statement (of Bamgbose 1966: 113) can be misleading.

4.32 LINEARITY AND DISCONTINUITY IN STRUCTURAL REPRESENTATIONS

4.321 THE FAILURE OF A LINEAR FRAMEWORK IN NUMERAL DESCRIPTION

Although this work deals with underlying representations, we cannot escape discussing some surface structure phenomena since underlying representations ultimately lead to surface structure representations. So, we want to examine two concepts in numeral representations in the Yoruba noun phrase. The two concepts - linearity and discontinuity - will be discussed simultaneously. Later, we shall use underlying sentential representations to solve not only the problems of discontinuity in the surface representations of noun phrases using certain categories of numerals but also the morphological problems that relate to the contraction and preposing phenomena of the numeral operators already discussed in 4.2 above.

In chapter II above, we saw that Bamgbose had some sequence determined secondary elements of structure in his 'qualifier' system which contained the strictly ordered elements:

26. n, j, l, k, d, t

where the symbols respectively stand for the nominal, adjective, numeral, rankshifted, deictic and post-deictic qualifiers.¹ Also we noticed that

1. Bamgbose 1966: 99

the incorrectness of this linear ordering would have been recognized by Bamgbose if he had considered more examples than his oral text could provide,¹ and we gave examples of discontinuous numerals in which whole noun phrases could be inserted between two parts of a single numeral e.g. in

27. egbèrin ajá dúdú ó lé kan (800 dog black it plus 1) '801 black dogs' where the noun phrase ajá dúdú (dog black) 'black dog' is inserted between the two parts of the underlined numeral in 27. There we saw that in Bamgbose's analysis, 27 would have been analyzed as h, n, j, k (where h = 'head') and the other symbols are as interpreted in 26 since what occurs initially in surface NP structure for Bamgbose is automatically the 'head'.² Then, for Afolayan, a likely analysis of 27 will be m, h, j, k (modifier, head, adjective qualifier, rankshifted qualifier) since Afolayan recognized that the 'head' of the Yoruba noun phrase can be pre-modified in surface structure representations. In neither case was there the suggestion that there is a numeral in 27. And so, both analyses are not adequate.

For the Yoruba numeral, the inadequacy of Bamgbose's framework represented as 26 above is twofold. First, on the theoretical side, the 'category' numeral is determined only by sequence in structures like 26 so

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1. It seems Bamgbose's analysis tells us more than we can obtain from his oral text since we have already noticed from his exemplification of Nominal Group structures (1966: 124-5) that he could not fill more than four places of structure in his seven place nominal group columns. It appears none of the examples in the text on which his grammar was based (Bamgbose 1966: xi) contained lexical items for the seven columns of table E14 on pages 124-5. Otherwise, he would have used such examples to justify 26 here and the ordering in his E14. The conclusion one can draw from E14 is that recorded texts are inadequate data for grammatical analyses since Bamgbose actually had to use his own native speaker's intuition wherever the recorded text failed to give the necessary information e.g. in his ordering of adjectives before numerals in E14 and also in Bamgbose 1966: 99.
 2. See some comments on this phenomenon in 2.1 above.

that it obligatorily follows the adjective and obligatorily precedes the relative (which was a part of the 'rankshifted qualifier'). Consequently, when we have a discontinuous numeral in 27, it is impossible to identify the numeral as numeral since one part of the numeral (i.e. agbèrin '800') precedes an adjective (i.e. the adjective - dúdu 'black') while the remaining part of the numeral (ó lé kan 'it increases by 1') follows the same adjective. Hence, the linearity of structural element determination, whereby only linear structure determines that one item must be an adjective while the other one must be a numeral, makes certain Yoruba numerals indescribable, and so, a structural framework like 26 cannot cover the available data and must fail all known conditions of adequacy. Note that the mechanisms for handling discontinuities in Halliday's system have limited value for sequence determined categories.

Secondly, on the practical side, as one can observe from Bamgbose's own analysis of examples, 26 is inexplicit. For instance as we have already observed, the numerals Bamgbose theoretically recognized are almost always treated in his monograph as one of j - (adjective qualifier), or h - (head).¹ It appears that the only time this inconsistency in description was recognized was when he gave the forty examples listed under E14 as "Exemplification of Nominal Group Structures", since it is necessary for him to have lexical items in the 1 (or numeral) column there. But even there, what he treated as type 3 numeral on p. 113 became an adjective in the tables. Thus, the example of a type 3 numeral on p. 113 is meji meji in iyawo meji meji 'two wives each', but in ijo marun marun 'every five days' on p. 124, the numeral marun marun is an adjective. Perhaps the meaning

1. The syntactic and phonological similarity of Yoruba numerals and quantifiers to adjectives is examined below in 5.2 and 5.3.

of the translated version influenced this decision. Besides, ogun 'twenty', a 'non reduplicated form', was treated as head in ogun odun 'twenty years', ogun orin 'twenty hymns', and then as an adjective in orin ogun H_j 'the twentieth hymn' on p. 114. One can say that by giving different structural descriptions to ogun orin '20 hymns' and orin ogun 'the 20th hymn', Bamgbose has recognized the distinction between cardinals and ordinals. However, one wonders why orin ogun should be H_j (head, adjective) and not H₁ (head, numeral) if ogun is considered as a numeral and not as an adjective on p. 113. Then, in the other example where ogun is treated as 'head', the implication will be that ogun orin 'twenty hymns' is unrelated to orin mókàndínlógun 'nineteen hymns'.

So, the ^{inconsistency} ~~inconsistency~~ in treatment is not restricted to so called 'type 3 numerals'. Perhaps j and l (the adjective and the numeral) could be in complementary distribution in Bamgbose 1966 so that they would actually constitute 'one element of structure'. From his examples, one can say that numerals and adjectives are one although the conditions of oneness can only be conjectured. One can note that in his examples of adjectives on p. 112, quantifiers like pupò 'many' and dié 'few' are included. If we have any quantifier under j in 26, it is impossible for us to have any numeral immediately after it. There is no *ilé pupò meta (house many three) '*three many houses' in Yoruba. So, we find that quantifiers which were treated as adjectives cannot be followed by numerals, and this makes one feel that quantifiers may be variants of the numeral or that numerals and adjectives are indistinguishable. The feeling that numerals and adjectives are members of an underlying super category is reconsidered at length in chapter V below.

We may just end this section by remarking that Bamgbose's analysis (which we found to be inadequate above) seems preferable to Afolayan's on

numerals since Bamgbose actually recognized the structural and semantic difference between ordinal and cardinal multiples of ten whereas Afolayan suggested that 'ilé ogóta' which he glossed as 'sixty houses'¹ is ungrammatical. Note that this mistaken suggestion on grammaticality is caused by a failure to recognize that ogóta in ilé ogóta (house sixty) 'the sixtieth house' is an ordinal and not a cardinal as his glossing suggests.

4.322 A DERIVATIONAL RULE FOR DISCONTINUOUS NUMERALS

We noticed in 4.321(27) that a whole noun phrase e.g. ajá dúdú 'black dog' can be inserted between the two parts of the Yoruba discontinuous numeral. The discontinuous numeral itself consists of two parts, the second of which is a sentence e.g. ó lé kan in 4.321(27). The first part of the numeral can be regarded as a NP since multiples of '10' e.g. egbèrin i.e. igba mérin (200 x 4) or (four igba's) '800' have the internal structure of NP's (see 4.4 below). We therefore have the discontinuous numeral as NP S. And in order to derive 4.321(27) from egbèrin ó lé kan '801' and ajá dúdú 'black dog', we need a rule like 4.322(28):

28. SI: [NP [NP S] NP] NP
 1 2 3 ---->
 SC: 2 1 3

(condition: 2 and 3 constitute one numeral).

There are certain restrictions on the NP's occurring within discontinuous numerals e.g. they cannot have determiners. For instance, we have:

29. àwọn ajá dúdú méta wònyen (plur dog black three those) 'those three black dogs' - where both àwọn (the plural marker) and wònyen 'those' can be

1. Afolayan 1968: 438

treated as one DET (see 6.2 below). But we do not have:

30. *irínwó àwón ajá dúdú wònyen ó lé kan (400 plur dog black those it plus 1) for '401 black dogs'.

To express the idea in 30, one will have a periphrastic form which looks like the type of underlying sentential representations we would have for the idea viz.

31. àwón ajá dúdú wònyen, tí iye won jé irínwó ó lé kan (plur dog black those, which sum their is 400 it plus 1) 'those black dogs, the sum of which is 401'.

The phenomenon just observed may be used as additional evidence for the suggestion that underlying sentential representations which use classifiers are needed for Yoruba numerals since the determiners that cannot occur in 30 can be expressed only as sentential forms which use classifiers e.g. 31 above.

4.4 INTEGRATION OF NUMERAL OPERATORS IN UNDERLYING REPRESENTATIONS

4.41 THE INTEGRATION OF NUMERAL OPERATORS - FIRST STEP

In 4,2212, we suggested that the numbering of the numeral operators (e.g. as èdín₁ and èdín₂ etc.) depends on the significance of each subclass of the operator for the vigesimal system. Hence, èdín₁ is the most important of them since without it, we cannot get the odd multiples of '10' '100' and '1,000' which are derived from their respective even multiples and which are needed before intermediate figures like ètádínládóta (50 - 3) '47' are derived from odd multiples of '10' like ádóta '50'. In other words, without an èdín₁ operation, the Yoruba vigesimal system is not reducible to a decimal one.

Now, without contradicting the principle of èdín numbering above, we

intend to suggest that only sentential èdín and èlé forms exist in underlying representations. There will be no contradiction if, at this stage, we recognize three categories of underlying sentential forms such that the first category (corresponding to èdín₁) ultimately undergoes both contraction and preposing on the surface, while the second category undergoes only preposing, and the third category remains as a sentence in surface structure representations. This new development is helped by the fact that any èdín₁ or èdín₂ at all can have a sentential èdín₃ counterpart but not vice versa. Thus, the èdín₁ numerals in 1 and the èdín₂ numerals in 2 below have the associated sentential èdín₃ counterparts, but the èdín₃ numerals in 3 have no èdín₁ or èdín₂ counterparts:

- 1(a) edogun - ogún ó dín márún (20 it minus 5) '15'
(b) adojo - ogójo ó dín méwá (160 it minus 10) '150'
(c) ederberun - egbèrun ó dín ogórún (1,000 it minus 100) '900'
(d) ederbaajo - egbàajo ó dín egbèrún (16,000 it minus 1,000) '15,000'
- 2(a) atadinlogbon - ogbòn ó dín méta (30 it minus 3) '27'
(b) erinkleladofa - àdofa ó lé mérín (110 it plus 4) '114'
(c) arundinlogosan - ogósán ó dín márún (180 it minus 5) '175'
(d) orindinlegeta - egbèta ó dín ogórín (600 it minus 80) '520'

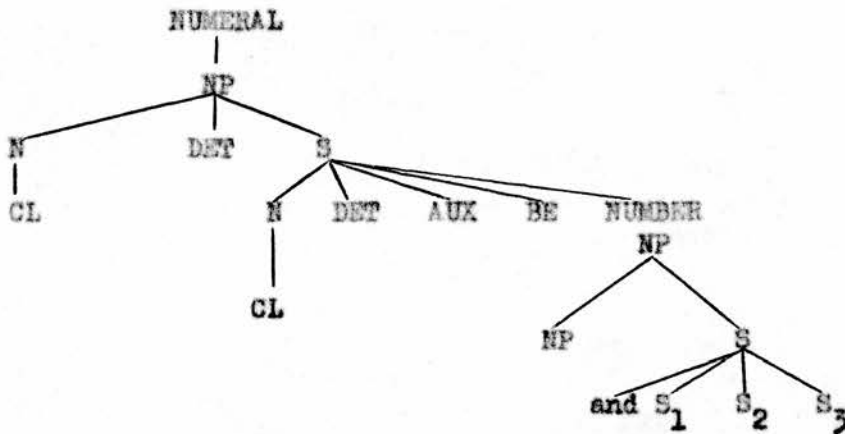
See 4.2213 (15 and 16) for more examples of the types of numerals in 2.

- 3(a) odunrun o dín kan (300 it minus 1) '299'
(b) esberun o le mewa (1,000 it plus 10) '1,010'
(c) adota oke o dín mejí ((50 x 20,000) it minus 2) '999,998'
(d) adota oke o le ogun ((50 x 20,000) it plus 20) '1,000,020'

From 1 to 3, we find that the contracted èdín₁ and the preposed èdín₂ numeral forms of 1 and 2 could be provided with sentential èdín₃ counterparts. Note that the sentential representations in 1 and 2 have the same

structures as those of 3.¹ In spite of the similarity in the structures of the sentential forms representing the three èdín formatives in 1 to 3, we may index the underlying sentences such that underlying S₁, S₂ and S₃ in numeral representations respectively lead to surface èdín₁, èdín₂ and èdín₃. This indexing will help us in the discussion of the operations on the sentences till the level of surface structure. Now, if we want to add the indexed sentences to tree structures like the P_{i-6} of 2.4(4), we would get the tree diagram 4.

4.



where S₁, S₂ and S₃ respectively represent the underlying sentences containing èdín₁, èdín₂ and èdín₃. The classifiers for numerals will appear in the appropriate places (where we have CL) in 4.

We can now give some representations that are based on 4 such that all three S's are represented. Meanwhile, we shall use a blank or a horizontal line to indicate where any of the èdín's is absent but this does not mean

1. Each of the sentential representations can be realized as NP S descending from a Numeral NP node. McCawley 1968b: 246-247 supported an argument of Lakoff and Peters that rules of the form A --> α A or A --> Aα i.e. NP --> NP S, or NP --> and NP^N are actually needed in the grammar of English. So, rules like NP --> NP S are not idiosyncratic. In fact such rules are commonly used nowadays in TG. A rule which is similarly used like that is that for coordinate structures e.g. S --> and S^N. Such rules are favoured by Lakoff and Peters, and they are often used in Ross 1967.

that there are blanks in underlying representations. We just want the representations to show what the choice of one of the S's could imply for morphology. We shall use labelled round brackets for edin sentences and desist from labelling any other brackets in 5.

Suppose we use the classifier ipo 'position' for the ordinals, then the positions: '601st, 610th, 590th, 640th, 643rd, 500th and 499th' can respectively be represented as:

- 5(a) ipo ti o je [igba meta ()_{S₁} ()_{S₂} (o le kan)_{S₃}] NP '601'
 (b) ipo ti o je [igba meta ()_{S₁} ()_{S₂} (o le mewa)_{S₃}] NP '610'
 (c) ipo ti o je [igba meta ()_{S₁} ()_{S₂} (o din mewa)_{S₃}] NP '590'
 (d) ipo ti o je [igba meta ()_{S₁} (o le ogoji)_{S₂} ()_{S₃}] NP '640'
 (e) ipo ti o je [igba meta ()_{S₁} (o le ogoji)_{S₂} (o le meta)_{S₃}] NP '643'
 (f) ipo ti o je [igba meta (o din ogorun)_{S₁} ()_{S₂} ()_{S₃}] NP '500'
 (g) ipo ti o je [igba meta (o din ogorun)_{S₁} ()_{S₂} (o din kan)_{S₃}] NP '499'

where the final forms of the numerals following ipò tí ó jé 'the position which is' in 5(a) - (g) are respectively:

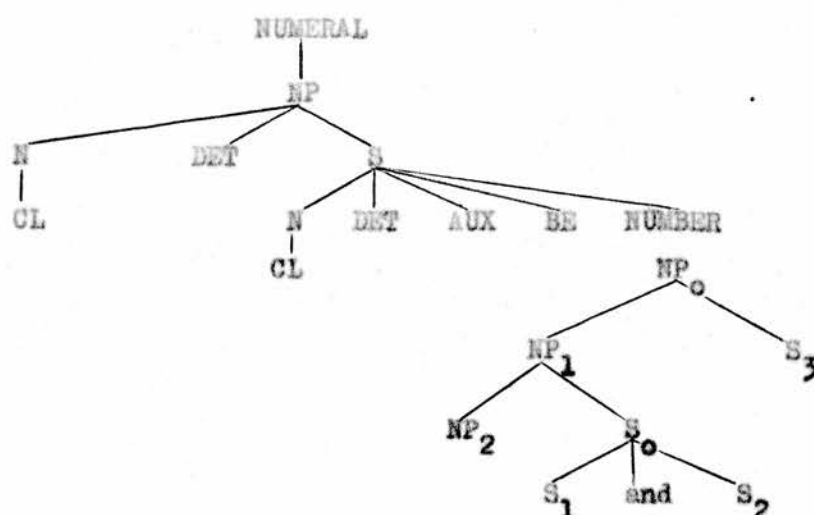
- 6(a) egbeta o le kan (600 it plus 1) '601'
 (b) egbeta o le mewa (600 it plus 10) '610'
 (c) egbeta o din mewa (600 it minus 10) '590'
 (d) ojilelegbeta (40 + 600) '640'
 (e) ojilelegbeta o le meta (640 it plus 3) '643'
 (f) edegbeta (600 - 100) '500'
 (g) edegbeta o din kan (500 it minus 1) '499'

In 5, the contraction and preposing of edin₁ occurs only in (f) and (g) since those are the only structures where there are S₁ representations for edin₁ operations; edin₂ preposing occurs only in (d) and (e) for those are

the only structures having underlying S_2 representations; and we have the surface numeral sentential representations in 6(a), (b), (c), (e), and (g) for their respective S_3 counterparts in 5. The representations in 5 can then be used to dictate the morphological processes that take place in numeral structures and predict the criteria for numeral discontinuity in surface structure representations. Note that discontinuity occurs only if S_3 is chosen in underlying representations since both underlying S_1 and S_2 structures end up either as contractions or as surface prefixes (i.e. preposed forms).

However, before the tree structure in 4 can handle discontinuities, some changes have to be made. Since S_3 is the only one that occurs as discontinuous on the surface, it is necessary to exclude the S_1 and S_2 of 4 from the operation of T-rule 4.322(28) above. There are two ways of doing this. First of all, it is possible to attach S_1 and S_2 to NP by an obligatory transformation before T-rule 4.322(28) applies to NP and S_3 . But the fact that an obligatory rule is always needed suggests that tree structure 4 itself may be inadequate. So, the second way of excluding S_1 and S_2 from the T-rule is by reformulating 4 so that the obligatory rule is no longer needed. This can be done by expanding the NP dominated by the NUMBER NP in 4 into NP S again as in 7. We shall index the NP's in 7 merely for convenience so that reference can easily be made to particular NP's. So, the indexing of NP's in 7 has no resemblance to the indexing of sentences there. The only indices that have any significance in 7 are those for S_1 , S_2 , and S_3 . Others can be omitted.

7.



Actually, the indexing of édin sentences as S_1 , S_2 and S_3 is not required if we state the rewriting rules which lead to a tree diagram like 7. In this subsection, we leave the indices on the S's of 7 although we wish to get rid of the indices later. Now that we have got 7, we can write the 2 and 3 of the structure index of T-rule 4.322(28) as the NP_1 and S_3 of 7 respectively. 7 can now solve the problem of 4 since no obligatory transformation is required.

However, as we indicated in the preceding paragraph, the occurrence of indices on 7 makes it inadequate. Thus, we have to get rid of the indices, but before that can be possible, it will be necessary for us to consider the possibility of sentential representations for the multiplication formative. We did not consider sentential representation for it earlier, because, unlike the addition and subtraction formatives which have actual sentences as surface structure representations (e.g. ó lé kan 'it increases by 1'), the multiplication formative is not represented as a complete sentence on the surface. All we have on the surface for the multiplication formative is ònà 'times' followed by the multiplier, but not preceded by any verb. Note that lé 'exceed' and dín 'be less by' are actually verbal formatives, and this contrasts with ònà 'times' which is nominal. In 4.42, we consider sentential representations for the multiplication formative.

4.42 THE INTEGRATION OF NUMERAL OPERATORS - FINAL STEP.

At the end of 4.41, we obtained a tree representation for numerals which we still consider inadequate because it is burdened with S's that have indices. However, we noted there that we were inhibited by the fact that we had sentential representations only for addition and subtraction formatives, but not for the multiplication formative. In this subsection, we suggest a sentential origin for the multiplication formative. Then, we suggest a technique of handling èdín 'polysemous' ~~since èdín is polyssemous only on the surface but not in underlying representations.~~ And finally we propose that there is only one ^{main} rewriting rule $NP \rightarrow NP S$ for Yoruba numerals. We shall then draw a final derivational tree which uses the rule $NP \rightarrow NP S$ mainly for the recursive numeral in 4.2213(24). In the proposed final tree structure, only basic numerals will occur as terminals.

Apart from the simplicity in representation which a common sentential origin for the addition, subtraction and multiplication formatives will give us, there are at least four other reasons why the multiplication formative should be sententially derived. First, from 4,2211(6, 8, 9, and 10) above, we note that the numeral discontinuity condition also applies to the multiple series. Since the S_3 of 4.41(7) actually implies obligatory discontinuity, and the multiple series which have surface representations for the multiplication formative ònà 'times' are also obligatorily discontinuous, we can develop the multipliers of 4.2211(6, 8, 9 and 10) into ' S_3 ' types of sentences e.g.

1. ó jé ònà mɛfà (it is times six) 'it is in six places'

for 4.2211(6) above. And the only difference between the ònà and èdín

forms in the S_3 of 4.41(7) will be that the full sentence of the èdín form

appears on the surface whereas only the NP that follows the copula je in 1 will appear on the surface for the multiple series. cf.

2. egbàawá ajá dúdú ònà méfà '120,000 black dogs' = 4.2211(7) above.

We can then go a step further and suggest that all multipliers are given an underlying sentential representation so that we do not need the index on S_3 . We then have just one S, and for any multiple, the multiplier is sententially represented in the underlying structure. The differences observable e.g. among the three possible alternative (surface) representations of '80' as ogún ònà mérin, ogún mérin, and ogórin in 4.2211(1) will then reflect various stages on the way from underlying representations to surface structure. The underlying form for 4.2211(1) will then be:

3. ogún ó jé ònà mérin (20 it is times 4) '80'.

Representations like 1 and 3 make the statement of generalities easy since the three numeral operators can now be uniformly treated in the underlying structure, and one may now dispense with the indices on the underlying S's of 4.41(7) - (see 9 below).

The second reason in favour of a sentential origin for the multiplication formative ònà 'times' is that only the form with surface ònà is possible for certain classes of numerals. For instance, if we use egbàawá '20,000' instead of òké '20,000' for the derivation of multiples of '20,000', the ònà representation is obligatory as we have already observed during the discussion of examples 6 to 13 in 4.2211 above. Hence, whenever we have multiples of egbàawá '20,000', we can always expect an underlying and surface representation similar to 3 above.

Thirdly, only a few multiples of òké '20,000' have the alternative representation with the multiplier preceding òké. And this happens just when the multiplier of òké is a multiple of '10' excluding '10' e.g. ádotá òké (50 òké) '1 million'. Others have multipliers following òké e.g.

òké mérin (oke 4) '80,000', and these other ones can easily be represented as òké ònà mérin (20,000 times 4) etc., and finally in the form of 3. But surface forms like ádóta òké can also be given a sentential representation e.g.

4. oke o je ona adota (20,000 it is times 50) '1,000,000'

Since representations like 4 are possible for all multiples of òké, the fact that we have some surface forms like ádóta òké '1 million' in which the multiplication formative ònà 'times' is absent is of no significance any longer.

The fourth point is that the observation that the multipliers of òké which are multiples of '10' can precede òké on the surface giving representations like ádóta òké (50 oke) vis-a-vis òké mérin (oke 4) is not general. Thus, when the multiple of òké is another òké, we do not have:

5. *òké òké ajá dúdú for '400 million black dogs'

but only the form with a surface ona representation:

6. òké ajá dúdú ònà òké kan (20,000 dog black times 20,000 x 1)
'400 million black dogs'.

Thus, we now have sentential representations for the addition, subtraction, and multiplication formatives for Yoruba numerals within the Yoruba NP. In the representation that will be used later, the sentential forms of the operators will be abbreviated for the addition, subtraction, and multiplication formatives respectively as it + NP, it - NP and it x NP where other numerals will descend from NP.

We now turn to the question of èdín₁ polysemy. In 4.2212, we discussed four classes of numerals for which surface èdín₁ (i.e. èdín contraction) has a different meaning. Since we know which numeral must be subtracted from the relevant vigesimal in èdín₁ (contractions), we can just have the actual numeral in underlying representations and these different underlying forms

will ultimately lead to the same surface representations. For instance, we can restate the information about the four numeral classes in 4.2212 as 7 below. We first give a general rule (= 7), and, in a taxonomic manner, we represent information about édín polysemy as conditions on the rule:

7(a) SI: [A [ó dín B] _S] _{NP}
 1 2 3 4 ⇒
 SC: ∅ ∅ /~~édí~~/ 1

(b) ~~some phonological rule~~ /édí + Vw.../ → /éd Vw.../

(where ^{some} phonological rules are later used to state that /éd/ changes to /äd/ before /o/ or /o/ and /éd/ before /e/). The phonological rule 7(b) is merely stated here for convenience. It is obligatory however.

- Conditions: (i) B = '5' if A = '20' or '30'
 (ii) B = '10' if A = '60', '80', ..., '180'
 (iii) B = '100' if A = '600', '800', ..., '2,000' and
 (iv) B = '1,000' if A = '4,000', '6,000', ... '20,000'.

From 7, we will derive (a) ědógún '15' from ogún ó dín mārūn (20 it - 5), (b) ädóta '50' from ogóta ó dín mēwā (60 it - 10), (c) ědégbèta '500' from egbèta ó dín ogórūn (600 it - 100), and (d) ědégbàata '5,000' from egbàata ó dín egbèrūn (6,000 it - 1,000) using conditions (i), (ii), (iii), and (iv) respectively. The minus sign is used in the literal gloss of the derived numerals above. Note that all the numerals that constitute A in 7 begin with vowels on the mid tone. This is reflected in the way the phonological rule 7(b) is stated.

Although the representation of the conditions on 7 is taxonomic, the significant point about it is that it can be stated at all. Once it is stated like this, there is no longer any motivation for the S₁ representations of 4.41(7).

In a similar manner, we can destroy all motivations for the S_2 representations of 4.41(7). Since S_2 involves preposing (although we have a phonological change in the form of the preposed item if it is '20' or its multiples), we can suggest the following representation:

$$\begin{array}{r}
 8. \quad SI: \quad [C \quad [\acute{o} \quad \{ \overset{16}{\text{dín}} \} \quad D]_S]_{NP} \\
 \qquad \qquad \qquad 1 \qquad 2 \qquad 3 \qquad 4 \qquad \implies \\
 \quad SC: \quad 4 \quad \emptyset \quad 3+ní \quad 1
 \end{array}$$

(where the necessary phonological adjustments take place in the relevant places in structure e.g. the dropping of m before méjì when ogún ó dín méjì becomes èjìdínlogún '18', or the contraction of ogójì to òjì when egbèta ó dín ogójì (600 it - 40) becomes òjìdínlégbèta '560'.

- Conditions:
- (i) D = '1' to '4' if C = '20', '30', ..., '180'
 - (ii) D = '5' when C of condition (i) applies and $3 \neq \text{lé}$
 - (iii) D = '20', '40', '60', '80' if C = '400', '600', '800', ..., '2,000'
 - (iv) D of condition (iii) applies when C = '200' if and only if $3 \neq \text{dín}$

The above conditions adequately cover the S_2 representations in earlier sections. There may be ways of improving 8, but for the moment, it is adequate for our purposes the way it is stated.

Once we have got 8, the motivation for the S_2 representation in 4.41(7) is lost and we now have just one S representation. We can now examine how numerals are derived once 7 and 8 take over the functions of former S_1 and S_2 representations. Our final tree representation for édégbàawá ó lé òjìdínlégbèta ó dín kan '19,559' will now be the tree representation 9. Tree 9 now replaces the NUMBER NP₀ part of 4.41(7), and it does not affect the rest of the representation there.

In 9, the numeral that each NP represents is included in brackets beside the NP. Thus, the next to the topmost NP in 9 represents '19,000', hence we write it as NP(19,000), the next lower NP to its left represents '20,000', and it is written as NP(20,000) etc. The tree representation actually reflects the type of bracketting involved in an arithmetical computation of the numeral. Compare the tree representation with the bracketted representation of the same numeral in 9. The bracketted representation is obtained by deleting all it's from the terminals on the tree. Note that all the terminal numeral representations consist of basic numerals only. 9 is an example of the final form in which the computational or morphological forms of numerals will appear in underlying representations. We have already observed what the full form will look like when classifiers are used to distinguish subclasses of numerals in our discussions in 2.4, 3.5, and 4.1 above.

We cannot list all the advantages of 9. But one of its advantages is that we need to have only the few basic numerals listed as 4.22(1 and 2) and pure syntactic rules like NP \rightarrow NP S, or NP \rightarrow N, or S \rightarrow NP V NP for the derivation of all Yoruba numerals to 'infinity'. Thus, one of the advantages of sentential representations is that it makes it possible for us to use purely syntactic rules like NP \rightarrow NP S to describe even Yoruba mathematical processes like numeral computation economically. We did not derive the full advantage of economy in statements until we have extended sentential derivation to all the three numeral operators.

We now make one final observation about Yoruba numeral representations. This relates to the application of transformational rules like T-rule 4.322(28) to recursive numerals. Consider the following numerals.

10(a) ẹ̀dẹ̀gbàawá ọ́ lé kan '19,001'

(b) ọ̀jídínlẹ̀gbẹ̀ta ọ́ dín kan '559'

If we use T-rule 4.322(28) to insert the NP ajá dúdú (dog black) 'black dog' into the numerals in 10, we would have:

- 11(a) ědégbàawá ajá dúdú ó lé kan '19,001 black dogs' and
(b) òjìdínlégbèta ajá dúdú ó dín kan '559 black dogs'.

Nevertheless, despite the grammaticality of both 11(a) and (b), we can only have 12(a) for '19,559 black dogs' and not 12(b):

- 12(a) ědégbàawá ajá dúdú ó lé òjìdínlégbèta ó dín kan
(b) *ědégbàawá ó lé òjìdínlégbèta ajá dúdú ó dín kan.

But note that the whole of the grammatical 11(b) occurs as the last six items in the ungrammatical 12(b). The point we want to illustrate through this observation is that 11(b) is completely embedded in 12(b), or more precisely, the numeral in 11(b) is completely embedded in the numeral in 12(b), and that any T-rule that applies to any recursive numeral cannot apply to any numeral that is completely embedded in it. Thus, T-rule 4.322(28) which inserts NP's into 'discontinuous' numeral representations applies only to the first expansion of the NUMBER NP. Using tree representation 9 as an example, the T-rule 4.322(28) can only apply to the first expansion of NP(19,559) into NP(19,000) S and not to any other NP in 9. So, one condition for grammaticality in recursive numerals (or in numeral representations generally) is that main T-rules never apply to numerals that are completely embedded in higher numerals. Note the similarity of this condition to Ross's Complex NP constraint which states that:

No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation.
Ross 1967: 127.

Thus, the NP(559) of 9 is contained in a sentence dominated by a noun phrase (i.e. NP(19,559)) with a lexical head noun ědégbàawá '19,000'. It is not significant that ědégbàawá itself is complex or ultimately dominated

by NP(19,000) at this stage. But since the NP(559) of 9 satisfies Ross's specification of the environment in which the complex NP constraint holds, the constraint also applies to it. Consequently, when NP(559) is expanded into NP(560) S (i.e. ḡiḡinlégbèta ó dín kan), neither NP(560) nor S, nor any of the symbols that descend from them can be moved out of NP(559) by any transformation for the derivation of the ungrammatical 12(b). Hence, T-rule 4.322(28) which moves one NP out of an NP dominated NP S structure and replaces it with an NP from outside cannot apply to the NP(559) in 9 since NP(559) is "an element contained in a sentence dominated by a noun phrase with a lexical head noun." In general, we can therefore say that any syntactic transformation that applies to the whole of tree structure 9 operates only on the topmost expansion of NP into NP S.

There are actually other similarities between the structures of Yoruba numerals and full Yoruba NP's e.g. the possibility of relativization and pronominalization transformations for numerals in 2.4(6a and b) above. While there are also some differences of details when we compare numeral structures with full NP structures, we may just suggest that the similarities in the underlying representations, transformational possibilities, and restrictive conditions between Yoruba numerals and full Yoruba NP's show that a detailed study of the numeral in Yoruba syntactic structure may ultimately lead to the conclusion that most of the distinctions universally made among forms like numerals, nouns, adjectives, verbs, etc. are surface manifestations of a single abstract underlying category. The reduction of category distinctions is discussed later in chapter V.

CHAPTER V

5.1 THE NON PROLIFERATION OF STRUCTURAL CATEGORIES

5.11 TOWARDS THE UNDERLYING FORMS OF SURFACE CATEGORIES

In this chapter, we suggest a sentential derivation for adjectives and propose that some of the different surface categories (e.g. those found in Bamgbose's "sequence determined secondary elements of structure" like the noun, the adjective, and the numeral are surface manifestations of the same abstract underlying category. The underlying category in this case is the hyperconstituent 'contentive' of Bach 1968. Bach's proposal was attacked in Dougherty 1970, and Dougherty's attack on Bach will be examined in 5.52 below.

We begin this study, in 5.2, by examining the question of multiple class membership for some categories like quantifiers. Then, in 5.3, we give reasons for the common treatment and sentential derivation of elements like quantifiers, numerals, nouns, and adjectives. Also, in 5.3, we state what advantages there are in deriving quantifiers, numerals, nouns, and adjectives from a single super-category. In 5.4, we go one step forward in our non proliferation proposal by suggesting that numerals are represented as a subclass of nouns in underlying representations. In 5.5, we discuss Yoruba nouns and adjectives following a suggestion made by Ida Ward that "there is often no dividing line between a noun and an adjective."¹ So, similarities and differences between nouns and adjectives are examined in 5.51 while Bach's notion of the hyperconstituent 'contentive' is adopted as a Yoruba underlying category in 5.52. Then in the epilegomena to the non proliferation of structural categories in 5.6, we conclude the discussion started in 5.3 and make some final remarks on the non proliferation of structural categories.

1. Ward 1952: 75

In this chapter we shall not examine Bamgbose's rankshifted, deictic, and post-deictic qualifiers. At present, it seems a discussion of the rankshifted qualifier (or the embedded sentence structure in NP's) is superfluous since the sentential derivation of other categories like the noun, the adjective and the numeral makes them occur in forms of 'rankshifted' clauses in underlying representations. Hence, a numeral, for instance, may have an underlying representation in which a 'rankshifted' clause (or a relative clause) 'qualifies' (i.e. follows)¹ the classifier for numerals (cf. 2.4 and 4.1 above). The relative clause that follows the classifiers for common or proper nouns in 3.5 can also be interpreted as rankshifted 'qualification' of underlying classifiers so that nouns too are derived from underlying rankshifted clauses.

We have not yet discussed the adjective per se. In 5.3, we shall state that most adjectives have predicative counterparts. However, the primacy of a 'rankshifted' origin for Yoruba descriptive adjectives is nowhere more positively stated than in Ward's observation:

1. "Where no adjective corresponding to the verb exists, the relative clause making use of the verb takes its place: indeed, this form is often preferred to the descriptive adjective when there is one." - Ward 1952: 72 (italics supplied.)

Hence, all the various elements being discussed in this chapter may have a similar underlying representation consisting of the relevant classifiers, the determiner, and the appropriate sentences.

We do not anticipate the points made on the advantages of deriving

1. The term 'qualify' is used in its technical sense whenever it is enclosed within quotation marks. But what this simply means is that the item follows the head noun, and whenever an item precedes its head noun, the Hallidayan technical term is 'modify'. See Halliday 1961, and the exposition of Halliday 1961 in Bamgbose 1966: 14-26.

numerals, adjectives and nouns from a super-category in 5.3 to 5.5 below. But it is possible to suggest at this stage that the Yoruba numerals, adjectives and nouns which are discussed from 5.3 to 5.5 are similar because each of them can be derived from underlying structures of the form:

2. N DET RM S

where N (noun) represents the 'classifier' and RM = relative marker.

Note that 2 is not the deepest representation since we say in chapter II above that a structure like 2 which is similar to the P_{1-4} of 2.2(5) would be derived from a structure like the P_{1-6} in 2.2(4).

Then the underlying differences between numerals, adjectives, and nouns will be principally differences in the classifier (represented as N in 2) and the underlying sentence (the S in 2). When such differences are minor, it is possible to collapse two categories and treat them as one. This is partly what happens in 5.4 with the numeral and the noun. The principal difference between the noun and the numeral is found in the classifier (the N of 2); and they have similar sentential sources generally of the form Pronoun Copula X where (a) - 'X' is a variable representing the noun and numeral (cf. Chpts II - IV), (b) - Pronoun is realized as ó 'he/she/it', and (c) - Copula is jé 'is'.

On the other hand, the differences between nouns and adjectives are found not only in the classifiers used but also in the structures of the sentential sources since the copula is generally absent in the underlying sentential sources of adjectives whereas it is always present in the sentences underlying both nouns and numerals (cf. 3.5(90) and 2.2(4)). This is partly why we examine similarities and differences between nouns and adjectives in 5.51. But in spite of the differences observable between Yoruba nouns and adjectives, there are still very good syntactic reasons why they should have a common sentential origin and be distinguished only by features.

5.2 MULTIPLE CLASS MEMBERSHIP FOR QUANTIFIERS IN YORUBA

We now examine a set of quantifying items which Ida Ward referred to as 'chief adjectives of quantity'. These items are Yoruba quantifiers (excluding numerals) e.g. púpò 'many', and diè 'few'. We discuss these items because multiple class membership has already been suggested for them. Note that the fact that Yoruba quantifiers have been treated as members of the class 'noun' and the class 'adjective'¹ may be used as indirect evidence for the presence of an underlying super-category to which nouns and adjectives belong. In this section, we merely examine the multiple class treatment of quantifiers and we postpone suggestions about the super-category to later sections.

Quantifiers have often been treated as adjectives in Yoruba syntactic structure. Only the two quantifiers mentioned in the preceding paragraph - púpò and diè are entered under 'B6 The Adjective' by Bamgbose,² but Ida Ward has a longer list, and she discusses quantifiers under 'Indefinite Adjectives and Pronouns'³. In Ward's list however, it is difficult to distinguish what she called 'the chief adjectives of quantity' from 'what may be corresponding pronouns' in the section on Indefinite Adjectives and Pronouns since she gave no criteria whereby one can distinguish her indefinite 'adjectives' from the indefinite 'pronouns'.⁴ Some of Ward's indefinite adjectives or

1. Abraham 1958: 138, 139, 557.

2. Bamgbose 1966: 112 fn. 76, Bamgbose suggested that "the item gbogbo is an adjective when it precedes the rankshifted qualifier." We may use this footnote information to suggest that gbogbo 'all' is also treated as an adjective by Bamgbose.

3. Ward 1952: 75

4. It is difficult to find what were supposed to be 'corresponding pronouns' for Ward's púpò 'many', much (very)', òpòlòpò 'several', diè 'some, a few' míràn 'other, another' onírurú 'various' lálímoye 'numberless'. Also, it is not easy to find the corresponding adjectives for her eyikeyi 'any, anyone', igbakúgbà 'always, every time' enikéni 'anyone'. The adjectival, quantifier or pronoun status of some of her examples is even doubtful. Then Ward did not state whether the same item can both be an adjective or a pronoun.

The only modification to Ward's transcription in her examples in this work is the substitution of e and o for her ε and Ϸ respectively.

'adjectives of quantity' are:

1. gbogbo 'all', púpò 'many, much', òpòlòpò 'several' diè 'some, a few', míràn 'other, another', onírurú 'various'.¹

Although Ward had no overt class of quantifiers, she used the title 'chief adjectives of quantity' for the examples in 1, and one may infer that she regards the items in 1 as quantifiers as well as adjectives or more precisely, as a sub-class of adjectives. Thus, we can interpret her 'adjectives of quantity' as adjectives which quantify or quantifiers which qualify. And so, we can say that she recognized them as quantifiers although she also called them adjectives.

To a certain extent, Ward's nomenclature, 'adjectives of quantity' (or quantifiers which qualify) also points towards the problem of multiple class membership for quantifiers since numerals too can be described as 'nouns' of quantity' when they function as NP 'heads'² or as 'adjectives of quantity' at other times. Abraham's analysis demonstrates this problem most clearly. We shall limit our investigation to the universal quantifier gbogbo 'all' and the most important pair from the other quantifiers: diè 'few' and púpò 'many'. These three quantifiers are compared with the quantifiers of the predicate calculus in Appendix III. At present, we shall merely look at the problem of structural description quantifiers could create for those who believe that nouns and adjectives cannot belong to a super category in underlying representations.

Just as Bamgbose recognized a class of numerals formally distinguished from the class of adjectives, but cannot escape describing some numerals as adjectives (cf. 4.321), so Abraham had some quantifying items to which he gave no common structural label similar to the one he gave the numerals,

1. Ward 1952: 75

2. Bamgbose 1966: 98

but which can belong to entirely different syntactic parts of speech at different times. First, we have diè 'some, few' which was analyzed as a 'noun', as 'an adjective'¹ and as 'an adverb'.² Thus, diè is a member of three entirely different syntactic parts of speech. For púpò 'many', however, it was only (a) 'used as an adjective', (b) 'used as a noun', and (c) 'used as an adverb'.³

Thus, while there is hardly any purely syntactic reason to suggest that púpò 'many', and diè 'few' should be treated differently in underlying representations,⁴ the latter, diè, was given multiple class membership, whereas the former, for hardly any justifiable syntactic reason, was only used as a member of different parts of speech at different times.

So, there are now two alternative decisions, only one of which must be taken in a consistent grammatical framework although Abraham took both. The first is whether the same item can belong to entirely different syntactic parts of speech because it is used in certain ways, and the second is whether we have just one item which is sometimes used in the same way as members of one particular part of speech and at other times like members of another part of speech.

Abraham's adoption of different techniques for the description of diè and púpò involves a confusion of how words function in syntactic structure with any notional classification that can be proposed for them. Thus, we have a set of quantifying elements like diè, púpò and the numerals which can

1. Abraham 1958: 138

2. Abraham 1958: 139

3. Abraham 1958: 557

4. The only possible difference is morphological since púpò is semantically and morphologically related to a 'predicator' pò 'to be many' whereas there is no 'predicator' to which diè can be related. Hence diè can only occur after the copula (je 'is', se 'becomes' etc.) in predicative positions whereas the predicator pò requires no copula. But if púpò itself were used in a predicative position, the copula (for examples like se púpò 'becomes numerous') would be obligatory.

operate as the most important element in a NP (i.e. as 'head' or Abraham's 'noun'), or as a subsidiary element in the NP (thereby qualifying the 'head' i.e. as Abraham's 'adjective'), or as a subsidiary element in the VP (now qualifying the verb i.e. as Abraham's 'adverb'). The question of multiple class membership for Yoruba quantifiers and numerals¹ therefore relates to the distinction between the way items function in structure and what their notional classification may be (cf. 5.51 for a discussion of this point in relation to Yoruba nouns and adjectives). The problems of determining class membership and the labelling of the classes also led to inconsistencies and confusion in structural class assignment to Yoruba quantifiers by Abraham.²

Observe that the universal quantifier gbogbo 'all' was given a different treatment from others by Abraham. In the case of gbogbo 'all', Abraham suggested that it is a 'noun'³ like dié 'few', and indicated that it can be used as adjective like púpò 'many'. Then, he suggested that whenever it is so used, it precedes its noun.⁴ Observe now that Abraham actually varied his techniques of structural class assignment for the three quantifiers since no two quantifiers are now treated identically. Thus, dié is a noun, an adjective, and an adverb; púpò is only used as a noun, used as an

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1. We have already observed how Bamgbose established a class of 'numerals' that contrasts with the class of 'adjectives', but analyzed several numeral examples as 'adjectives'. Abraham also had a similar problem with Yoruba numerals.
 2. So, the criticism which Lyons made concerning the way traditional grammarians confused two different questions - the question of class membership; and the labelling of the classes "(as 'nouns', 'verbs', 'adjectives', etc.)" - Lyons 1966: 210 - actually applies to Abraham on the question of Yoruba quantifiers. Moreover, the same observation can be made on his analysis of Yoruba numerals where he had Columns One and Two for "these numerals when used as a noun" (p. xxxii), while Column Three "gives the forms of these numerals when used adjectivally i.e. when they qualify a noun." (p. xxxii). Later, on the same page, he suggested that the adjectival forms of the numerals (i.e. the cardinals) are also used as nouns.
 3. Abraham 1958: 246
 4. Abraham 1958: 246

adjective, and used as an adverb; while gbogbo is a noun, but it is only used as an adjective. So, Abraham not only suggested multiple class membership for quantifiers, but also failed to do so consistently even for a limited set of quantifiers. Note that the same problem is observable in his treatment of the numeral, but since the numeral has been named as numeral, the problem is less acute there. The problem is serious with quantifiers because they are not named or recognized as quantifiers or as adjectives of quantity by Abraham.

Actually, Abraham is not alone in suggesting multiple structural class membership for quantifiers. Bangbose had a similar proposal for the universal quantifier gbogbo 'all' which he first theoretically recognized as a post-deictic qualifier,¹ and then as an adjective,² but which he later analyzed as a head noun in examples like:

2. "gbogbo n̄kɔn .wɔnyɛn 'all those things'"³ and
3. "gbogbo wɔn 'all of them'"⁴

Although Bangbose never called gbogbo a noun, he analyzed it as the head of a NP in 2 and 3 above, and defined nouns thus:

"Nominals which may take qualifiers when operating as head are nouns."⁵

It may be objected that gbogbo was not specifically described as a nominal, but by the definition of the nominal, we know that "words operating at n and H in nominal group structure are nominals."⁶ Since gbogbo operates at H in 2 and 3 above, it is a nominal; and it is also a noun in the two examples

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1. Bangbose 1966: 114
 2. Bangbose 1966: 114 footnote 76
 3. Bangbose 1966: 125 - example 35
 4. Bangbose 1966: 121
 5. Bangbose 1966: 102
 6. Bangbose 1966: 102

since it (obligatorily) takes qualifiers when operating as head.

The only test we shall use to reject the analysis of gbogbo as a noun in both Abraham's and Bamgbose's models will be their own criteria for determining noun membership. Not to prolong the argument, we shall restrict ourselves only to Bamgbose's definitions.

Thus, the definition of the nominal quoted in ^a~~the~~ preceding paragraph is three way ambiguous. It could mean (i) "words operating at n are nominals", (ii) "words operating at H are nominals", or (iii) "only words that could operate at both n and H can be nominals." It is in the third sense that gbogbo may escape being implicitly treated as a nominal since the only other examples of gbogbo given in the section on the Nominal Group are the adjective and the post-deictic qualifiers.¹ However, granted that gbogbo does not operate at n, by the definition of the 'head' too, it cannot operate there since the head is "that element which can operate in a nominal group of only one element."² In none of the examples in Abraham, Ward, and Bamgbose did we find gbogbo operating "in a nominal group of only one element", and it is in fact impossible for gbogbo to operate in a nominal group of only one element in Yoruba syntactic structure.³ Thus we cannot have 4 and 5 although we have 2, 3, and 6:

4. *gbogbo m̀ bọ̀ lọ̀la (all -ing come tomorrow) for 'all are coming tomorrow'
5. *òkùnrin nà mọ̀ gbogbo (man the know all) for 'the man knows all'

1. Bamgbose 1966: 114 - footnote 76

2. Bamgbose 1966: 98

3. The Yoruba item gbogbo 'all' is different from its English counterpart although it is translated as all. This point is made in Appendix III. Gbogbo, like the elements called post-deictic qualifiers in the Yoruba NP, is a bound item. It cannot occur alone whether on the surface or in the underlying representations. Hence, the Yoruba equivalent of All must die is not *gbogbo ní láti kú (all have to die), but gbogbo èda/òníyàn ní láti kú (all creatures/people have to die). A failure to note the bound form characteristics of gbogbo made Abraham call it a noun, and this also made Bamgbose call it the 'head' of the 'nominal group' in the relevant places.

6. *gbogbo alàngbá ni ó dóbálè, a kò mò èyí tí inú n run* (all lizard is it prostrate, we not know one which stomach -ing trouble) 'all lizards lie on their stomachs, but we do not know which of them suffers from stomach troubles.' i.e. 'appearances are deceptive.'

6 is admissible while 4 and 5 are not allowable since it is only in 6 that *gbogbo* is not treated as the element "operating in a nominal group of only one element."

So, the treatment of *gbogbo* as the 'head' of a Yoruba nominal group in Bamgbose's analysis, or as a 'noun' in Abraham's description is not correct. Actually, the inadequacy in the description of *gbogbo* is not caused by working within the level of surface structure only. The main defect is merely one relating to wrong analyses of examples, and this is not a fault of the model used. (cf. Appendix III for a discussion of *gbogbo* 'all'.)

The question of the other quantifiers is different since Abraham's proposal of multiple class membership for those quantifiers at least indicates, although vaguely, that some of the major structural parts of speech like nouns and adjectives may be related in some ways at least in underlying representations.

5.3 PROLEGOMENA TO THE NON PROLIFERATION OF STRUCTURAL CATEGORIES IN THE UNDERLYING REPRESENTATIONS OF THE YORUBA NOUN PHRASE

5.31 SENTENTIAL DERIVATION FOR ADJECTIVES

We have already discussed sentential derivations for nouns in chapter III and numerals in chapter IV. Here, we give reasons why Yoruba adjectives should be sententially derived. Then in 5.32, we state the advantages of deriving Yoruba adjectives, nouns, numerals and quantifiers from a super-category.

We now give four reasons for the sentential derivation of adjectives in the Yoruba noun phrase.

First, certain characteristics of the adjective are difficult to state

unless the adjectives themselves are sententially represented. For instance, it is difficult to state that adjectives occur in partitive constructions since we have ungrammatical structures like:

1. *gíga nínú àwọn méjílá nâ ni ó ní èkó ilé (tall within plur twelve the is he has training home) '? the tall of the twelve has some home training',
2. *pupa nínú àwọn méjílá nâ ni ó ní èkó ilé (red within plur twelve the is he has training home) '? the light skinned of the twelve has some home training',
3. *pupa nínú àwọn obínrin gíga nâ ni kò ní ọkọ (red within plur woman tall the is not have husband).

But when adjectives are sententially represented on the surface, we find that they actually occur in partitives. Hence, instead of 1 to 3, we normally have:

4. àwọn tí ó ga nínú àwọn méjílá nâ ni ó ní èkó ilé (plur who he tall within plur twelve the is he have training home) 'only the tall ones among the twelve people have any home training'.
5. àwọn tí ó pupa nínú àwọn méjílá nâ ni ó ní èkó ilé (plur who he red within plur twelve the is he have training home) 'only the light complexioned ones among the twelve people have any home training'
6. àwọn tí ó pupa nínú àwọn obínrin^{gíga} nâ ni kò ní ọkọ (plur who he/she red within plur woman_{tall} the is not have husband) 'only the light complexioned ones of the tall women are spinsters'.

We may also have 4 to 6 in the singular e.g. if we substitute eyí tí ó ga 'the one who is tall' for àwọn tí ó ga 'the ones who are tall' in 4 etc. Perhaps the inability to distinguish between singular and plural without a sentential representation is partly responsible for the ungrammaticality of 1 to 3. Thus, the impossibility of grammatical forms for 1 to 3 unless we have sentential representations favours sentential derivation for Yoruba adjectives. So, adjectives have underlying sentential representations in

partitives which they retain in surface structure representations. Unless we recognize that adjectives are sententially derivable and representable, we shall be forced to state erroneously on the basis of 1 to 3 that adjectives do not occur in partitives. But they do. Only they retain underlying sentential forms in surface structure representations.

Secondly, adjectival comparison in Yoruba is only sententially representable. So, in Yoruba, attributive adjectives are never compared, but predicative adjectives may be.¹ Thus, we have 7 but not 8:

7(a) oòrùn gbóná ju òṣùpá lẹ² (sun hot exceed moon beyond) 'the sun is hotter than the moon'

(b) Ibadan tóbi ju Eko lẹ (Ibadan big exceed Lagos beyond) 'Ibadan is bigger than Lagos'

(c) Lùkùlùkù léwu ju pajápajá lẹ (small-pox is-dangerous exceed cramp beyond) 'small pox is more dangerous than cramp'

(d) Ibadan ni ilú tí ó tóbi jùlọ ní Nigeria (Ibadan is town which it big most in Nigeria) 'Ibadan is the largest city in Nigeria'

(e) Mo fẹ mọ àrùn tí ó burú jùlọ ní ayé (I want know disease which it bad most in world) 'I want to know the worst disease on earth'

8(a) *oòrùn gbígboná jù (for 'the hotter sun')

(b) *ilú títóbi jùlọ (for 'the largest city')

(c) *okùnrin sísanra jùlọ (for 'the fattest man')

Instead of the ungrammatical superlative forms 8(b) and (c), one would have the sentential representations:

9(a) ilú tí ó tóbi jùlọ (town which it big most) 'the biggest city' and

(b) okùnrin tí ó sanra jùlọ (man who he fat most) 'the fattest man'.

1. Delano 1965: 123-4.

2. See 1.34(39-49) for a discussion of the degree adjective formatives jù and lẹ.

Thus, Yoruba adjectives may be compared, but only when sententially represented. If adjectives are not sententially derived, 8 will make us state an erroneous generalization that it is impossible to compare Yoruba adjectives. This is a big problem for contrastive studies since in Afolayan 1968 which was devoted to eliciting the linguistic problems of Yoruba learners and users of English, there was no indication that adjectival comparison constitutes a special problem area for Yoruba learners and users of English. However, this problem does not arise when adjectives are sententially derived since the observation that compared adjectives are sentential only affects rule ordering. The rule for the reduction of sentential adjectival forms to single attributive words must not precede the rule for adjectival comparison. In this way, there is no problem at all. The only problem we have relates to a failure to recognize the sentential origin of Yoruba (attributive) adjectives.

Thirdly, the sentential form of the adjective is actually the preferred form in Yoruba and when several adjectives qualify a Yoruba noun, most of them are usually sententially represented. E.g. one would expect a representation like 10 but not one like 11:

10. ajá tí ó tóbi, tí ó yára, tí ó dúdú, tí ó lágbára yèn dà? (dog which it big, which it quick, which it black, which it strong that (w?)) 'where is that dog, which is big, quick, black, and strong?'

11. *ajá alágbára dúdú títóbi yiyára yèn dà? (dog strong-one black big being-quick that (w?)).

In 10, there are four relative clause representations, and we can have an indefinite number of adjectives modifying nouns if they are all sententially represented as in 10. When adjectives are reduced to attributive forms as in 11, structures with more than two or three reduced attributive forms are not generally acceptable. Thus, the fact that the Yoruba speaker can qualify a noun with as many adjectives as he likes is only statable when adjectives are sententially represented. And this fact supports our proposal that the

sentential representation of adjectives takes precedence over the attributive variety so that Yoruba attributive adjectives could be sententially derived.

Note that the point on the Yoruba preference of the sentential representation of adjectives to their attributive use was stated in Ward 1952: 72, and quoted as 5.12(1) above.

A fourth point in favour of sentential derivation for Yoruba adjectives is the absence (or oddity) of single attributive adjective words for some sententially representable predicative adjective forms. For instance, there are no single attributive adjectives for the relative structures using the predicative adjectives in 12:

12(a) *ọ̀kúnrín tí ó sánra* (man who he fat) 'fat man'

(b) *asọ tí ó wón* (cloth which it dear) 'expensive cloth'

Thus, we do not use *sísánra* 'being fat' and *wíwón* 'being dear' as attributive adjectives but only as verbal nouns as we point out in 5.32 below.

We may then set up the schema for the underlying representations of adjectives and suggest a way of deriving surface attributives from underlying sentential forms. We may suggest that the preferred sentential form of Yoruba adjectives occurs earlier in representation for all adjectives, and the reduced attributive form is a variant of the sentential form. The attributive form will be derived from the sentential form through some deletion rules.

For instance, since the nominalization rule 3.2211(5) i.e.

$N = C_1 \{ [C_1 Vw(C_1 Vw...)]_V \}$ also derives attributive adjectives from their predicative counterparts, we can suggest that NP's that have attributive adjectives e.g.

13. *ilé gíga* (house tall) 'tall building'

are derived from NP's that have predicative adjectives e.g.

14. *ilé tí ó ga* (house which it tall) '(the) house which is tall/high'

However, since attributive adjective forms that use rule 3.2211(5) are also gerundive nominalization forms, both processes can be combined if we have an

intermediate stage where the gerundive form occurs (like nouns) after a copula e.g. in the form of:

15. *ṣilé tí ó jé gíga* (house which it is being-tall).

Then, 13 is derived from 15 through a deletion of the relative marker *tí* 'wh-', the pronoun *ó* (he/she/it), and the copula provided the copula is *je* 'is', and it is in a narrative tense.¹ This derivation can be stated as a transformational rule:

16. SI:	[	N	[	RM	PRON	COP	NP	]	S	]	NP
		1		2	3	4	5				----->
		1		∅	∅	∅	5				

condition: 5 is attributive and 4 = *je* 'is'.

When 16 is applied to 15, we derive 13 *ilé gíga* 'tall building'. Rule 16 will be obligatory for some attributive adjective forms like *dáradára* 'good' which are not preceded by *je* 'is' on the surface although they may be preceded by other copulative verbs like *di* 'become'. Some other adjectives may be preceded by other copulative verbs like *ri* 'seem' etc.

The intermediate stage between 13 and 14 which is represented by 15 not only enables us to insert forms like *gíga* in sentential representations, but also makes it possible for us to have sentential representations for the attributive adjectives which have no predicative counterparts e.g. *níá* 'big', *roboto* 'round', and *rere* 'good' (cf. Ward 1952: 72) since their predicative representation will resemble 15.

Moreover, there are some Yoruba perjorative phonaesthetic adjectives which have no specific meanings e.g. *jágbajágbá*, *réderède*, *rúdurúdu*, *bátibàti*, *júgbujúgbu*. These phonaesthetic pejorative adjectives all contain four syllables each, and each has the tone pattern - high - mid - low - mid .

1. See 7.2 below for our comment on the narrative tense. We accept the narrative tense of Bach 1968.

When such adjectives occur in predicative positions they must be preceded by a copulative verb. Hence, we can have irun rẹ rí jàtíjàtí¹ (hair his seem dishevelled) 'his hairs are dishevelled', but not *irun rẹ jàtíjàtí from where the copulative verb rí has been omitted. (Note that this is the form in which nouns also occur in predicative positions (i.e. nouns in VP's are preceded by predicators including copulative verbs.)) Thus, the predicative representation of such adjectives will be an analogue of the intermediate stage (represented by 15) which we suggested between 13 and 14 earlier. So, for many adjectives, this intermediate stage is obligatory if they are predicatively represented. We may then make this intermediate stage necessary for all attributive adjectives at an earlier stage in derivation. And we can then suggest the following derivation for surface attributive adjectives.

For the derivational history of attributive adjectives, one may now start from stage A, the predicative forms like 14 when they exist, nominalize the predicative adjective through rule 3.2211(5) and introduce a copulative verb before it in a sentential representation for stage B (e.g. 15), and apply T-rule 16 for the attributive adjective stage C (i.e. 13). Thus, in stage A, we have representations like:

17(a) omọ tí ó dára (child which it good) 'good child'

-
1. That these pejorative adjectives have no specific meanings can be seen from the way Abraham glossed mónramònrá as 'nonsense' and then added the following as synonyms: "= bórobòró = bárábára = bótibòtí = bátibàtí = bátobàtó = rádaráda = réderède = rádirádí = rón:un-rón:un = ráuráú = sábasàba = kálakàlá = bágabàga = bátabàtà = kásakàsa = kátikàtí." Abraham 1958: 427. Abraham's gloss of the above as 'nonsense' is significant for it supports any contention that these pejorative adjectives are basically nouns. However, any pejorative meaning apart from 'nonsense' can fit into the description. Thus, the jàtíjàtí and kón:un-kón:un of Abraham p. 341 (glossed as 'feckless') can also be used for 'nonsense' or 'nonsensical' instead of any of the above phonaesthetic forms. When some phonaesthetic adjectives become specialized in use with certain lexical items they acquire specific meanings as a result of their association. That is how jàtíjàtí acquires the meaning 'dishevelled' through its regular association with irun 'hair'. But it still has other pejorative senses like Abraham's 'feckless' when applied to human beings. Similarly, jàlajàlá is associated with clothes, so it acquires the meaning: 'tattered'.

- 17(b) *omọ tí ó pupa* (child which it red) 'light complexioned child'
(c) *igi tí ó ga* (tree which it tall) 'high tree'
(d) *onje tí ó wón* (food which it dear) 'expensive food'
(e) *isẹ́ tí ó sòro* (work which it difficult) 'difficult job'.

For stage B, we can regard what follows *je* 'is' as a nominal since it will be ultimately dominated in tree structure by NP. Hence, *dáradára* and *dídára* are nominals in 18(a). Thus, stage B is the intermediate nominal representation stage where we have representations like:

- 18(a) *?omọ tí ó je dáradára/dídára* (child which it is good/being-good)
(b) *?omọ tí ó je pupa/pípupa* (child which it is red/being red)
(c) *òrò tí ó je kátikàti* (word which it is being-nonsensical) 'nonsensical topic'
(d) *ohun tí ó je nlá* (thing which it is big) 'big thing'
(e) *agogo tí ó je roboto* (clock which it is round) 'round clock'
(f) *?ilé tí ó je giga* (house which it is being-tall)¹
(g) *?onje tí ó je wíwón* (food which it is being-dear)
(h) *?isẹ́ tí ó je síṣòro* (work which it is being-difficult)

The forms in 18 which are not odd e.g. 18(c) - (e) have no counterparts in 17. But they have attributive adjective forms as demonstrated in 19 below so that a representation like 18 is needed at least for attributive adjectives like *nlá* 'big', *rere* 'good', *roboto* 'round' etc. which have no predicative or verbal counterparts. In this derivation, only *je* 'is' shall be used as our copulative verb since it will enable us to use the structure index of rule 16 for other items which are normally preceded by *je* 'is' in the Yoruba NP e.g. nouns, numerals, and some quantifiers (cf. some tree diagrams in 7.1 and 7.2

1. Some stage B representations in 18 are odd probably because, as suggested in Lyons 1968: 322-3, the copulative verb *to be* "is not itself a constituent of deep structure, but a semantically-empty 'dummy verb'." But we still need the stage B representations at least for attributive adjectives without predicative counterparts.

below). We may then make rule 16 obligatory for the representations that are odd in 18 and optional for 18(c) to (e). Thus, rule 16 is optional for the stage B representations of attributive adjectives which have no predicative counterparts.

At the final stage of adjectival derivation, we have the attributive adjective representations in 19 which are derived from 18 through rule 16:

- 19(a) *omo dárádára* (child good) 'good child'
- (b) *omo pupa* (child red) 'light complexioned child'
- (c) *òrò kátikàti* (talk nonsensical) 'nonsensical topic'
- (d) *ohun òlá* (thing big) 'big thing'
- (e) *agogo roboto* (clock round) 'round clock'
- (f) *ilé gíga* (house tall) 'tall or high building'

There are no stage C derivations for 18(g) and (h) since *wíwón* 'being dear' and *sísòro* 'being difficult' are not used attributively.¹ So, the condition on 16 that the 5 of the structure index is attributive excludes 18(g) and (h).

Perhaps we may just mention at this point that some Yoruba attributive adjectives are ordered relative to one another in surface structure representations whereas when they are sententially represented, they occur in any order. For instance, we have:

20. *ajá dúdú dárádára yèn dà?* (dog black good that Qw) 'where is that good black dog?'

However, all my informants (and I) reject:

21. **ajá dárádára dúdú yèn dà?* (dog good black that Qw).

1. Here, we agree with Ward in Ward 1952: 72 that *wíwón* is only a verbal noun, but disagree with her suggestion there that *sísòro* is an attributive adjective. Those I consulted on its acceptability would prefer *ise ti o soro* (17(e)) to **igé sísòro* which several people will reject outright. The same observation was made on the attributive uses of *yíyára* 'being quick', *sísanra* 'being fat', *dídára* 'being good', *kíkére* 'being small', *kíkúru* 'being short' and several other derivations from rule 3.2211(5).

It is possible for someone who does not favour the sentential derivation of adjectives to suggest that the fact that the occasional ordering of adjectives is noticeable only on the surface indicates that certain facts about adjectives are known only when not sententially represented. This is not a strong point against our proposal since the surface structure ordering of elements can be determined from underlying structures. Thus, a condition for the reduction of underlying sentential adjective representations to surface attributive adjectives could be that colour adjectives (like dúdí 'black') precede evaluative ones (like dáradára 'good') when reduced on the surface. And this surface structure ordering can be done through an obligatory transformation.

Having examined the sentential proposal for adjectives (thereby bringing the adjectives in line with the nouns in chapter III and the numerals in chapter IV), we now examine the real motivation for the non proliferation of structural categories in the Yoruba NP.

5.32 TOWARDS THE ESTABLISHMENT OF A SUPER-CATEGORY FOR NOUNS, ADJECTIVES, NUMERALS, AND QUANTIFIERS IN THE YORUBA NOUN PHRASE.

We shall first suggest that the main difference between numerals and quantifiers is statable as a difference between absolute quantifiers (i.e. numerals) and relative quantifiers so that the feature that will be used to distinguish one from the other is [±absolute]. For instance, eyin márún 'five eggs' will have the same semantic interpretation¹ to those who can count whereas eyin díè 'few eggs' would be interpreted differently by many people. When relative quantification is undertaken with items like díè 'few' and púpò 'many' the number of eggs varies relative to several factors like the total number of eggs, what constitutes 'many' or 'few' to various people, and

1. 'Semantic interpretation' is used in its non technical sense here.

several other factors. So, we shall later suggest the feature [+quantifying] for both numerals and quantifiers and distinguish them through the feature [+absolute]. Meanwhile, we use 'numerals' and 'quantifiers' for the two sets of elements.

If elements like numerals, nouns, adjectives, and quantifiers are sententially derived from the hyperconstituent 'contentive' of Bach 1968, then certain apparent differences between them will be seen as no difference at all in underlying representations, but only as differences in the surface realization of members of a super-category.

Thus, if we do not recognize the sentential origin of nouns, adjectives, numerals, and quantifiers, we may conclude from the following examples of partitives that nouns and adjectives are radically different from numerals and quantifiers.

1. *aláṣọ nínú àwọn oníṣòwò nâ ni òrẹ́ mí (cloth-seller among plur trader the is friend my) for 'the cloth-seller among the traders is my friend'.
2. *roboto nínú àwọn agogo pupa nâ ni tẹ̀mí (round among plur clock red the is mine) for 'the round one among the red clocks is mine'.
3. méta nínú àwọn ọ̀kúnrin mẹ́wá nâ tí dé (three among plur man ten the have come) 'three of the ten men have come'.
4. díẹ̀ nínú àwọn ẹ̀yin púpọ̀ nâ ní ó sì bàjẹ́ (few among plur egg many the is it happen spoil) 'only a few of the many eggs are spoilt'.

From 1 to 4, it appears that nouns and adjectives do not appear as partitive elements whereas numerals and quantifiers do. But all four elements actually occur as partitive elements. Both nouns and adjectives occur in their underlying sentential forms on the surface when used as partitives e.g.

5. ẹ̀yí tí ó jẹ́ aláṣọ nínú àwọn oníṣòwò nâ ni òrẹ́ mí (the-one who he is cloth-seller among plur trader the is friend my) 'the cloth-seller among the traders is my friend',
6. ẹ̀yí tí ó jẹ́ roboto nínú àwọn agogo pupa nâ ni tẹ̀mí (the-one which it is

round among plur clock red the is mine) 'the round one among the red clocks is mine'.

On the other hand, numerals and quantifiers do not occur in their underlying sentential forms in partitives on the surface but get reduced as in 3 and 4. Note that when we establish the numeral as a subclass of nouns in 5.4, this characteristic of the numeral in partitives may be used to distinguish the numeral from other nouns. But one may point out that what we later label the 'base numeral noun' (unlike the cardinal in 3) still behaves like nouns since we do not replace méta '3' in 3 with géta or éta '3'. Note also that numerals and quantifiers are still sententially representable e.g. in:

7. àwọn tí ó pò (the-ones which it many) 'those that are many'
8. iye tí ó jé márún (sum which it is five) 'the sum which is five'.

Thus, the main difference with partitives is that different restrictions operate on underlying sentential forms for surface structure realization. See 5.6 below for a statement of such restrictions. One may observe that rule 5.31(16) optionally applies to the sentential representation of nouns and adjectives in partitives on condition that inú 'stomach, inside' is substituted for nínú 'among' and the 1 of the structure index of 5.31(16) contains èyí 'the one' or àwọn 'the ones' for some colloquial expressions. Thus, colloquially, we have:

9. èyí aláṣọ inú wọn ni (the-one cloth-seller inside them is) 'it is the cloth-seller among them'.
10. èyí gíga inú wọn kọ ni (the-one tall insider them not is) 'it is not the tall one among them'.

9 and 10 are colloquial because it is only in colloquialisms that inú 'stomach, inside' is substituted for nínú 'among, within' or ní inú 'at stomach' in partitives. If the statements of generalizations are not based on underlying sentential representations, one effect of the possibility of colloquial

expressions like 9 and 10 is that one will first state that adjectives and nouns do not occur as partitive elements on the basis of 1 and 2, and later contradict the statements on the basis of 9 and 10. Or one may decide to ignore 9 and 10 hoping that colloquialisms will not be used to test general statements. But when we have underlying sentential representations like those in 5 and 6, we can distinguish between 1 and 2 on one hand and 9 and 10 on the other through the type of transformational operations they undergo on the way to surface structure. We shall not go into any details on such operations.

We now find that the apparent differences between nouns and adjectives on one hand and numerals and quantifiers on the other are differences in the surface realization of underlying sentential forms. If nouns, numerals, adjectives and quantifiers are members of a higher class, their behaviour in partitives may be handled together as suggested in 5.6 below.

Another apparent difference deals with the question of mutual exclusiveness. Consider these examples:

11. *mo pádè àwòn ọ̀kúnrín méta púpò ní Iléwò (I meet plur man three many in Iléwò) '*I came across three many men in Iléwò',
12. *mo ní alùpúpù mérín diè ní Ijebu Igbo (I have motorcycle four few in Ijebu Igbo) '*I have four few motorcycles in Ijebu Igbo',
13. mo ní ilé gígá méta ní Abẹ̀okuta (I have house tall three in Abẹ̀okuta) 'I have three tall buildings in Abẹ̀okuta',
14. àwòn dáradára diè ní mo rí (plur good few is I see) 'I saw only a few good ones there'.

On the basis of 11 to 14, one may infer that numerals and quantifiers are members of a higher class from which the adjective is excluded. This

is true to some extent.¹ But the point cannot be stressed too far since the quantifier diè 'few, a little' is also used as a numeral substitute when one is not certain about the actual number of items being computed e.g. in:

15. àwọ̀n èniyàn tí mo rí jẹ́ ogún ó lé diè (plur people who I see is twenty it plus a-few) 'the people I saw are a little over twenty'.

The expression ogún ó lé diè is similar to èdín, sentential representations in chapter IV. So, when we have sentential representations, the point on mutual exclusiveness, which was based on examples 11 to 14, is difficult to make since someone may point out that numerals and quantifiers are not mutually exclusive in 15. But the real point is that we should have sentential representations throughout and base all arguments on the underlying sentences rather than on the surface manifestations of underlying sentences in 11 to 14 with the fear of eventual contradiction on 15.

One point that can be made from examples 11 and 12 is that nouns are not simultaneously quantified relatively and absolutely. This is a different point from saying that relative and absolute quantifiers are mutually exclusive. So, nouns are either quantified absolutely (if we use numerals) or relatively (if we use relative quantifiers). In the case of ogún ó lé diè or its surface variant ogún àti diè (twenty and few), what we have is not both relative and absolute quantification, but absolute quantification only since diè 'few' is used as a numeral substitute in that structure. But we would have been unable to make this point clearly if we have not yet had examples of the sententially representable numerals of chapter IV at our disposal.

1. To some extent, quantifiers and numerals may be considered as members of a super class which contains only numerals and quantifiers such that only the feature [+absolute] that we mentioned earlier is used to distinguish one from the other. But quantifiers, numerals, adjectives, and nouns belong to a higher class together, and we ignore any minute subgrouping into classes and subclasses in this exercise.

In ogún ó lé díè, the numeral that díè 'few' refers to must be less than ogún 'twenty' itself since one restriction which was not positively stated in chapter IV is that whenever we have the addition or subtraction numeral operators, what is added to, or subtracted from, a numeral must be less than the numeral. So, the díè 'few' in 15, like numerals, is subject to this restriction, although it has no such restriction in its ordinary use as a relative quantifier. We can therefore say it is used as a numeral substitute there. Consequently, 15 does not violate the condition that Yoruba nouns are not simultaneously quantified relatively and absolutely.

Note that when we have sentential representations e.g.

15' àwọn agbejórò Adio jé ogójì, wón ti pò ju fún un (plur lawyer Adio is forty, they have many exceed for him) 'Adio has forty lawyers, they are too many for him',

we still do not have simultaneous relative and absolute quantification, but a comment on the absolute quantification in one part of the sentence. 15' is similar to the type of commentary that constitutes 15":

15" ogójì agbejórò ti pò ju fún ẹnikẹni (forty lawyer have many exceed for anybody) 'forty lawyers are too many for anybody'.

Points similar to preceding ones can also be made on conjoining and disjoining. We shall make only the point on conjoining. Thus, if we ignore the sentential representations of elements like quantifiers, numerals, nouns, and adjectives, we are likely to conclude that the only possibilities in conjoining are adjective + adjective, noun + noun, and numeral + numeral, while the quantifier is excluded. Consider:

16. *àwọn ẹnìyàn tí mo rí jé díè àti púpò (plur people who I see is few and many) '*the people I saw are few and many'

17. àwọn tí mo rí jé akọ àti abo (the-ones which I see are male and female) 'those I saw are male and female'

18. aṣọ pupa àti funfun nikan ni ó ní (cloth red and white alone is he has)

'he has only red and white clothes'

19. àwọn èniyàn tí mo rí jẹ ogún àti mēta (plur people who I see is twenty and three) 'the people I saw are twenty three'.

From 16 to 19, one is likely to conclude that the quantifier is never conjoined. However, one will soon come into difficulties with expressions like ogún àti díè which is a surface structure variant of the underlying sentential ogún ó lé díè 'a little over twenty' of 15 above. So, unless the statements of generalizations are restricted to underlying sentential forms, one cannot escape self contradiction on the conjoining of quantifiers since one will first say that quantifiers are never conjoined on the basis of 16, but one will later have to say that they are conjoined on the basis of ogún ó lé díè or ogún àti díè 'a little over twenty'. Thus, one of the advantages of sentential derivation for conjoining is that self contradiction in syntactic statements is forestalled.

Another point on conjoining is that we are not restricted to pairs like noun + noun, adjective + adjective etc., but we also have adjective + numeral, quantifier + adjective etc. However, it is only when they are sententially represented that the second type of pairing is possible. Hence, we do not have 20 and 21, but the senses of 20 and 21 are only expressible in the forms of 22 and 23 respectively:

20. *àwọn èniyàn tí mo rí jẹ ogún àti gíga (plur people who I see is twenty and tall) '*the people I saw are tall and twenty'

21. *àwọn èniyàn tí mo rí jẹ gíga àti púpò (plur people who I see is tall and many) '?the people I saw are tall and many'

22. àwọn èniyàn tí mo rí jẹ ogún, wón sì ga (plur people who I see is twenty, they and tall) 'the people I saw are twenty, and they are tall'

23. àwọn èniyàn tí mo rí ga, wón sì pò (plur people who I see tall, they and many) 'the people I saw are tall, and they are many'

Thus, the fact that inter-class conjoining is possible (if numerals,

adjectives etc., are regarded as classes for this purpose) is not statable unless NP elements like adjectives are sententially represented. So, all these NP elements (or contentives) can be conjoined in underlying sentential representations. Those that have identical features (with very few exceptions) can be reduced to the forms we had in 17 to 19, but those which are distinguished from others by some features e.g. the numeral is [+ quantifier] while the adjective is [- quantifier] (cf. 5.521) retain their underlying conjoined sentential forms in surface structure representations.

So far, we have discussed apparent syntactic differences which do not constitute differences at all when certain elements within the Yoruba NP are sententially represented. Now, we consider points of similarity where the recognition of a super-category to which adjectives, nouns, numerals and quantifiers belong will enable us to economize our statement of syntactic characteristics, rules, or restrictions. Since we cannot state the required restrictions until we discuss the hyperconstituent 'contentive' in 5.5, only the examples on points of similarity where economy of statement can be made will occur here. The main argument will occur in 5.6 below.

The first set of examples relates to the negation of the NP elements discussed here. There are three principal ways¹ of negating nouns. We may use kó 'not', kì í sè 'it isn't' or kì í sè pé 'it is not the case that'. Adjectives, numerals, and relative quantifiers are negated the same way. We shall just give the example of kó negation for the four groups of items:

24. díè kó ní mọ rí (few not is I see) 'it is not a few that I saw'
25. mẹ́ta kó ní mọ rí (three not is I see) 'it is not three that I saw'
26. pupa kó ní mọ rí (red not is I see) 'it is not a red one that I saw'

1. We say 'principal' ways because the specification of null sets (see kò sí 'not exist' in Appendix III) may be considered a way of negating e.g. in kò sí ènìyàn níbẹ̀ (not exist person there) 'there is nobody there'.

27. *ọkùnrin kọ ní mọ rí* (man not is I see) 'it is not a man that I saw'.

For a *kì í se* and a *kì í se pé* negation, the negative item precedes the negated expression in surface structure representations e.g. in:

28. *kì í se díè ní* (it isn't few is) 'it isn't a few' and

29. *kì í se pé pupa ní* (it isn't that red is) 'it is not the case that it is a red one'.

We postpone the discussion on examples 24 to 29 till 5.6 below. We also postpone further discussion on the syntactic advantages of a common derivation for the NP elements discussed here. But meanwhile we mention some derivational reasons for the recognition of a super-category.¹

Nouns, adjectives, and numerals share derivational rules. For instance, the rule used for the derivation of distributives from other numerals in 4.21(17, 23, and 25) is also used for deriving nouns from other nouns (cf. quotation from Abraham 1958: xli in the penultimate paragraph of 4.1 above). If numerals and nouns belong to a super-category, rules that are common to them can be stated once for the super-category, and other members of this super class which do not share the rules can be excluded when we state conditions on such rules as we did in 4.42(7 and 8) above.

Moreover, the nominalization rule 3.2211(5) used for deriving verbal nouns from verbs and predicative adjectives also derives attributive adjectives from their predicative counterparts. If verbs, adjectives, and nouns belong to the same super-category, this rule need not be stated separately for nouns and attributive adjectives but once for the super-category.

Besides, unless we regard 3.2211(5) as a rule used for deriving members of a super class which share a feature e.g. [-predicator] (i.e. non verbal

1. Henceforth, we use 'derivational' as a replacement for 'morphological' since we have been using rules of the grammar (i.e. pure syntactic rules and transformations) for the derivation of single words from chapter II above.

elements) from those which have the feature [+predicator], thereby grouping verbs and predicative adjectives together for the purpose of deriving nouns and attributive adjectives through rule 3.2211(5), we will have to decide whether 3.2211(5) is a nominalization and adjectivization rule or only a nominalization rule. Evidence actually points towards regarding 3.2211(5) merely as a nominalization rule.

Thus, there are five reasons for suggesting that rule 3.2211(5) is a nominalization rather than an adjectivization rule. First, all attributive adjective forms using the rule are also gerundive nominal forms (e.g. gíga 'tall' and 'being tall' derived through 3.2211(5) from ga 'be tall'). Thus, gíga is an attributive adjective in 30 but a verbal noun in 31:

30. èniyàn gíga ni (person tall is) 'he is a tall person'

31. báwo ni gíga rẹ̀ se tó (how is being-tall his up-to) 'how tall is he?'

Secondly, the negation of rule 3.2211(5) which was stated as the àì + VP rule of 3.2222(36) derives only nominals and never adjectives. Hence, from the predicative adjectives in 32 and the verbs in 33, only the verbal nouns of 34 are derivable through the negative abstract/gerundive nominalization rule 3.2222(36):

32. gùn 'be long', ga 'be tall', wó 'be crooked', gbóná 'be hot'.

33. lù 'beat', pa 'kill', rán 'sew', tíro 'walk on tip toe', tà 'sell'.

34(a) àìgùn 'not being long', àìga 'not being tall', àìwó 'not being crooked',
àìgbóná 'not being hot'.

(b) àìlù 'not beating', àìpa 'not killing', àìrán 'not sewing',
àìtíro 'not walking on tip toe', àìtà 'not selling'.

If 3.2211(5) is both a nominalization and adjectivization rule, its negation will be expected to behave similarly in some cases at least, but when the negation, i.e. 3.2222(36) is applied to predicative adjectives, only negative verbal nouns are derivable, and this suggests that 3.2211(5) may not be an adjectivization rule.

Thirdly, there are some attributive adjectives which are not derived through rule 3.2211(5) or through any known productive process from their predicative counterparts, but rule 3.2211(5) is still used for the derivation of gerundive nominals from the predicative counterparts of these adjectives. For instance, the attributive counterparts of kéré 'be small', kúru 'be short', dára 'be good' (cf. 5.31(18a)), buru 'be bad' are respectively kékéré 'small', kúkúru 'short', dáradára 'good', and búburu 'bad'. ~~When rule 3.2211(5) applies to the predicative adjectives here, we derive~~ kíkéré 'being small', kíkúru 'being short', dídára 'being good' and híburu 'being bad', and we can have them in examples like:

35. kíkéré tí ó kéré ni ó dámú mí (being-small which it small is it worry me) 'it is its being small which worried me'.

Fourthly, some predicative adjectives have no attributive counterparts, and yet rule 3.2211(5) still applies to them but now it derives only verbal nouns. Thus, although there are no attributive adjective counterparts of wón 'be dear', sòro 'be difficult', gbón 'be wise', we still derive wíwón 'being dear', sísòro 'being difficult', gbígbon 'being wise' through rule 3.2211(5). We have such gerundive derivations in:

36. wíwón tí ó wón ni èmi kò se rà á (being-dear which it dear is I not happen buy it) 'it is its being expensive that prevented me from buying it'.

The fifth point deals with attributive adjectives which have the same forms as their predicative counterparts e.g. colour adjectives like pupa 'red' and pupa 'be red' (cf. 5.31(18b)). Rule 3.2211(5) still applies to this class of adjectives and derives verbal nouns from them. Hence, we have derivations like pípupa 'being red', dídúdu 'being black' in examples like:

37. pípupa rè ni à ní wí (being-red its is we -ing say) 'it is its being red that we are discussing'.

This point covers pairs like tutu 'cold' and tutu 'be cold' although the tone pattern on the attributive and predicative forms differ. Rule 3.2211(5) still

derives títutù 'being cold' from the predicative tutù 'be cold'. If 3.2211(5) had been an adjectivization rule, it would have been difficult to explain why some predicative adjectives have no attributive counterparts although 3.2211(5) applies to them. Similarly, one can hardly explain why the rule should apply at all in cases where attributive and predicative adjectives are physically identical on the surface. Thus, all evidence points to the conclusion that 3.2211(5) is a nominalization rather than an adjectivization rule. Hence, we are correct in stating 3.2211(5) only as a nominalization rule in chapter III.

But we now have a situation where some Yoruba attributive adjectives are obtained through a nominalization rule which also derives gerundive nominals from the same set of items (i.e. predicative adjectives). Thus, just as numerals and nouns share derivational rules in 4.21(17, 23 and 25), so have we now found adjectives and nouns sharing derivational rules. The points on the shared rules can be stated economically once for these items if they are treated as members of a super-category. Thus, rule 3.2211(5) would have been stated once for the super class to which adjectives and nouns belong, rather than separately for gerundive nominals and attributive adjectives in the face of evidence which points to the conclusion that 3.2211(5) is a nominalization rather than an adjectivization rule.

Before we propose that nouns, numerals, and adjectives are members of the hyperconstituent 'contentive', we shall suggest that Yoruba numerals are nouns in underlying representations. The discussion of numerals and nouns follows in 5.4, while the suggestions concerning Bach's hyperconstituent 'contentive' follows in 5.5 below.

5.4 THE NOUN AND THE NUMERAL

5.41 THE RELATIONSHIP BETWEEN NOUNS AND NUMERALS

The main suggestion in this section is that Numerals are represented as Nouns in underlying representation so that numerals need not exist as an

independent category of the underlying representation. We shall not have to give detailed syntactic points for this suggestion since there exists a class of numerals, the ones which Ida Ward labelled as 'for counting'¹, which Abraham had in columns 1 and 2,² and which Bamgbose referred to as 'nouns',³ which have almost all the characteristics of nouns, and from which other forms of the numeral can be derived. Actually, these forms of the numeral are nouns as suggested by Bamgbose and they are the underlying forms.

Since (with the probable exception of Ida Ward who did not call forms of the numeral 'nouns' or 'adjectives'), all other Yoruba grammarians generally agree that the numerals in Abraham's columns 1 and 2 are nouns, our task here is not a very difficult one.⁴ Hence, we only need to state the similarity of the characteristics of the numerals in Abraham's columns 1 and 2 to those of nouns. Observe our comment in 5.32 that the difference in the behaviour of nouns and numerals in partitives can be used to distinguish one from the

1. Ward 1952: 155

2. Abraham 1958: xxxii

3. Bamgbose 1966: 113 footnote 72.

4. **Ida Ward did not assign forms of numerals to different structural parts of speech because she was probably aware of the difficulties of multiple membership which Abraham and Bamgbose could not escape. Abraham for instance, said that in column 3, we have "the forms of these numerals when used adjectivally i.e. when they qualify a noun" p. xxxii (italics supplied), but one becomes nonplussed when, referring to the same 'forms of ... numerals' he adds: "When a numeral is used as a noun to denote 'how many' (but not in a series contrasted with other numerals as in (ii), (iii) above, then the forms from column 3 are employed." p. xxxii (italics supplied) Thus, the forms in column 3, i.e. the cardinals are defined as numerals 'used adjectivally', but they are also 'used as a noun'. Actually, the confusion is caused by the lack of a deep-surface structural distinction in syntactic theory when Abraham described Yoruba numerals, and probably, it was in order to escape the type of equivocation that was characteristic of Abraham on cardinals etc. that Ida Ward avoided using terms like 'nouns' and 'adjectives' when describing the Yoruba numerals.**

However, Abraham's questionable syntactic commitment on the parts of speech of numerals in use is preferable to Ward's clever silence on the issue for the only distinction the latter could make between nominal and modifying forms of the ordinal in Ward 1952: 156 is phonological.

other. Thus, there are minor differences between nouns and numerals. But if we examine Yoruba nouns and numerals closely, we find that the forms of the numerals 'used for counting' (except multiples of ten which have the same surface form for most subclasses of numerals) do not occur in the place of cardinals in the examples used in 5.32. Thus, the form 'used for counting' still behaves like nouns there. Besides, that form rarely occurs in structures since it is mainly 'used for counting'.

We shall call the forms of numerals 'used for counting' in Abraham's columns 1 and 2 - the base numeral nouns (abbreviated as BNN). The BNN's have all the general characteristics of nouns in Yoruba. For instance, unless BNN's occur as genitives, they can never be used for modification purposes. Hence, we do not have:

- 1(a) **iwé ẹwá* (book ten) or **iwé ẹwá* (book ten) for
(b) *iwé mewa* (book ten) 'ten books'.

There is an apparent counter example to 1 in irú oókan (locust-bean one) taken from the accompanying song for one Yoruba folk tale, but the oókan in that example is a contraction from owó kan (money one) 'one cowry', and so irú oókan is not 'one locust-bean' but 'the locust-bean which costs one cowry'. Hence, there is no real exception to 1 above.

Now, any NP element that is rarely used for the modification of another element within the same NP will usually function as the 'head' in the NP. Only nouns (e.g. proper nouns) have such characteristics. Since BNN's can hardly function as modifying elements in NP's because they are usually 'heads', their status as nouns is hardly controvertible.

However, we suggested that there might be an exception when these BNN forms are in the genitive since genitival forms are usually considered as modifying elements. It seems that most nouns that can hardly be used for modification purposes (e.g. proper names) can have the genitival realization so that this exception applies also to all nouns and does not weaken the

hypothesis that BNN's are nouns. An example of the genitival use of BNN's is:

2. *baba ogún ni ogbón* (father of-twenty is thirty) 'thirty is the father of twenty' - implying that thirty is greater (or mightier) than twenty.

In 2, ogún 'twenty' has the genitival realization and is consequently not the 'head' of the NP baba ogún 'the father of twenty'.

We do not need to develop points to show that the genitive is not the head in NP's since it is obvious that the nominal in the genitive is not the most significant one for verb selectional purposes. In 5.51 below, selectional restriction is used for the definition of the analogue of 'head' in Bangbosa 1966. Now we shall mention the general characteristics of Yoruba base numeral nouns.

5.42

THE BASE NUMERAL NOUNS

In this section we shall merely state the characteristics of the base numeral nouns. It seems there will be little or no discussion since there is very little to discuss. The characteristics of the BNN will be numbered to make reference to any of them easy. The characteristics will be stated as 1 thus:

1(a) The most fundamental or underlying forms of the numerals that can be given any phonological interpretation are Abraham's 'short' forms:

ení or òkan 'one', èlì 'two', èta 'three' ..., and his 'long' forms:

oókan 'one', séjì 'two', séta 'three' etc.; and these are all nouns (BNN).¹

The real BNN's are the short forms since it is from them that the long forms as well as other forms of the numerals are constructed. Abraham suggested that "the long forms were devised for counting cowries and contain the word *owó* 'money'. The -w- has dropped out, so *owóò kòṅ*, by loss of -w-, becomes *o'kòṅ* ..." (cf. discussion of irú oókan in 5.41 above). Abraham

1. Abraham 1958: xxxii

2. Abraham 1958: xxxi1

derived other long forms by compounding owó with the short form and eliding -w-. Then he derived ordinals from the short forms e.g. ekeji 'the second' was derived from èè-ki-èji. There are some phonological operations before the final form is obtained (cf. 4.21 above).

The cardinal can also be derived from the short form BNN. Although Abraham did not derive cardinals, Ward suggested the derivation e.g. "In the form used with a noun, the prefix mé (mɛ) is high."¹ The use of the term 'prefix' suggests that there is a root from which the cardinal is derived. The regularity of the derivation is observed in Ward's comment on the cardinals and ordinals when she stated:

It will be seen that these forms follow a definite pattern **made up of (a) prefix, (b) particle and (c) root.** The roots vary as from one number to another, but the particles and the prefixes are the same in each number, excluding number one, which is irregular in formation. Ward 1952: 156. (italics supplied.)

The roots in the Ward quotation above are the BNN's (i.e. the base numeral nouns), and they occur in all forms of the numerals. The fact that all "the prefixes are the same" suggests that the derivational process is regular, and it can be described by rules.

(b) The BNN's are what follow the copulative verb je 'is' in the underlying representations for numerals (e.g. the NP₀ of 4.4(7) above). Since BNN's are nouns, and what follows BE in 4.4(7) are NP's; and moreover, since 'N' (noun) can be dominated directly in Phrase Structure trees by NP, the fact that some of the nouns that are dominated by NP's are numerals is of no deep syntactic significance any longer. What now occurs as the NP₀ of diagram 4.4(7) i.e. in the 'deep structure' of the Yoruba NP is no longer Numeral but a class of Nouns. A proper subset of Yoruba nouns then constitutes the numerals. The fact that some nouns are called numerals is useful to us first because other

1. Ward 1952: 155

forms of the numeral e.g. the cardinals and the ordinals can be constructed from them, and secondly, because they constitute an infinite homogeneous set of lexical items within the Yoruba NP.

(c) Only forms constructed from the BNN's (e.g. the cardinals and the ordinals) can be 'used adjectivally' (cf. Abraham 1958), or both nominally and 'adjectivally'. The BNN's are mainly used as nouns, i.e. as 'heads' of Noun Phrases, and hardly as modifiers of any 'head' (except in rare examples like the one in 5.41(2)). Since all other forms of the numerals are derivable from these base numeral head nouns, all numerals must therefore be nouns in underlying representation.

(d) The BNN's (Ward's 'roots' - see (a) above) occur completely in the constructions of all other numeral forms since wherever their initial low vowels are deleted,¹ the tones of these deleted or elided vowels are still assimilated into the tones of the derived numerals e.g.

(d') $m\acute{e} + \grave{e}wa$ becomes $[m\acute{e}.wa]$ 'ten'.

The effect of the assimilated low tone (indicated by a full stop before wa in (d') - following Bangbose 1966: 113) is to lower the pitch of the high tone on wa so that the pitch contour of $m\acute{e}.wa$ in (d') is $[- -]$ where the second high tone is lower than the first one. Note that all numeral representations in Bangbose 1966 (except the BNN's in his footnote 72, and the multiples of ten from twenty upwards) have this assimilated low tone indication. The multiples of ten are excluded because, as we noted in 4.1, they do not have the m- k- cardinal-ordinal distinction, and secondly, their

1. In Bangbose's type 2 numeral, there is only one assimilated low tone indication instead of two because the initial vowel of the BNN is not deleted in the last few syllables. There, we have: (i) mé.jèèjì 'both' (ii) mé.tèèta 'all three' etc. Since the last è in (i) and the last è in (ii) are not deleted, there cannot be any assimilated low tone there. But for the cardinal part of (i) and (ii), mé + èjì becomes mé.jì and through assimilation, the ì of mé.jì later changes to è in the environment - preceding èjì giving Bangbose's mé.jèèjì.

BNN forms are used for their cardinal and ordinal representations. The fact that the BNN's occur completely in all numeral representations then justifies the suggestion that the BNN's which are nouns are the only true representatives of Yoruba numerals in underlying representations.

(e) The numeral is a unique class of nouns because not all nouns have derived phonological counterparts that can be 'used adjectivally' i.e. as modifiers of other nouns. For most nouns which can be 'used adjectivally', the same phonological form of the noun will be used for the two different syntactic operations. For numerals, the choice is open as between its use as an 'adjectival' cardinal, an 'adjectival' ordinal, a 'nominal' cardinal, a 'nominal' ordinal, and a pure noun. And theoretically at least, this choice in the use of numeral nouns is possible from the figure 'one' to 'infinity'.

Thus, we can conclude that the Yoruba numerals must be nouns in the underlying representation, and the use of numerals 'adjectivally' (qua Abraham) must have taken place at an intermediate stage in derivation on the road from underlying representation to surface structure (cf. Stages A to C in 5.31(13-19) for adjectives). Moreover, the 'numeral' will now cease to occur as an independent category in the underlying representations of the Yoruba noun phrase. Having eliminated the numeral from the underlying structure of the Yoruba NP, we can now re-examine the relationship between nouns and adjectives. This re-examination is necessary for two reasons.

First, we have just seen that the distinction between numeral and noun does not exist in the underlying representation of the Yoruba NP. Perhaps a similar proposal can be made for nouns and adjectives.

Secondly, Ward's comment that there is often "no dividing line between a noun and an adjective"¹ is significant for the points we are making in this exercise. It will be necessary to examine Ward's comment closely if we intend

1. Ward 1952: 75

to suggest that Yoruba nouns and adjectives belong to a super-category. Ward's statement shall be discussed later.

Before we finish the discussion in this section, we may just comment on the possibility of developing Bamgbose's 'deictics' also as underlying nouns. We shall not treat 'deictics' or 'determiners' as nouns in this exercise, but it is a curious fact that the deictics of Bamgbose 1966: 114 (with the exception of ni 'that'), and all the 'adjectival' or modifying forms of the ordinal in Bamgbose 1966: 113 are preceded by the full stop convention representing the assimilated low tone. The low tone that is assimilated must have belonged to the vowel that must be prefixed to these 'adjectival' or modifying forms in order to regain the nominal forms from which the 'adjectival' forms are allegedly derived. With the exception of ni 'that' which has its nominal form as èyíni 'that one', all the other deictics, and all the 'adjectival' forms of the ordinal need just one initial low vowel prefix before they become nominals. e.g. ìwónyẹn 'those (ones)' for wónyẹn 'those' and èyí 'this one' for yí 'this'.

Nevertheless, we shall not consider 'deictics' as underlying nouns for these reasons. First, we believe that the Yoruba determiner system, which incorporates Bamgbose's deictic and post deictic elements is better treated within a feature framework (see 6.2 below). Secondly, if we decide that the deictics are underlying nouns, it may be difficult to suggest that Yoruba has any nominalization rules at all since one will be forced to say that all syntactic elements are underlying nouns which get 'denominalized' when not 'used as nouns'.

We can use the example of ordinals to show that Yoruba actually has nominalization processes. First, the ordinals which modify are derived by prefixing k to the short form of the BNN giving forms like kiní 'first', kwá 'tenth' in examples like ilé kiní (house first) 'the first house' and omó kwá (child ten) 'the tenth child'.

Then, as indicated in chapter IV above, the nominal forms of the ordinal are formed through the abstract noun nominalization rule 3.2223(44) that prefixes i to VP's or V's giving ìkíní 'the first', ìkẹwá 'the tenth' etc. for forms of the numeral that have the m- k- alternation. (Note that the nominalization rule in 3.2223(44) refers to VP's or V's suggesting that the k of the ordinal may be a verbal or adjectival element. This point needs further investigation.) Since all nominal forms of ordinals which have the m- k- alternation can be derived through rule 3.2223(44), it is most uneconomical to reverse the order of derivation and say that the modifying form of the ordinal is derived from the nominal form through the deletion of the vowel prefix and the assimilation of its low tone into the remaining elements.

Most Yoruba grammarians favour the reversal of the order of derivation just because of a misinterpretation of the nominal 'prefix' in ordinals as èè = èrìn 'times'¹ (cf. Abraham 1958: xxxii). This misinterpretation is implied in the use of the initial assimilated low tone in all of Bamgbose's ordinal representations in Bamgbose 1966: 113 and in Ward's 'prefix' for ordinals in Ward 1952: 156. Actually the è alternative to the prefix for nominal forms of ordinals is not èè 'times' since the latter can also precede cardinals and question words e.g. èè meta = èrìn meta (times three) 'three times' and èè meló = èrìn meló (times how-many) 'how many times?'.
Moreover, the interpretation of the nominal element in the ordinal as èè = èrìn 'times' is quite wrong since èkejì mí (the-second my) or ìkejì mí (the-second my) 'my second' or 'my partner' is not interpretable as 'my second time'. Similarly, ìkejì nkó (the-second where-is) 'where is the second one?' is not '*where is the second time?'.

At this stage, we can put an end to the discussion of numerals and turn to the relationship between the noun and the adjective.

1. The doubling of vowels on the same tone e.g. èè in the example is Abraham's, not ours. As stated ~~on~~ on p. 400 below, we only double vowels for the compounding of the mid tone with any other tone.

5.5

THE ADJECTIVE AND THE NOUN

5.51

THE AMBIGUOUS ADJECTIVE AND THE DIVIDING LINE

In this section, we discuss the relationship between nouns and adjectives. In 5.51, the ambiguity in the use of the term 'adjective' is discussed in relation to Ward's statement that there is no dividing line between the noun and the adjective. There is an ambiguity in the use of the term 'adjective' in Ward and in many other Yoruba grammars, and it will be necessary for us to examine such ambiguities before we discuss the differences and similarities between nouns and adjectives. In 5.52, Bach's notion of the hyperconstituent 'contentive' is adopted as an underlying category in Yoruba syntactic structure, and this adoption is done against the background of Ray Dougherty's severe criticism of Bach's framework which we also discuss. We may start by examining the ambiguous use of the term 'adjective' in Yoruba syntactic structure.

It appears that the term 'Adjective' in the works of Yoruba grammarians has often been used in two senses. In its first use, it means something that modifies a head noun. This is the sense in which Abraham used 'adjectivally' in his description of certain classes of Yoruba numerals.¹ It is also in this sense that Ida Ward used the word 'adjective' in her 'demonstrative adjectives', 'possessive adjectives', 'indefinite adjectives', etc.² And we find that it is also in this sense that Bamgbose used (or accidentally used) the term 'j' - 'adjective' when he said: "For numerals which are multiples of ten from twenty upwards, the structure Hj is rare."³ This sense of the use of 'adjective' is actually fairly captured by the term 'qualifier' in Bamgbose 1966, and by the two surface structure determined terms 'modifier' and 'qualifier' in Afolayan

1. Abraham 1958: xxxii

2. Ward 1952: 56-75

3. Bamgbose 1966: 114

1968. So, all lexical items that do not function as Bamgbose's 'head' of the 'nominal group' are 'adjectives' in this first sense of the term. Such elements naturally include nouns, numerals, 'deictic' elements as well as 'adjectives' in the second sense.

'Adjective' in the second sense refers to what Bamgbose called 'j' - 'adjectives'.¹ Ida Ward also has this second restricted set of items in what she describes simply as 'Adjectives'.² Ward's use of 'adjective' in Adjectives is therefore really distinct from her use of the same word in her demonstrative adjectives, indefinite adjectives etc. While her demonstrative adjectives etc. constitute merely formal categories (i.e. elements that modify the 'head' of a noun phrase), her 'Adjectives' refer to the analogues of Bamgbose's 'j' or the stative verbs of Awobuluyi in Afolayan (forthcoming). One can recall from 4.321 that even Bamgbose who had the term 'qualifier' (Q) available for the first sense of 'adjective' (which incorporates nouns, numerals, etc.) still said that numerals could be 'j' (adjectives) while maintaining, contemporaneously, that numerals also participate with adjectives in the "further differentiation of the primary element Q into sequence-determined secondary elements of structure."³

In this subsection, the second sense of 'adjectives' will be relevant to our discussion. The use of 'adjective' in both senses, by those Yoruba grammarians who used 'adjective' ambiguously involves a confusion of the functions of words in structure with any division into notional classes. In the first sense, words which function as the modifiers of the main lexical item in the Noun Phrase (the head) are considered.⁴ There, the term

1. Bamgbose 1966: 112

2. Ward 1952: 70 - section 135.

3. Bamgbose 1966: 99

4. Here, modifier, is used in the non technical sense since it is not in quotation marks. One can recall an earlier decision in 5.12 to put both qualifier, and modifier in quotation marks when they are used technically.

'adjective' is functional (with emphasis placed on formal representation) since the series of formatives that can modify 'head' nouns in the NP can be further subdivided into syntactic classes or subclasses like 'nouns', 'pure adjectives', 'deictics' etc. In the second sense of 'adjective', more emphasis is placed on division into notional classes since the general concern in this case centres around a set of lexical items that describe or denote 'qualities', 'states', 'attributes' etc. Some of these items are listed in Ward 1952:70-75.

We stated earlier that we shall later discuss Ward's statement on nouns and adjectives. The full statement is:

1. A noun can also be used as an adjective: indeed there is often no dividing line between a noun and an adjective.
Ward 1952: 75.

From the discussion above, one finds that the word 'adjective' is being used in the first sense (i.e. the modifier sense) by Ward in the first part of the quotation. It can be paraphrased as "a noun can also be used as a modifier." However, in the second part of the same quotation, "adjective" is definitely not being used in the first sense since we cannot paraphrase it as: "there is no dividing line between a noun and a modifier." In 1, our main interest is in the second part where 'adjective' might have been used in the sense that we shall mainly be concerned with in this section. However, we can make some remarks on the use of nouns as modifiers (i.e. on the first part of 1).

Ward's examples of 1 are:

- 2(a) "arugbo [- --] an old person"
- (b) "arugbo okunrin [- -- - -] an old man"
- (c) "arugbo obinrin [- -- - -] an old woman"

(d) "or ɔkɔnɔrɪn arugbo [- - -] "1

Three nouns: arugbo, ɔkɔnɔrɪn and obɪnɔrɪn are involved in all the examples in 2. If we substitute the term modifier (in its non technical sense) for Ward's 'adjective' in the first part of 1, our task here will be to decide which noun is the modifier in each of 2(b) to 2(d). Since Ward did not tell us which one is the modifier (or which one is used as an adjective), we shall need some additional examples before we make our inferences. So, we can add 3, where two nouns òfò 'nothing, emptiness, zero' and ìgò 'bottle' are used in a head - modifier construction:

3(a) òfò ìgò 'empty bottle'

(b) ìgò òfò 'empty bottle'²

At this point, we shall like to make a terminological revision. Since the terms 'modifier', 'qualifier', and 'head' have become technical, and since we do not make any distinction between a qualifier and a modifier in the ways the users of the terms in Halliday's systemic framework make such distinction, we shall use the term principal (PR) for the 'head' of the noun phrase, and ancillary (ANC) for other modifying elements in the noun phrase. (These exclude conjunctions and prepositions.) The two abbreviations will sometimes be combined as 'PR-ANC relationships'.

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1. Ward 1952: 75. The transcription is Ward's; the numbering as 2(a) - (d) is ours. The tone levels used by Ward there are [-] 'low', [-] 'mid', and [-] 'high'. Note that 2(d) is not glossed by Ward because it is a synonym of 2(b). However, in contexts, there can be differences in semantic interpretation between 2(b) and 2(d) especially on points of presupposition and focus. For instance, one of my informants and I, observe that (i) has a different meaning from (ii) below.
(i) obɪnɔrɪn arúgbó kan ni ó fẹ́ (woman old-person one is he marry),
(ii) arúgbó obɪnɔrɪn kan ni ó fẹ́ (old-person woman one is he marry),
although both are interpretable as 'he married an old woman'. In (ii), where arúgbó 'old person' precedes obɪnɔrɪn 'woman' on the surface, the attention of the listener is called only to the fact that the person married is old, but in (i), there is no emphasis on the fact that she is old.
 2. Abraham 1958: 452

Principal and Ancillary Defined:

We shall define the principal as 'the NP element that is the most significant for verb selectional restriction purposes.' This definition is not a notational variant of Bamgbose's definition of 'head'. A 'head' is defined by Bamgbose as "that element which can operate in a nominal group structure of only one element."¹ Since 'h' (head) is obligatory in the Hallidayan formula for nominal group structures (m)h(q) on which Bamgbose's grammar is based, Bamgbose's definition of 'head' is an accurate restatement of Halliday's position. To a certain extent the 'principal' here corresponds to the 'head' in Bamgbose and Halliday, but there are some significant differences.

As we shall point out in 6.13 below, there are certain Yoruba formatives like eni 'person' which cannot 'operate in a nominal group of only one element,' but which are the elements modified (or qualified) by other items in some NP's. Since they do not satisfy the Bamgbose-Hallidayan definition of 'head', they are indescribable in a Hallidayan grammar. But these elements are the most significant for selectional restriction purposes in the NP's in which other elements modify them. Hence, they operate as principals, they satisfy our definition of 'principal', and they are describable within our framework. Consequently, our principal/ancillary division is not a notational variant of the Bamgbose-Hallidayan head-modifier-qualifier complex.

The 'ancillary' is then defined as 'any NP element, the main selectional constraint of which is compatibility with an NP principal rather than a verb'. Thus, *etí ilé ná di (ear of-house the block) '*the house's ear is blocked' i.e. '*the house is deaf' is ungrammatical mainly because of the incompatibility of the principal etí 'ear' with the ancillary ilé 'house, of house'

1. Bamgbose 1966: 98

since it is still possible for the verb di 'is blocked' to select the principal eti 'ear' as its subject e.g. in eti mi di (ear of-me block) 'my ear is blocked' i.e. 'I am deaf'.

So, the terms 'principal' and 'ancillary' are defined in relation to the underlying syntactic (or semantic) notion of 'selectional restrictions' rather than the surface structure characteristics of operating as the only element in single element NP's. As long as selectional restrictions remain as a grammatical feature, the above definition will be adequate. It does not matter whether selectional restrictions operate in syntax (qua Chomsky 1965) or in semantics (qua Katz and Postal 1964 and McCawley 1968a). The important condition is that selectional restrictions exist at all. It is not even significant whether it is the verb that selects the noun subject/object or vice versa, or whether selectional restrictions can only be stated as compatibility relations existing between verbal elements and nominal elements without one directly selecting the other. The important point is that the NP element that is the most significant one for the verb participating in the selectional restriction operation is the principal.

Some apparent synonymies and the Dividing Line

Now, if one compares 2(b) with 2(d), and 3(a) with 3(b), one will find that there is a surface positional change in the lexical items or nouns used in each pair which does not actually alter the meaning. In most cases, the noun that occurs initially in sentence structure is the principal (or 'head') while the one that follows it is an ancillary. This is probably the reason why in his analysis of the Yoruba Noun Phrase, Bamgbose said that "the simple nominal group ... consists of a head or a head followed by a qualifier i.e. H, HQ" (italics supplied).¹ We say 'in most cases' rather than 'in all cases'

1. Bamgbose 1966: 98

as Bamgbose's analysis presupposes because there are exceptions to the condition e.g. ako odún 'leap year' (cf. 28 below) where the principal is actually not the initial ako 'male' but odún 'year' etc. (Afolayan 1968 has already pointed out Bamgbose's error in relation to the structure of the initial element in the NP when he established a mhq for Yoruba in place of Bamgbose's hq.)

Now, let us suppose that in 2 and 3, the usual relationship whereby the principal precedes the ancillary exists. Then, the change of function from principal to ancillary of the nouns in the constructions there has no semantic significance. The apparent synonymy¹ of 2(b) with 2(d) and 3(a) with 3(b) makes the PR-ANC relationship existing between the nouns in those constructions insignificant for purposes of 'semantic interpretation', and it is this puzzling phenomenon that makes Ward declare that "there is often no dividing line between a noun and an adjective". But from our discussion, we have seen that Ward's use of the word 'adjective' has actually led her into some difficulties since a failure to distinguish between description of qualities etc. and modification of the principal NP element made her suggest that arúgbó, okinrin and obinrin are nouns in some constructions and adjectives in others. Thus, multiple membership was suggested for Yoruba nouns because the distinction between functional terms like modifiers, qualifiers or ancillaries and notional terms like nouns, adjectives, or numerals was not made at that stage (or theoretically, at any stage) in Ward's description. Consequently, the assertion that there is no dividing line between nouns and adjectives is inadequate if 'adjective' were used in the sense the examples from Ward makes us believe it is being used (i.e. as 'ancillary'). What her examples actually

1. The synonymy of 2(b) with 2(d) is only apparent as suggested earlier. A similar comment can be made for the apparent synonymy of 3(a) and 3(b) since there is a difference in 'focus' when the examples occur in contexts.

suggest is that nouns can function as principals or as ancillaries, and this is correct.

However, Ward's statement about the absence of any dividing line between nouns and adjectives may be correct when 'adjective' is interpreted in the second sense suggested above but not in the sense presupposedly suggested by Ward's own unanalyzed examples. One can recall that Lyons 1966 recognized that the only other syntactic universal apart from the noun is the predicator.¹ In Lyons' paper, it was suggested that adjectives and verbs should belong to one syntactic category, and the adverb was even later made a positional variant of the adjective in some structures.

Lyons' view may now appear contrary to the suggestion (taken from Ward) that there is 'no dividing line between a noun and an adjective' in Yoruba. This is especially the case since Lyons actually rejected the grouping together of the noun and adjective in Alexandrine times while distinguishing them sharply from verbs. This Alexandrine grouping was based on the observation that adjectives and nouns are inflected for case and number, and also because adjectives without accompanying nouns may be used as the subject of a sentence.² If it is recognized that the Yoruba adjective is never inflected for gender and number like the Greek and Latin cases on which the points being disputed by Lyons is based, one will realize that the suggestions for the Yoruba cases now do not contradict Lyons' contention since the points here, like those used by Lyons to contradict the Alexandrine practice are based on the recognition of the distinction between surface structure and underlying representations. If they were to be considered as contradictions at all, they would be contradictions on reasons different from those that were being discussed in Lyons 1966.

1. Lyons J. (1966) "Towards a 'Notional' Theory of Parts of Speech" in JL (2). 209-236. A summary of the points made in the paper can also be found in Lyons 1968.

2. Lyons 1966: 216

On the other hand, the grouping together of nouns and adjectives here will have to depend partly on an earlier suggestion from chapter III that even nouns (like adjectives) can be derived from the predicate of a sentence. This does not yet mean that all nouns are necessarily derived in essentially the same ways, or that all derived nouns are similar to adjectives.

However, there are some classes of derived nouns (especially the descriptive nouns using the oní + N derivation rule) which are not really distinguishable from adjectives. We call the Yoruba nouns derived through the oní + N or eni tí ó ní N nominalization rule of 3.223(50) descriptive nouns since most¹ of them can be "used adjectivally" (qua Abraham).

Descriptive and Non Descriptive Nouns as Ancillaries

The point we want to make here is that descriptive nouns behave generally like adjectives when they operate as ancillaries. In 4 to 10 below, we provide examples of descriptive nouns using the oní + N nominalization rule in some NP structures. The (a) forms of 4 - 10 will be the descriptive nouns themselves. In the (b) forms, each descriptive noun will function as an ancillary to another Yoruba noun. In some (c) examples, especially 4(c) and 5(c), the surface positions of ~~the~~ descriptive and non descriptive nouns, ^{like these} in (b) will be reversed. Irrespective of surface positions, it will be seen that the descriptive noun is still an ancillary of the principal in each of the examples so that its behaviour is similar to that of the adjective. Now consider:

4(a) alákoṛí 'a stubborn fellow' i.e. eni tí ó ní ako orí (one who he has tough head) cf. note on 6 below.

(b) okúnrin alákoṛí yen (man stubborn-fellow that) 'that stubborn man'

(c) alákoṛí obìnrin (stubborn-fellow woman) 'a stubborn woman'

1. When we say 'most of them', we exclude those oní + N nominalizations which have become proper nouns e.g. Olorun 'God' from oní + Ọrun (oní + heaven).

- 5(a) oníjàngbòn 'a troublesome fellow' i.e. superficially enì tí ó ní ìjàngbòn (one who he has troubles) 'one closely connected with troubles'
- (b) okùnrin oníjàngbòn yèn (man troublesome-fellow that) 'that troublesome man'
- (c) oníjàngbòn obinrin 'a troublesome woman'
- 6(a) alárùn 'a diseased fellow' (one who is closely connected with bad diseases)¹
- (b) okùnrin alárùn yèn 'that diseased man'
- 7(a) onísàngo 'a Sango worshipper' (one closely connected with Sango)
- (b) okùnrin onísàngo yèn 'that man who is a Sango worshipper'
- 8(a) eléwòn (one who is closely connected with èwòn 'prisons') 'a prisoner'
- (b) okunrin elewon yèn 'that convicted man'
- 9(a) elému (one who is closely connected with emu 'palm wine') - (i) 'a palm wine seller', (ii) 'a drunkard'
- (b) okùnrin elému yèn 'that drunken man'
- (c) omo elému yèn (child oní + palm wine that) 'that palm wine seller' or 'the son of that palm wine seller'.

Note that Yoruba children are not expected to be drunk, so the omo in 9(c) cannot refer to 'a drunkard'. 9(c) has the first interpretation when the demonstrative, yèn 'that', is an ancillary of omo 'child' and both omo and

1. The close connection relationship suggested for oní + N nominalizations in 3.223 can be interpreted differently in specific cases. Some people may like to suggest that the close connection relationship allows the interpretation of alárùn as 'doctor' or 'nurse', and that the 'possessor of' interpretation handles this specific case better. But, it can also be argued that the doctor is more closely connected with isègùn 'the manufacturing and dispensing of medicine' than alárùn 'the diseased person' is. Besides, doctors are not always 'on duty' so that they do not always live with diseases. However, an alárùn 'a diseased person' is a constant companion of his diseases. Note that àrùn 'disease' is more pejorative than àisàn (not being well) or (the state of not being well) 'illness', so that aláisàn is generally used for people suffering from minor ailments.

elému are appositive.¹ It has the second interpretation when elému is in the genitive.

10(a) olówó (one who is closely connected with owó 'money') 'a wealthy person', 'a rich man'

(b) okúnrin olówó yèn 'that wealthy man'.

In some uses, olówó also means 'lord of' e.g. in olówó orí 'one who pays the tax on behalf of another person (usually a husband)'.

In 4(c) and 5(c) where the surface positions of the descriptive and non descriptive nouns in the (b) examples are reversed, non descriptive nouns still remain as principals, not only because this is deducible from their English translations, but also because the non descriptive nouns are the most significant for verb selectional restriction purposes. Hence, it is only the compatibility of obínrin 'woman' or okúnrin 'man' with the VP in 11 and 12 below that makes 11 grammatical and 12 ungrammatical:

11(a) aláḳorí obínrin nâ ti ní oyún (stubborn-fellow woman the have got pregnancy) 'the stubborn woman has become impregnated'

(b) obínrin aláḳorí nâ ti ní oyún (woman stubborn-fellow the have got pregnancy) 'the stubborn woman has become impregnated'

12(a) *aláḳorí okúnrin nâ ti ní oyún (stubborn-fellow man the have got pregnancy) '*the stubborn man has become impregnated'

(b) *okúnrin aláḳorí nâ ti ní oyún (man stubborn-fellow the have got pregnancy) '*the stubborn man has become impregnated'

Thus, descriptive nouns function like adjectives since they remain as ancillaries to non descriptive nouns irrespective of surface structure position. The only difference between the (a) and (b) forms of 11 and 12 then appears to be only one of 'focus' since more emphasis is placed on the qualities described

1. It may be necessary to have a distinction between deictic ancillaries (for determiner elements) and lexical ancillary (for lexical categories). This further distinction merits a more serious examination.

by the descriptive nouns when they precede the non descriptive in 11(a) and 12(a). The examples in 4 - 12 can be compared with instances when we use adjectives rather than descriptive nouns.

We can illustrate the comparable adjective examples with 13 and 14:

13(a) *ẹ̀kùn kẹ́kẹ́rẹ̀ yẹ̀n* (tiger small that) 'that small tiger'

(b) *kẹ́kẹ́rẹ̀ ẹ̀kùn ọ̀dẹ̀ ní í sẹ̀* (small tiger, hunter is -ing do)¹ 'any tiger, whether young or old, is a hunter'

14(a) *olẹ̀ dúdú yẹ̀n* (thief black that) 'that black rogue'

(b) *dúdú olẹ̀, olẹ̀ ní; funfun olẹ̀, olẹ̀ ní* (black thief, thief is; white thief, thief is) 'any thief is a thief irrespective of the colour of his skin'.

In both the (a) and (b) forms of 13 and 14, the adjectives *kẹ́kẹ́rẹ̀* 'small' and *dúdú* 'black' still function as ancillaries when used with non descriptive nouns. As in 11 and 12, only *ẹ̀kùn* 'tiger' in 13 and *olẹ̀* 'thief' in 14 are significant for verb selectional restriction purposes so that descriptive nouns behave like adjectives whenever they are used with non descriptive nouns in NP's.

A second point of similarity between the descriptive noun and the adjective is that they are paraphrasable as embedded relatives when they are used with non descriptive nouns, but non descriptive nouns cannot be sententially represented in such circumstances. Hence, for *alákorí* in 4 and *kẹ́kẹ́rẹ̀* in 13, we have:

15. *ọ̀kúnrín tí ó jẹ̀ alákorí yẹ̀n* (man who he is stubborn-fellow that) 'that man who is a stubborn fellow' i.e. 'that stubborn man'

16(a) *ẹ̀kùn tí ó kẹ́rẹ̀* (tiger which it small) 'the tiger which is small'

(b) *?ẹ̀kùn tí ó jẹ̀ kẹ́kẹ́rẹ̀ yẹ̀n* (tiger which it is small that) roughly 'that tiger which is a small thing'.

1. 13(b) is a Yoruba proverb warning people against defiance. Just as any tiger is a source of terror to any domestic animal, so is anybody invested with authority to be feared and respected however young or physically weak he may appear to be.

but we do not have:

17. *alákorí tí ó jé okùnrin yèn (stubborn-fellow who he is man that) '*a stubborn fellow who is that man' or '?that stubborn fellow who is a man'

18. *kékeré tí ó jé èkùn yèn (small which it is tiger that) '*a small (thing) which is that tiger'.

So far, we have noticed points of similarity between descriptive nouns and adjectives when they are used with non descriptive nouns, and we find that descriptive nouns and adjectives are usually ancillaries in such constructions. But this should not be misinterpreted as a suggestion that non descriptive nouns are always principals. They too can function as ancillaries, but only on other non descriptive nouns. We shall compare descriptive + non descriptive noun constructions with descriptive + descriptive noun constructions and with non descriptive + non descriptive noun constructions in 19 - 27 below. We give the examples having descriptive + non descriptive nouns from 19 to 20 as additional examples to the ones we had in 4 - 10 since we used only oní + N nominalizations as descriptive nouns there. In 19 - 20 and 21 - 23, we have other descriptive nouns which do not use the oní + N rule. So, in 19 - 20, we have descriptive + non descriptive noun constructions, in 21 - 23, we have descriptive + descriptive noun constructions, and in 24 - 27, we have non descriptive + non descriptive noun constructions:

19(a) arewà 'a handsome or beautiful person' from ewà 'beauty'

(b) obìnrin arewà (woman beautiful-person) 'a beautiful woman'

(c) arewà obìnrin (beautiful-person woman) 'a beautiful woman'

20(a) aséwó 'prostitute' cf. 3.2221(29(iii))

(b) obìnrin aséwó (woman prostitute) 'an adulterous woman'

(c) aséwó obìnrin (prostitute woman) 'an adulterous woman'

21(a) òpuró 'liar' from pa 'make' iró 'lies'

(b) àgbàlagbà òpuró (elderly-person liar) 'a deceitful old man'⁺

(c) òpuró àgbàlagbà (liar elderly-person) 'a deceitful old man'⁺

⁺Both 21(b) and 21(c) are paraphrasable as 'an old deceitful man'.

Both 21(b) and (c) can be interpreted as 'a deceitful old man' or 'an old deceitful man' because àgbàlagbà 'elderly-person' is also a descriptive noun. Hence, both àgbàlagbà and òpuró can be principals. In order to know the principal from the ancillary in 21, we have to get the full sentence structure to know what selectional restriction violations can take place. Thus, irrespective of surface structure position, we can have òpuró and àgbàlagbà as principals when the selectional rules prohibit respectively the following sentences:

22 *àgbàlagbà òpuró yèn kò puró rí (elderly-person liar that not lie before)
'*that deceitful old man had never lied'

23 *àgbàlagbà òpuró yèn kò ju ọmọ ọdún mēwá lẹ (elderly-person liar that not exceed child year ten beyond) '*that deceitful old man is less than ten years old'

The principals are underlined in 22 and 23, and principalship in this case is independent of surface structure order. Thus, the descriptive + descriptive noun constructions in 21 to 23 can be used as additional evidence for the determination of structural relationships as principals and ancillaries through underlying selectional restriction possibilities rather than surface structure order. Thus, from examples 21 to 23, it now appears that structural relationships within the Yoruba NP are not even totally independent of the VP.

We do not have to discuss 19 and 20 since they are just additional examples for our earlier discussions of the non descriptive + descriptive noun constructions in 4 to 12. Now, we turn to non descriptive + non descriptive noun constructions. Examine the following NP's.

24(a) ilé owó (house of-money) 'a bank'

(b) owó ilé (money of-house) 'house rent'

25(a) orí owó (head of-money) 'the head that brings money or luck'

(b) owó orí (money of-head) 'tax, income tax'

26(a) isé owó (work of-money) 'paid job; 'occupation'

(b) owó isé (money of-work) 'wages'

27(a) *onje asikò* (food for-period) 'regular meal'

(b) *asikò onje* (period for-food) 'time for food'

In 24 to 27, the first surface noun is the principal and the second one is the ancillary. Unlike the examples in 5.51(2) where 5.51(2b) and 5.51(2d) are cognitively synonymous, the (a) and (b) forms in 24 to 27 are not synonymous. So, if 5.51(2) had led Ward into the observation that there is no dividing line between nouns and adjectives, a consideration of 24 to 27 here might have led to a modification of that opinion. The significant point about the above examples is that the centre of information is the first surface noun. So, in 26(a) for instance, *isè owó* is *isè* 'work' or 'job' and not *owó* 'money' whereas in 26(b) *owó isè* is *owó* 'money' and not *isè*. Since the (a) and (b) forms are not synonymous, the complete identification of nouns with adjectives on the basis of 5.51(2) will be too radical a suggestion for syntactic description. Hence, in this work, while noting syntactic similarities between Yoruba nouns and adjectives, we will not make them identical as we have done for nouns and numerals in 5.4. We will just follow Bach in suggesting that Yoruba nouns and adjectives are derived from the hyperconstituent 'contentive'. But we will not ignore the differences between nouns and adjectives.

Further Remarks on the PR-ANC relationship:

We may end this subsection with some further observations on the principal-ancillary relationships. First, there is nothing to indicate that the principal-ancillary (PR-ANC) relationship exists between co-members of appositive constructions. Each noun which is in apposition to another one will be equally significant for verb selectional restriction operations, and each noun must be compatible with the other one. Thus, two appositive nouns could be principals of a coordinate structure.

Another observation about the PR-ANC relationship is that the method used for testing for principalship for certain classes of nouns may not be workable for other classes. For instance, during the discussion of 21 to 23, we used

the types of selectional restriction violations possible to determine which of the two surface descriptive nouns is the principal. But this technique will not work if one of the nouns is non descriptive e.g. consider:

28(a) *akọ ọdún* (tough/male year) 'leap year'

(b) *ọdún akọ* (year tough/male) 'disastrous year'

We are sure that *ọdún* 'year' is a non descriptive noun. We are not so sure about the status of *akọ* 'male'. If we say that *akọ* is non descriptive while *ọdún* is also non descriptive, then it ought to function like 24 to 27 and *akọ* should operate as the principal in 28(a). And if we say it is descriptive, it will be difficult to determine its internal derivational source. (This does not suggest that all descriptive nouns have internal derivational sources, but most of them do.)¹ However, from the way *akọ* functions in 28, it appears that it is descriptive since *ọdún* 'year' still remains as principal irrespective of surface structure order. Nevertheless, since there is at least one non descriptive noun *ọdún* in the constructions in 29 below, we cannot use the type of sentential representations in 22 and 23 to determine principalship. Thus, we do not use test cases like 29 for determining principalship when one of the nouns involved in the PR-ANC relationship is non descriptive:

29(a) **ọdún akọ nâ kò ya akọ* (year tough the not become tough) '*the disastrous year is not disastrous'

(b) **ọdún akọ nâ jẹ osù méta péré* (year tough the is month three only) '*the disastrous year is only three months long'.

The only significant point that can be made from 29(a) is that *akọ* 'tough, disastrous' is not an appropriate ancillary for *ọdún* 'year' since they are incompatible in that structure. So, the test for descriptive noun principalship

1. The term 'internal derivation' is used to capture the type of distinction existing between 3.5(85) and 3.5(86) above. A noun that has no internal derivational sources will use 3.5(85) while one that has an internal derivational source will use 3.5(86).

is not applicable when one noun is non descriptive. 29(b) represents a different type of deviation since it will still be ungrammatical even when odún is not modified.

Note however that we have:

30. ako odun na ko ya ako (tough year the not become tough) 'the leap year is not disastrous',

since ako odún 'leap year' and odún ako 'disastrous year' are not synonymous.

What one can infer from this observation is that the relationship between ako and odún is fairly, though not significantly, different from the relationship between non descriptive and descriptive nouns having the PR-ANC relationship in 4 to 12 because there is hardly any change in meaning when surface position is reversed in the earlier examples, whereas a reversal of surface position leads to a change in meaning in 28 to 30.

Furthermore, probably if Ward had examined non synonymous pairs like 28(a) and (b) rather than fairly synonymous ones like arúgbó okùnrin - 5.51(2b) and okùnrin arúgbó - 5.51(2d), her conclusions on the relationship between nouns and adjectives might have been different. It is difficult to know.

We may now make a summary of our findings in this last part of the discussion. First, we note that nouns can be divided into descriptive and non descriptive. The descriptive behave very much like adjectives so that Ward's observation on the absence of a dividing line between nouns and adjectives is more appropriately referable to descriptive nouns and adjectives. Secondly, when descriptive and non descriptive nouns have the PR-ANC relationship (i.e. when they are not appositive e.g. in 4 - 12 and 19 - 20), the non descriptive noun normally functions as the principal irrespective of surface structure order. Thirdly, when two non descriptive nouns have the PR-ANC relationship (e.g. in 24 - 27), the first noun on the surface structure representation is usually the principal. For such classes of nouns, Bamgbose's hg analysis for 'nominal group structures' may be adequate, but

they do not constitute all classes of nouns. Fourthly, when two descriptive nouns have the PR-ANC relationship (e.g. in 21 - 23), either one could be the principal irrespective of surface structure order, and principalship can be determined through the method used for 22 and 23. And finally, the method used for determining principalship when two descriptive nouns have the PR-ANC relationship is not applicable if any of the nouns is non descriptive. If any of the nouns were non descriptive (e.g. in 28 and 29), the selectional violation test of 22 and 23 would only determine compatibility relationships between the non descriptive principal and the descriptive ancillary.

Having observed the similarities of adjectives with nouns, in particular with the class of nouns called descriptive nouns, we may now turn to the argument about underlying representations of nouns and adjectives. Hence, we now consider Bach's proposed 'contentive' in Yoruba syntactic structure.

5.52 THE YORUBA NP AND THE HYPERCONSTITUENT 'CONTENTIVE'

5.521 THE 'CONTENTIVE' AND 'FEATURE BUNDLES'

In this section, we suggest Bach's notion of the hyperconstituent 'contentive' for nouns and adjectives in the Yoruba noun phrase. The relevant syntactic reasons for this suggestion have already been discussed when we examined points of similarities and differences between nouns and adjectives in 5.51. Hence, in order to avoid the repetition of points already made, we shall merely concentrate on Bach's proposal and Dougherty's criticisms of Bach here. Consequently, no discussion of the similarities between Yoruba nouns and adjectives will appear in this section.

The grouping together of nouns with adjectives has a long history going back to the Alexandrine times (cf. discussion in Lyons 1966). Recently, within the generative semanticists' school of transformational grammar, the similarities between nouns and adjectives have been emphasized to the extent that Bach 1968 suggested that the three main syntactic categories Noun, Adjective and Verb are derived from one single syntactic category in underlying

representation. Bach's suggestion is that N, A, and V are derived from the hyperconstituent 'contentive', and their surface structure differences are introduced by transformational mechanisms controlled by features.

Chomsky (1970: 199) has already criticized the idea that verbs and adjectives could belong to a category, predicator. Chomsky's argument is:

Suppose it were true that just verbs and adjectives cross classify with respect to the feature active-stative. It would not follow that verbs and adjectives belong to a single category, predicator, with the feature [+adjectival] distinguishing verbs from adjectives. From the fact that a feature [+F] is distinctive in the categories X, Y, it does not follow that there is a feature G such that X = [+G] and Y = [-G], and a category Z = [+G]. What is more nouns are subdivided in an exactly parallel way (i.e. nouns also have the [+stative] distinction - SAE)...Again, the property in question is a property of lexical categories; the fact that noun, verb, and adjective share this property does not imply that they belong to a super-category.

Then, Chomsky added, just to be dismissed, the comment that:

It is quite possible that the categories noun, verb, adjective are the reflection of a deeper feature structure, each being a combination of features of a more abstract sort. In this way, the various relations among these categories might be expressible. For the moment, however, this is hardly clear enough to be a speculation.
Chomsky 1970: 199.

It seems the above endemic pessimism about ordinary speculation concerning the possibility of finding a deeper feature structure that could be a super-category for noun, adjective, and verb is inevitable for anyone who believes in the autonomy of a syntactic level of deep structure where all lexical insertion must take place in a block. For instance, if the proponents of the level of 'deep structure' allow super-categories in more abstract underlying representations than the deterministic level of 'deep structure', the problem of relating such deeper levels of representations to the deep structure will arise, and it seems, for the moment, that there is no possible logical solution to such problems if the present deterministic definition of syntactic 'deep structure' were to be maintained. Consequently, the objections raised by Chomsky about the inability to speculate on the possibility of having N, A, and

V as the reflection of a deeper feature structure are not independent of the maintenance of the autonomous level of syntactic 'deep structure' (cf. 1.5 and 2.4 above).

Dougherty 1970 has also made some serious criticisms of the notion that N, A, and V could belong to a hyperconstituent 'contentive'. In a recent review¹ of Bach and Harms,² Dougherty made grave criticisms of articles by McCawley, Bach and Fillmore. Although Dougherty's review of Bach's article in particular was devastating he did not deny Bach's suggestions about the similarities between N, A, and V. His only important criticism of Bach is that the interpretive model based on Chomsky's Aspects and "Remarks on Nominalizations" recognizes both the similarities and differences that exist for the main syntactic categories while Bach appeared to have ignored the differences in underlying representations. Consequently, Dougherty tried to show that the fact that "the major categories can be expanded by phrase structure rules which can be collapsed into a schema follows as a consequence of the assumptions that nodes are feature complexes and that a given feature... can be assigned to any of the major categories."³

The suggestion that 'nodes' are feature complexes is made in Chomsky 1970. In the lexicalist paper, Chomsky decided that all the symbols of grammar are complexes of features.⁴ A little part of Bach's argument is that since certain features e.g. [+stative] are common to the three major categories, noun, adjective, and verb in 'deep structure', the three major categories may be derived from a hyperconstituent called 'contentive', and that the recognition of this hyperconstituent can lead to simplicity in syntactic description since

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1. Dougherty, Ray C. (1970) "Recent Studies on Language Universals" in Foundations of Language (6) 505-561.
 2. Bach and Harms 1968.
 3. Dougherty 1970: 556
 4. Chomsky 1970: 207-8

nouns and adjectives can then be derived from embedded relatives (the predicate nominal). But note that Bach's main arguments, like ours in 5.3, are in fact syntactic and they are not actually based on points of feature similarity.

Dougherty's contention is that the three major syntactic categories can occur in environment: "(Q)____(ADV)" since his PSR hypothesis¹ recognizes the rules:

$$\begin{array}{l}
 \text{"(14) S} \text{ ---->} \text{ (Q) S}^n \text{ (ADV)} \\
 \text{(15) NP} \text{ ---->} \text{ (Q) NP}^n \text{ (ADV)} \\
 \text{(16) VP} \text{ ---->} \text{ (Q) VP}^n \text{ (ADV)}
 \end{array}$$

which can be collapsed to: "X ---- (Q) Xⁿ (ADV) where X = major categories: S, NP, VP and n = 2, 3, 4..."² Because of similarities in the expansion characteristics of the major categories and the possibilities of collapsing the rules, the PSR hypothesis is supposed to be capable of dealing with the problems Bach tried to solve. So, the feature complex, NP, will be similar to VP to the extent that both share identical features e.g.

[+stative] or "(Q) ____ (ADV)".

But one can note that while Bach discussed the notional terms 'noun', 'adjective' and 'verb', Dougherty was discussing category symbols like S, NP, and VP. Hence, he was actually not providing an exact lexicalist alternative to Bach's proposal. Moreover, granted that some NP's could be nouns, and that some VP's could be adjectives or verbs, the fact that Dougherty himself suggested a 'hyperconstituent' X shows that he himself has created an unchristened contentive so that his suggestion is only a disguised extension of Bach's proposal to cover category symbols like S and VP in addition to the Notional terms N, A, and V.

So, from Dougherty's suggestion, a super-category should be found for

1. Dougherty 1970: 555

2. Dougherty 1970: 555-6. The numbering of the rules is Dougherty's.

the three major syntactic categories S, NP, and VP, just as Bach has found one - 'contentives' for the three major syntactic constituents¹ noun, adjective, and verb. Dougherty's suggestion that "a given feature can be assigned to any of the major categories" implies that any (given) feature e.g. [+stative] or [-human] can be assigned to any major category like S (sentence). So, we have not only Bach's stative noun, adjectives, and verbs to consider, but also, by implication, Dougherty's stative, non abstract, human sentences, noun phrases and verb phrases to examine.

Perhaps one really misleading aspect of Dougherty's criticism of the hyperconstituent contentive is that in his own alternative formulation, the PSR hypothesis (p. 556), where he himself created a hyperconstituent 'X' for the three major syntactic categories S, NP, and VP, he did not realize that his own 'X' is a hyperconstituent or super-category. It is difficult to assume that Dougherty failed to recognize some superficial similarities between Bach's system and the PSR hypothesis. For instance, Dougherty noted, in his criticism, that Bach even postulated a system involving three fundamental kinds of entities in the 'deep structure' viz. - Sentences, Terms and Predicates or Contentives. Then, terms stand for forms like noun phrases etc. Now, Bach would derive all his (common) nouns, his adjectives, and verbs from the third entity of the system - 'Predicates' or 'Contentives'. In Dougherty's terminology, Bach's 'contentives' will be represented by VP, Bach's 'terms' by

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1. As there is a systematic ambiguity in the use of the term 'category', we may like to reserve the term 'category' or 'major category' for terms like NP, VP and S while 'constituent' will henceforth be used for noun, adjective, and verb. It appears Dougherty will refer to everything as 'category' since Chomsky has already suggested that all the symbols of grammar are complexes of features. These symbols include major and minor categories etc. It appears that what we now call 'constituents' can be [+stative]. But Dougherty will probably like [+stative] etc. to apply to all major syntactic categories. And yet, he did not give us examples of sentences that can be [+stative], [+human], [+abstract] etc.

Dougherty's 'NP', and his 'sentence' by Dougherty's 'S'. So, Dougherty's real point is that Bach recognized the three major constituents N, A, and V as VP (or as elements occurring within the VP) which is correct since Dougherty himself never broke down the VP into component parts. By not breaking down the VP into parts, and by recognizing the same VP as a single major syntactic category, Dougherty has given some support for Bach's point that Dougherty's 'feature bundles' N, A, and V are dominated immediately by a single hyper-constituent to be called 'predicate' or 'contentive', or are dominated ultimately by a category symbol to be called VP.¹ Bach's N, A, and V are ultimately dominated by VP since the VP contains some syntactic elements like AUX which must precede N, A, V or what immediately dominates these items e.g. 'contentives' in phrase markers.

However, Dougherty's suggestion that N, V and A are just feature bundles in the 'deep structure' is very attractive. From the suggestion, two categories can be considered similar in their 'deep structure' representations where they share features, and may differ to the extent that they have different feature specifications.

Nevertheless, there is the problem of feature grading which has to be examined or solved before the suggestion can be very useful. For instance, the possibility of a set of Yoruba (descriptive) nouns sharing more features numerically with Yoruba adjectives and verbs than with other nouns is not enough to make people say that they are not nouns. Even if they share only ten percent of their features with nouns and the remaining ninety percent with adjectives or verbs, one is unlikely to do more than quote Ward's observation (cf. 5.51 above) that "there is often no dividing line between a noun and an adjective." The

1. See 3.4 above for a discussion of immediate and ultimate (non) self dominance.

descriptive nouns will still be called 'nouns'. But on the basis of feature counting, they should not be called 'nouns'. Hence, efforts have to be made for setting up a feature hierarchy before any general applicability of the feature complex proposal can be practised.

At present, people have proposed various grades of feature complexes. We have the polarized ones like [+def], [+human], [+stative], [+abstract] which may or may not be syntactic. These polarized feature bundles seem to have no significant advantages over Halliday's non polarized systemic features. We also have some non polarized super categorial feature complexes like N, V, which can be collapsed to Chomsky's \bar{X} (or Dougherty's 'X'). We even have the uncertain cases like Dougherty's environment " $\rightarrow (Q) \text{---}^n$ (ADV) where $n = 2, 3, 4, \dots$ " In the uncertain cases, any symbol to the left of the arrow must at least be doubled or tripled when it enters the specified contexts in order to prohibit immediate self dominance if the optional Q and ADV are not taken. (cf. 3.4). Then we also have the contextual restriction feature framework like [+ NP] used in Aspects to distinguish transitive from intransitive verbs. In the contextual restriction cases, all the contexts must be considered together since a single contextual restriction will usually be ambiguous. At least [+ NP] alone cannot distinguish between a preposition and a transitive verb.¹

From the preceding paragraph, it then appears that at least four different feature grades exist, and there is still no way of deciding which feature

1. Actually, the treatment of prepositions as verbs is not rare. By failing to take enough features into account, Bamgbose 1966 actually described all Yoruba prepositions as verbs. Nevertheless, it is interesting to note that Becker and Arms, who used the arguments of generative grammar to propose that: "prepositions share many basic features with verbs and may be represented at a fairly abstract level of the grammar as predicates" (italics supplied), also warned: "Please, note that we are not saying that prepositions are verbs: our contention is only that verbs and prepositions may be surface realizations of the same abstract semantic categories." Becker and Arms 1969: 1 (italics theirs).

grades should be given precedence over the rest in determining which groups of feature complexes belong to the same super category or hyperconstituent.

5.522 ONE NON SYNTACTIC REASON FOR NOT ELIMINATING THE ADJECTIVE
AS AN UNDERLYING CATEGORY

In 5.4, the numeral was eliminated as an independent category of the underlying representation, and treated as a subclass of nouns. But in 5.51 and 5.521, the adjective was only regarded as one of the three major constituents that constitute the 'contentive'. In this section, we give one non syntactic reason for not eliminating the adjective the way the numeral was eliminated in 5.4 as an independent category of the underlying structure.

On the question of the possible elimination of adjectives in underlying structures, the position we now arrive at is that adjectives cannot be eliminated like the numerals. Nouns are used for naming and classifying, but nouns cannot do all the work of naming. Hence, adjectives assist nouns in subclassifying, thereby reducing the burden on the nouns. We find this process going on in all languages as knowledge increases. So, the reason being given now may be considered epistemological. We can give an example with the division of the body of knowledge into subparts, and we shall use the English names of the body of knowledge concerned.

For instance, we can say that all knowledge is 'science' from Latin scientia 'knowledge'. As soon as knowledge increases, it will be found necessary to subdivide the body of knowledge to 'sciences', and the sciences could be given names like 'the natural sciences' and the 'humane sciences'. The 'humane sciences' can be subclassified later as the 'linguistic sciences' and the 'social sciences'. Further subdivisions will take place within the linguistic and social sciences. Suppose we now concentrate only on the 'natural sciences'. We find that the natural sciences can be subclassified through the multiplicity of nouns as 'mathematics', 'physics', 'biology',

'chemistry', etc.; but later, as knowledge increases in each of these fields and as we have more than one type of 'physics' etc., the nouns become adjectival and they will qualify 'science' in the plural as in the 'mathematical, physical, and biological sciences'. Suppose we now take 'physics', we would discover sooner or later that we might need some adjectives to subclassify it into 'space physics', 'atomic or nuclear physics', 'quantum physics', etc. And yet, this is not the end of the process of subclassification. We only need more research in each of the fields to be forced to 'invent' a new noun for a relatively new field or use the adjective to modify the old noun from which the new field has arisen. Usually, the adjective will arise from a relative clause representation so that 'atomic physics' might have come originally from 'the area of physics that deals with the atom'.¹ It seems more natural for language users to qualify nouns rather than invent new nouns for new subclasses or subspecies based on existing classes and species.² Otherwise, new nouns would be available for 'unmarried actors, philosophers, presidents, prime ministers, beasts, birds, reptiles etc.' as bachelor and spinster are available for unmarried men and unmarried women respectively.

Since the predicator cannot be eliminated from underlying representations, the adjective in the NP, which is usually a reduced predicator having attributive functions cannot be eliminated from underlying representations like the numerals.

Actually, there are three stages of predicator reduction. In stage 1, there is no reduction at all. In stage 2, the predicator becomes an attribute of the noun in the NP, and in stage 3, both the predicator and the noun become fused or reduced to one new noun. The three stages are observable in the following relativized expressions. As this phenomenon is not restricted to

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1. See 1 to 3 below for the three stages that new words that subclassify an already existing class could have gone through.
 2. cf. the discussion of species and subspecies in Lyons 1968 chapter 9.

Yoruba, or to any single language, we can use English examples e.g. for stage 1 -

- 1(a) men who have faithful wives,
(b) men who love their wives - (Not Reduced : Stage 1)
- 2(a) men who are tall = tall men,
(b) men who are married = married men - (Reduced to Adj + N: Stage 2)
- 3(a) men who are very tall = giants,
(b) men who are not married = bachelors,
(c) men who have lost their wives = widowers,
(d) men who have unfaithful wives = cuckolds - (Fused: Stage 3).

cf. 4.2211(1a-c) for ogún onà mérin, ogún mérin, and ogórin for some Yoruba examples of stages 1-3.

Note the similarities in the unreduced relative clause representations in 1 to 3. And yet, while 1 does not go beyond stage 1, 2 was able to reach stage 2, and only 3 completes the lexicalization process by providing single words for the senses of nouns plus predicators. Since it is impossible for all noun plus predicator complexes to get reduced to single words as in 3, we must accept the reality of 2 where the predicator assumes attributive functions in the underlying representations of noun phrases. Consequently, the attributive predicator or the adjective cannot be incorporated into nouns the way numerals were incorporated in 5.4 above.

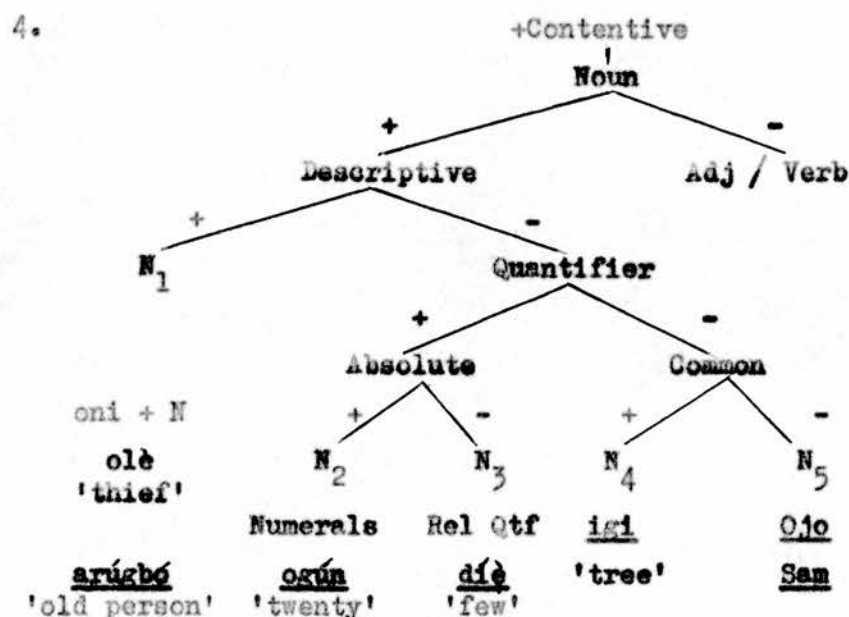
We do not ignore the similarities of our observation here to others that have occurred in the linguistic literature, in particular, those within generative semantics, e.g. in Postal 1970b and McCawley 1968c. For instance, a similar observation to the above was made by McCawley 1968c when he observed that 'cause to become not alive' can be lexicalized to 'kill' in English whereas many other similar English expressions e.g. 'cause to become not obnoxious', 'cause to become not loquacious', 'cause to become not important' etc., are not represented by any English lexical formative. Besides, while the complete lexicaliza-

tion process was found in expressions like pork from pig meat, beef from cow meat, and other types of meat like mutton, venison, etc., there are no lexical items for the meat from turkeys, ducks, snakes, monkeys, owls, etc.

Thus, lexicalization is not always complete, and so, not all possible actions are lexicalized into verbs like 'kill' just as the expressions that reach stage 1 above do not necessarily reach the complete lexicalization stage which is stage 3. If we realize that adjectives assist nouns in subclassification, thereby reducing the burden of nouns and perpetuating the incompleteness of lexicalization, we shall note the inadvisability of eliminating the adjective from the underlying representation since subclassification never ends.

We now set up a feature network representing the way the elements already discussed can appear in the underlying representation of the Yoruba noun phrase. Representation in tree form is difficult to control for reasons that will soon become obvious. Hence, we shall first set up the tree structure 4 and then discard tree representation in favour of representations merely as lists of features. Our use of features is in line with Bach's proposal that N, A, and V are derived from the hyperconstituent 'contentive' while their surface differences are introduced by transformational mechanisms controlled by features.

In spite of our use of the polarized feature system in tree 4. (and in chapter VI below), we still note that the problems of feature representation remain. In particular, we still find it difficult to consider that some non polarized super categorial feature complexes like \bar{X} and some polarized atomic or molecular feature bundles like [+abstract], and some context-sensitive (environmental) configurations like "(Q)____(ADV)" are equally referred to as 'complexes of features'. In this work, we shall consistently use feature representations with polarity signs, and we shall adopt this system until feature complexes can be uniformly represented. We shall omit polarity signs only for the representations of terminals.



The representation in 4 is beset with problems of cross classification because the features used are not altogether hierarchically organized. For instance, most descriptive nouns are common nouns, but we have common occurring only in the [-descriptive] section of the tree. A tree representation does not adequately handle the problems of cross classification. Hence, we think a tree representation is inadequate for the representations here. Note that it is very difficult to find a place for the [+stative] distinction in 4 since the only place where it is irrelevant is in the quantifier section.

We can therefore have all those features represented as choices obtainable from a set of unordered features. Then, descriptive common nouns can select +descriptive and [+common], although on the tree, common nouns occur as -descriptive. Moreover, the adjective will now be able to select [+descriptive] without necessarily having to select [+noun] etc. We may then end this section by giving a list of the possible features that can be used in the subclassification of the contentive in the Yoruba NP.

5. [+noun], [+descriptive], [+common], [+quantifier], [+absolute], [+abstract], [+human], [+animate], [+count], [+stative], [+predicator].

Some of the features in 5 are hierarchically structured in relation to some other ones e.g. the relationship of [+human] to [+animate] or [+absolute] to

[+quantifier], but not all features have such relationships with one another.

5.6 EPILEGOMENA TO THE NON PROLIFERATION OF STRUCTURAL CATEGORIES

Here, we discuss the motivation for the non proliferation of structural categories, and we make a brief comment on the limits to which non proliferation exercises can go. As soon as several syntactic elements that have many similar syntactic characteristics are treated as members of one hyperconstituent, certain syntactic statements have to be stated only once for all members of the hyperconstituent or super-category. Then, the differences between members can also be easily stated in terms of the features that distinguish one member of the super-category from the others.

The first advantage of deriving the elements discussed in this chapter sententially from the hyperconstituent contentive is that a statement on the possibility of negation (especially constituent negation) for all contentives is made only once. For instance, we observed in 5.32 that there are three ways negation can be practised on nouns e.g. negation with kó 'not', kí í se 'it isn't', and kí í se pé 'it is not the case that'. Also, from examples 5.32(24 to 27), we noted that the three negation processes apply to numerals, adjectives, and quantifiers. If numerals, relative quantifiers, adjectives and nouns cannot be handled together as members of a super-category, it is impossible to make any general statement on the applicability of the three negation processes. But when these elements are treated as members of the hyperconstituent contentive, general statements can be made on all the restrictions and rules that apply to the members of the super-class. Moreover, when these items are sententially derived, the negation process in VP's and the one affecting contentives in NP's can be handled together. Then, we can suggest that there is only one NEG formative which is realized as kò 'not' for contentives that are marked as [+predicator] (e.g. verbs and predicative adjectives), but as kó 'not',

kí í se 'it isn't' and kí í se pé 'it is not the case that' for contentives that are marked as [-predicator] i.e. for those discussed in this chapter.

One should point out that the three negation processes for [+contentive, -predicator] items are different. While kó and kí í se are used for constituent negation processes, kí í se pé negates whole propositions (cf. Appendix III for further comments on kí í se pé 'it is not the case that'). And members of the hyperconstituent contentive are negated the same way by the constituent negation formatives and the proposition negation formative. However, the significant point about negation here is that it is a common process for members of the class of contentives, and when this hyperconstituent is recognized, repetition of information is avoided since our statement on negation for contentives in general appears only once in the grammar.

A second statement that will have to be made once concerns the feature [+stative]. It is already recognized by transformational grammarians that the [+stative] feature belongs to nouns, adjectives and verbs (cf. quotation from Chomsky 1970: 199 in 5.521 above). The point on the [+stative] distinction will have to be stated once for all members of the class of contentives, and wherever there are exceptions, the distinguishing features listed in 5.522(5) will be used to exclude members of the class of contentives that constitute exceptions from general statements. For instance, it appears that absolute and relative quantifiers do not have the [+stative] distinction since every one of their members will be marked [+stative]. But absolute and relative quantifiers share many of their features with other contentives as already observed in our discussion in sections 5.2 to 5.4 above. Hence, it is uneconomical to drop them from the class of contentives and repeat all the features they share with other members of the class of contentives elsewhere just because they appear to lack the [+stative] distinction. We may therefore state that the [+stative] distinction applies to categories that are: [+contentive, -quantifier].

Nevertheless, if Chomsky's remark that the [+stative] distinction "is a property of lexical categories"¹ were correct, then, Yoruba numerals must have the distinction since they have the general characteristics of one class of 'lexical categories' known as 'nouns' (cf. 5.4 above), and we may be spared the effort of specifying the domain of applicability of the [+stative] distinction as [+contentive, -quantifier]. But so far, Yoruba absolute and relative quantifiers do not show signs of having [-stative] members, and we can state as a general rule the fact that the [+stative] distinction applies to items that are [+contentive, -quantifier].

There are still many other areas where general statements can be made. For example, points on economy of statements can be based on the fact that contentives are describable as 'open' sets of elements as opposed to determiners which can be considered as 'closed' sets, or that those contentives that are marked [-predicator] can be the principal element in NP's, and that they can function as single surface element NP's, or the fact that elements that are [+contentive, -predicator] e.g. those discussed in this chapter, must be preceded by copulas in verb phrase representations, but copulas do not precede [+contentive, +predicator] items (i.e. verbs like lọ 'to go' and predicative adjectives like dara 'be good'). Note that other items like verbs can precede [+contentive, -predicator] items e.g. mo ní fé méta (I -ing want three) 'I want three', but this is not relevant to our present point since

1. Chomsky 1970: 199. If 'lexical categories' actually have common features or properties, then, one may say that they belong to the super class called 'lexical categories'. But a single common feature is not enough for grouping categories together as members of a super class or super-category.

verbs can also precede verbs, but copulas do not precede verbs in the same expansion of VP.¹

Points like the preceding will not be repeatedly stated at different stages in grammatical description if the hyperconstituent contentive were recognized since a single feature e.g. [+predicator] can always be used to exclude members of the class of contentives that are not covered by general statements.

One more statement that can be made once for all [+contentive, -predicator] items is that they are not compared. Since Yoruba attributive adjectives are not compared (cf. 5.32(17 and 18)), all compared items in Yoruba must be marked [+contentive, +predicator]. So, the statement on comparison occurs only once for all nouns, numerals, relative quantifiers and attributive adjectives since we do not have *mo meta ju o lo (I three exceed you beyond) '*I more three than you' etc.

One other advantage of the treatment of the elements discussed here as contentives is that all the points of syntactic similarity and differences among adjectives, relative quantifiers, absolute quantifiers, and nouns are even storable in the form of general constraints. This will make it unnecessary to repeat points of similarity which might have led to cross classification or the treatment of the same item as members of entirely different syntactic parts of speech if such elements have been treated separately (cf. the discussion of Abraham's treatment of quantifiers in 5.2 above). Instead of stating points of similarity and differences, we may state

1. The copulas that precede [+contentive, -predicator] items in VP's need not be the same item. For instance, before the phonaesthetic adjectives jágbá,jágbá and jálá,jála (of 5.31 above) different copulative verbs are possible e.g. rí 'seem' for the former, and dí 'become' for the latter. And generally, before relative quantifiers, we have se e.g. ó se díé 'it is just a little' or dí in ó dí púpò 'it becomes many', and rarely íé 'is' which is used before absolute quantifiers. But the important point is that they must be preceded by copulative verbs whereas verbs are not preceded by copulative verbs.

one general constraint concerning the possibility of finding all [+contentive, -predicator] items occurring in partitive constructions. Then, we may state all the restrictions on how each subclass of the contentive operates in partitives as conditions after it. Thus, we may state 1 as a general constraint and supplement it with the conditions that occur as 2 below:

1. $NP = NP_1(\text{contentive}) \text{ níńú } NP_2(\text{contentive})$, where níńú = 'among, within, in', and $NP(\text{contentive})$ is [-predicator].
- 2(i) When NP_1 and NP_2 are [+quantifier, +absolute], $NP_1 < NP_2$
 - (ii) When NP_1 is [-noun, +descriptive] or [+noun], underlying expansion rule $NP_1 \dashrightarrow NP \ S$, is not subject to reduction transformation (obligatory).
 - (iii) When NP_1 is [-quantifier, -absolute], underlying expansion rule $NP_1 \dashrightarrow NP \ S$, is subject to reduction transformation (obligatory).

Constraint 1 states that contentives can occur as partitives on contentives. Condition 2(i) states the syntactic and semantic restrictions on numerals when one occurs as a partitive on the other. Hence, by 2(i), we exclude deviant structures like *méje níńú àwọn obìnrin méje nâ... 'seven of the seven women...', and impossible structures like *méje níńú àwọn okùnrin márùn nâ... '*seven of the five men...'. Since NP_1 is not less than NP_2 in the examples above, condition 2(i) is violated, and we have ungrammatical structures. But the ungrammaticality of these structures does not imply that numerals will not occur in partitives. They occur in partitives subject to the restrictions we have stated, and the fact that they occur in partitives is adequately handled by 1.

Condition 2(ii) is the reverse of condition 2(iii). By condition 2(ii), when adjectives or nouns occur as the first element in partitives, they retain underlying sentential representation on the surface. This fact is stated for adjectives in 5.31 where it is possible to have 5.31(4) - àwọn tí ó ga níńú àwọn méjìlá nâ..., and where àwọn tí ó ga (those who he tall) 'those who are tall' has the structure NP RM S on the surface, but it is impossible for us

to reduce 5.31(4) to 5.31(1) - *gíga nínú àwon méjìlá nà '*the tall of the twelve'. On the other hand, we have quantifiers in the reduced form as dié nínú àwon méjìlá nà 'few of the twelve people', but not in the unreduced form as *àwon tí ó dié nínú àwon méjìlá nà (those who he few within/among those twelve the). So, conditions 2(ii) and 2(iii) are converses.

Note that only the part of condition 2(ii) that refers to adjectives was exemplified in 5.31. We had our noun examples in 5.32(1 and 4). Some additional examples are:

3. àwon tí ó jé ọ̀mọ̀dé nínú àwon oníjọ̀ nà (those who he is child among plur dancer the) 'those who are children among the dancers',
4. èyí tí ó jé ọ̀mọ̀dé nínú àwon oníjọ̀ nà (the-one who he is child among plur dancer the) 'the child among the dancers',

and as observed earlier (cf. 5.32(17)), we would not express 4 as:

5. *ọ̀mọ̀dé nínú àwon oníjọ̀ nà (child among plur dancer the) for 'the child among the dancers'.

So, the restrictions on the occurrence of nouns and adjectives in partitive constructions merely show that there are certain constraints on surface structure representation and this is the exact opposite of what happens when relative quantifiers are used. But nouns, adjectives, relative quantifiers and absolute quantifiers (cf. 5.32) still occur in partitive constructions since they are contentives.

Now, if we examine all the conditions stated as 2, we find that 2(i) is the most significant since it represents a syntactic as well as a semantic constraint. Besides, from condition 2(i), we can predict that when relative quantifiers occur in partitive constructions on other relative quantifiers, some relative quantifiers like dié 'few' will operate as partitives on relative quantifiers like púpọ̀ 'many' but not vice versa. Hence, while we have dié nínú àwon eyin púpọ̀ nà 'few of the many eggs' in 5.32(4), we do not have *púpọ̀ nínú àwon eyin dié nà '?many of the few eggs' in Yoruba at least.

Observe that relative quantifiers are not covered by 2(i) the way it is stated. But only the deletion of [+absolute] is necessary if we want to include relative quantifiers. And, so far, there is no motivation for that.

Moreover, we can use condition 2 to predict what cannot be violated even by the most grammatically unconscious user of the Yoruba language. It is possible to suggest that the reactions of informants will vary to violations of conditions 2(ii) and 2(iii). Some degree of violation may be tolerated since one condition is the converse of another one. But it seems that every Yoruba speaker will react the same way to any violation of condition 2(i) since we do not have 'seven out of five men'. The same unanimity in reaction to violations cannot be guaranteed for the other conditions.

Thus, we find that condition 2(ii) and condition 2(iii) are merely constraints on the surface structure representation of sententially derived underlying categories. While 2(ii) states that underlying NP S must remain as NP S on the surface, 2(iii) states the reverse, that is, underlying NP S must not occur as NP S on the surface in partitives. Note that relative quantifiers still have surface sentential representations e.g. the àwọn tí ó pò 'those who are many' of 5.32(7); but they are excluded in partitives since we do not have *àwọn tí ó pò nínú àwọn oníjọ ná '*those who are many among the dancers' although we have: púpò nínú àwọn oníjọ ná 'many of the dancers'. Thus, by recognizing the super-category or hyperconstituent contentive, we are able to state syntactic constraints economically and distinguish those that are really important and fundamental from those that are accidental and surface. We may now give two more examples of the way restrictions are stated economically.

First, we observed from examples 5.32(11 and 12) that nouns are not simultaneously quantified absolutely and relatively. But we can generalize this point and say that contentives are not simultaneously quantified relatively and absolutely since other items apart from nouns can occur as

principals in NP's, and whenever any principal is quantified absolutely, it is not simultaneously quantified relatively. Suppose we represent principal with Pr, and ancillary with Ac. Then we may state the restriction as:

6. For any Ac_1 that is [α absolute] in any surface syntactic structure $[Pr, Ac_1, \dots, Ac_n]$ such that $[Pr, Ac_1, \dots, Ac_n] = NP$, there is no Ac_j for $j \neq 1$ in Ac_1, \dots, Ac_n which is [$-\alpha$ absolute] - where $\alpha = '+'$ or $\alpha = '-'$, and $Pr, Ac_1, Ac_2 \dots$ are contentives. Condition: Pr does not necessarily precede all Ac 's in structure.

Restriction 6 refers to what we observed on the quantification of nouns in 5.32(11 and 12) where we do not have *okùnrin méta púpò '*three many men'. And this restriction is stated only once for all contentives that operate as principals. Hence, when any other contentive e.g. the adjective pupa 'red' or the numeral métaméta 'groups of threes' operates as principal, it is not simultaneously quantified relatively and absolutely. Thus, we can expect:

- 7(a) pupa díè (red few) 'a few red ones'
(b) métaméta díè (groups-of-threes few) 'few groups of threes'
(c) pupa méréin (red four) 'four red ones' and
(d) métaméta méréin (groups-of-threes four) 'four groups of threes'

but none of:

- 8(a) *pupa díè méréin '*four few red ones'
(b) *métaméta méréin díè '*few four groups of threes'
(c) *métaméta díè méréin '*few four groups of threes' or '*four few groups of threes'.

Thus, the restrictions on quantification is stated once for examples like 7 and 8 as well as those of 5.32(11 and 12) above.

The second example of economy in the statement of restrictions deals with the observation that numerals (i.e. absolute quantifiers) do not modify items that are specified as [-count]. Hence we do not have *omi méta (water three) '*three waters'. The statement of the restriction will resemble that of 6 above.

9. For any Pr that is $[\alpha \text{ count}]$ in a NP structure $[\text{Pr}, \text{Ac}_1, \dots, \text{Ac}_n]$, there is no Ac_i for $1 \leq i \leq n$ which is $[-\alpha \text{ count}]$ - where $\alpha = '+'$ or $\alpha = '-'$, and Pr, $\text{Ac}_1, \dots, \text{Ac}_n$ are contentives. Condition: Pr does not necessarily precede all Ac's in structure.

Restriction 9 states the point that ancillaries and principals agree on the feature $[\pm \text{count}]$. Thus, the principal need not necessarily be a common noun for the *omi méta '*three waters' above. It may be an attributive adjective, a verbal noun, a proper noun, a relative quantifier or even a numeral. Note that the principal and ancillary can both be numerals e.g. in irínwó méta (400 three) 'three 400's' i.e. '1,200' or in the ogún mérin (twenty four) 'four twenties' i.e. 'eighty' of 4.2211(lb), or in 7(d) above. Restriction 9 also applies even when it is difficult to decide whether an ancillary item is an adjective or a quantifier e.g. àìmoye 'infinite, infinity'. Through 9, *àìmoye omi 'infinite water' is excluded since omi 'water' is -count. But it seems that aimoye, derived through the àì + VP rule of 3.2222(36) from mo iye 'know the number' quantifies only what can be numbered as one of the formatives used in its construction iye 'number, sum, amount' suggests. Observe that iye is our classifier for cardinals, and that àìmoye is also one of the derived nouns that are 'used adjectivally' following Abraham's terminology. So, we find that the statement on agreement in the feature $[\pm \text{count}]$ (i.e. 9) is stated once for all members of the class of contentives whether they operate as principals or as ancillaries.

The similarity of 6 to 9 may make one feel that such restrictions might be generalized further if $[\alpha F]$ (where F = feature) were substituted for either $[\alpha \text{ absolute}]$ or $[\alpha \text{ count}]$, but no such generalization is valid for some nouns are specified as +noun, -descriptive while adjectives are specified as -noun, +descriptive, but adjectives still modify non descriptive nouns although they are oppositely specified for the features $[\pm \text{noun}]$ and $[\pm \text{descriptive}]$.

There are other areas where economy of statement is possible. For instance, we observed in 5.32 that the nominalization rule 3.2211(5) derives gerundive nominals from verbs, and it appears that the same rule derives attributive adjectives from predicative adjectives. It was shown in 5.32 that the rule is basically a nominalization rule. But we would have been saved the efforts of proving that rule 3.2211(5) mainly derives nouns rather than adjectives if we had recognized both adjectives and nouns as contentives. The only necessary statement would have been that rule 3.2211(5) derives [+contentive, -predicator] items from [+contentive, +predicator] items. And this single statement will cover the morphological derivations from both predicative adjectives and verbs. Moreover, a similar statement can easily be made on the negative abstract/gerundive rule àì + VP of 3.2222(36), and the distributive numeral derivation rule 4.21(24 and 25) since the latter is also a noun derivation rule (cf. 4.1 above). And so, the common treatment of the items discussed here as contentive is advantageous not only for pure syntactic statements but also for statements about derivational processes.

So far, we have seen the way the non proliferation of structural categories leads to economy in the statement of syntactic restrictions. We have also observed that such economies even apply to derivational processes. The non proliferation of structural categories or the recognition of the hyperconstituent contentive also has phonological advantages. For instance, all [+contentive, -predicator] items in Yoruba are polysyllabic. Once we recognize the contentive and some of its features like [+predicator], we only have to state the fact about polysyllabicity once in the grammar e.g.

10. $\left[\begin{array}{l} +\text{contentive} \\ -\text{predicator} \end{array} \right] \neq / \# \text{CVw} \# /$ where '#' represents 'word boundary'.
i.e. no contentive marked [-predicator] is monosyllabic.

But if we do not have the hyper constituent contentive at our disposal, we must state this fact separately for nouns, attributive adjectives, numerals and relative quantifiers.

Note that 10 even constitutes a statement of competence since any new

noun or [+contentive, -predicator] item that is constructed or borrowed by the Yoruba must be subject to rule 10. Hence, even when Yoruba personal names are abbreviated, they are never monosyllabic. And when foreign monosyllabic names and nouns are borrowed by the Yoruba, or when the abbreviated versions of borrowed names occur as monosyllables (as we pointed out in 3.21 above), the names are obligatorily supplied with tone glides. The obligatory tone glide may then be interpreted as sympathetic polysyllabicity since such tone glides e.g. in examples like Jo [jòó] for Joseph and Ge [gèé] for Gabriel is needed to distinguish names (which are nouns) from [+contentive, -predicator] items like verbs and predicative adjectives since the latter can be monosyllabic.

What appears as the only exception to 10 is kan 'a' or 'one' which is also an indefinite article. But there are three other formatives: ení, oókan, and òkan which refer to the numeral 'one'. So, kan is not a serious exception since it is not uniquely a numeral. Thus, the non proliferation of structural categories in this chapter has syntactic, derivational as well as phonological merits. We may then end this chapter by raising a point of interest in relation to the non proliferation of categories in general.

Exercises in the non proliferation of structural categories raise a question concerning the point at which we stop treating structural categories as members of a super-category. In this chapter, we have provided at least one answer to the question. Our main answer relates to what could be accomplished through the common treatment of certain NP elements as contentives. We note that the repetition of syntactic information e.g. the possibility of negation (especially constituent negation) etc. for each of the different members of the contentive is avoided through a common treatment since such statements can be represented in the form of general restrictions once for all contentives; and exceptions to general characteristics can be stated

economically as supplementary conditions on the general restrictions. But if a potential member of a super-category appears to be an exception every time such restrictions are stated - (e.g. the universal quantifier gbogbo 'all' is an exception to most of the points of similarity among members of the contentive - see Appendix III) - then we know that there is no justification in treating it with others as members of the same super-category or hyperconstituent.

CHAPTER VI

6.0 THE RELATIVE MARKER AND THE DETERMINER

In 5.12, when we suggested the rule 5.12(2) - "N DET RM S" for the underlying derivation of most of the elements in the Yoruba NP, we ^{did not} indicate that Bamgbose's deictic and post-deictic elements, which come within the Yoruba determiner system, would be given a feature treatment. The determiner system will be discussed in 6.2, but in 6.1 here, we discuss one of the four elements in rule 5.12(2), the RM or relative marker. Both the relative marker and determiner are constants in 5.12 because we suggested there that the principal differences between numerals, adjectives, and nouns are differences in the classifier (represented as N in 5.12(2)) and the underlying sentence (the S in 5.12(2)). Thus, DET and RM remain unchanged whether what we derive are nouns, adjectives, relative quantifiers, or absolute quantifiers (i.e. numerals). We now discuss the constant RM and DET in this chapter.

6.1 THE RELATIVE MARKER

6.11 RELATIVIZATION CONDITIONS IN THE YORUBA NOUN PHRASE

We are not discussing the whole of the relative here. Our main concern is with the relative marker which was introduced through adjunction by T-rule 2.2(6a) to tree structure 2.2(4) for the derivation of the phrase marker 2.2(5). Thus, what we discuss in this chapter is dictated mainly by the structures we have already obtained, and consequently, this is not a comprehensive description of the relatives.

In our discussion of the relative marker, we shall concentrate on relativization conditions in 6.11. The discussion of relativization conditions is necessary because only one such condition was overtly stated in 2.4: the condition of NP identity. But the condition of NP identity

itself is not as simple as it appeared in the earlier representations because a reference to a part of a NP (e.g. a genitival reference) is a sufficient condition for relativization as we shall see later. Moreover, there is so far, no agreement on what the Yoruba relative marker is, and we would like to be unequivocal on what we meant by RM (relative marker) in 2.2 above and elsewhere. In 6.12, we take over one observation from the discussion of relativization conditions in 6.11. The observation is that the relative marker tí 'wh-' which we sometimes gloss as who or which is infinitely productive although not everything introduced by it satisfies Yoruba relativization conditions. And finally, in 6.13, we discuss the distinction between restrictive and non restrictive relatives, and decide on which of the two types of relatives can be used for the underlying representations of contentives and other NP elements.

Uncertainty about what constitutes the relative marker is clearly illustrated in Afolayan's labelling of kí 'let, so that, that' in

1. "ó yẹ kí gbogbo wa lo¹ (it fits that all we go) 'it is necessary for us to go'

as a 'relative pronominal binder'. One Yoruba relativization condition which was satisfied by the P-marker 2.2(4) and which was stated in the T-rule 2.2(6a), but which is not satisfied by kí in 1 is that of NP identity. It is actually difficult to suggest that the embedded sentence gbogbo wa lo 'we all go' in 1 modifies any lexical item before kí which is coreferential with an NP in the embedded sentence the way the embedded sentence after the relative marker tí modifies eni 'person' in:

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1. Afolayan 1968: 250. There are plenty of arguments on the formative ki. Appendix I of Bamgbose 1966 was entirely devoted to it (cf. Appendix I 'A Note on ki' - Bamgbose 1966: 149-150). Afolayan 1968 rightly criticized Bamgbose for glossing ki as 'let' throughout. But Afolayan's treatment of ki went to the other extreme of recognizing more distinctions than necessary e.g. in his labelling of ki as a 'relative pronominal binder.'

2. eni tí ó n' pa èniyan (person who he -ing kill person) 'one who murders' i.e. 'a murderer'.

Note that ó 'he' from the embedded sentence ó pa èniyan 'he murders' is coreferential with eni 'person' in 2. Such coreferential relationships cannot be established for 1.

Moreover, kí is just one of the formatives that introduce embedded sentence structures, but this does not necessarily make whatever it introduces a relative. Apart from kí, we also have pé 'that'. Both kí and pé often introduce what was traditionally known as 'subordinate noun clauses' whereas the relative marker tí generally introduces the traditional 'subordinate adjective clauses'. Hence, while the principal-ancillary relationship of 5.51 generally holds between the S introduced by the RM tí and the N or NP preceding it, this relationship cannot be suggested for the S that follows kí in 1 and any preceding NP since kí actually follows a verb there.

Furthermore, kí and the sentence that follows it generally constitute the complement of a verb. Hence, kí must be preceded directly by a verb e.g. ye 'fit, be befitting' in 1, but a relative is not the complement of a verb, and so the RM tí (e.g. in 2) is not preceded directly by a verb.

Besides, the NP or N to the left of the RM tí and the S to its right must be dominated directly by the same NP node (cf. 2.2(4) to 2.2(6) above). When this happens, the S will be in an ancillary relationship to the N or NP before the relative marker. But this condition does not hold for non relatives. And from the previous paragraph, we find that a verb actually separates any NP to the left of kí from the S to its right. Consequently, the S to the right of kí and the N or NP to its left cannot be sisters or direct descendants from the same NP node. And therefore, kí in no way qualifies as a Yoruba relative marker. Thus, Afọlayan's labelling of kí as a 'relative pronominal binder' must have been based on a different interpretation of the term 'relative', and his 'relative pronominal binder' is

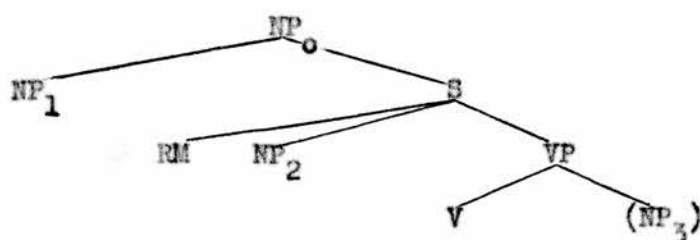
not isomorphic to our 'relative marker'.

The Yoruba relative marker is then tí 'who, which, that'. It introduces relatives (or sentential ancillaries) in the surface structure representation of Yoruba NP's. But it appears to have other functions apart from the indication of what constitutes relativized structures since it also combines with the time and place formatives ìgbà 'time' and ibi 'place' for the formation of the time and place adverbials ìgbà tí (time which) 'when' and ibi tí (place which) 'where' respectively. And it seems that when these time and place adverbials introduce sentences, relativization conditions like coreference or NP identity are not always satisfied. But see 7.2 below for a proposal that makes time and place expressions satisfy the relativization condition of coreference. Thus, a study of relativization conditions in Yoruba will not only clarify the status of the relative marker of 2.4(6a), but it will also help us to decide whether an expression introduced by the RM tí should be considered as a relative or not. We shall begin this discussion with the interpretation of 'NP identity' for relativization purposes.

6.111 THE INTERPRETATION OF 'NP IDENTITY' FOR RELATIVIZATION

The aim in this section and in 6.112 is to suggest that one or more underlying NP's, or at least a part of one underlying NP, in the embedded sentence introduced by the relative marker tí must be non distinct referentially from the NP that is modified by the embedded sentence before we have a relative structure. Thus, non distinctness rather than total identity is an adequate criterion, and besides, a part reference to the NP modified by the sentence will also be considered adequate for relativization purposes. Moreover, the possibility of surface RM tí is also relevant at this stage since we would like to exclude non relatives like the kí in 6.11(1) from the relativization domain. In 1 here, we set up a typical tree representation for relatives which is similar to ^{2.2(5)}~~2.4(6a)~~ above.

1.



The tree structure in 1 is almost identical with 2.2(5) where we have COP (copula) instead of the V(verb) in 1. Hence, 1 is also a derived structure like 2.2(5) since 2.2(6a and 6b) had applied to 2.2(4) before 2.2(5) was derived. In 1 here, the equivalent of the pronominalization rule 2.2(6b) has not yet applied. The bracket surrounding NP₃ in 1 shows that it is optional. When there is no NP₃, V is intransitive, but when an NP₃ occurs, V is transitive. However, the transitivity of V does not prevent object deletion which may cause ambiguity in the surface structure representations of some Yoruba relatives e.g. in:

2. àwọn obìnrin tí ó bá fẹ́ (plur woman who he/she happen like)

(i) 'the women who like', (ii) 'the women whom he likes'.

The ambiguity of 2 depends on what constitute the NP₂ and NP₃ equivalents of 1 in the underlying structure for 2. For the first interpretation of 2, assuming tree structure 1, NP₁ = NP₂, but neither NP₁ nor NP₂ is identical with NP₃ which is deleted on the surface. For the second interpretation of 2, NP₁ = NP₃, and neither is identical with NP₂ which occurs as the pronoun ó 'he, she, it' on the surface. 2 is ambiguous because NP₃ is deleted on the surface for two different underlying structures that could have been represented respectively as:

3. àwọn obìnrin₁ tí àwọn obìnrin₁ bá fẹ́ NP₃

4. àwọn obìnrin₁ tí NP₂ bá fẹ́ àwọn obìnrin₁

Since NP₂ (= àwọn obìnrin for 3) occurs as a pronoun ó on the surface structure representation of both 3 and 4 (cf. 2), and since NP₃ (= àwọn obìnrin for 4) is deleted on the surface structure representation of both 3 and 4 (i.e. in 2), we have the ambiguous surface representation 2. But the object deletion

operation in the surface forms of both 3 and 4 does not affect the transitivity or intransitivity of the verb.

The ambiguity of 2 above is accounted for through the different identity patterns for the NP's in tree structures like 1. There are actually three possible situations when we have tree structures like 1. (We exclude preposition phrases in VP's in this discussion.) Thus, we have $NP_1 = NP_2$ for 3, $NP_1 = NP_3$ for 4, and we can have $NP_1 = NP_2 = NP_3$ for 5:

5. àwọn obìnrin₁ tí àwọn obìnrin₁ bá fẹ̀ràn àwọn obìnrin₁
(plur woman₁ who plur woman₁ happen love plur woman₁)

which becomes:

(b) àwọn obìnrin tí wón bá fẹ̀ràn ara wón (plur woman who they happen love self their) 'the women who happen to love themselves'.

The main observation here is that one NP (e.g. in 3 and 4) or more than one NP (e.g. in 5) must be coreferential with NP_1 . When only one NP is identical with NP_1 , this coreferential NP can be pronominalized (like the NP_2 in 3) or deleted (like the NP_3 in 4). But when $NP_1 = NP_2 = NP_3$, one of the coreferential NP's is pronominalized (e.g. $NP_2 = wón$ 'they' in 5(b)), and the other one is reflexivized (e.g. $NP_3 = ara wón$ 'themselves' also in 5(b)). Thus, coreferentiality with NP_1 seems to be the important point. And so, if $NP_2 = NP_3$, but neither is coreferential with NP_1 , we cannot have a relativized structure e.g. in:

6. ọ̀rọ̀ pé kí a má fẹ̀ràn ara wa (talk that so-that we not love self our)
'the fact that we do not love ourselves (or one another)',¹

although in the underlying representation, e.g. the analogue of 5(a), the

1. We do not discuss reflexives here. But it is worth pointing out that the Yoruba expression for reflexives is ambiguous. Thus, wón kò fẹ̀ràn ara wón (they not love self their) is either 'they do not love themselves' where each person hates himself, or 'they do not love one another' where each person hates another person or all the others but still loves himself.

NP₂ and NP₃ of 6 are coreferential (i.e. NP₂ = NP₃).¹ So, NP identity here is interpretable as 'identical with the NP₁ of 1' or 'not distinct from the NP₁ of 1'. There is no NP in gbogbo wa lo (all we go) 'we all go' which is coreferential with the NP₁ o 'it' in the example quoted as 6.11(1) above, and so, 6.11(1) fails as a Yoruba relative structure.

6.112

THE QUESTION OF PART REFERENCE

In 6.111, we suggested that at least a part of one underlying NP in the embedded sentence introduced on the surface by the relative marker tí must be non distinct from the NP modified by the embedded sentence. We shall illustrate what we mean by 'a part of one underlying NP' here. Hence, the point being discussed here is that of 'part reference' rather than 'total reference' to the NP₁ of 6.111(1).

In the examples in 6.111, NP identity implies total identity so that we have NP₁ = NP₂ or NP₁ = NP₃ etc. Then, if NP₁ is a principal, the NP that is coreferential with it is also a principal.² For part reference, it is the principalship in the status of the NP which is coreferential with the NP₁ of 6.111 that is in doubt.

Consider the following structure:

1. eni tí Sango bá ti ojú rẹ̀ wọ̀ ilẹ̀ (person who Sango happen through eye his enter ground) 'the person through whose eyes Sango enters the ground' i.e. 'anyone struck dead by Sango, the god of lightning'.

In 1, NP₁ = eni 'person', NP₂ = Sango, and NP₃ = ojú rẹ̀ 'his eyes' referring

-
1. It appears that reflexivization must be ordered to precede the pronominalization of one NP when NP₁ = NP₂ = NP₃ since the NP that initiates the reflexivization operation will no longer be available for the reflexivization process if pronominalization precedes reflexivization. This point is not really crucial to what is being discussed here.
 2. See the definition of 'principal' and 'ancillary' in 5.51 above.

back to eni - NP₁ and not to Sango - NP₂ although the pronoun rè 'his' can also refer to Sango. Note that NP₁ ≠ NP₃, but there is a reference back to NP₁ in NP₃, and this part reference is adequate for the identity condition on Yoruba relativization structures.

We can summarize our observations on 1 thus: The use of the relative marker in 1 suggests that it can be a relative structure. But 1 does not become a relative unless the anaphoric reference from NP₃ - ojú rè 'his eyes' goes back to NP₁ - eni 'person' rather than NP₂ - Sango as we indicated while discussing 6.111(6). Thus, 1 is unambiguous because the relativization condition requires coreference with NP₁ rather than NP₂ although ojú rè could have easily referred back to Sango - NP₂.

We can now be more specific on what is meant by 'part reference'. Using 1 again, we find that ojú rè would have had an underlying form in which the equivalent of NP₁ is in the genitive. If we use the type of representations we had for 6.111(3 and 4), we can provide a less surface or more fundamental representation of 1 as:

2. eni₁ tí Sango bá ti ojú eni₁ wọ ilẹ̀ (person₁ who Sango happen through eye person₁ enter ground) -

where the first eni₁ 'the person' is a principal and the second eni₁ 'of the person' is the ancillary of ojú 'eye' in NP₃ - (ojú eni₁ 'the eye of eni₁'). It is in cases like 2 where NP identity is not totally but partly satisfied through the ancillary status of the identical NP in the relevant embedded sentence that we say there is a part reference to NP₁. This part reference could go through a series of NP's e.g. in the underlined NP's in:

3. eni tí omo rè bá bú baba rè ní ojú rè fi ara rè fún òsì ta
(person who child his happen insult father his in face his leaves self his for wretchedness fiddle) 'any person who allows his child to insult his own father in his presence is wretched'.

The suggestion of NP part identity for total identity, which is illus-

trated with 1 to 3 will not be stated as a relativization condition, although this condition, i.e. 4, will be incorporated into one main relativization condition that is stated as 6.1131(9) below.

4. 'For relativization in Yoruba, the coreference condition is adequately satisfied by at least any part reference to the NP that is modified by the embedded sentence'.

6.113

THE RELATIVE MARKER

6.1131

RELATIVE MARKER DELETION

So far, we have assumed that the relative marker occurs in surface relativized structures. And we have not yet eliminated the physical occurrence of the relative marker as a condition for relativization. But if we recall that the relative marker itself is transformationally derived (cf. 2.2(6a) above), our relativization conditions must be independent of it. Hence, in 6.1131 here, we look at some surface structure relatives which do not have the relative marker. Then, we state which relativization conditions such surface structures must have satisfied before they qualify for relativization transformational operations.

Consider the following structures:

1. *eni se rere, o se e fun ara re* (person do good, he do it for self his) 'anybody who does good works, does so for himself' i.e. 'virtue is its own reward'.
2. *eni ba da omi siwaju, a te ile tutu* (person happen pour water forward, shall step ground cold) 'anyone who pours water ahead will walk on wet and comfortable soil' i.e. 'one good turn deserves another'.

3. eni òjò pa, tí Sango kò pa, kí ó maa dúpé¹

(person rain kill, who Sango not kill, let he continue give-thanks)

in pidgin - 'person who rain kill, who Sango no kill, make him thank God'

i.e. 'anyone whose sole calamity is that he is drenched, but who is so fortunate that he is not struck dead by lightning, must be grateful' OR 'thank God for it could have been worse'.

4. èy'ó wùn a wí, t'Olúwa l'àsè (the-one-it pleases we say, of-the-Lord is-law) 'whatever we say is wishful thinking, only what God says is mandatory' i.e. 'man proposes, but God disposes'.

(Note that the apostrophes in 4 represent contractions e.g. èyí 'the one' + ó → èy'ó, tí 'of' + Olúwa → tOlúwa 'of the Lord', and ní 'is' + àsè 'law' → làsè 'is law'. Bamgboṣe 1965 does not favour the use of the apostrophe in orthographic representations.)

One common observation about 1 - 4 is the deletion of RM tí after the first surface structure item. 4 is different from others since we also have the assimilation of the pronoun ó 'it' that often follows the RM tí into èyí 'the one' which is the first NP of 4.

Since we are mainly concerned with underlying representations, we shall concentrate on the deeper forms for surface forms like 1 - 4. Such deeper forms would have contained expressions in which the relative marker was not deleted. Thus, we intend to suggest the forms in which 1 - 4 could have occurred at an early stage in derivation and state the conditions 1 to 4 satisfy which make rule ^{2.2(6a)}~~2.2(6a)~~ applicable to them while this rule

1. In 3, there is a play on words. Although pa means 'kill', when it is used in certain contexts, it has different meanings. Thus, pa in (i) òjò ní pa mí - roughly 'rain is killing me' is 'pour' so that (i) actually means 'I am getting wet'. Also, (ii) - ebi ní pa mí (hunger-ing kill me) is 'I am hungry'. The pun is based on the word pa which is worse for its victim if the agent of the action pa is Sango 'the god of lightning' rather than òjò 'rain' or òdrùn 'sun'.

does not apply to Afolayan's example quoted as 6.11(1) or the example we used in 6.111(6).

For a more fundamental representation of the relevant parts of 1 to 4 we would have:

5. eni ti o se rere (person who he do good) 'anybody who does good works'
6. eni ti o ba da omi siwaju (person who he happen pour water forward) 'anyone who pours water ahead'
7. eni ti o jo pa, ti Sango ko pa (person who rain kill, who Sango not kill) 'one who is drenched by the rain, but not struck dead by lightning'
8. eyi ti o wun ki a wi (the-one which it pleases that we say) 'whatever we may say'.

5 to 8 are not the deepest forms of 1 to 4 since T rule 2.4(6) has already applied to the underlying structure of 5 to 8.

If we compare 5 to 8 with 1 to 4, we find that the surface occurrence of the relative marker is not obligatory for relativized structures since the RM ti is absent in the relativized structures in 1 to 4. But certain conditions must be satisfied before RM is deletable. For instance, for the formative eni 'person' in 1 to 3 (and 5 to 7), it is possible to delete not only the RM, but also the NP that refers back to eni from the embedded relative. Hence, both ti 'who' and o 'he' from 5 and 6 are deleted in 1 and 2. This double deletion is possible mainly because eni 'person' cannot constitute a Yoruba NP of only one element. The formative eni must qualify a principal, or if it is a principal, it must be qualified in a Yoruba NP. (This fact is discussed in 6.13 below.) Consequently, eni se rere in 1 cannot represent a Yoruba sentence. It can only be a NP since an unqualified eni precedes the VP se rere (do good), and therefore the VP se rere is only a part of what qualifies eni 'person'.

For formatives which can constitute single element NP's, the double deletion of the RM and a coreferential NP does not take place. Hence, in

4, where the RM is deleted, the NP that is coreferential with eyí 'the one' i.e. ó 'it' is not deleted. The significant point about 1 to 8 is that the surface occurrence of the RM is not mandatory for relativized structures. Hence, we shall drop the occurrence of the RM from the relativization conditions of Yoruba.

From our earlier discussion, we can now summarize the relativization conditions of Yoruba. There are two main conditions. If we call the S that occurs to the right of the relative marker in surface structure representations 'the relative sentence', and the NP on the left of the RM - 'the modified NP', we can state the first condition as:

9. "One NP in the relative sentence is coreferential or partly coreferential with the modified NP" (where 'the modified NP' is the NP that is modified by the 'relative sentence').

The second condition is stated as:

10. "The modified NP and the relative sentence are immediately dominated by a single NP node."

9 and 10 apply simultaneously, and both are independent of RM. The part reference clause in 9 is reminiscent of 6.112(4) above. The coreferential condition itself blocks structures involving verbal complements like 6.11(1) from the operation of relativization transformational rules. It also blocks structures like 6.111(6) in which all coreferential NP's are within the embedded sentence, but where no NP is coreferential with the modified NP. The simultaneity in the application of 9 and 10 also blocks 6.111(6) where it can be argued that condition 10 is satisfied since the embedded sentence in 6.111(6) is not the complement of any preceding verb. Note that the embedded sentence in 6.111(6) is not even preceded by a verb.

However, both the relativized structures in examples like 1 to 8 above, and non relatives like 6.111(6) can be represented as NP S since determiners can occur in the NP part for both structures. They are then distinguished

mainly by relativization conditions like 9 above.

The simultaneity of 9 and 10 actually blocks as relatives some interesting examples like:

11. okùnrin ná₁ jéwó pé òun₁ kò ní ogbón (man the₁ confess that he₁ not have wisdom) 'the man confesses that he is unwise'.

Thus, although 11 satisfies the coreferential condition 9, it fails 10 since the embedded sentence, being the complement of a verb, is dominated by VP and not by the NP which dominates the modified NP.

6.1132 THE RELATIVE MARKER IN 'NON RELATIVES'

We stated earlier in 6.11 that not everything introduced by the relative marker is a relative. In 6.1131, we discussed the absence of the RM in relative structures. Now, we discuss the presence of the relative marker in non relatives.

The object of this discussion is to suggest that the mere surface occurrence of the relative marker tí is not a sufficient condition for relativization in Yoruba unless condition 6.1131(9) were met. Thus, we find that Yoruba time and place adverbs which use RM tí, but which fail the coreferential condition are not relatives. However, apart from structures containing time and place adverbs, we find that wherever RM tí occurs and the coreferential condition is not satisfied, we obtain ungrammatical sentences e.g. in:

1. *okùnrin tí mo kókó rí Modupe (man who I originally see/saw Modupe)
'*the man whom I first saw Modupe'
2. *okùnrin tí mo gbó iròhìn ìjà árin ilé àwọn Páyân (man who I hear news fight interior house plur Spaniards) '*the man who I heard the news of the Spanish Civil War'.

If we replace the initial nominals in 1 and 2 with ìgbà 'time', both expressions will be grammatical only because everything happens in time.

And the fact still remains that the coreferential condition 6.1131(9) is not satisfied, and thus, we have no relatives in 3 and 4:

3. *ìgbà tí mo kókó rí Modupe* (time which I originally see Modupe)
'when I first saw Modupe'

4. *ìgbà tí mo gbó ìròhìn ìjà àrín ilé àwọn Pàyán* (time which I hear news fight interior house plur Spaniards) 'when I heard news about the Spanish Civil War'.

Actually, both time and place adverbials make use of the relative marker *tí* in grammatical expressions which fail the coreferential condition 6.1131(9). Hence, we can give more examples involving both the place word *ibi* 'place' and time words like *ìgbà* 'time' or *ojó* 'day':

5. ní ibi tí eni méjì tàbí méta bá tí kó ara won jọ ...

(at place which person two or three happen have collected self their together)
'where two or three are gathered together ...'

The underlined expressions in 5 respectively represent analogues of NP₁, NP₂, and NP₃ in tree structure 6.111(1). Although the reflexivization of NP₃ to *ara won* 'themselves' shows that NP₂ = NP₃, no NP is coreferential with NP₁. Hence, 5 is not a relative structure. Also consider 6:

6. ní ojó tí mo dé ilé àwọn Àgánvín (at day which I arrive ground plur Ghanaians) 'on the day when I arrived in Ghana'

where the underlined expressions in 6 are analogues of NP₁, NP₂ and NP₃, but NP₁ ≠ NP₂ ≠ NP₃.

From 3 to 6, there is no grammatical requirement that any NP in the sentence that follows the time and place expressions must refer to place and time since everything happens in time and space, and usually, it is a whole sentence, rather than a single NP that refers to the time or place word. Hence, 3 to 6 provide us only with examples of sentential adverbs instead of relatives, and the mere occurrence of the relative marker *tí* (e.g. in time and place adverbials) is not a sufficient condition for relativization.

However, if there is a NP (or pronoun) that is coreferential with the time or place word preceding tí on the surface, the coreferential condition 6.1131(9) is satisfied, and we have a relative structure as in 7 to 9 below. In 7 to 9, the coreferential expressions are underlined:

7. ibi tí ó dára jùlọ ní ilú wa ... (place which it good most in town our) 'the place which is the most beautiful in our town ...' i.e. 'the most beautiful place in our town ...'
8. ìgbà tí ó tutù jùlọ nínú ọdún ni ìgbà ọyé (time which it cold most in year is time harmattan) 'the harmattan is the coldest period in the year'
9. osù tí ó wùn mí jùlọ ni osù Eṛénà (month which it pleases me most is month March) 'the month I like most is March'

From the relativization conditions 6.1131 (9 and 10), 7 to 9 qualify as Yoruba relative structures while 3 to 6 fail to qualify since they fail the coreferential condition 6.1131(9). However, time and place words as well as the relative marker tí occur in both sets of examples. Thus, the occurrence of time and place words does not preclude the possibility of having relative structures (cf. 7 to 9), and the occurrence of the relative marker tí does not necessarily imply that we have got a relative structure (cf. 3 to 6). Consequently, only the coreferential condition 6.1131(9) and the immediate dominance condition 6.1131(10) are needed for Yoruba relatives.

6.114 SOME EMBEDDINGS IN RELATIVE STRUCTURES

In this section, we distinguish between two types of embedded relatives. We have relativized structures involving a recursive use of tree structure 6.111(1) in 1 below, and one involving the conjoining of relatives that modify a single noun in 2.

1. èyí ni ọkùnrin tí ó lu obìnrin, obìnrin tí ó ta ajá, ajá tí ó lé kòlòkòlò, kòlòkòlò tí ó pa àkùkọ, àkùkọ tí ó je àgbàdo, àgbàdo tí Bisi rà.

rough translation - 'this is the man who beat the woman, the woman who sold the dog, the dog which chased the fox, the fox which killed the cock, the cock which ate the corn, the corn which Bisi bought'.

i.e. 'this is the man that beat the woman that sold the dog that chased the fox that killed the cock that ate the corn that Bisi bought'

2. *èyí ní okúnrin tí ó lu obínrin, tí ó ta ajá, tí ó lé kòlòkòlò, tí ó pa àkùkò, tí ó sì jẹ àgbàdò tí Bisi rà.*¹

rough translation - 'this is the man who beat the woman, who sold the dog, who chased the fox, who killed the cock, and who ate the corn that Bisi bought'

i.e. 'this is the man that beat the woman, (that) sold the dog, (that) chased the fox, (that) killed the cock, and ate the corn that Bisi bought'.

The Yoruba translation of the famous 'the house that Jack built' will look like 1. The difference between 1 and 2 is that *okúnrin* 'man' performed all the actions except the last (i.e. 'buying') in 2 so that the relatives in 2 are conjoined whereas his only action in 1 is the beating of the woman. 1 and 2 then constitute different structures, and while the two can be given the same surface structure representation in English and distinguished only through intonation features, their underlying differences are well illustrated in the surface representations in Yoruba without the necessary assistance of intonation features.

The significant point here concerns the interpretation of immediate dominance for the modified NP and the relative sentence in the relativization condition 6.1131(10) above. For 1, there is no problem of interpretation since each modified NP is repeated in the relevant (surface) relative structure (see the repetition of *obínrin* 'woman', *ajá* 'dog', *kòlòkòlò* 'fox', *àkùkò* 'cock' and *àgbàdò* 'corn' in 1 above). However, for 2, each of the

1. For *à* 'and', see discussion of 'Compound Sentence' in 1.31, and cf. example 1.31(3) above.

conjoined relatives is a relative sentence modifying okùnrin 'man'. Hence, although there are four relativized sentences between okùnrin and tí ó sì je àgbàdò 'and who ate the corn', the latter is still an ancillary of the former. It is also a relativized structure although it now appears to have violated the immediate dominance condition 6.1131(10). But we cannot discard condition 6.1131(10) since we need the condition to exclude at least 6.11(1) and other verbal complements from the domain of operation of Yoruba relativization transformational rules.

There are two alternative methods of approaching the problem created by 2. First, we can have series of conjoined NP's like 3:

3. okùnrin₁ tí ó lu obìnrin, okùnrin₁ tí ó ta ajá, okùnrin₁ tí ó lé kòlòkòlò, okùnrin₁ tí ó pa àkùkò ... 'the man₁ who beat the woman, the man₁ who sold the dog, the man₁ who chased the fox, the man₁ who killed the cock...' such that all okùnrin representations except the first are deleted since the common index shows that they are coreferential. 3 will then have a structure using rules like:

4. NP ----> NP and NP and NP ...

where each NP is further expanded as:

5. NP ----> NP S.

There will be no problem of reinterpreting 'immediate dominance' for the modified NP and the relative S since each of the conjoined NP's in 4 will directly dominate a modified NP and a relative S.

The second method is for us to have just one application of rule 5 so that NP = okùnrin 'man'. Then the S in rule 5 will be developed into a series of conjoined sentences using rule 6:

6. S ----> S and S and S ...

Each of the conjoined S's on the right of the arrow in 6 will then be realized as RM S where RM = tí 'who, which, that' giving the series:

7. ... tí ó lu obìnrin, tí ó ta ajá, tí ó lé kòlòkòlò, tí ó pa àkùkò ...

And when 7 is combined with 5, we add okùnrin to the left of 7.

The problem with this second method is that what dominates each of the conjoined sentences in tree structure is not the NP that dominates the modified NP - okùnrin 'man', but the S to the left of the rewriting arrow in 6. Hence, the criterion on immediate dominance for relativization appears to have been violated. But this second method has the advantage that the relativization transformation 2.2(6a) can be applied only once to the S in 5 so that the relative marker tí is just copied for each of the conjoined sentences in 6. On the other hand, if we use the first method, the T-rule 2.2(6a) will have to apply to each of the NP S configurations that produces 3. Consequently, economy in the statement of T-rule 2.2(6a) is not practicable for the first method although it is free from the difficulties of interpretation for the immediate dominance condition 6.1131(10). Note however, that the two methods are valid, and use will be made of their validity below.

Since there are advantages in the economical statement of rules, we shall use the second method here and modify the immediate dominance condition 6.1131(10) to:

8. "The modified NP and the relative sentence are immediately dominated by a single NP node. But when there are conjoined relative sentences, the modified NP and the S that dominates all the conjoined relative sentences are immediately dominated by the same NP category."

We have now stated Yoruba relativization conditions entirely in terms of coreferentiality and category dominance so that the presence or absence of the relative marker is a secondary phenomenon in relativized structures. The phrase marker 2.2(4) which provides the structure index for the relativization rule 2.2(6) above satisfies the relativization conditions stated here, and when we derive elements within the Yoruba NP from underlying sentential representations, these underlying structures must satisfy the relativization

conditions in 6.113. Reference will be made to the two different structures in 3 and 7 above when 3 is suggested for conjoined non restrictive relatives and 7 for conjoined restrictive relatives in the Conclusion in 7.1 below.

6.12 THE PRODUCTIVE CAPACITY OF THE RELATIVE MARKER

Apart from the possibility of repeated embeddings as noted earlier in the discussion of examples similar to 'the house that Jack built' (see 6.114(1 and 2)), it is still possible in Yoruba to use the fact that the relative marker tí appears in time and place expressions to provide indefinitely long NP structures. Observe that in 6.1132(3 - 9), we saw that it is possible for time and place words to appear in relatives (e.g. in 7 - 9), where direct reference to the NP's standing for the time and place words is made vis-a-vis 3 - 6 where there is no satisfaction of the coreferential condition on relativization although the relative marker tí is used. The possibility of the use of tí in the two forms enables tí to be infinitely productive since the expressions or sentences it introduces need not always necessarily be relative. Note that the coreferential condition together with the immediate dominance condition must be satisfied before we have a relative (see 6.1131(9) and 6.114(8) which constitute the main relativization conditions of the Yoruba language).

As we do not have any new points to make in this subsection, we shall just provide an example that proves the point we have already made that the relative marker in Yoruba is infinitely productive. So, we can just examine example 1 here. In 1, both the opening and closing brackets for dominated categories will be labelled:

1. $[_{S1} [_{NP}$ àwọn ọmọdẹ tí $[_{S2}$ mo mú lọ sí ibi tí $[_{S3}$ àwọn ọrẹ wa wí pé kí $[_{S4}$ a se ẹ̀tò sí ní ìgbà tí $[_{S5}$ a lọ rí wọn ní ilé tí $[_{S6}$ wọn sèsè kọ ní tòsí ilé tí $[_{S7}$ Ojo fẹ wó lulẹ̀ ní ìgbà tí $[_{S8} [_{NP}$ àwọn tí $[_{S9}$ ó n

se isé ojú ònà] S₉] NP [VP fé la títì tí [S₁₀ ìjòba ti pinu láti là sí
 gbogbo ìlú tí [S₁₁ ó bá dibò fún egbe wọn] S₁₁] S₁₀] S₈] S₇] S₆] S₅] S₄] S₃] S₂] NP
 [VP kò bikítà bóyá [S₁₂ ohun gbogbo tí [S₁₃ [S₁₄ a rí] S₁₄ tí [S₁₅ a sù
 wí pé kí [S₁₆ a sọ fún wọn] S₁₆] S₁₅] S₁₃] lè jé ọtọ ní torí pé [S₁₇ wọn
 ti bá baba tí [S₁₈ ó bí wọn] S₁₈] jà kí [S₁₉ a tó ro nú pé [S₂₀ ó yẹ
kí [S₂₁ ng mú wọn lẹ] S₂₁] S₂₀] S₁₉] S₁₇] S₁₂] NP] VP] S₁

where the relative marker tí and the subordinators pé and kí are underlined in 1. The main time and place words which introduce embedded sentences are ìgbà 'time' and ibi 'place', but they are not underlined in 1. There are other place words in 1 e.g. ìlú 'town', títì 'road' etc., but whenever they satisfy the relativization conditions of 6.113, we have relative structures.

As a word for word translation of 1 will be very difficult to follow, we have represented it here as a rough translation.

2. All the children whom I took to the place where our friends advised that we convert to our rendezvous when we went to see them in their recently built house near the house (which) Ojo wanted to demolish when those who are now working on the roads (i.e. road contractors) wanted to construct the road (which) the government promised to build in all the towns from which votes were cast for members of their political party did not care whether all that we said and decided to tell them could be true because they had quarrelled with their father before we thought it necessary for me to take them there.

Note that it is still possible to continue the embedding process in the first NP if the last word in that NP is replaced with wọn tí + S - those who + S' etc.

A word for word gloss of 1 is difficult to make, but we shall attempt it here. The only category symbols that will be indicated in this gloss are the S's. The beginning of a S structure will be indicated as 'S(', and the end as ')S'. As in our representation in 1, the subscripts of

sentences are not written as subscripts but as ordinary figures following S. The underlined item in 3 has been deleted before 1 was obtained.

3. S1(plur child who S2(I take go to place₁ which S3(plur friend us say that that S4(we do arrangement to place₁ at time which S5(we go see them in house which S6(they recently build in neighbourhood house which S7(Ojo wants break to-ground at time which S8(those who S9(he -ing do work face road)S9 want construct road which S10(government has promised to construct at all town which S11(it happen vote for party their)S11)S10)S8)S7)S6)S5)S4)S3)S2 /// NP -- // --> VP /// not care whether S12(thing all which S13(S14(we see)S14 which S15(we and say that that S16(we say to them)S16)S15)S13 can be truth for reason that S17(they have with father who S18(he beget them)S18 quarrel before S19(we before ponder mind that S20(it fits that S21(I take them go)S21)S20)S19)S17)S12)S1.

In 3, when a discontinuous item cannot be given separate glossing for its parts as in kí ... tó 'before' in S17 where the other part of the discontinuous item occurs in S19, we use the full gloss for each part. The actual translation of 3 is 2.

As suggested earlier, 1 can still be extended further, and it seems there is no limit to the use that can be made of the relative marker for producing indefinitely long Yoruba NP structures.

Thus, we find that the relative marker in Yoruba is a very productive mechanism so that its occurrence at certain stages in underlying representations is not merely a methodological device, but a reflection of its contribution to the creativity of the Yoruba language.

6.13 RESTRICTIVE AND NON RESTRICTIVE RELATIVES IN UNDERLYING STRUCTURES

Here, we examine the relevance of the distinction between restrictive and non restrictive relatives to underlying representations in the Yoruba

noun phrase. From 6.12 above, and from Bangbose's examples,¹ we saw that the Yoruba relative is extremely productive. The relative is however not isomorphic to Bangbose's rankshifted qualifiers since Bangbose's 'rankshifted qualifier' includes preposition phrases which he called 'the rankshifted verbal group'.²

We first provide a method of recognizing restrictive and non restrictive modification in Yoruba and then examine the already proposed NP structure on the basis of the distinction between restrictive and non restrictive modification.

In general, no article occurs between a noun modified by a relative and the relative if the latter is restrictive. For instance, 1 to 3 cannot be restrictive relatives since some articles occur between the main nouns and their relatives whereas in restrictives, the main articles usually occur after the relatives. Thus, consider:

1. ẹni kan, tí ó rò pé òun gbón, kò mò òtún yàtò sí òsì (person a, who he think he wise, not know right different from left) 'a certain person, who considers himself wise, cannot distinguish between right and left'.
2. ẹni yẹn, tí a ní sọ ọ̀rọ̀ rẹ̀ (person that, who we -ing speak word his) 'that man, about whom we talk'
3. ọ̀kúnrin yí, tí ó ní pa irọ̀ (man this, who he -ing make lies) 'this man, who tells lies'.

In contrast to 1 to 3, we have the restrictives in 4 and 5 where the article does not precede the relative:

4. ẹni tí a ní sọ ọ̀rọ̀ rẹ̀ yẹn (person who we -ing speak word his that) 'that man we talk about'

1. Bangbose 1966: 115-119

2. Bangbose 1966: 120, section E10.2

5. *òkùnrin tí ó n pa irọ́ yí* (man who he -ing make lies this) 'this deceitful man'

The article can precede the surface forms of non restrictive relatives mainly because Yoruba non restrictive relatives can be replaced with appositive NP's whereas the restrictives cannot be so replaced. Thus, examine the following pairs. The (a) form of each of the NP structures from 6 to 8 is restrictive whereas the (b) form is non restrictive, and in 9, we substitute appositive NP's for the non restrictive relatives that make up the (b) forms of 6 to 8:

6(a) *òkùnrin tí kò fẹ́ràn àwọn ọmọ rẹ̀ yẹn* (man who not love plur child his that) 'that man who does not love his children'

(b) *òkùnrin yẹn, tí kò fẹ́ràn àwọn ọmọ rẹ̀* (man that, who not love plur child his) 'that man, who does not love his children' or 'that man, who happens not to love his children'.

7(a) *àwọn olùkọ́ àgbà tí ó n jìjádù ipò wònyẹn* (plur teacher elder who he -ing struggle position those) 'those lecturers who are obsessed with promotion'

(b) *àwọn olùkọ́ àgbà wònyẹn, tí wọ́n n jìjádù ipò* (plur teacher elder those, who they -ing struggle position) 'those lecturers, who happen to be obsessed with promotion'

8(a) *ilé tí mo kọ́* (house which I build) 'the house I built'

(b) *ilé kan, tí mo kọ́* (house one which I build) 'one house which I built'

The (b) forms of 6 to 8 are non restrictive. Each of the non restrictive relatives can be replaced with a NP especially one starting with *èyí tí* 'the one which' in the singular definite, *òkan tí* 'one which' in the singular indefinite, or *àwọn tí* 'the ones which' in the plural definite (where *àwọn tí* is alternatively interpreted as 'those which'). Thus, the (b) forms of 6 to 8 can respectively be realized as:

9(a) *òkùnrin yẹn, èyí tí kò fẹ́ràn àwọn ọmọ rẹ̀* 'that man, the one who does

not love his children'

(b) àwọn olùkó àgbà wònyen, àwọn tí wón n jìjàdù ipò 'those lecturers, the ones who are obsessed with promotion'

(c) ilé kan, òkan tí mo kó 'a certain house, one which I built'

From 6 to 8, we observe that when we have non restrictive relatives, the pronoun which follows the relative marker (RM) tí, and which is coreferential with the modified noun must agree in number with the latter. But this requirement does not hold for restrictive relatives. Thus, in 7(a), we can have the relative as either tí ó n jìjàdù ipò or tí wón n jìjàdù ipò, but in 7(b), only the latter tí wón n jìjàdù ipò is grammatical, the former is not. But if the non restrictive is replaced with a NP as in 9, since the plural form àwọn tí 'those who/which' is used instead of the singular form èyí tí (e.g. in 9(b)), the coreferential pronoun which follows the RM tí could be either singular or plural since number agreement has already been satisfied through the employment of àwọn tí in that structure. The fact that number agreement is obligatory for non restrictive relatives shows that the non restrictive relative actually specifies an appositive construction rather than the modification of the noun supposed to be modified by the relative. Since a restrictive relative and the noun it modifies are dependent on each other, number is shown in the principal element modified by the relative whereas for non restrictive relatives, the independence of the relative from the noun shows that it is a separate detachable construction, and explicitness in number is expected in such constructions in case detachment takes place.

So, one really significant point about 9 is that non restrictive relatives could be considered as versions of appositive clauses which must normally be in concord with the nouns they are in apposition to whereas restrictive relatives and the nouns they modify are integral parts of a single noun phrase.

Now, we suggest which of the relatives is needed for underlying representations. First, we examine some Yoruba defective nouns. Nouns like eni 'person', ohun 'thing', and ibi 'place' are defective because they do not normally function as single element NP's in Yoruba. For instance, there are no Yoruba sentences:

10(a) *ohun wùn mí gan (thing please me exceedingly) '*thing pleases me exceedingly'

(b) *mo rí ohun ní ilé (I see thing at home) '*I see thing at home'

(c) *ohun ni (thing is) '*it is thing'

11(a) *eni fẹ̀ràn wa (person love us) '*person loves us'

(b) *mo ri eni (I see person) '*I see person'

(c) *eni ni (person is) '*it is person'

12. *mo de ibi (I reach place) '*I reach place' etc.

10(a) and 11(a) are ungrammatical when interpreted as sentences with either eni or ohun functioning as a single element NP. But they are grammatical when the whole structure is regarded as a NP with ohun and eni representing nouns which are modified by relatives. Usually, we have grammatical sentences when Yoruba nouns are followed directly by VP's. When we use eni as the principal element in a NP however, the VP that follows it directly on the surface is usually a reduced relative (cf. examples 1 to 3 in 6.1131 above). Hence, 11(a) is grammatical only when it is interpreted as the NP eni fẹ̀ràn wa or eni tí ó fẹ̀ràn wa (person who he love us) 'the person who loves us', but not as a sentence.

One observation from the above characteristic of eni 'person' is that any relative that follows it directly on the surface can only be restrictive. Since eni hardly stands alone in Yoruba NP's, any relative that follows it directly cannot be detached or replaced with an appositive NP as we did for the (b) examples of 6 to 8 above. Hence, where we use eni as a classifier followed by a relative in our structural representations here, we expect

the relative to be restrictive.

Moreover, in certain derivations where we have eni (e.g. in the /a/ + VP and the oní + N nominalizations of chapter III), since the relatives in those derivations follow eni directly, they are restrictive. Generally, for our classifiers, the relative introduced by the classifier is not detachable and it is not representable as an appositive NP. Thus, we can state as a general requirement that only restrictive relatives are introduced by classifiers in the underlying representations of Yoruba NP's.

We shall end this section by making three brief comments. First, we consider the defectiveness of eni 'person'. The only environment where Yoruba defective nouns appear to function as single element NP's is between two verbal elements (or Ansre's verbids) in the VP. Thus, eni and ohun appear to be single element NP's in 13 and 14:

13. mo rí eni ké (I see person pet) 'I have found someone to pet'

14. mo rí ohun fún Olu (I see thing give the-Lord) 'I have found something to give to the Lord'

Since rí eni ké is a VP and eni is the only nominal in the VP, it appears that we have a single element NP in 13. However, the only surface difference between 13 and the ungrammatical 11(b) is that the second verbal element of 13 is absent in 11(b). If eni could be a single element NP in a grammatical sentence as 13 suggests, it will be difficult to explain the ungrammaticality of 11(b).

Nevertheless, the eni ké 'someone to pet' in 13 is paraphrasable as a relative structure similar to 6.1131(1-3) from where the relative marker and a coreferential pronoun are deleted.¹ Thus, a paraphrase of 13 is 15:

1. Although what appears to be an infinitive in 13 is paraphrasable as a relative in the environment of defective nouns, this is not generally the case for infinitives in other environments. However, the paraphrasability of infinitives as relatives is significant only for defective nouns like eni 'person'.

15. *mo rí eni tí mo ké* (I see person that I pet) 'I found someone that I pet'.

Thus, the paraphrasability of the second verbal element in 13 as a reduced relative may explain the ungrammaticality of 11(b) since nothing in 11(b) is interpretable as a restrictive relative on eni. One may then say that we still have eni plus an underlying relative functioning together as a NP in 13. So, it seems that 13 does not constitute a real exception, and eni still remains there as a defective noun.

Secondly, if eni is a defective noun, we would like to know how it is represented in NP diagrams. From our suggestions so far, eni descends from a NP node. The NP is first rewritten as N before we later obtain eni 'person'. Since there are selectional restrictions in transformational grammar, the selectional power of the grammar takes care of the defectiveness of eni so that it is not selected as the only NP element before a VP in underlying representations. Hence, if we consider 6.1131(1-3) where eni is followed by a surface VP, what we actually have in underlying structures is a NP followed by a S and both NP and S satisfy the relativization conditions of 6.1131(9) and 6.114(8) above.

Thirdly, we comment on the representation of classifiers when we have them in surface NP's. For our general classifier for nouns in 3.5, we suggested èyí 'the one'. We can use it as a general classifier always. So, in tree representations for the derivation of surface NP's which consist mainly of other classifiers e.g. (eni kan 'a person') we may have èyí as the first classifier. Suppose that meanwhile, we have eni, ohun, ibi, ìgbà as specific classifiers for nouns and ìye and ìpò as specific classifiers for numerals. Then, our classifiers in expressions like eni kan 'a person', ohun kan 'a thing', and ibi kan 'a place', ìgbà kan 'a time', ìye kan 'a sum', ìpò kan 'a position' will all be sententially derivable from èyí tí ó n jé eni kan 'the one who is a person' etc. (cf. 4.2) for

our suggestions on the selection of classifiers in general). And the only classifier that will constitute a problem for sentential derivation will be èyí itself. In order to make sentential derivation uniform, we may have an underlying representation for èyí which is odd because it is a tautology e.g. ?èyí tí ó n jé èyí 'the one which is this one' or 'the one which is the one'. So, for this odd representation, the transformation necessary for surface structure realization will be obligatory. Thus, it is possible to derive all surface ~~structures~~ Yoruba NP's sententially. See 7.2 below for more comments on less complex NP structures.

6.2

THE ARTICLE

6.21

THE ARTICLE CATEGORY IN THE UNDERLYING STRUCTURE

Our main suggestion in this section is that the determiner system must be excluded from the type of underlying sentential treatment proposed for contentives in chapter V. We shall use the term article for all determiner elements in this work. So, we shall make no distinction between 'determiner' and 'article' since all the items discussed in this section are recognized as 'articles'.

The items to be treated as articles will include those that were called 'the deictic' and 'post-deictic' qualifiers in Bamgbose 1966 viz.

1. the deictics - ".yí 'this', .wònyí 'these', .yèn 'that', .wònyèn 'those', nì 'that', .wonnì 'those', .wo 'which'",¹ and
2. the post-deictics - "nòdò 'that very', gonon 'exactly; even', pàápàá 'too', nìkon 'alone', gbogbo 'all', kè 'even'."²

The items quoted constitute the 'full list' in Bamgbose's analysis, and they are determined by the surface structure phenomenon of occurring as the last set of elements in surface Yoruba NP's. Thus, the criteria of

1. Bamgbose 1966: 114

2. Bamgbose 1966: 114

determination are surface. The criteria we shall use for separating the two classes i.e. Bamgbose's deictics and post-deictics here are the presence of a syntactic feature described in 6.2222 below as [+intensive] for post-deictics but not for deictics, and the nominalizability of deictics. Thus, the items that can be nominalized turn up on the surface as Bamgbose's deictic qualifiers whereas those that cannot be nominalized turn up on the surface as his post-deictic qualifiers. For instance, the nominal counterparts of his deictic qualifiers are respectively:

3. èyí 'this one, the one, this'; ìwònyí 'these ones, these'; ìyèn 'that one, that'; ìwònyèn 'those ones, those'; èyíni 'that one, that';¹ and ìwònnì 'those ones, those'.

None of the items that turn up on the surface as post-deictics is nominalizable. Hence, nominalizability is an adequate criterion for the determination of surface deictic and post-deictic distinctions.

We will however suggest that the full lists in 1 and 2 constitute just a part of the Yoruba determiner system since other deictic categories like that of person for the personal pronouns (cf. Lyons 1968: 276-8) are not considered as deictics in Bamgbose's analysis, and that there are determiner features like specificity which are not accounted for in Bamgbose's system because they are not represented by formatives in surface structure representations. Besides, personal names are generally definite, but they are rarely followed by the definite article on the surface. Thus, no adequate treatment of the Yoruba determiner or article system can be carried out on the surface.

In this section, we have another task apart from discovering the

1. The nominal form èyíni 'that one' appears to be different in construction from the others, but the significant point is that it is the nominal form of nì 'that'. Probably it is a compounding of èyí 'the one' with nì 'that', but that point is immaterial here.

underlying features that dictate surface structure ordering. We intend to handle the Yoruba determiner system within a transformational generative framework, and we wish to use a feature analysis similar to the one proposed by Postal in 1967. Postal's article was first published in the Georgetown Monograph series in 1967. The references here are to the edition in Jacobs and Rosenbaum 1970. So, we refer to it as Postal 1970a. We shall now discuss the (Yoruba) article.

At least four positions have been taken in TG in the description of articles. The first position, which is that of Chomsky (1957) and Lees (1960), makes articles occur as the terminal symbols in grammar. In Chomsky's framework, articles were handled like other lexical items except that they are a closed set while others constitute an open set. But in Chomsky 1965, where articles were still treated the same way as other lexical items, another step was taken. The step was that of matching features of terminal nodes of articles (e.g. those of agreement) with those of other lexical items. Thus, if N is specified as $[\alpha \text{ Number}, \beta \text{ Gender}, \gamma \text{ Case}]$, where each of α , β , and γ could be an integer, the article is similarly specified. One should note also that articles are still treated as other lexical items in Chomsky 1970 and 1971 although all the symbols of grammar (including the articles) are now regarded as 'complexes of features',¹ and we now have the idea of the second lexical lookup.

The second position which is diametrically opposed to the preceding is that of Annear, Robbins and Vendler who have contended that all instances of the definite article the are transformationally derived. There were some criticisms of transformationally derived articles in Stockwell 1968. Stockwell and others suggested that the major problem with this proposal is that transformations "would have to be permitted on

1. Chomsky 1970: 207-8.

domains larger than a single sentence."¹ They referred to Wolfe and Shopen who have "shown that antecedents relevant to definitization are sometimes not only non-locatable but also linguistically non-existent."² In order to evade this problem, Annear 1967 assumed that the definite article must come from the second part of a conjunction, the first part of which may be deleted at the discretion of the speaker so that we have an anaphoric semi-sentence. Vendler (1968) on the other hand allows all definite articles to arise during the operation of relativization transformations, but he gave no formal explanation of the fact that some relative clauses do not end up as definite (cf. example 12 below which is indefinite in spite of the relative clause there).

Thus, the suggestion about a transformational derivation for articles (especially definite articles) is beset with innumerable difficulties. Here, we shall not follow those who derive articles transformationally from deleted sentences (whether those sentences constitute the first part of a conjunction, or whether it is a relative clause) because we find no motivation for it. Although we supported a sentential derivation for contentives in chapter V, we find no point that can be used for supporting a similar sentential derivation for articles. Note our comment about the point where we stop non proliferation exercises in 5.6 above. Yoruba articles are not contentives since they do not have features of contentives like the possibility of constituent negation, or the possibility of [+stative] distinction, or a possibility of occurrence as the partitive of other items. Yoruba articles are not conjoined like contentives. There is no rule $ART \rightarrow ART$ and ART which is similar to $NP \rightarrow NP$ and NP , or $S \rightarrow S$ and S . Thus, only nominal forms of articles can be conjoined e.g. Fún mi ní èyí àti ìyẹn (give me Trf this-one and that-one)

1. Stockwell et al (ed) 1968: 97

2. Stockwell 1968: 97

'give me this and that'. But we do not have *fún mi ní yí àti yèn for 'give me this and that'. Thus, what are conjoined as èyí 'this one' and iyèn 'that one' are actually nominals rather than articles. Hence, there is no justification for using the proposal adopted for members of the contentive in chapter V for articles.

Finally, a sentential derivation for articles will lead to the type of infinite derivational circularity that we discussed in 3.4. For instance, the underlying sentential representations for articles will still have to include articles. The type of sentential derivation examined now is different from those mentioned in preceding paragraphs. The one in 4 below for instance is similar to underlying sentential forms for contentives.

Thus, if for the definite article, we have the sentential substitute:

4. èyí tí ó dájú (the-one which it definite) 'the one which is definite' or 'that which is definite',

the first item in the proposed underlying sentence, èyí 'the one', still contains the equivalent of the definite article as the English gloss even suggests. Actually only what is definite can be referred to as eyí 'the one, this one, this'. Now, in the underlying representation of the definite article portion of èyí, the whole of 4 will be repeated, we shall get another èyí, and the whole process will be repeated ad infinitum. So, one of the implications of sentential derivation for articles is infinite derivational circularity. Hence, apart from the points already made about the syntactic differences between contentives and articles, a sentential derivation for articles, similar to the one we had for contentives in chapter V will lead to infinite derivational circularity.

We have not yet mentioned the other two positions that have been taken in TG in the description of articles. The third position is that of Postal which we follow here. Postal's system is based on one suggestion of his:

The fact that an element is present in the surface form does not mean it was present in the deep structure and, conversely, absence from the surface form does not necessarily entail absence from the deeper aspect of grammatical structure. - Postal 1970a: 58 (see 1.34 above).

Hence, in Postal's framework, there is no such category as ART in the phrase structure. The article (with the pronouns as a proper subset) are represented in the underlying structure as syntactic features on the head noun:

In the deepest structures they (articles - SAE) are, not present segmentally but are represented as syntactic features of nouns, features analogous to [animate], [human], [countable], ... - Postal 1970a: 58

Then, the features that are relevant to the article are partly determined by the noun e.g. [+plur] which is needed for distinguishing between yí 'this' and wonyi 'these', and they are in part determined by transformational rules like pronominalization, definitization, genitivization, reflexivization and definite article attachment.¹ At a later stage, in the derivation, 'segmentalization' rules² apply to each NP and copy the features needed for articles. Then the phonological shape of the items that match these features is later attached. This position is suitable for us although we will differ from Postal on points of details. Nevertheless, we shall examine the fourth position briefly before coming back to Postal's.

The fourth position is that taken by Stockwell et al in UCLA grammar, known as UESP.³ The position is midway between the first (i.e. Chomsky's) and the third (i.e. Postal's):

In this view the PS contains a terminal category into which only syntactic features are inserted on the first

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1. Postal 1970a: 61
 2. Postal 1970a: 62
 3. Although the UCLA grammar appears to precede Postal 1970a chronologically, Postal's article was first published in 1967, and it was from Postal that Stockwell and others took up the idea of regarding articles and pronouns as syntactic features.

lexical lookup. Following various T's which change the feature composition of the ART's (cf. REL, PRO, and NEG), a second lexical lookup provides the phonological shape of the reconstituted ART. - Stockwell 1968: 89.

Our analysis resembles the third and fourth proposals. We differ from Postal and come closer to Stockwell et al. where we represent the article as a node in the expansion of NP and where we use only two person features [+I] and [+II]. But we differ from Stockwell et al. where we do not represent article features in (branching) tree diagrams (see 6.222 below).

In our structural representations, we have the ART node, and under this, we have features of articles relevant to surface structure formatives listed in square brackets. Two article features of Stockwell et al. are relevant to NP's, but are not represented by formatives in the surface structure representation of Yoruba NP's. They are: [+specific] and [+generic]. So, they may not appear in the list of features under our article nodes, but we still recognize them as relevant features since the [+specific] distinction is noticeable in the following examples where omodebinrin kan (girl a) 'a girl' is specific in 5 but not in 6:

5. àwa métèta jò bú omodebinrin kan ní ilé Ojo láná (we all-three together insult girl a in house Ojo yesterday) 'all the three of us jointly insulted a girl (i.e. a particular girl) in Ojo's house yesterday'
6. rán omodebinrin kan sí mi báyibáyí (send girl a to me now) 'send a girl (i.e. any girl) to me now'.

On the other hand, only the absence of specificness is distinguished through the choice of formatives e.g. in:

7. a kò rí omodebinrin kankan níbè (we not find girl any there) 'we did not find any girl there'.

The choice of kankan 'any' rules out the possibility of a [+specific] interpretation of the NP omodebinrin kankan in 7. But the fact still remains that the presence of specificness is not indicated by any formative on the

surface.

The distinction between specific and non specific here is similar to that drawn by Heringer:¹

the distinction between specific and non specific indefinite noun phrases ... actually amounts to a distinction between those noun phrases which carry with them a presupposition of the 'existence' in a sense to be clarified later, of a referent and those which do not.

The behaviour of specific and non specific noun phrases in 'referentially opaque contexts' was used to show the difference, and it is interesting to note that in the English examples used for the discussion by Heringer, it is also not obligatory for any English formative to indicate specificity in the surface structure representations. The generic feature in Yoruba is syntactically similar to [_±specific] since it is not indicated by formative on the surface. A generic example is:

8. elédè máa ní je òkú (pig continue-to -ing eat corpse) 'the pig eats corpses' or 'pigs eat corpses'.

In 8, both elédè and òkú have the generic feature.

However, we shall not go into any details on features that are not represented on the surface by distinct formatives since many factors we do not intend to discuss here e.g. presuppositions (cf. quotation from Heringer) will be involved.

So, in this work, we use a feature framework for articles. We have an ART node under which the various article features that are relevant to surface structure formatives are represented. We shall however not discuss the various transformational rules that are relevant to articles e.g. those referred to by Postal as: pronominalization, definitization, segmentalization, article attachment, pronoun deletion, and genitivization.

1. Heringer, James T. "Indefinite Noun Phrases and Referential Opacity" in CLSP 5 (1969): 89.

In 6.22 we round up the discussion of the article in Yoruba. First in 6.221, we briefly discuss some of the formatives that we shall treat as articles, and in 6.222, we complete the discussion by giving the necessary article features.

6.22 PRONOUNS, ARTICLES AND FEATURES OF THE ARTICLE

6.221 THE PERSONAL PRONOUN AND THE ARTICLE

It was once suggested by Postal that "the traditional personal pronouns are actually forms of the definite article."¹ In Postal's article, (see 6.21 above), he gave many reasons why English pronouns should be analyzed as articles. In his concluding section, he made a phonological observation that "there is no real [θ] - [ð] contrast in English", and noted that "voicing may be predicted in such elements in articles, the, this, that, these, those and in so called pronouns, they, them, their, (... these, thy, thine, thou)" so that "if we assume that pronouns are articles, these two environments are reduced to one."² Since such phonological similarities are observable for pronouns and articles in German and Spanish e.g. "the respective pronoun - definite-article similarities between er - der, sie - die, and el - el, ella - la"³ he concluded that his proposal for English pronouns may be extended to German and Spanish. It seems that one can use arguments similar to Postal's to point out that a combined treatment of pronouns and articles can be suggested for the Yoruba language as we have intimated in 6.21 above. So, in this section, we examine the relationship between pronouns and articles more closely and compare one form of the pronoun with the other. Therefore, no rules will be suggested in this section.

1. Postal 1970a: 76 see 6.21 above

2. Postal 1970a: 76

3. Postal 1970a: 76

Two different forms of the pronoun are possible in Yoruba. First, we have the conjunctive form¹ of the pronoun described as "unemphatic pronoun" in Afolayan 1968 and just as 'pronoun' in Bangbose 1966. Then we have the other form of the pronoun which is both conjunctive and disjunctive. This other form of the pronoun was called 'emphatic pronoun' and 'pronominal' in Afolayan and Bangbose respectively. We shall call it the disjunctive pronoun. Most of the arguments for the treatment of English pronouns as articles in Postal (1970a) can be applied to the two forms in the Yoruba pronoun system. For instance, just as English personal pronouns are definite (or marked [+definite]) in Postal (1970a), so are the two forms of the personal pronouns in Yoruba definite. So, we shall not attempt to provide points to prove that the two forms of the pronoun in Yoruba are forms of the article since that will just be tantamount to repeating Postal's argument with Yoruba equivalents of examples similar to his. Besides, such an exercise will lengthen this work unnecessarily. Hence, we shall just supply a different type of evidence to suggest that one form of the pronoun (the conjunctive and unemphatic variety) possesses more article characteristics than the other one (i.e. Bangbose's 'pronominal') while Bangbose's pronominal has more nominal or noun characteristics than the conjunctive pronoun.

The conclusion we intend to draw about the two forms of the Yoruba pronouns is that there is only one type of pronoun in underlying representation. In contrast to Bangbose's sharp distinction between 'pronominal' and 'pronoun', this appears to be also in the spirit of the non proliferation of structural categories (in chapter V above). Thus, the underlying pronoun is an article, and since the only surface form which retains most of the article characteristics is the 'unemphatic' or conjunctive pronoun, it is nearer the underlying

1. The Yoruba conjunctive pronoun is similar to pronoun forms like je of je parle 'I speak' in French, but the disjunctive pronoun is not as similar as one would have expected to French moi in c'est moi 'it's me' or 'it is I' because it is also used conjunctively.

pronoun than the 'emphatic' or disjunctive variety. The disjunctive form is then the surface representation of the underlying pronoun in structures where the conjunctive is excluded (e.g. in disjunction, conjunction, emphasis, modification etc. - see below). Thus, the conjunctive pronoun which retains many article features on the surface (thereby calling attention to the article source for pronouns) is additional justification for Postal's proposal that pronouns are articles in underlying representations.

We now consider the conjunctive and disjunctive forms of the pronoun. The two forms of the pronoun are represented as 1 and 2 below:

1. Disjunctive pronouns: (a) ami 'I', (b) iwo 'you' singular, (c) oun 'he/she/it', (d) awa 'we', (e) ayin 'you' plural, (f) awon 'they'.

2. Conjunctive pronouns: (a) mo 'I', (b) o 'you' singular, (c) o 'he/she/it', (d) a 'we', (e) a 'you' plural, (f) won 'they'.

For the purpose of this exercise we shall not discuss the various cases of these items e.g. mi 'me' - (the objective case) and 'my' - (the genitive) etc., nor shall we consider other uses of some of the pronouns e.g. the honorific use of the second and third persons for singular human beings. Although the elements in 1 are referred to as 'disjunctive pronouns', they are also found in environments where conjunctive pronouns occur. We use the terms 'disjunctive' and 'conjunctive' to distinguish between the two forms of the pronoun here mainly to avoid saying 'Bangbose's pronominal', or Afolayan's 'unemphatic pronoun' etc. when we refer to the items. As we shall observe later, the difference between 1 and 2 is more than one of emphasis as Afolayan's nomenclature suggests. Also, Bangbose's distinctions 'pronominal' and 'pronoun' cannot be used to indicate the article characteristics of his 'pronoun' since if we say "'Pronominal' = [+PRO, +NOMINAL] and 'Pronoun' = [+PRO, +NOUN]", the distinction between the two forms will ultimately be a distinction between a nominal and a noun.

We now examine the syntactic restrictions on the disjunctive and conjunctive pronouns and show that the latter has more article characteristics than the former.

First, the conjunctive pronouns cannot be conjoined although the disjunctive pronouns can be e.g. there is no:

3. *mo ati ó lè lo sí Èkó (I and he can go to Lagos) for 'he and I can go to Lagos',

but we have:

4. èmi àti òun lè lo sí Eko (I and he can go to Lagos) 'he and I can go to Lagos'.

Note also that articles too are not conjoined. Hence we do not have:

5. *mo rí omọ kan àti nâ (I see child a and the) for '*I see the and a child',

6. *mo n fẹ́ lwe yí àti yẹn (I -ing want book this and that) '*I want this and that book(s)' (cf. discussion of conjoining in 6.21 above).

Secondly, the conjunctive pronoun cannot be disjoined although the disjunctive can be e.g. there is no:

7. *mo tàbí ó lè se isé nâ (I or he can do job the) for 'he or I can do the job',

but we have:

8. èmi tàbí òun lè se isé nâ (I or he can do job the) 'he or I can do the job'.

Note also that articles are not disjoined. Hence, we do not have:

9. *mo wà ní ilé kan tàbí nâ '*I was in a or the house',

10. *o lè fún mi ní yí tàbí yẹn (you can give me Trf this or that) for 'you can give me this or that'.

Instead of 10, we must have:

11. o lè fún mi ní èyí tàbí iyẹn (you can give me Trf this-one or that-one) 'you can give me this or that',

or we can expect:

12. o lè fún mí ní iwé yí tàbí ìyẹn (you can give me Trf book this or that-one) 'you can give me this book or that (one)'

Note that we must use ìyẹn 'that one' instead of yẹn 'that' in 12 since what is disjoined is a nominal and not an article. Thus, as we observed in 6.21 above, only the nominal forms of articles e.g. èyí 'this one' are conjoined or disjoined. The articles themselves are not disjoined.

Another significant difference between the conjunctive pronoun and the disjunctive pronoun is that the former cannot be qualified while the latter can be e.g. we have:

13. ìwọ burúkú yí (you bad this) 'you this bad person'

14. òun tí ó n' bọ (he who he -ing come) 'he who is coming'

but we do not have the conjunctive pronoun forms o and ó in the places of ìwọ and òun in 13 and 14 respectively. Hence, there is neither:

15. *o burúkú yí for 'you this bad person' nor

16. *ó tí ó n' bọ (he who he -ing come) for 'he who is coming'.

The fourth major difference between the conjunctive and the disjunctive pronouns is reflected in Afọlayan's names for the two forms viz. one is emphatic (or can be emphasized) whereas the other one cannot be. Note however that the contrast in emphasis occurs only where both forms are possible. Hence, ìwọ in 13, òun in 14, èmi in 8 and èmi in 4 are not the respective emphatic forms of the conjunctive pronouns o in 15, ó in 16, mo in 7, and mo in 3. So, we can say that at least in conjunction and in disjunction, the disjunctive pronoun is not an emphatic form of the pronoun since there is no unemphatic form for it to contrast with in such environments. And so, the distinction between the two forms of the 'pronoun' is not one of emphasis. Observe that it is even possible to emphasize the conjoined disjunctive pronoun forms and contrast this emphasized form with

the unemphasized form e.g. in èmi àti òun ní 'it is I and he'.¹ An emphasized form of the conjoined disjunctive pronoun forms in 4 would have given one:

4' èmi àti òun ní ó lè lẹ sí Eko 'He and I are the ones who can go to Lagos'.

Since the same form of the 'pronoun' is used in 4 and in its emphasized form 4' here, the distinction in Afolayan's use which calls the pronoun form in 4 the 'emphatic' and contrast it with the 'unemphatic' appears to be inadequate.

There are however, some minor points of difference between the disjunctive and conjunctive pronouns. But before we mention these minor points, one can note an apparent exception to the first major point above (i.e. the point on coordination). There is a peculiar form of coordination involving both the disjunctive and conjunctive pronouns. Through this construction, the objective form of the conjunctive pronoun will follow the disjunctive pronoun, and no conjunction will be used in the construction; but the result will be the coordination of pronouns. An example is:

17. èmi rẹ = disjunctive 'I' + objective conjunctive 'you' - 'you and I'

There is something curious about the construction in 17. If the persons of the pronoun concerned are first and second, the order can only be that of 17 and not one in which the second person precedes the first person.

And if we have only second and third persons, the second can precede the third but not vice versa e.g. while we have:

18. ìwọ rẹ = disjunctive 'you' + objective conjunctive 'him' - 'you and he'

19. ẹyin wọn = disjunctive 'you' plural + objective conjunctive 'them' - 'you and they',

we do not have:

1. We can recall from 1.33 that emphasis is done through a clefting process.

20. *àwón yín (for 15 - 'you and they')

21. *ìwo mi (for 13 - 'you and I')

22. ?òun rẹ (for 14 - 'he and you').

Thus, there is an order of pronouns viz. first before second, and first and second before third. For some speakers, 22 is possible probably only because of its phonological similarity to 17 in which rẹ 'you' is the second element in the constructions. But since 22 can only be possible in isolation but not in a Yoruba syntactic sentence, we will not consider it as a valid exception to the regularity observed. Thus, there are no sentences:

23. *òun rẹ ni kí ó jọ se isé nâ (he you is must he together do job the)
for 'you and he must do the job together'.

24. *òun rẹ ni kí ẹ jọ se isé nâ (where ó 'he' in 23 is changed to ẹ 'you' plural in 24).

25. *òun rẹ ni kí wón jọ se isé nâ (where the plural wón is substituted for the singular ó from 22).

whereas we have:

26. ìwo rẹ ni kí ẹ jọ se isé nâ (you him is must you together do work the)
'you and he must do the work together'.

Although the construction discussed from 17 to 26 looks like co-ordination, it is not exactly the same as coordination. For instance, in coordination, there is no mandatory surface order on the items conjoined similar to the irreversibility of persons in the constructions in 17. In normal coordination, if we have Ojo àti Aina 'Ojo and Aina', it will be possible also to have Aina àti Ojo 'Aina and Ojo', but in the above construction, if we have èmi rẹ (i.e. 17), then we do not have *ìwo mi (i.e. 21).

Secondly, coordination usually takes place between syntactic elements that are fairly describable as the same types or same categories etc. e.g. NP and NP, N and N, V and V, but not between different categories e.g. NP and S (for '*John and there was no milk there'), V and N (for '*decide and

London') where and implies coordination. But in 17, the elements concerned do not belong to the same conjoinable set. In particular, the members of the conjunctive pronoun class are never conjoined. So, we can say that the construction represented from 17 to 26 is a rare one.

One way of handling 17 to 26 is to suggest that the construction we have there is not coordination but a 'with construction' in which the with element is deletable provided the first person precedes the second and the second precedes the third. From this suggestion, we shall have 26 for instance as 27 where pèlú 'with' is later deleted.

27. ìwọ̀ pèlú rẹ̀ ní kí ẹ̀ jọ̀ sẹ̀ isẹ̀ ná (you with him is must you together do work the) '?you with him must do the job together' or 'you must do the job together with him'

Since the above suggestion can work for all the examples, we may not regard 17 to 26 as cases of coordination, but as 'with constructions' with ultimate 'with deletion'.

The minor points of difference between the conjunctive and disjunctive pronouns are often related to the third and fourth points made above: that the disjunctive can be modified whereas the conjunctive cannot be, and that the former can be emphasized although the latter cannot be. Since the conjunctive pronoun cannot be emphasized, it cannot be questioned, it cannot be denied whereas these three possibilities hold for the disjunctive pronouns. For instance, we can emphasize èmi 'I' through the clefting process discussed under emphatic structures in 1.33 above. Thus, we emphasize èmi by making it occur before the emphatic particle ni 'is' on the surface e.g.

28. emi ni (I is) 'it is I'.

Since 28 is possible, we can also question èmi either by using the sentence initial question word sé or the sentence final question word bí¹ together with

1. See question word - Qw - in 1.32(14 to 17) above.

the form in 28 e.g.

29. èmi ni bí? (I is Qw) 'is it I?'

30. Sé èmi ni? (Qw I is) 'is it I?'

We can also deny èmi by using the constituent negation formative kó 'not' with or without the emphatic particle ni 'is' e.g.

31. èmi kó (I not) 'it is not I'

32. èmi kó ni (I not is) 'it is not I'.

The disjunctive pronoun èmi can also be doubted through the use of the formative kè 'even' e.g.

33. èmi kè (I even) 'even me!'

Considering the conjunctive pronoun on the other hand, we find that we cannot have it before the emphatic particle since it cannot be emphasized. Note that this is a different type of argument from the one we used earlier when we stated that there is no contrast between emphasis and lack of emphasis for coordination and disjunction since here, the absence of the conjunctive pronoun is obligatory because we are dealing with the emphatic particle itself whereas in the earlier examples, the possibility of emphatic forms depends on the possible existence of unemphatic forms in the same environment. Thus, èmi is emphatic in 35 below because mo is also possible in a similar place in structure. cf. 34 and 35:

34. mo jalè (I steal) 'I steal' or 'I am a thief'

35. èmi jalè (I steal) 'I (myself) steal' or 'Do you say that I am a thief? You must be joking'.¹

Note that the difference between 34 and 35 is not exactly identical with that

1. cf. Bangboşe 1966: 107, "In those structures in which both pronouns and pronominals may occur, the pronominal is the emphatic equivalent of the pronoun." There is however not enough underlying syntactic evidence to support Bangboşe's "further step" of making the disjunctive pronouns "a distinct subclass of nouns" in footnote 68.

of emphasis since the speaker in 35 does not necessarily emphasize the fact that he is a thief (the fact of 34), but he may also doubt it. If we were given 34, then the speaker is a thief and he admits that he is, but one cannot infer that the speaker has stolen anything or that he admits he is a thief from 35. So, the absence of the conjunctive form before the emphatic particle is a different type of evidence from the one we used earlier on the possibility of contrasts.

As we have already indicated, mo 'I' does not occur before the emphatic particle. Thus there is no:

36. **mo ni* (I is) for 28 - *èmi ni* (I is) 'it is I'.

Since 36 is impossible, we cannot also have:

37. **mo ni bí?* for 29 - *èmi ni bí?*

38. **şé mo ni?* for 30 - *şé èmi ni?*

39. **mo kó* for 31 - *èmi kó*

40. **mo kó ni* for 32 - *èmi kó ni* and

41. **mo kẹ* for 33 - *èmi kẹ*

Observe that the impossibility of constituent negation for conjunctive pronouns, as examples 39 and 40 show, indicates that they are not contentives (cf. discussion of the characteristics of contentives in 5.6 above).

There are other minor points of difference between conjunctive and disjunctive pronouns e.g. the possibility of a high tone junction between NP's consisting of nouns, nouns plus their ancillaries, or disjunctive pronouns and VP's that do not start with certain formatives like kò 'not' or yíó 'shall, will' etc. This tone junction, described in Afolayan 1968 as 'normal successivity junction' does not apply when the NP consists of a conjunctive pronoun. But we need not go into details on such minor points since the really significant point to be made is that the conjunctive pronoun displays many of its article characteristics even up to surface structure.

From examples 13 to 16 above, we find that only the disjunctive pronoun

can be qualified. Thus, since the conjunctive pronoun is not qualified (cf. 15 and 16), whenever it occurs as the principal element in a NP, it must be the only element in that NP. Note that its being an NP principal of only one element is also related to the fact that it cannot be conjoined. In the cases mentioned in 17 above, it does not appear that the conjunctive pronoun is a principal element in the NP in such structures since what we have there cannot be validly described as coordination.

Moreover, if structures like 17 are interpreted as 'with constructions' with ultimate 'with deletion' as we suggested earlier, the problem of describing the conjunctive pronoun as principals in 17 to 26 will not arise since 'with constructions' (or traditional ablatives) do not normally constitute principal NP elements in most languages. We shall not go into discussions on 'with constructions', but we shall assume that they do not constitute principal elements in the constructions from 17 to 26 since the 'with construction' alone e.g. pèlú rẹ 'with him' in 27 cannot be the subject of the sentence we have there.

One may note that many of the differences observed between the conjunctive and the disjunctive pronouns resemble differences between articles and nouns. For instance, as observed earlier, articles too can neither be conjoined or disjoined. Articles cannot be qualified but nouns can be. For instance, there is no:

42. *kan tí mo rí '*a which I saw' (where kan is the indefinite article), although we have:

43. okúnrin tí mo rí (man which I see) 'the man whom I saw'.

Also, Yoruba articles cannot be emphasized although their nominal forms can be. Thus, we do not have 44 although 45 occurs:

44. *kan ni (a is) '*it is a'

45. òkan ni (one is) 'it is one'.

Since we consider that demonstratives too are articles here, the same

restriction holds. Thus 46 occurs but 47 does not:

46. *èyí ní* (this-one is) 'it is this'

47. **yí ní* (this is) for 'it is this'.

The syntactic dissimilarity of conjunctive and disjunctive pronouns is observable even when we do not have the 'nominative case'. Thus, in the 'objective case', only the disjunctive is qualified. Hence, although we normally have:

48. *diẹ nínú wa* (some among us) 'some of us',

we do not have 49 but only 50:

49. **diẹ nínú wa burúkú yí* (some among we bad this) for 50,

50. *diẹ nínú àwa burúkú yí* (some among we bad this) 'some of us who are all bad people' (i.e. we are all bad).

Nevertheless, both disjunctive and conjunctive pronouns still differ from nouns in other respects since Yoruba personal pronouns represented as 1 and 2 above have the article feature [+definite], they all have obligatory features for person and number (e.g. first, second or third person singular or plural), Yoruba personal pronouns are not used as generic noun phrases, and like articles, they can all be described as members of a closed set of items. Thus, the similarity of the disjunctive pronoun to nouns in 42 to 47 above does not constitute enough justification for taking Bamgbose's further step (in Bamgbose 1966: 107 fn. 68) of "making them (i.e. the disjunctive pronouns - SAE) a distinct subclass of nouns" unless we treat nominalized deictics like *èyí* 'this one' the same way.

From the preceding discussion we find that the Yoruba conjunctive pronoun even retains most of its article characteristics in surface structure representations. And the existence of these conjunctive forms of the pronoun, which lack most of the properties of contentives e.g. the possibility of constituent negation, conjoinability, possibility of clefting for emphasis etc. provides some surface structure empirical support for

Postal's suggestion that there is a common underlying source for articles and pronouns.

We shall end the present discussion by suggesting how the two forms of the pronoun are distinguished. Earlier, in 6.21, we suggested that the nominalizability of Bamgbose's deictics is one of the criteria used to distinguish between deictics and post-deictics. In 6.2222 below, we also suggest that the feature [+intensive] is used to distinguish deictics which are [-intensive] from post-deictics which are [+intensive]. Then the feature [+PRO] from Postal is used to distinguish pronouns from other articles. When we have the features [+PRO], [+def(inite)] and person features like [+I] (see 6.2221 and 6.2222 below), the lexical formatives which match these features turn up on the surface as the conjunctive pronoun forms. But when we have [-PRO], [-intensive], and other necessary features, the lexical formatives which match these features turn up on the surface as Bamgbose's deictic elements in 6.21(1) above. Then, when the first set of items (i.e. [+PRO], [+def],...) articles are nominalized, we have the disjunctive pronoun forms. So, the noun characteristics of the Yoruba disjunctive pronoun (e.g. the possibility of clefting for emphasis, conjoining, disjoining, constituent negation etc.) come as a result of the nominalization of underlying [+PRO] articles and not because they constitute a "distinct subclass of nouns". When the second set of items (i.e. [-PRO], [-intensive] ... articles or Bamgbose's deictics) are nominalized, we have the nominal counterparts of articles which are listed as 6.21(3) above. The nominal counterparts of articles, like the disjunctive pronouns, also acquire their nominal characteristics (e.g. conjoining, disjoining, constituent negation (cf. èyí kò 'it is not this one'), possibility of clefting for emphasis (cf. èyí ní 'it is this one'), possibility of modification (cf. èyí gíga inú wón of 5.32(10) above), possibility of questioning, doubting etc.) as a result of the nominalization of underlying [-PRO] articles. Thus, Bamgbose's deictics are distinguished from the Yoruba

conjunctive pronouns mainly through the person features and the [+PRO] of 6.2221; and the differences in surface realization (e.g. the possibility of having conjunctive pronouns as single element NP's vis-a-vis the deictics which do not constitute single element NP's) come as a result of their different specification on [+PRO]. Since we have not yet discussed features of the pronoun, we shall soon end the discussion here and turn to features of the pronoun. Meanwhile, we may make two comments on the description of Yoruba pronouns.

First, we note that other pronoun forms e.g. the indefinite pronouns of Ward 1952 i.e. enikéni 'anybody' etc. can also be developed from the article since they will be distinguished from the personal pronouns mainly through the article feature [+definite] and the absence of first and second person article features.

Secondly, we may state a language specific distinction which is relevant to our present suggestion on the treatment of conjunctive and disjunctive pronouns. We can distinguish between lexical and deictic ancillaries. A lexical ancillary is a member of an open set of elements which does not have to be nominalized before it operates as the principal element in a Yoruba noun phrase and which also has the characteristics of Yoruba contentives. A deictic ancillary is a member of a closed set of elements which must be nominalized before it acquires the characteristics of contentives. Through this definition, we exclude surface post-deictic elements, prepositions, and conjunctions since they are not nominalizable, and consequently, they do not constitute deictic ancillaries. Note that 'deictic ancillary' is not an alternative to 'article' since post-deictics are articles but they do not constitute deictic ancillaries. Note also that 'deictic ancillary' refers to the closed set of [+PRO] articles since they must be nominalized like [-PRO] articles before they acquire properties of contentives. Then surface post-deictics can be called

'peripheral ancillaries' since they occur mainly on the periphery of surface NP's.

The distinction made is language specific because Yoruba nouns, attributive adjectives, numerals and quantifiers are not nominalized before they operate as NP principals or before they have features of contentives like conjoinability, constituent negation, possibility of clefting for emphasis etc. However, [-PRO, -intensive] articles like yen 'that' must be nominalized to forms like iyen 'that, that one' etc. before they acquire features of contentives.

Thus, the closed set of elements that constitutes disjunctive pronouns and nominalized deictics lose most of their article features and acquire features of nouns mainly as a result of nominalization processes. In this way, one may explain the syntactic similarity of disjunctive pronouns to nouns and the syntactic similarity of the conjunctive variety to surface deictics.

6.222 FEATURES OF THE ARTICLE

6.2221 SOME PRONOUN FEATURES

We now consider the features that will be relevant to the article in the Yoruba NP. We start with the pronouns. This will be followed in 6.2222 by features for what were treated by Bamgbose as deictic and post-deictic qualifiers.

The features we use for the pronoun are the two person features [I] and [II] (found in Stockwell et al or ego and tu in Lyons 1968) as well as the plurality formative [+plur]. Although Postal made a strong case for [III] as a person feature because there are more than four types of combination in the plural,¹ we do not feel that it is necessary to introduce

1. Postal 1970a: 75. We use feature representations like our [+II] and Postal's [III] as alternatives.

[III] just to account for two extra distinctions in the plural while at the same time permitting two distinctions for the plural that are non-existent viz. [-I, -II, -III] and [+I, -II, -III].¹

Secondly, it is not necessary for all the distinctions between the inclusive and exclusive uses of the pronoun to be explicitly indicated at the same level. We can suggest that there is a feature changing device such that certain combinations of features merge to other combinations on the surface as a result of a feature changing or feature adding operation. For example, we can set up the personal pronoun as 1 below. Then through a feature adding operation, certain combinations may merge to some of the plural forms we have in 1:

- 1(a) [+def, -plur, +I, -II ...] = èmi 'I'
(b) [+def, -plur, -I, +II ...] = ìwo 'you' singular
(c) [+def, -plur, -I, -II ...] = òun 'he/she/it'
(d) [+def, +plur, +I, -II ...] = àwa 'we'
(e) [+def, +plur, -I, +II ...] = èvin 'you' plural
(f) [+def, +plur, -I, -II ...] = àwon 'they'²

We leave out some features like [+PRO] meanwhile.

All that 1 says about the plural forms is that they need a plurality feature as well as a person feature. Thus, in addition to [+plur], (d) requires only [+I] while (e) requires only [+II] and (f) only [-I, -II]. However, since there can be an exclusive as well as an inclusive use of plural pronouns, we can set up the feature adding or feature changing device

1. Postal 1970a: 75

2. Not all the features needed for article specification will be indicated since many features (e.g. [-contentive]) are redundant features of articles. Hence, only the features necessary at particular stages will be indicated. So we shall not use dots every time to indicate that there are other features except on trees.

2 whereby a feature specified as negative could change to positive as a result of the operation. Observe that a process like 2 is implied by Postal's suggestion that "all noun structures start off in the deep structure as [-genitive]" and that "there are ... many ... origins for [+genitive], all of them transformational."¹ Whether Postal's process of changing [-genitive] to [+genitive] will be formalized as in 2 is a different matter. But since Postal allows all nouns to be specified as [-genitive] before some have the '-'s changed to '+'s through a genitivization process, we can say that the process of change for the genitive is a variant of 2 so that 2 is not a unique or ad hoc process. Moreover, a process which changes èmi àti ìwò (I and you) to àwa 'we' is needed anyway, and that is what 2 does. Thus we now have:

- 2(a) [+plur, -I, -II] + [+II] = [+plur, -I, +II] i.e. èvin 'you' plural
(b) [+plur, -I, -II] + [+I] = [+plur, +I, -II] i.e. àwa 'we' exclusive
(c) [+plur, -I, +II] + [+I] = [+plur, +I, +II] i.e. àwa 'we' inclusive

If we disregard the plurality features on both sides of the equality sign in each of 2(a) to (c), we find that one person feature specified as 'minus' in some representation on the left is changed to 'plus' on the right of the equality sign. Thus, in èmi àti ìwò (I and you) i.e. 2(c), one formative ìwò 'you (sg.)' is specified as [-I], but when èmi àti ìwò combine to àwa 'we', the 'minus' of ìwò in the [-I] feature specification is changed to '+'. Hence, on the right of the equality sign in 2(c), there is no '-' specification. We can then say that 2 represents the summary of a transformational operation which both creates the plurality feature and changes person features. e.g. when we have a derivation in which ?èmi àti ìwò ni èmi àti ìwò jò rí i (I and you is I and you together see it) becomes èmi àti ìwò ni a jò rí i (I and you is we together see it) 'you and I saw it together' i.e. 'we (inclusive) saw it together'.

1. Postal 1970a: 64

Thus, 2 represents the summary of the type of transformational process that takes place when you and I is changed to we. Whether we have Postal's III or not, the transformational process summarized as 2 is needed in syntax anyway. And besides, a process like 2 appears to be more satisfactory than a system in which III is introduced for the following reasons. First, it is not necessary for any of the person features participating in the operation in 2 to be specified as plural. Hence, 2(a) refers to cases when we add either 1(c) or 1(f) to [+II] since both $\text{\u00e0w\u00f3n} + \text{\u00e0w\u00f3} = \text{\u00e0yin}$ (they + you = you plural) and $\text{\u00e0un} + \text{\u00e0w\u00f3} = \text{\u00e0yin}$ (he/she/it + you = you plural). Thus, each of the examples in 2 describes two distinct situations so that theoretically, we have six distinctions in 2, and when we add these to the six in 1, we obtain twelve possible distinctions in the personal pronoun system. But in Postal's framework, we have only nine (i.e. the three distinctions in the singular and only six in the plural).¹ Thus, the fact that the inclusive \u00e0wa 'we' of 2(c) refers to two cases - when the second person is singular as opposed to the case when the second person is plural - is not accounted for.

A comprehensive list of the type of combination 2 provides can be given as:

- 3(a) \u00e0wa 'we' = (i) $\text{\u00e0mi} + \text{\u00e0w\u00f3}$ (I + you sg.), (ii) $\text{\u00e0mi} + \text{\u00e0yin}$ (I + you pl.),
(iii) $\text{\u00e0mi} + \text{\u00e0un}$ (I + he/she), (iv) $\text{\u00e0mi} + \text{\u00e0w\u00f3n}$ (I + they),
(v) $\text{\u00e0mi} + \text{\u00e0w\u00f3} + \text{\u00e0w\u00f3n}$ (I + you sg. + they), (vi) $\text{\u00e0mi} + \text{\u00e0yin} + \text{\u00e0w\u00f3n}$
(I + you pl. + they), (vii) $\text{\u00e0mi} + \text{\u00e0yin} + \text{\u00e0un}$ (I + you pl. + he/she),
(viii) $\text{\u00e0mi} + \text{\u00e0w\u00f3} + \text{\u00e0un}$ (I + you sg. + he/she) etc.
- (b) \u00e0yin 'you' plural = (i) $\text{\u00e0w\u00f3} + \text{\u00e0w\u00f3}$ (you sg. + you sg.) where both
formatives are not coreferential, (ii) $\text{\u00e0w\u00f3} + \text{\u00e0un}$ (you sg. + he/she),
(iii) $\text{\u00e0w\u00f3} + \text{\u00e0w\u00f3n}$ (you sg. + they) etc.

1. Postal 1970a: 75

- (c) àwɔn 'they' = (i) ɔun + ɔun (he/she + he/she) i.e. (he + he) or (he + she) etc. where the persons in the conjunction are not coreferential, (ii) ɔun + àwɔn (he/she + they) etc.

So, once a feature changing process represented as 2 is recognized, we can in fact have several types of feature combination which will adequately account for all the possibilities in the plural of the pronoun. And this can be done without the introduction of [III] as a person feature.

Secondly, we do not have feature combinations for non-existent distinctions similar to [-I, -II, -III] in Postal's proposal. So, this is at least a minor point in favour of using [I] and [II] instead of [I], [III], and [III].

Thirdly, in 2, we find that plurality is even derivable from the combination process alone (see comprehensive list in 3). Thus, the specification of plurality is redundant in the first or second part of each of the items conjoined by '+' in 2 since the '+' which combines the two person features also creates or derives a plurality feature (cf. 3a(i) and (iii)). Hence, in 2(a) for instance, either the part before the combination formative '+' i.e. [-I, -II] or the one after it i.e. [+II] can be in the plural. We call this 'inherent plurality' i.e. plurality not derived through the amalgamation process in 2.¹ Then, whether both parts are in the inherent plural, or in the singular, or only one is in the inherent plural while the other is in the singular, we still have the derived plurality feature in the derived personal pronoun features on the right of the equality sign. Thus, 2 shows us that several possibilities are open in the combination of person features with number features (like [+plur]) in the personal pronoun system.

Our observation on àwa 'we' is that it has both the plurality feature,

1. The fact that we use the term 'inherent' to qualify 'plurality' here does not mean that there is anything conceptually 'inherent' in plurality.

and the feature for the first person. And for the first person plural, the plurality feature is usually derived through a process similar to that illustrated by 2 since a combination of lwo 'you' (singular) or oun 'he/she' (singular) with emi (singular) is enough to create a plurality feature as in 3a(i) and (iii). It is only this created or derived plurality feature, reminiscent of 2 and 3(a) that the first person has in the plural.¹ The second person has both the derived plurality formative (e.g. for 2(a)) as well as the inherent plurality formative which may be found in 1(b) and in honorific uses of pronouns. The third person plural has the inherent plurality feature mainly, and it is only in 3c(i) that it has the derived plurality variety.

Observe also that we need the two distinctions between 'inherent' plurality (for several of the examples in 1) and the 'derived' for all the examples in 2 since the use of the plural form does not necessarily imply more than one person. The honorific² use of the plural personal pronouns

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1. It is possible to suggest that the plurality feature in awa 'we' is not derived in cases where people speak in choruses e.g. for 'we want peace'. But one can equally argue that every member of the group speaking in a chorus interprets awa 'we' as emi 'I' 'plus the others' in which case, we still have the derived plurality feature. For the royal plural also, one can say that the monarch's we is interpretable as 'I and my court'.
 2. The plural forms of second and third person pronouns often have the honorific usage when reference is made to single but respected second and third persons in discourse in many dialects of Yoruba. Until recently, certain northern Yoruba dialect areas (like the Ekiti for instance) did not have the honorific usage, and it seems that social pressure and lack of sympathy for their apparently 'outlandish' and 'disrespectful' use of pronouns from their southern neighbours have now forced them to adopt the honorific convention. However, there are still some variations in the honorific usage. For instance, some northern Yoruba speakers adopt only the second person honorific usage and never employ the honorific convention third person pronouns. Some use the plural of the third person as honorific only when the third person referred to is present but use the singular third person pronoun at other times. Also, some over polite individuals adopt the honorific usage for the modification of common nouns and proper nouns e.g. awon baba mi (plur father me) 'my father (honorific)' and awon daga Ojo (plur master Ojo) 'Ojo' or 'Mr Ojo' etc. So, variations in honorific usage suggests that it is still in a state of flux.

for single individuals (e.g. èyin 'you' plur. for a single individual) shows that we do not derive the plurality features the way we derive èyin in 3b(1) in such formatives. Thus, we cannot always guarantee that èyin 'you' plural comes from ìwọ 'you' sg. + ìwọ 'you' sg. In other words, only one individual is involved in the honorific examples, and the plurality feature of the pronoun in such cases is only inherent. We shall not however discuss the honorific uses of pronouns any longer.

Thus, for the Yoruba pronoun system, we use only the features [I] and [II] instead of Postal's [I], [III], and [III]. Then the derivational process represented as 2 will take care of the various distinctions of person combination that are possible in the plural. Before we leave the pronouns, we should discuss the àwọn we have been glossing as (plur) from chapter I.

One important point which we made earlier about the surface plurality formative found in expressions like àwọn omọdẹ (plur child) 'children, the youth' is that it has the features of the third person pronoun. For instance, the plurality formative àwọn like any other àwọn in Yoruba is specified as [-I, -II] i.e. as a third person. Hence, both the speaker and hearer are excluded when a speaker who is a child uses àwọn omọdẹ for 'children'. When the hearer is a member of the set, we have èyin omọdẹ (you child) 'you children', and when the speaker is included, we have àwa omọdẹ (we child) 'we children'. Thus, the plurality formative àwọn (plur) has the main features of the third person plural pronoun àwọn 'they', but they both differ on the features [PRO] and [definite]. While all the personal pronouns are marked as definite i.e. [+def],¹ the plurality formative àwọn is not specified on definiteness. Hence, the feature [+def] is irrelevant to the plurality formative.

1. cf. Postal 1970a: 58 - "... it is fundamental to my basic claim which is that the so-called pronouns, I, our, they, etc. are really "articles," in fact types of "definite" articles." (quotation marks on articles and definite are Postal's.

There are still other senses of àwon like the one followed by the restrictive relatives e.g.

4. àwon tí ó sùn (plur who he sleep) 'those who slept'

which on the surface may be interpreted as demonstrative. Nevertheless, the differences between various forms of àwon are manipulatable as minimal feature distinctions since all Yoruba àwon formatives (e.g. the third person plural pronoun, the third person singular honorific, the plurality formative and the apparently surface demonstrative) have the underlying features: [+plur, -I, -II]. We shall comment on surface àwon kan 'a certain group of people' at the end of this chapter. At present, we can say that there is only one other Yoruba àwon formative apart from the pronoun àwon 'they', and that these two àwon formatives differ only on the feature [PRO]. So, àwon 'they' is specified as [+PRO] while the other àwon is specified as [-PRO].

Now that we have discussed the features of the pronoun, we can examine other features that are relevant to the article. The other article features are discussed in 6.2222.

6.2222

OTHER ARTICLE FEATURES

We end this chapter by examining the remaining features of the article. We take over article features like [±far], [±wh], [±dem], [±gen], [±spec] from Stockwell 1968 although the last two features will not appear on our tree diagrams since they are not relevant to the surface realization of our article formatives. Some of the features we take from Stockwell et al are found in Postal too. Then we add two features [±all] and [+int] (i.e. intensive). The features will now be illustrated.

We use [±dem] for the demonstratives - yen 'that' and yí 'this', and we use [±far] to distinguish one from the other. From 6.2221, we add [+plur] to complete the specification of all the demonstrative formatives. Thus we have:

- 1(a) [+def, +dem, -far, -plur] = yí 'this'
(b) [+def, +dem, +far, -plur] = yen 'that' or ní 'that'
(c) [+def, +dem, -far, +plur] = wòn-yí 'these'
(d) [+ def, +dem, +far, +plur] = wòn-yen 'those' or wonni 'those'

The plural forms of the demonstratives start with wòn which is the plurality formative for demonstratives. Unlike àwòn (plur), wòn is not specified for person since we have èyin wònyí (you these) 'you these people' although àwòn is incompatible with the second person.

The feature [+wh] is used in Stockwell et al. We use it for Bamgbose's deictic element wo 'which' (cf. 6.21(1) above). It occurs in examples like:

2. òkúnrin wo ni o ní bá sò òrò? (man which is you -ing with talk word)
'with which man are you speaking?' i.e. 'with whom were you speaking?'

However, [+wh] is needed for more distinctions than we had in Bamgbose's list. For instance, we also expect it to feature in other places. Most of the feature combinations in which [+wh] is relevant appear in 3:

- 3(a) [+def, +wh, ...] wo 'which', keló 'which one',
(b) [-def, +wh, ...] kí 'what', méló 'how many' ta 'who'.

In surface structure representations, items specified as [+wh, ...] are generally followed by the emphatic particle ni 'is' e.g. in:

- 4(a) òkúnrin wo ni o rí (man which is you see) 'which man did you see?'
(b) ilé keló ni òyèn (house which-position is that-one) 'which house is that?'
(c) omó méló ni Ojo bí (child how-many is Ojo beget) 'how many children has Ojo got?'
(d) kí ni? (what is) 'what is it?' etc.

The features [+spec] and [+gen] refer to specificity and genericness, and we have already mentioned these in 6.21 above. For these features, we have no overt surface structure formatives (cf. 6.21(5) for an example of a structure which contains a specific NP and 6.21(8) for one containing a generic structure).

The additional features we introduce are [+all] and [+int]. We use

[+all] for the universal quantifier gbogbo 'all' whose only similarity to other quantifiers is semantic. Thus, gbogbo has mainly article features whereas the other quantifiers we discussed in 5.2 are contentives. See Appendix III for a comparison of the universal quantifier gbogbo with the two main Yoruba relative quantifiers. Thus, gbogbo 'all' is a bound item like the articles, it does not operate in partitive constructions, it is not subject to constituent negation like the contentives, it does not operate as a single element NP, and it fails to satisfy Bamgbose's criterion for headship in the NP as we observed in chapter V above and in Appendix III below. Thus, both Bamgbose and Afolayan are correct in treating gbogbo 'all' together with other 'deictic' and 'post-deictic' categories. In this work, we provide the reasons why gbogbo 'all' is a 'post-deictic' element whereas none of the other quantifiers is. Moreover, we show that gbogbo 'all', a bound item, cannot be an adjective as Bamgbose suggested in footnote 76 since adjectives are contentives, and gbogbo is an exception to almost all the characteristics of contentives.

Now, if [+all ...] defines gbogbo 'all', we must look for what [-all] specifies. We can use [-all] for the indefinite article kan 'a', and the plurality formative àwọn (plur) will be unspecified on [+all] since the former is incompatible with gbogbo 'all' whereas the latter is not.

The feature intensive [+int] is introduced mainly for elements which occur as 'post-deictics' on the surface. It combines with various other features to produce items like gan (Bamgbose's gonon 'exactly; even' in 6.21(2) above), ná 'the, that very' (recall the ambiguity of ná from 1.4 above), páná 'too', nìkan 'alone' and kè 'even'. Thus, what most of the elements that occur on the surface as 'post-deictics' have together is the feature [+intensive],

and this is probably what is responsible for their failure to nominalize.¹ Note that in 6.21, we used nominalizability to distinguish items that turn up on the surface as deictics from those that turn up as post-deictics. Another way of stating this distinction is to suggest that articles that are specified as [-int] (i.e. not intensive) in underlying representations turn up on the surface as deictics whereas items positively specified for the feature intensive (i.e. peripheral ancillaries) turn up on the surface as post-deictics.

We may end the main discussion of the Yoruba article here. We note that it is impossible for us to discuss all the processes relevant to article formation. Hence, we did not discuss such processes e.g. genitivization, segmentalization, reflexivization, definitization, pronominalization etc. But we are able to show that the article should not be treated as a contentive like the elements discussed in chapter V. However, the non proliferation spirit of chapter V is still observable in our discussion of the article since items normally treated differently e.g. pronouns and articles, or formatives usually recognized as multiply ambiguous e.g. áwón (as a plurality formative, a third person plural pronoun, a third person singular honorific pronoun, an apparent surface demonstrative, an item referring to an unspecified number of people etc.) are shown to be closely related in underlying representations.

Next, we consider the structural representation of articles in the Yoruba NP. Since we recognize the article node in our structural representation, we may expect rules of the form NP ----> N ART, and so the ART

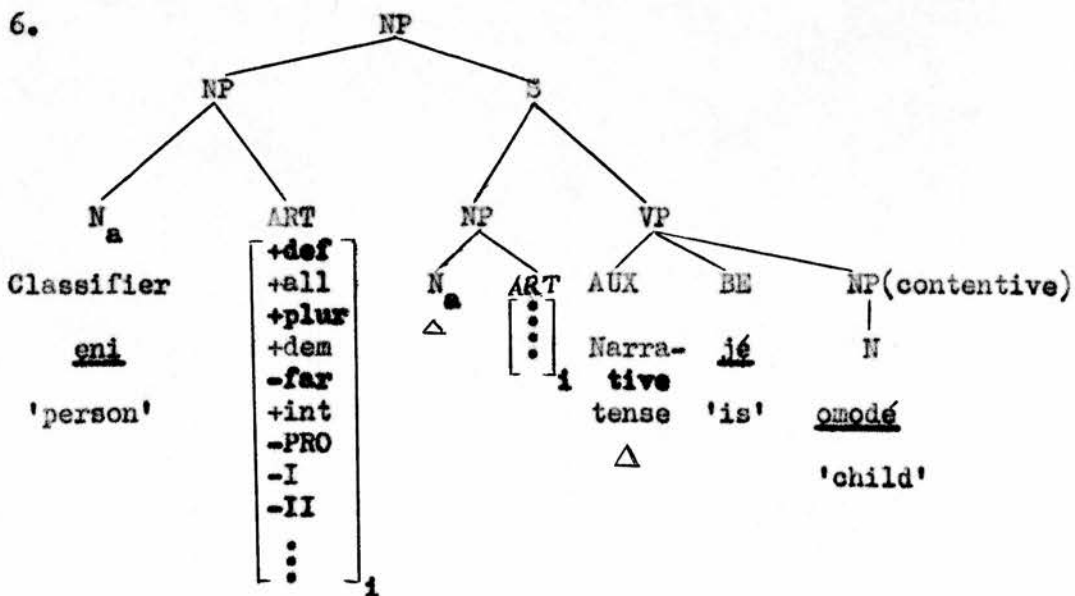
1. It seems that gbogbo 'all' is the only exception among the post-deictics since it appears neutral on the feature [+intensive]. But one may say that 'allness' is related to 'intensity'. However, the fact that gbogbo 'all' is neutral on intensity may be responsible for its occurrence also initially on the surface while the others occur only finally (i.e. before VP's) in surface structure representations. Thus, of all the 'post-deictics', only gbogbo 'all' can occur initially in surface NP structures.

will occur as a node on phrase structure trees.

But the article features we recognize will not be represented in the form of branching diagrams similar to that of Stockwell 1968: 145. We find that Stockwell and others cannot avoid the repetition of features in different parts of their branching diagram. For instance, the features [demonstrative], [wh], and [specific] are repeated in different parts of the diagram, and repetition of feature representation is inevitable unless features are all hierarchically organized. Note the similarity of the inadequacy of (branching) tree diagrams for article features to the one we observed in 5.52 when the features distinguishing members of the contentive are represented on a branching diagram.

So, what we do is that we expand a NP into N ART, and the article features that are relevant to surface structure formatives are represented in a long square bracket under the ART node. For example, we can have 6 tentatively as the representation of 5.

5. *gbogbo àwọn omodé wònyí nâ* (all plur child these the/even) 'even all these children'.



From the article features in 6, we obtain surface *gbogbo* 'all' *àwọn* (plur), *wònyí* 'these', *nâ* 'even'. We obtain *gbogbo* from [+all, +plur] since

omodé is [+count], we obtain àwon (plur) from [+plur, -PRO, -I, -II] since àwon (plur) is differently specified from àwon 'they' on the feature [+PRO]. We get the won of wònyí 'these' from [+plur] since it is a plurality prefix for demonstratives (see 1(c) and (d) above). We obtain the vi of wònyí from [+def, +dem, -far, ...]. Then nâ 'the/even' is obtained from [+def, +int, ...]. Note that not all the features relevant to each formative are indicated. For instance, all the articles in 5 and 6 are [-wh], and none of them has any specification on specificity and genericness. However, only the combination of the features appear on tree representation 6. Generally, we shall represent article features on trees in a combined form as in 6.

It appears that transformational rules may be used to insert the noun or contentive that is sententially derived in tree structures like 6 into the middle of surface article formatives since gbogbo 'all' and àwon (plur) usually precede other NP elements while demonstratives and article features marked as [+intensive] usually come at the end. Thus, if we have the article formatives in 7, and the noun omodé 'child', the usual surface representation is 8 where omodé occurs in the midst of article formatives:

7. àwon (plur) gbogbo 'all', wònyí 'these', gan 'exactly, even', nâ 'even, that very', kè 'even'.

8. gbogbo àwon omodé wònyí gan nâ kè (all plur child these exactly even then) 'even all these children!' (derogatory).

Observe that the three fairly synonymous 'post-deictic' elements gan, nâ, and kè in 8 emphasize the doubts expressed about the children.

It may be pointed out that the surface term 'post-deictic' is actually a misnomer since it also applies to gbogbo 'all' which occurs both finally (i.e. after 'deictics' or as a 'post-deictic') and initially (i.e. as 'pre-deictic') in surface NP structures. Thus, the surface term 'post-deictic' does not accurately describe all the items it is supposed to describe even

on the surface. Perhaps a more appropriate surface substitute for underlying [+all] or [+intensive] articles will be 'peripheral' (see 6.221). The terminological problems which terms like 'post-deictic' create are actually irrelevant in a generative grammar since transformations can be used to move the formative representing underlying [+all ...] article features to initial or final places in surface NP representations.

However, since our emphasis here is on underlying representations, we need not go into details on what happens to underlying structures before they become surface structures. So, we may just make one final remark about articles. It now appears that it is only when an NP has a [+PRO] article feature that what we treat as article features of NP's (e.g. the pronoun) can occur as the principal element in a NP. One can then generalize that unless [PRO] is positively specified, formatives that represent article features of NP's can only be NP ancillaries. Thus, although both àwon (plur) and kan 'a' in surface àwon kan 'some people' are [-PRO] article features, we recognize that the principal for surface àwon kan is usually specified as [+human] since àwon kan is generally used of human beings, and that is why it is interpretable as 'some people' etc.

It seems however that we can have a [-human] feature specification for àwon kan in contexts like àwon kan ti jera (plur a have decay) 'some have decayed'. Usually, what decays will be specified elsewhere in discourse when we have the example in the preceding sentence. We do not have this requirement when àwon kan refers to 'people'. Hence, the only generalization one can make is that a principal N has been deleted. It is not necessary for it to be specified as [+human], although that is the usual feature specification for àwon kan constructions. We may then remark that when only formatives that have [-PRO] article features occur on the surface for a Yoruba NP, we have got an underlying principal which may be specified as [+human] but has already been deleted before the level of surface structure. Thus, underlying article features like [+PRO] are even relevant for surface structure representations.

CHAPTER VII

7.0

CONCLUSIONS

We divide this conclusion into two parts. In the first part, i.e. in 7.1, we examine the procedure for the structural representation of elements within the Yoruba NP. Then, in 7.2, we give the final remarks.

7.1

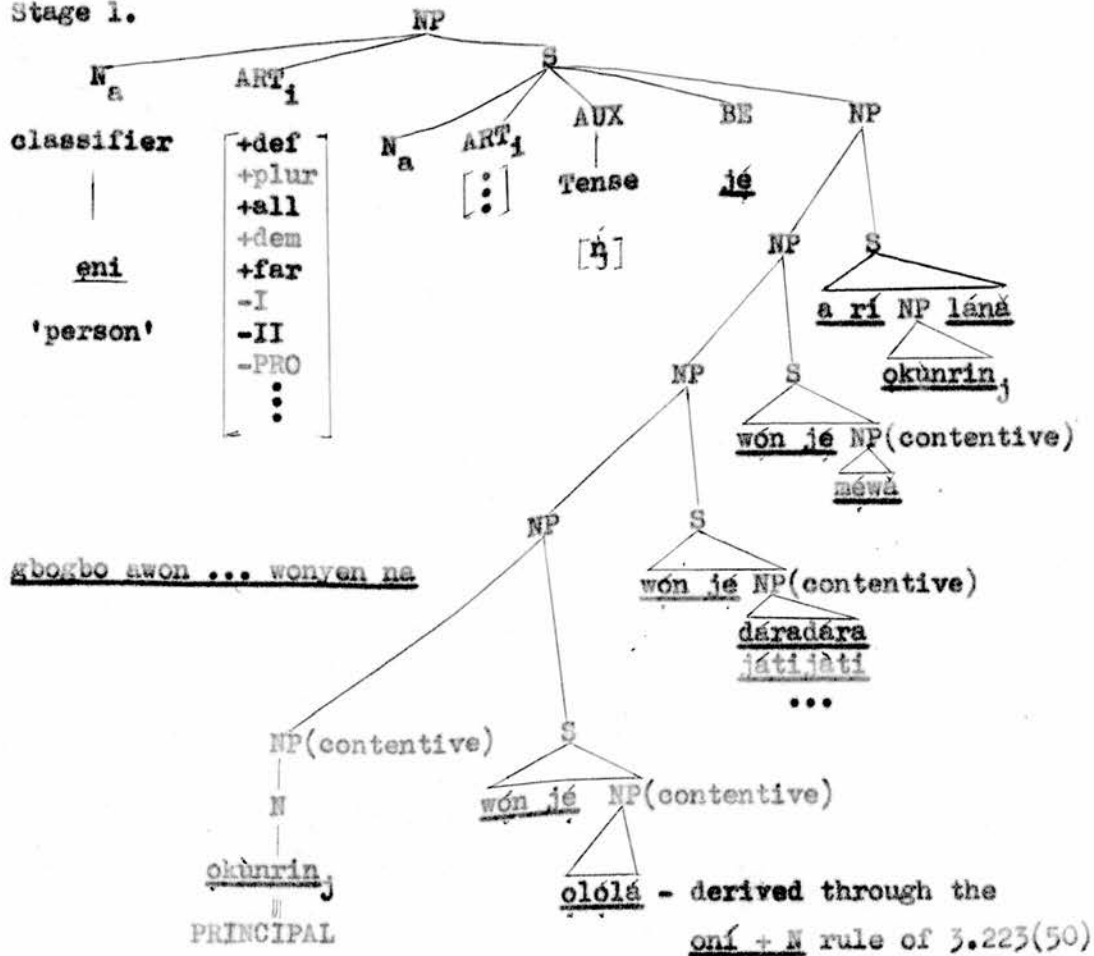
PROCEDURE FOR THE STRUCTURAL REPRESENTATION OF UNDERLYING NP ELEMENTS

In this section, we provide a tree diagram for a typically complex underlying NP in which many of the surface structure elements found in the representations we used in ^{1.41} ~~4.41~~ above are given underlying sentential derivation. Then, we suggest how further complexities within the already complex NP can be handled.

The tree structure we provide as example 1 i.e. 7.1(1) (on p. 359) will not be the deepest form since each of the elements dominated by the NP labelled 'contentive' in 1 will ultimately be derived from a structure similar to the whole configuration in 1. For instance, in 1, one NP (contentive) dominates mewa '10'. But the item mewá itself will come from a complex tree structure like 4.41(7) above. Besides, if mewá '10' in 1 were replaced with édégbàawá ó lé òjìdínlégbèta ó dín kan '19,559', then, the NP (contentive) which dominates mewá will be replaced with the NUMERAL NP of 4.41(7), and instead of the NUMBER NP_o section of 4.41(7), we substitute tree structure 4.42(9) which is the final tree structure for the morphological derivation of édégbàawá ó lé òjìdínlégbèta ó dín kan '19,559'. But note that the syntactic rewriting rule NP → NP S is repeatedly applied nine times in the derivation of '19,559' in 4.42(9), and yet, the topmost NP of 4.42(9) is not even what replaces the NP that ultimately dominates mewá '10' in 1. Hence, each of the NP(contentive) representation in 1 is expected to have a complex structure.

7.1(1) A tree diagram for 4.41(13) - gbogbo àwon okùnrin olólá dárádára méwá tí a rí láná wònyen ná 'even all those ten good honourable men whom we saw yesterday'

Stage 1.



Stage 2' - ((((((okùnrin)_{NP} wón je olólá)_S wón je dárádára)_S wón je méwá)_S a rí wón láná)_S .

2" - ((((((okùnrin)_{NP} olólá)_S dárádára)_S méwá)_S a rí ___ láná)_S

Stage 3' - gbogbo àwon eni tí wón ní je okùnrin₁ tí wón ní olá tí wón dára (wón je dárádára) tí wón je méwá tí a rí àwon okùnrin₁ láná wònyen ná.

3" - gbogbo àwon okùnrin olólá dárádára méwá tí a rí láná wònyen ná.

(If the number of men were '19,559', then develop the NP that ultimately dominates méwá '10' to the NUMERAL NP of 4.41(7), and replace the NUMBER NP₀ of 4.41(7) with tree structure 4.42(9).)

With the exception of the NP which is rewritten as N and later as okùnrin_j 'man', i.e. the principal, we used triangles rather than straight lines to show the connection between the NP(contentive) and the lexical items derived from them. The main reason for this practice is to suggest that each of the NP's will have a complex structure. The same triangle is used for another NP which dominates a coreferential okùnrin_j, but this is done to suggest that it has a complex derivation which is similar to the part of tree structure 1 from the topmost NP to the next lower NP on the tree. In other words, the triangle indicates that the final okùnrin_j and the okùnrin_j which occurs as the NP in the sentence a rí NP láná (we see NP yesterday) have the same complex structure.

Apart from the various NP(contentive) representations in 1, the S's which dominate them are not represented in their most primitive forms. For instance, certain syntactic processes like pronominalization and agreement would have applied before we obtain all the pronouns represented as wón 'they' in expressions like wón jé olólá 'they are honourable people' in 1. Thus, the S and NP representations in 1 actually stand for some more abstract and more complex structures. And it will be necessary to state that what we call stage 1 in 1 is just the first stage that is considered necessary for the purposes of our discussion rather than the most abstract underlying representation.

The stages in 1 are not strictly ordered. It may be assumed that stage 1 precedes both stages 2 and 3, but stages 2 and 3 are independent since different processes are discussed there. In stage 2, we were merely concerned with the type of bracketing that takes place in one part of the tree i.e. from the principal upwards, but excluding the classifier and determiner sections of the tree. Thus, in stage 2', we bracketed the NP's and S's the way we bracketed the numeral derivations for '19,559' in 4.42(9) earlier. So, at the bottom of the tree, we have okùnrin 'man';

and the closest sentence to it, as the brackets indicate, is the one which contains olólá 'honourable person'. The closeness of this S which contains olólá to okùnrin in underlying structures is reflected on the surface where the 'nominal qualifier' of Bamgbose 1966 (i.e. the equivalence of the olólá in 1) follows the 'head' (i.e. the equivalence of okùnrin in 1) directly. The next higher sentence to be bracket-ed contains dáradára 'good' which is realized as the 'adjective qualifier' or Bamgbose's 'j' on the surface. This is followed by the S which contains the noun that functions for counting purposes (i.e. the numeral) or Bamgbose's 'l' etc. In stage 2", we ignored all other elements in these sentences, and just allowed S's to dominate the lexical items that are significant for surface structure representations. Thus, the process described in stage 2 is independent of that in stage 3.

From stage 2, we can then say that the surface structure ordering of syntactic elements in the Yoruba NP reflects the type of bracketing that takes place at an earlier stage in derivation. But a discussion of the fundamental principles governing the surface ordering and underlying bracketing is actually beyond the scope of this work since it involves many questions that will be difficult to discuss satisfactorily here e.g. questions of *categoremata* and *syncategoremata*.¹

From the representation in 1, at stages 2' and 2", we find that what ultimately functions as the principal of the NP is developed from an NP node while the main lexical ancillaries e.g. olólá 'honourable person', dáradára 'good', méwá 'ten' etc. are developed from S nodes. This is how the principal-ancillary distinction of 5.51 is represented at the stage from which we start our discussion of structural representations.

1. See Dorrough D.C. "A Note on Primary and Secondary Syncategoremata" in Foundations of Language (5) 1969: 285-288, and G.R. Sampson "Good" in Linguistic Inquiry (1) 1970: 257-260 for two different views on syncategorematic words.

Note that each of the contentives which functions as an ancillary on the surface in 1 is still ultimately dominated by NP. Hence, if any of the ancillaries in 1 functions as the principal in another structure, it is this new principal that will appear in a structural position analogous to that of the lowest okùnrin_j in 1. Suppose we have a structure 2 which is different from 1 in that okùnrin_j occurs in 1, but it is absent in 2, and also why okùnrin 'man' is the principal element in 1, the principal in 2 is olólá 'honourable person'. The surface representation of 2 will then be:

2. gbogbo awon olola daradara mewa ti a ri lana wonyen na (all plur
honourable-person good ten who we see yesterday ^{those} the/even) 'even all those
ten honourable people whom we saw yesterday'.

The structure in 2 is similar to ^{1.42(16)} ~~the structure~~ above. The form of 2 that will be an analogue of the stage 2" of 1 above is:

3. ((((olólá)_{NP} daradara)_S mewá)_S a rí ___ láná)_S

and this shows that olólá 'honourable person' is now the principal since it is the only item that comes from the main NP as 3 indicates while others come from S's, and are consequently ancillaries. Thus, the principal-ancillary distinction as well as the surface structure order of ancillaries are reflected in the expansion pattern in 1.

In stage 3' of 1, we bring together the classifier element eni 'person', the principal, the sententially derived ancillaries, and the determiner features which were developed to gbogbo àwon ... wònyen ná. And we also allow the occurrence of the relative marker ti 'who, which' in stage 3', suggesting that the relativization rules of 2.1(6a and 6b) have already applied. The underlined elements àwon okùnrin₁ in stage 3' are coreferential with some other elements in the same representation.

Actually, not all parts of the representation in stage 3' are good surface structures. Hence, we included the one that sounds slightly odd

in brackets, but its more acceptable representation is given surface structure representation as tí wón dára (who they good) 'who are good' (cf. 5.31(16 to 18) above).

One significant observation from stage 3' of 1 is that the principal and main lexical or sententially derived ancillaries are completely enclosed within determiner elements. This is one of the cases where transformational rules will be used for the insertion of the principal and main ancillaries into the determiner elements. Transformations will also be needed when any of the ancillary elements is ordered to precede the principal on the surface e.g. in emphatic structures like kékeré ekún versus ekún kékeré 'small tiger' in example 5.51(13) above. So, the bracketing system for principals and ancillaries in stage 2 does not necessarily imply a definite or fixed surface structure order since transformations can be used to reorder some lexical ancillaries before the principal in surface structure representations. (Note that we now make a distinction between lexical ancillaries which are dominated by NP's at some stage in derivation and non lexical ancillaries which are developed from the determiner e.g. gbogbo àwon ... wónyèn nâ in 1.)

Thus, we find that the various relationships existing between the items which constitute the complex NP structure ^{1.41(13)} ~~2.41(13)~~ which was obtained by combining Afolayan's mhq proposal with Bangbose's expansion of q are representable at some earlier stages in derivation in the form of 1 above.

Although, ^{1.41(13)} ~~2.41(13)~~ is one of the most complex NP structures since it contains elements in all the recognized structural positions on the surface, it can still be complicated further. First, we examine a complication of numeral representations which involves the use of a discontinuous and recursive numeral instead of méwá '10' in 1. Secondly, we consider a complication of the adjective which involves the use of more than one adjective in structure, and finally, we discuss a complication in the form that occurs as

surface relatives. This involves both the examination of conjoined relatives and the distinction in representation between conjoined restrictive and conjoined non restrictive relatives in stages analogous to stage 1 in 1.

Suppose we substitute the recursive numeral: édégbàawá ó lé òjìdínlégbèta ó dín kan '19,559' for méwá '10' in 1. Then, as suggested in 1, if the number of men were '19,559', we should develop the NP that ultimately dominates méwá '10' in 1 to the NUMERAL NP of 4.41(7), and replace the NUMBER NP of 4.41(7) with tree structure 4.42(9). The complexity of this operation has already been mentioned. But we have not yet mentioned that it is also complex on the surface. In the underlying representation, when the operation is undertaken, we are going to have some representations involving the use of the classifier for cardinals - íye 'sum/amount', and if what we wanted to derive had been an ordinal, we would have expected the classifier for ordinals - ipò 'position' to occur in the representation. Suppose we concentrate only on the complex numeral and disregard other representations in 1. From the NP that dominates méwá '10' in 1, we would have derived a structure analogous to those we had in 4.41(5) e.g. for the cardinal and ordinal, we would have had the respective representations:

4. íye tí ó jé édégbàawá ó lé òjìdínlégbèta ó dín kan
(amount which it is 19,000 it plus 560 it minus 1) '19,559',

5. ipò tí ó jé édégbàawá ó lé òjìdínlégbèta ó dín kan
(position which it is 19,000 it plus 560 it minus 1) 'the 19,559th'.

But why representations like 4 and 5 for lower numerals like méwá '10' will later be realized as single words e.g. méwá '10' for the cardinal and kewá '10th' or íkewá 'the 10th' for the ordinal, a different situation obtains when we have numerals like those used in 4 and 5. Thus, if we ignore those representations in 1 which are not strictly relevant to our point here, and

substitute '19,559' for méwá '10', we would expect surface structures like 6 and 7:

6. áwon okúnrin tí iye wón jé édégbàawá ó lé òjídínlégbèta ó dín kan
(plur man who sum their is 19,000 it plus 560 it minus 1) '19,559 men'.

7. okúnrin tí ipò rẹ̀ jé édégbàawá ó lé òjídínlégbèta ó dín kan
(man who position his is 19,000 it plus 560 it minus 1) 'the 19,559th man'.

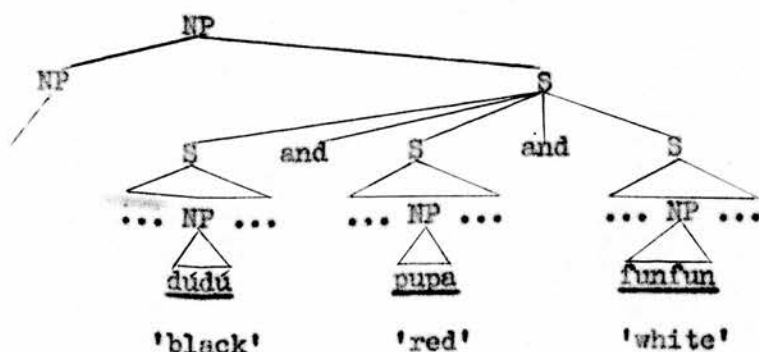
The main differences between 6 and 7 are found in the classifier used iye 'sum/amount' for the cardinal in 6 and ipò 'position' for the ordinal in 7, and also in the determiner feature [+PLUR] where the okúnrin in 6 is in the plural, but the one in 7 is not. The vindication which surface numeral representations like 6 and 7 that use classifiers give to the classifier proposal in chapter III has already been mentioned in 4.1 above. But one important point about 6 and 7 is that the complexity of each of the NP(contentive) representations in 1 is inevitable in some surface structure representations. Hence, such complexities are not merely methodological since some occasional inevitable surface structure complexities give full credence to them.

When a very complex numeral like the one used in 6 and 7 occurs in place of méwá '10' in 1, the surface structure representation is bound to be different from that in 1 since the inevitable occurrence of classifiers on the surface in 6 and 7 suggests that there should be some places where such classifiers and the relative marker that introduces them will be put in 1. Thus, there will be a relative clause representation of the complex numeral which is identical with the one we have after áwon okúnrin in 6. But in surface structure representations, relative structures which contain classifiers generally come last, that is, after relative structures which have no classifiers. We cannot go into details on this. But we can suggest that transformational rules should be used to permute the relatives which contain classifiers with the others.

Complexity of adjectival representation is different from that of the numeral probably because adjectives are not computed like numerals so that we do not have discontinuous adjectives inside which whole NP's can be inserted through T-rule 4.322(28) above. Nevertheless, complexity in adjectival representation can occur in two forms.

First, we may have a series of adjectives which can occur in any order. And secondly, as suggested in 5.31(20 and 21), there are instances

8.



where adjectives do not occur in just any order. For the first situation, we may suggest a tree structure like 8 where the unordered surface adjectives descend from conjoined sentences, and for the second situation, we have no tree representation meanwhile. 8 is obtained from that portion of tree 1 which is developed to NP S where the S part ultimately dominates adjectival forms like déradára 'good', játi,játi 'useless, reckless, feckless' etc.

The adjectives in 8 will occur in any order for examples like:

9. mo ní aṣo dúdí, pupa, àti funfun kan (I have cloth black, red, and white a) 'I have a black, red, and white cloth' (i.e. the cloth has three colours like some flags).

10. mo ní aṣo pupa, funfun, àti dúdí kan (I have cloth red, white, and black a) 'I have a red, white, and black cloth' etc.

Thus, when there is no strict ordering of adjectives on the surface, we have the tree representation 8.

However, adjectives, like numerals, are also sententially represented on the surface. One may recall our earlier quotation from Ida Ward in

5.12(1) that the sentential or relative clause form of the adjective "is often preferred to the descriptive adjective when there is one." Apart from the support which Ward's correct observation of Yoruba adjectival realization on the surface gives to underlying sentential derivation, her observation is also useful for the discussion of complexity in adjectival modification. For instance, when many adjectives modify a Yoruba noun, they are sententially represented on the surface. Hence, generally, complex adjectival representation in Yoruba will involve tree representations like 8 since there is no ordering when all adjectival modification is sententially represented on the surface. Hence, whether we use the set of adjectives in examples 9 and 10 (for which we have already suggested tree diagram 8), or the set in 5.31(20 and 21) (for which we have not yet made any decision), as soon as all surface adjectival representations become sentential, only tree structure 8 is needed. Hence, the adjectival examples in 5.31(20 and 21) could be sententially represented in any order in:

11. *ajá tí ó dúdú tí ó dára yen wùn mí* (dog which it black which it good that please me) 'I admire that dog which is black and which is good' i.e. 'I admire that good black dog' and
12. *ajá tí ó dára tí ó dúdú yen wùn mí* (dog which it good which it black that please me) 'I admire that dog which is good and which is black' i.e. 'I admire that good black dog'.

From our discussions so far, adjectives come from underlying sentences. Then, transformational rules can be used for the reordering of adjectives which have fixed non-sentential surface structure order. Such transformational rules would apply in examples like 5.31(20), where colour adjectives like dúdú 'black' precede evaluative adjectives like dáradára 'good'. But when these adjectives are sententially represented on the surface, such transformational rules will not be needed.

The third further complication of tree representation we consider

relates to complexities within that part of 1 which occurs on the surface as relatives. Suppose the NP in the S that dominates a rí NP lǎnǎ in 1 were replaced with a recursive relative structure similar to 'the house that Jack built' or the example used in 6.114(1), the NP that initiates further embeddings at each stage in such structures would come from the expansion of some of the S's introduced by earlier expansion rules so that we can even replace the okúnrin_j in the relative structure in 1 with that portion of 6.114(1) which starts from okúnrin tí ó lu obìnrin 'the man who beat the woman' to tí Bisi rà 'that Bisi bought'. This replacement will not constitute a problem for the tree diagram in 1 since the recursive occurrence of relatives, based on the substitution of a part of 6.114(1) for the higher okúnrin_j in 1, does not involve the rewriting of the S that dominates a rí NP lǎnǎ or the NP that dominates that S itself as any other symbol or group of symbols.

However, when we consider the conjoining of relatives, two problems arise. First, we noted from 6.13 that the distinction between the restrictive and non restrictive relative is similar to the distinction between the adjectival modification of a nominal category and an appositive representation of NP's. Hence, the distinction we drew between restrictive and non restrictive relatives in 6.13 must also be retained between conjoined restrictive clauses and conjoined non restrictive clauses.

Fortunately, we had already remarked in 6.114 above that examples that have the conjoined NP structure of 6.114(3) will be suggested for conjoined non restrictive relatives while those that have the conjoined S structure of 6.114(7) will be suggested for conjoined restrictive relatives. And we noted also in 6.114 that both representations 6.114(3) and 6.114(7) are valid. Moreover, the problem of a failure to satisfy the immediate dominance condition on relativization was adequately met by 6.114(3), and the problem of a failure to satisfy this condition for 6.114(7) was removed by our reformulation of

the immediate dominance condition of 6.1131(10) in the form of 6.114(8). So, all the technical problems which a conjoined NP source for conjoined non restrictives vis-a-vis a conjoined S source for conjoined restrictives have been handled in chapter VI above. Our only task here will then be an examination of how the differences between more complex restrictive relatives and more complex non restrictive relatives will affect tree diagram 1 above.

Let us suppose that the relative structure tí a rí láná 'whom we saw yesterday' in 1 is restrictive and it is conjoined with other restrictive relatives. In actual practice, it will be difficult to obtain a succession of conjoined restrictive relatives since most conjoined relatives in Yoruba are non restrictive. But it must be possible for us to account for it in syntax since our framework is generative.

So, if we have the conjoining of restrictive relatives, we rewrite the S that dominates tí a rí láná in 1 as:

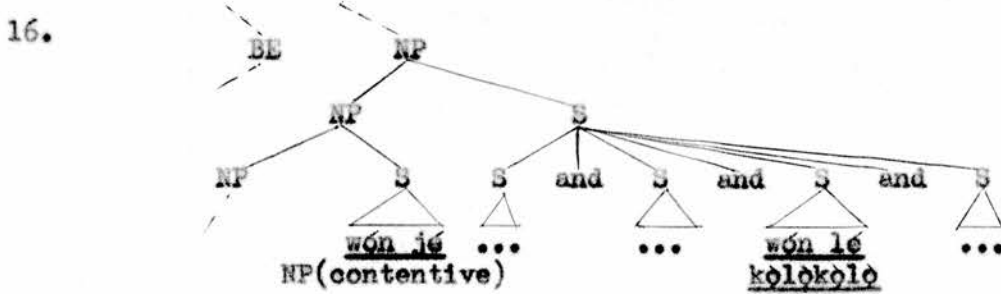
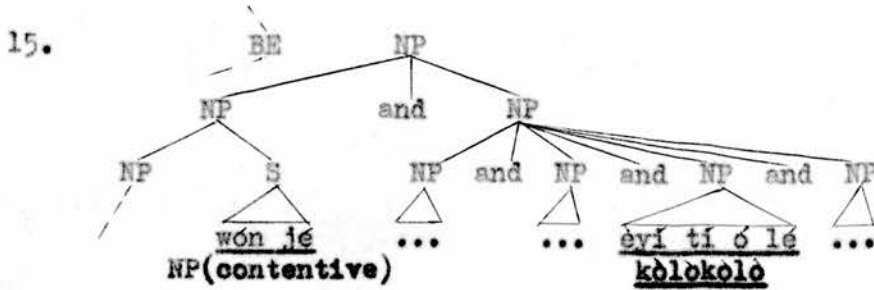
13. S ----> S and S and S and S ...

and each of the S's on the right of the arrow will be developed the same way as the S that occurs as a surface relative was developed in 1. Thus, the only problem which a representation like 13 for conjoined restrictives might have created was that of a failure to satisfy the immediate dominance condition on relativization. But this problem was solved through our reformulation of the immediate dominance condition as 6.114(8) above.

Then, when all conjoined relatives are non restrictive, we can rewrite the NP that dominates the relative S tí a rí láná in 1 as:

14. NP ----> NP and NP.

Then from the first NP on the right of the arrow we continue the rest of the process in 1 till we derive the principal through a continued reapplication of the NP ----> NP S rule. But we obtain the non restrictive relatives from the second NP which is further developed into conjoined NP's giving a tree diagram like 15.



In 15, each of the conjoined NP's that underlie the non restrictive relative has the internal structure of NP e.g. in èví tí ó lé kòlòkòlò (the-one who it chase fox) 'the one who chased the fox' or in the plural - àwón tí ó lé kòlòkòlò 'those who chased the fox'.

The tree representation for the conjoined restrictives will then be in the form of 16 where the relatives are dominated by S's, and the relative marker is first introduced to the left of the S that dominates the conjoined S's and is later copied to the left of each of the conjoined S's when they are given surface representation. The suggestion about copying the RM was first made in 6.114 during the discussion that led to the reformulation of the immediate dominance condition 6.1131(10) as 6.114(8). Thus, whatever each of the conjoined S's in 16 dominate will have the internal structure of a sentence e.g. in wón lé kòlòkòlò (they chase fox) 'they chased the fox'. And so, the differences between conjoined non restrictives and conjoined restrictives will be reflected in 15 and 16 respectively.

The case we have not mentioned so far is one in which restrictives and non restrictives are mixed. Thus, suppose the relative in 1 is restrictive and it is followed on the surface by a series of non restrictive relatives. We will still have a tree structure like 15, but where we had the first expansion of NP into NP S, the S will now dominate the restrictive relative

while the conjoined non restrictives will be represented as before. If it were possible for non restrictive relatives to precede the restrictive in surface structure representations, we would have had to use transformational rules for the permutation of restrictives and non restrictives, but it is impossible for non restrictives to precede restrictives on the surface in the same Yoruba NP, and so, the question of employing T-rules for permutation operations on this point does not arise.

Thus, we find that structural representation does not become impossible as a result of our earlier discussions on the underlying sentential derivation of individual members of different surface structure subclasses. On the other hand, from the preceding discussion, we can provide underlying representations which handle extremely complex surface structure phenomena in Yoruba NP's adequately. And besides, only a few syntactic rewriting rules are needed for this task even when deliberately complicated Yoruba NP structures are analyzed.

7.2

FINAL REMARKS

In our discussion of structural representation in 7.1, we suggested that each of the NP(contentives) in tree diagram 7.1(1) will be of the form 4.41(7) where the NP₀ of 4.41(7) eventually dominates what appears as a single lexical item on the surface. We observed that purely syntactic rules like NP ----> NP S are employed in the derivation of these NP(contentives), and we referred specifically to tree diagram 4.42(9) for the recursive numeral édégbaawá ó lé òjìdínlégbèta ó dín kan '19,559' as an example of the use of the recursive PS rule NP ----> NP S for (word) derivational processes. What we did not say at that time was that the part of tree structure 4.41(7) from the topmost NP to the NUMBER NP₀ that dominates the recursive numeral is also a representation of the NP ----> NP S rule. For instance the N which represents a classifier and the article features in 4.41(7) constitute a NP. Thus, we also have an application of the

NP ----> NP S rule for the introduction of classifiers. If we examine the topmost S in 4.41(7) also, we find that all the elements it dominates directly are analyzable as NP VP such that NP dominates N (and the article features) while VP dominates AUX BE NP. Thus, only the syntactic rules NP ----> NP S, and S ----> NP VP are used when classifiers are introduced. Hence, no special device was brought in for the introduction of classifiers into the description of the NP. And whether classifiers are introduced or not, the syntactic rules NP ----> NP S, and S ----> NP VP will be in the grammar anyway. So, no complication of the underlying structure accompanied the introduction of classifiers into the syntax of the Yoruba NP although the advantages of the classifier system, observed in chapters II, III, and IV, would have even justified a complication of the base.

We now have the recursive rule NP ----> NP S at all stages of the derivational process in the Yoruba NP. First, we use it for the derivation of lexical items. For instance, it is repeatedly applied up to nine times for the derivation of the recursive numeral '19,559' in 4.42(9). Very often, the rule is applied only once or twice e.g. - once in the lexical derivation of numerals like ogota '60' i.e. ogún ó jé onà méta (20 it is times 3) or (20, it x 3), and attributive adjectives that are reduced from underlying sentences e.g. òrò kátikàti (word nonsensical) 'nonsensical or useless topic' which comes from òrò₁ S, where S is further expanded as òrò₁ jé kátikàti (word₁ is being-nonsensical), - (see 5.31 above), and through a relativization transformation, we have òrò tí ó jé kátikàti (word which it is being-nonsensical), and finally òrò kátikàti 'nonsensical topic'. Hence, for complex lexical derivations in the Yoruba NP, we use the same syntactic rules as those found above the level P₁ of syntactic deep structure in the standard theory of generative grammar. Note that this point has already been made in connection with the derivation of èrinlélógójo '184' in 2.4 above.

Secondly, when classifiers are introduced in underlying representations

to show the underlying similarities of subclasses of elements which behave sometimes differently on the surface, it is the same NP \rightarrow NP S rule that is used as we observed at the beginning of this final section. The advantages of classifiers for subclasses within the Yoruba NP were discussed specifically in 2.2 and 4.1 earlier. As we observed in 2.2, the similarities between numerals which have a m-k- cardinal-ordinal alternation and those which do not have it are not observable from their surface structure behaviour. But in underlying representations where classifiers are used, the similarities are clearly portrayed, and we find that the absence of an analogue of kerinlélógósán '184' for the '184th' position is just a surface structure phenomenon (cf. 4.1 above). Now, only the purely syntactic recursive rule NP \rightarrow NP S of the categorial subcomponent is used when classifiers are introduced. But the structures which contain these classifiers often occur as single surface lexical items e.g. mérinlélógósán '184' and kerinlélógósán '184th', and they would have been 'inserted' as single lexical items at the level P_1 of syntactic deep structure. However, since the same NP \rightarrow NP S rule and other necessary rules e.g. S \rightarrow NP VP operate on elements greater than those normally inserted at P_1 , we now have the same phrase structure rule operating before 'lexical insertion' and after it in the intermediate level P_1 of syntactic deep structure. In 2.2, we saw that the same transformational rules e.g. relativization and pronominalization, operate before and after 'lexical insertion' at P_1 . Now, the same phrase structure rule also operates before and after 'lexical insertion'. It seems then that the actual definition of 'lexical transformation' in Chomsky's description of the level of syntactic deep structure (quoted as 2.2(1) above) will incorporate both categorial and syntactic transformational rules so as to account for generalities in the Yoruba NP. But the sharp distinction made between lexical and nonlexical (i.e. true syntactic) transformations in the definition of P_1 in Chomsky 1971

will now be called into question if 'nonlexical' (i.e. true syntactic) rules now operate before 'lexical insertion' at P_1 . So, at the level where words are derived, and at the level where classifiers are introduced, the usefulness of the NP \rightarrow NP S categorial rule bodes ill for the autonomous level P_1 of syntactic deep structure.

Thirdly, for the syntactic derivation of full Yoruba NP's (cf. 7.1(1) and the first paragraph of this section), it is also the same NP \rightarrow NP S rule that is used, and the same rule is applied and reapplied in 7.1(1) to illustrate the principal-ancillary distinction of 5.51 in underlying representations. We may say that in a syntactic framework which is based on the level P_1 of deep structure, this is usually the place where the NP \rightarrow NP S rule and nonlexical transformations will be expected.

But the fact that these same rules actually operate for the classifier proposal and for word derivational processes before lexical insertion at P_1 (i.e. between the P_0 and P_1 of the syntactic structure:

$\Sigma = P_0, \dots, P_1, \dots, P_n$ of the standard theory) makes them more valuable to us than they would have been had their sphere of operation been restricted merely to the single level between the P_1 and P_n of Σ in the standard theory. Hence, it appears that the 'basic theory' position that P_1 does not exist is more suitable than the standard theory position that it does for the syntax of the Yoruba NP since the NP \rightarrow NP S rule, the S \rightarrow NP VP rule and many true syntactic transformations of the standard theory naturally operate both before and after what would have been the level P_1 in an adequate 'standard' theoretical syntactic description of the Yoruba NP. So, if the autonomous level P_1 of syntactic deep structure is abolished, we will be saved the trouble of explaining why true syntactic rules that are by implication nonlexical also operate in sections where only lexical rules must operate.

We now make some final remarks on certain specific points in this work.

First, we consider ways of making time and place expressions satisfy the relativization condition of coreference so that wherever tí 'wh-' occurs on the surface, we have a relative structure. Then we examine types of decision that can be taken on derivations.

We can postulate for the underlying structure a preposition phrase which has an indefinite NP that is coreferential with the one that contains time and place words in examples like 6.1132(3 - 6) above. Then, the NP in the proposed preposition phrase may be definitized when it has surface structure representation, or the whole preposition phrase may be deleted when relativization transformations apply. For instance, (ní) ìgbà tí mo kókó rí Modupe ((at) time which I first see Modupe) of 6.1132(3) above can come from a structure that uses the syntactic rule $S \rightarrow ADV S$ such that ADV dominates a preposition phrase which is ultimately realized as ní ìgbà kan (at time a) 'at a time'. Then, since everything happens in time, a coreferential time adverbial structure can come from the expansion of the S on the right of the arrow in the above rule, and the immediate dominance condition of 6.1131(10) will apply to the ADV and S of the above rule rather than the NP and S specified in 6.1131(10). Then, what the relative modifies will be the NP ultimately dominated by ADV. From this proposal, whenever we have the surface relative marker tí 'wh-', we will always have a relative structure. Thus, it is possible for the occurrence of the surface relative marker tí to presuppose a relative clause at all times in Yoruba syntax.

Erasure transformations will now be needed for the deletion of the coreferential time expression. And the condition for deletion is that relativization takes place and the time expression is not definitized. For instance, if relativization fails to take place so that the RM tí does not occur in 6.1132(3), we will have the definitization of a time expression e.g. ní ìgbà kan ní mo kókó rí Modupe, ní ìgbà ná orun ní ó n sùn (at time a

is I first see Modupe, at time the sleep is she -ing sleep) 'it is at one time that I first saw Modupe; at the time (or at that time) she was sleeping'.

If relativization takes place on the above expression, the second time expression would have been deleted and we would have obtained: ni igbà tí mo kókó rí Modupe, orun ni ó ń sùn (at time which I first see Modupe, sleep is she -ing sleep) 'when I first saw Modupe, she was sleeping'.

Thus, the relativization operation for time expressions is an alternative for the definitization of the second time expression introduced in the present suggestion. However, the present suggestion does not solve all the problems of Yoruba relatives since there are still some more intricate problems connected with questions of anaphoric islands and referential and structural identity which are relevant to relativization, but which through lack of time and space are not specifically discussed here.

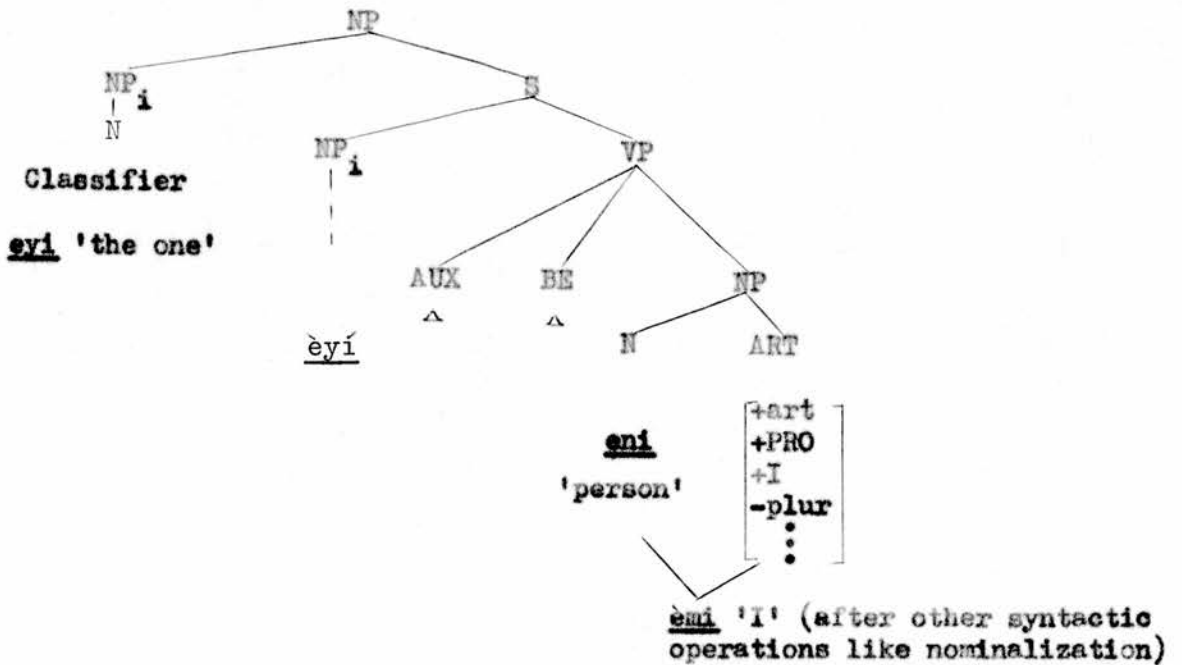
We now end the discussion here by making some further observation on the structural derivation of NP items. In 7.1, we concentrated on the derivation of deliberately complicated NP structures. Now, we examine simple structures. There is one significant problem connected with the derivation of simple NP structures usually of only one element e.g. pronouns, proper nouns, or a very few number of items e.g. àwon kan (plur a) 'a certain group of people'. The problem deals with which of the NP's in 7.1(1) for instance should develop the main article features for the whole NP. In 7.1(1), we attached the main article features to the topmost NP since the article features of 7.1(1) are actually features of the whole NP rather than features of any of the NP's represented as NP(contentive) in the tree structure there. This practice is good until we realize that items in the Yoruba NP are now sententially derivable, but there will be many NP's which sidetrack sentential derivation once main article features of the whole NP are represented as in 7.1(1). For instance, if one of the article features in 7.1(1) had been [+PRO], then we would have obtained a pronoun directly

from our first expansion of NP as N ART, and we would never have had any S on the derivational tree. Moreover, when we have only the article features in 7.1(1) and just the classifier eni 'person', we may derive gbogbo àwon (eni) wònyen ná (all plur (person) those the/even) 'even all those people' from the topmost NP directly, and sentential derivation would have been side-tracked again.

Since any NP can have article features, we may suggest that the main article features of the whole NP must be developed only from the NP that dominates the principal element in a structure like 7.1(1) or in any NP structure. Then very simple NP structures like those mentioned in the preceding paragraph will be sententially derivable since we do not have the principal in a structure like 7.1(1) until we have had an expansion of S. Suppose we have only one NP element on the surface (i.e. an unqualified principal), then the NP that follows the verb to-be in 7.1(1) will not be expanded into NP S but merely developed as the lowest NP in 7.1(1). Simple surface NP structures will be represented this way in underlying structures. See 1 below for a representation for èmi 'I'. Then, for surface structure realization, all structures from the NP that contains main article features will be raised and used to replace the topmost NP representation while the classifier, the auxiliary and the verb to-be are deleted. So, èmi 'I' would come from an underlying structure in which èmi 'I' occurs as the lowest predicate e.g. èyí tí ó ní jé èmi (the-one who it -ing I) 'the one who is I' while èmi 'I' later becomes the only element in the NP as a result of a successful application of the principle of predicate raising. For instance, since the NP that dominates èmi in 1 is the principal element in that structure, it is first raised¹ and used to delete the next higher NP

1. See McCawley's article on 'lexical insertion' in CLSP (4) 1968 for the use of a device known as 'predicate lifting' and Postal 1970b on the device called 'subject raising' in the discussion of the English surface verb 'remind'. The predicate raising device here is fairly similar to related constraints in generative semantics. And it appears that this may be the only special device here that is not in general use in the standard theory.

1.



which dominates a classifier and all the elements over which it is raised e.g. AUX, BE, and VP. Then, it is raised again and used to delete the next higher classifier and S; and since we now have one NP directly dominating another NP, it is raised once more and it becomes the dominant and only element in structure.

One restriction on predicate raising here is that progressive raising ends once the classifier of the raised element has been deleted. The purpose of this restriction is to prevent the lowest NP in structures (e.g. in 7.1(1)) deleting all other elements in structure so that we always end up with single element NP's or NP's with just one contentive plus only article features. Thus, when the numeral méwá 'ten' is derived in the numeral section of 7.1(1) through a deletion of the classifier for cardinals, we do not allow the derived méwá to delete any other item in 7.1(1) through raising. On the other hand, raising ends for numerals when méwá 'ten' is derived, it ends for adjectives when dáradára 'good' is derived, and subject to the observation made on where main article features are locatable earlier in this section, it ends for the principal element of 7.1(1) when gbogbo àwon okunrin wonyen ná (all plur man those the/even) 'even all those men' is derived. Note that this last derivation will now allow the deletion of the

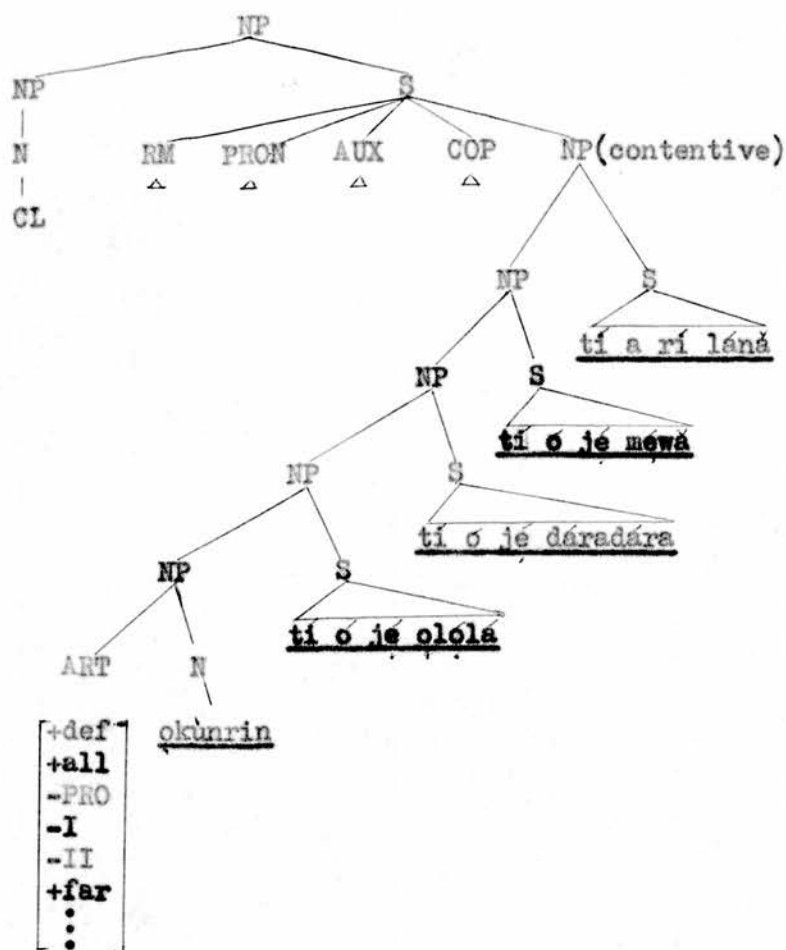
topmost NP in 7.1(1) with the principal element as observed in our discussion of 1 here.

There is one more observation worth making on the derivation of surface items. Not all classifiers that occur in underlying representations get deleted on the surface. Thus, there are occasions when predicate raising fails to take place so that our underlying representations are almost identical with the surface structure realizations. Examples of such occasions were given in ^{2.2}~~2.2~~ and 4.1 earlier during the discussion of the classifiers for cardinals and ordinals. This problem is actually not acute since all we have to do is to make the rule of predicate raising optional so that it fails to apply when underlying representations are almost identical with surface structure representations. And this is even advantageous for the proposal here since the fact that the main rule needed for the surface derivation of our underlying structures is optional shows that our underlying structures are not so abstract as to be totally unacceptable to the most committed proponent of the standard theory of generative grammar.

An alternative suggestion is that the classifier for each of the ancillaries can be deleted first, and the RM + S structure (i.e. relative sentence structure - cf. 6.113) remaining after classifier deletion be represented as on tree 7.1(1). Then a transformational rule is applied cyclically from the lowest NP S structure in a tree diagram like 7.1(1). And finally, the classifier for the principal is deleted. Since this alternative proposal can be illustrated on trees and by rules, we set up tree structure 2 as the new representation for 7.1(1). Then we apply rules 3, 4, and 5 below to them. In our expansion of NP from 2 to 10, the ART precedes N to facilitate the illustration of successive application of our T rules.

Now consider tree structure 2. At the stage where we have 2, the necessary relativization transformations have already applied, and so we have the relative marker RM ti represented on the tree in 2, and we expand NP as

2.



3. SI: [NP [RM PRON AUX COP NP]_S]_{NP}

	1	2	3	4	5	6	====>
SC:	1+6	∅	∅	∅	∅	∅	

Conditions: 1 is not a classifier, COP is je 'is' in a narrative tense.
 Conditions under which this rule does not apply are discussed in chapter V
 e.g. when the SI of rule 3 precedes the ninu 'among' of a partitive construction and the 6 of the SI is a noun or an adjective etc. So, 3 is optional.

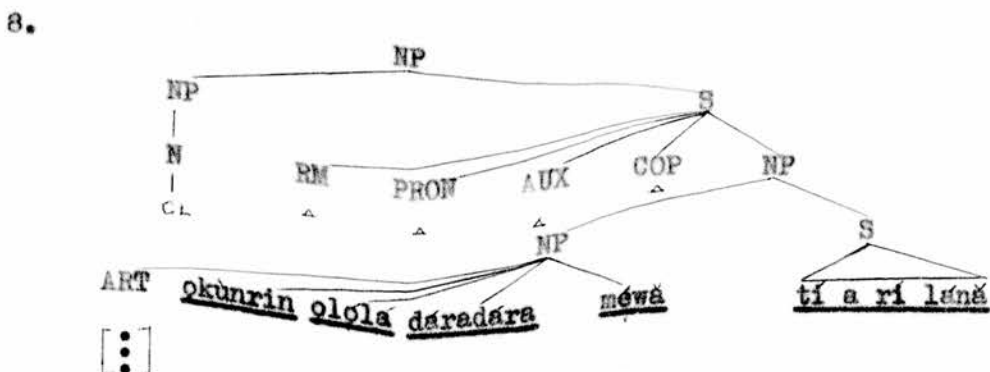
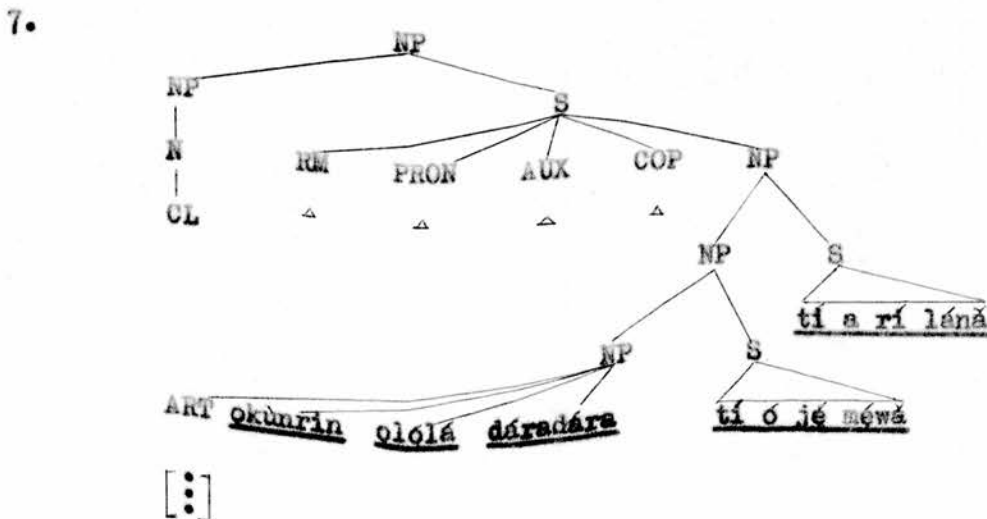
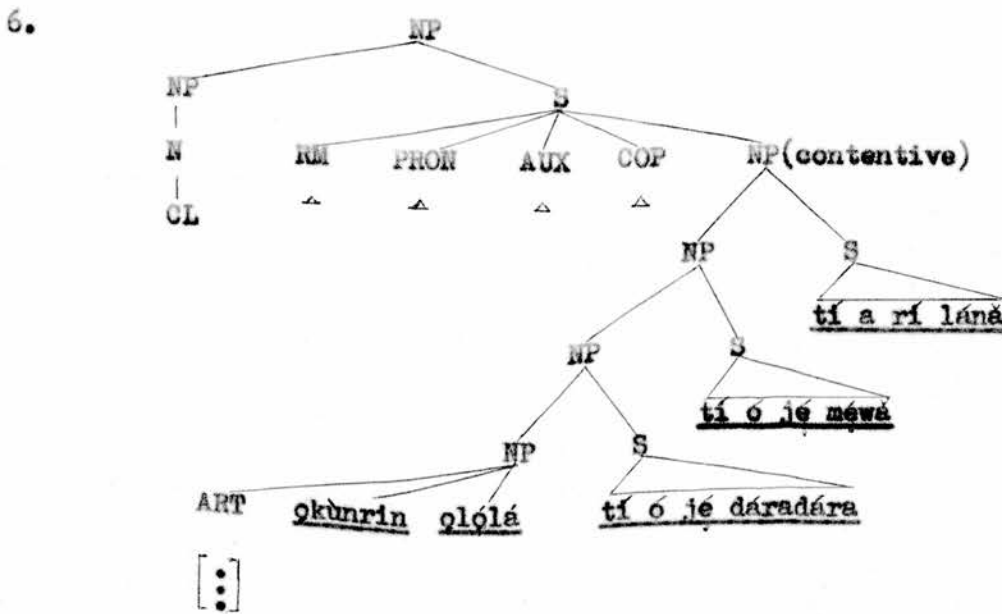
4. SI: NP S S

	1	2	3	====>
SC:	1	3	2	

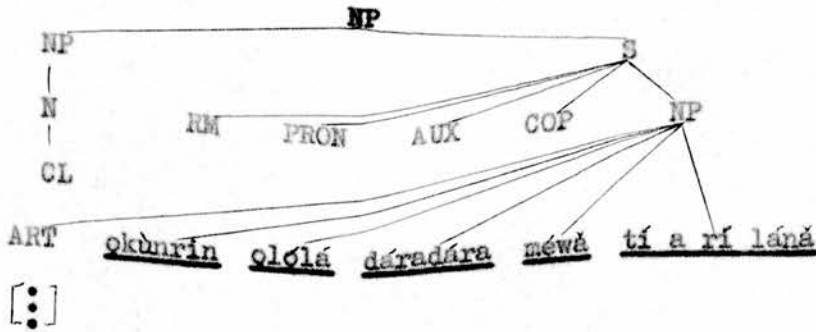
Conditions: The 1 and 2, and the 1 and 3 of the SI are analyzable as the SI of rule 3 and rule 3 fails to apply to 1 and 2 although it applies to 1 and 3. Rule 3 involves removing all elements under a S node, effectively deleting the S. When neither 3 nor 4 applies (e.g. in tree 8 to 9 pp. 381-2 since there is no COP in ti a ri lana) we still remove the S node for tree representational purposes since NP S is a NP.

5.	SI:	[NP	[RM	PRON	AUX	COP	NP] _S] NP
		1	2	3	4	5	6 ----->
	SC:	6	∅	∅	∅	∅	∅

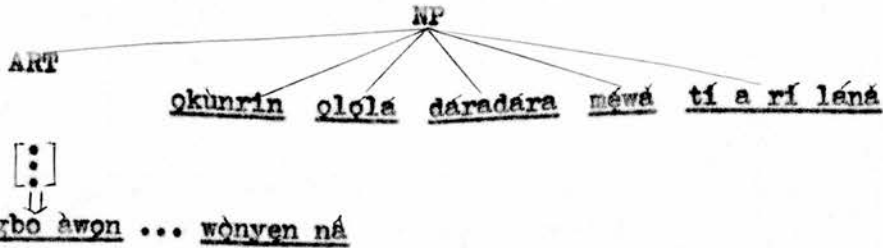
Conditions: 1 is a classifier, COP = je 'is' in a narrative tense, either T-rule 3 or T-rule 4 has applied, and the 6 of the SI develops the main article features.



9.



10.



= gbogbo awon okunrin olola daradara mewá tí a rí láná wonyen ná
 (all plur man honourable-person good ten who we see yesterday those even)
 'even all those ten good honourable men whom we saw yesterday'.

NP S where S is made up of the pronoun (derived through rule 2.2(6) above), the auxiliary, the copula and the NP which is a contentive (cf. 7.1(1)). The only classifier or CL representation in 2 refers to the classifier for the principal element. Rule 3 is a transformational statement of the alternative suggested for the earlier process of predicate raising. Rule 4 accounts for the occurrence of surface sententially represented ancillaries after non sententially represented ones, e.g. the adjective precedes the numeral in surface structure representations, but when the adjective is sententially represented on the surface, it occurs after numerals. Rule 5 is the final classifier deletion rule that applies to a tree diagram like 2 before we obtain the surface structure realization of 7.1(1).

Successive applications of the relevant rules from 3 to 5 lead to tree structures like 6 to 9. For instance, the lowest NP S representation in 2 satisfies the structure index of 3 since it contains a NP and the S contains

RM, PRON, AUX,¹ COP, a NP which is a contentive, and the first NP representation is not a classifier. So rule 3 applies to this NP S representation and we obtain tree representation 6. The lowest NP S configuration in 6 also satisfies the SI of 3, and when 3 applies, we obtain tree representation 7. We similarly obtain tree representation 8 ~~which~~ by applying 3 to the lowest NP S representation in 7. ^{See p. 380 for 8 to 9.} ~~which~~ Then, our 9 does not satisfy the SI of 3 since the leftmost NP there is still a classifier, but it satisfies the SI of 5, and since 3 to 5 are ordered rules, 5 can now apply. When 5 applies to 9, we obtain 10, and through segmentalization rules, the article features of the NP in 10 are developed into ~~formative~~ formatives.

Rule 4 does not apply to tree structure 2 or any of 6 to 9. But its effect is the transference of underlying sentential structures which are not reduced on the surface to a place after those that get reduced. It operates mainly on adjectives followed by reduced numerals when many adjectives qualify the same principal element since many such adjectives are usually sententially represented on the surface, whereas reduced numerals precede surface sentential adjectives. The forms of adjectives when sententially represented on the surface are different from what appear in 2 and 6. The representations in 2 and 6 are similar to the intermediate structure set up between predicative and attributive adjectives in 5.31 above. But we can state as a condition that the sentential representation of adjectives on the surface is one having the usual predicative adjective form (cf. ?tí wón jé dárádára and tí wón dára (wh- they good) 'who are good' in 7.1(1) above).

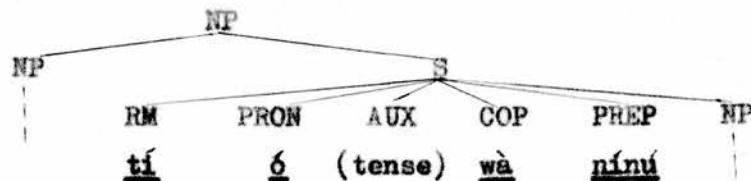
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1. The AUX will mainly refer to tense indication. In this case, we have a narrative tense, and as in the present example, it is not necessary for it to be indicated by formative in Yoruba structure. Thus, we accept the narrative tense of Bach 1968 for our underlying structures. In cases where we do not have narrative tenses, we also do not have copulative verbs (e.g. in examples like apàniyàn 'murderer' i.e. one who murders once, one who murders at all times, etc.). In such cases, the verbal element e.g. the pa 'kill' of apàniyàn is given surface structure representation although the AUX is deleted (cf. discussion in 3.5 above).

We shall not go into any detailed discussion of NP representations that have series of adjectives since the ratio of the adjectives which get reduced to those which have surface sentential realization is not fixed. But we suggest that when more than one adjective is reduced, each of the S's that dominates the adjectival element (cf. 7.1 above) is analyzable as the 2 to 6 of the SI of 3 above, and the transformation applies to each adjective in turn.

There is still one complex derivation we have not yet mentioned. This deals with partitives. It is possible to have diè nínú (some among) 'some of' or àwọn tí ó jé arúsbó nínú (plur who he is aged-person among) 'those who are aged among' before the surface representation of a complex NP structure like 7.1(1) or 2 above. There are some restrictions on what we can have a partitive on. For instance, a relative quantifier does not occur as a partitive element on NP structures which contain the universal quantifier gbogbo 'all'. Hence, we do not have *diè nínú gbogbo wa (some among all we) '?some of all of us'. However, since partitives still occur in other environments we may briefly examine how they will be handled.

The part of the NP that precedes the partitive formative nínú 'among, within' (i.e. ní + inú = at + stomach) is itself a NP. Hence, only elements that constitute full Yoruba NP's occur before the partitive formative. When we have single lexical items before the partitive formative e.g. the diè 'a few' of diè nínú wa 'a few of us', the single lexical items are also Yoruba NP's. In order to account for partitive structures without altering our previous rules and derivations, we can have a NP S structure like 11.

11. NP tí ó wà ninu NP (NP which it exists within NP)



(Observe that 11 is a derived structure since the relative marker in 11 arises only through the operation of a transformational rule like 2.2(6)).

The lowest NP or the NP that follows PREP in 11 will be developed the same way as 2 (or 7.1(1)). Through the repeated application of T rule 3 and any other relevant rule there, we obtain a structure like 10 for the rightmost NP in 11. The leftmost NP is similarly developed. Both NP's have the same principal element so that the principal element e.g. okùnrin 'man' will occur under both NP's and the one in the leftmost NP will be deleted after the operation of the partitive rule 12. The rule that deletes the identical principal element is 13.

12. SI:	[	NP	EM	PRON	AUX	COP	PREP	NP]	NP	
		1	2	3	4	5	6	7	7	----->
	SC:	1	∅	∅	∅	∅	∅	6	7	

Condition: COP = wa 'is/exists'

13. SI:	[	[	X	N	Y]	NP	PREP	[	U	N	Z]	NP	NP	
			1	2	3	3	4	5	6	6	7	7	7	----->
	SC:		1	∅	3	3	4	5	6	6	7	7	7	

Conditions: 2 = 6 and T rule 12 has already applied. U, X, Y, and Z are variables (cf. 1.52 above).

Through rule 12, partitives become NP PREP NP representations. Each NP has its own principal element. Rule 12 will apply to a structure containing the formatives in 14:

14. [[àwọn	okùnrin	tí	ó	jé	arúgbó]	NP	tí	ó	wà	nínú	[àwọn	okùnrin	dàradára	mẹwǎ	nâ]	NP	NP	([plur	man	who	he	is	old-person]	NP	who	he	exist	within	[plur	man	good	ten	the]	NP)
-------	---	------	---------	----	---	----	---------	----	----	---	----	------	---	------	---------	----------	------	-----	----	----	---	---	------	-----	-----	----	----	-------------	----	-----	----	-------	--------	---	------	-----	------	-----	------	----	---

When rule 12 applies to 14, the tí ó wà nínú in 14 becomes nínú 'among, within', and when rule 13 applies to what is derived from 14 after the application of 12, the okùnrin 'man' in the first NP of 14 is deleted and we obtain 15:

15. àwọn tí ó jé arúgbó nínú àwọn okùnrin dàradára mēwǎ nâ (plur who he is old-person within plur man good ten the) 'the aged ones among the ten good men'.

Note that the restrictions on contraction possibilities in partitives stated in chapter V earlier will affect the final output of the T rules. For instance, okunrin ti ó jé arúgbó (man who he is old-person) will normally contract to okunrin arúgbó 'old man' when subject to rule 3 above, but in partitives, such contractions are permissible when quantifiers and numerals occur as partitives of other elements, but not when nouns and adjectives occur as partitives. Hence T rule 3 will not apply to the NP which constitutes the 1 of the SI of T rule 12 when nouns and adjectives occur as partitive elements, but the rule applies for quantifiers and numerals since we have:

16. dié nínú àwọn okunrin dárádára mēwá nâ (few among plur man good ten the)
'a few of the ten good men' and

17. méta nínú àwọn okunrin dárádára mēwá nâ (three among plur man good ten the)
'three of the ten good men'

but not:

18. *gíga nínú àwọn okunrin dárádára mēwá nâ (tall among plur man good ten the)

One can recall from chapter V that gíga in 18 must be replaced with a sentential form like èyí tí ó gá (the-one who he tall) 'the one who is tall' before we obtain a grammatical sentence. So, our earlier observations on contentives in chapter V are relevant to the operation of the transformational rules used in the derivation of Yoruba NP's.

One decision we make which facilitates the derivation of surface NP's from underlying representations relates to the order of expansion of NP S structures in examples like 7.1(1) or 2 above. Thus, it is the sentence dominating the rightmost surface (contentive) ancillary that is developed first while the one dominating the leftmost (contentive) ancillary olólá 'honourable person' is developed last. On the other hand, it is the sentence that is developed last that the cyclic rule operates on first in the

transformational section of the grammar. It is possible to develop the sentential ancillaries in a different way, but there is no really good reason why the order of development of sentential ancillaries must be changed from the one we have here. If we change the order, we shall increase the burden of the transformational subcomponent of grammar since we shall now need a series of T rules for the rearrangement of ancillaries when given surface structure realization. At present, no such complication is envisaged, and through the application and reapplication of T rule 3 and other relevant rules, we obtain good surface structure representations for our underlying structures.

There are still other aspects of the NP that will require a detailed study. For instance, many syntactic processes in the Yoruba NP e.g. relativization, reflexivization, genitivization, pronominalization, complementation, definitization etc. and the conditions under which they operate can be given more detailed treatment within the present framework. Our comments on these other topics can only be suggestive. They cannot be final.

APPENDIX I

METHODOLOGICAL REMARKS ON ORTHOGRAPHIC REPRESENTATIONS HERE

The orthographic symbols used in this work have been introduced in 1.21. The representation adopted, however, offers certain methodological problems. In this appendix, we discuss three other possible alternative forms of representation: a phonetic transcription, the traditional Yoruba orthography and a 'more explicit' orthographic form. Our special concern is with the latter - the 'more explicit' orthography since the requisite degree of explicitness is at present undecidable. Note that our representation in this work is actually within the 'more explicit' orthographic form.

One general point about the various alternatives is that variations occur only in vowel representation and tonal indication and not in consonant representation since for each alternative, there are eighteen consonant symbols. Thus the only changes suggested for consonantal representations so far appear to be minor¹ e.g. Bangbose suggested: (a) that the syllabic nasal should be spelt n in all cases although it occurs as the sound [ɲ] before labials and [ŋ] before velar consonants,² (b) that the spelling nw and ny be replaced by w and y,³ and (c) that the double letters which he called "colonial spellings" should be replaced by single ones, and gh should be replaced by g.⁴ In none of these (Bangbose's major consonantal proposals) was there any suggestion that new symbols should be added to the inventory of Yoruba consonants, nor was there any feeling that existing consonant symbols should disappear. Note that the spelling nw for w was actually being used for some syntactic purposes. Thus, nwon 'they' was used for the subject of a sentence, while won

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1. See Bangbose 1966 and 1965 and also the recommendations of the Yoruba Orthography Committee 1969.
 2. Bangbose 1965: 13. A similar suggestion had been made previously in Ward 1952: 191.
 3. Bangbose 1965: 14
 4. Bangbose 1965: 15

'them/their' was used in all other places. But the suggestion that nw should be replaced by g does not affect the status of n elsewhere in the Yoruba language. The only major suggestion Bangbose considered concerned the relationship between [n] and [l],¹ but "a likely rejection" of the "innovation" made him abandon the project. Hence, the main representational problems eventually deal with vowels and the use of tone marks. Bearing in mind this general observation, we can now consider the various alternatives available.

A phonetic transcription of Yoruba lexical items will involve the replacement of only two of the consonant forms in 1.21 above with their phonetic correlates. So, for p and g, we shall have [kp] and [ʃ] respectively. But when we consider the vowels, many changes will take place since we shall now have ε, ɔ, ɛ̃, ɔ̃, ã, ũ, and ĩ for orthographic e, o, en, on, an, un and in respectively. Since there is a one to one correspondence of the phonetic and orthographic symbols, it appears the phonetic has very few linguistic advantages over the orthographic representation. And since the phonetic symbols are actually less manageable than the orthographic forms in any work where plenty of examples will be needed, it seems reasonable to prefer the more manageable alternatives to the phonetic forms.² We now turn to a consideration of the other alternatives since we were already committed to them from 1.21 above.

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1. Bangbose 1965: 6 cf. Bangbose 1966: 7 and 12. There were seventeen consonant phonemes on p.7, but eighteen consonants (including n) on p.12. And cf. discussion of the relationship between [n] and [l] in Appendix II below.
 2. The phonetic form is less manageable than the orthographic representation since it involves not only the use of exotic symbols at all times, but also the obligatory indication of tones in all cases even when there is no possibility of ambiguity or confusion in representations without the tone indication.

One is the so called traditional Yoruba orthography, the other is a more explicit orthography although there is no agreement yet on the degree of explicitness permissible. The two alternatives will be considered together. It seems that the main fault of the traditional orthography is its inexplicitness in indicating tones. Bamgbose¹ criticized features of the traditional orthography that arise precisely because those who devised the traditional orthography wanted to avoid the indication of tone. For instance, Bamgbose discussed "different spellings for the same vowel"² where ai in aiya 'chest' represents the same sound as a in aya 'wife'; or ei in eiye 'bird' represents the same sound as e in eye 'honour'. But those who devised the orthography could say that there was no need to use tone marks to distinguish àyà 'chest' from aya 'wife' since the use of the spelling aiya for 'chest' could perform the same task. However, those responsible for the traditional orthography failed to note the confusion their proposal could create for someone who knows that there is an àì prefix used for nominalization purposes in Yoruba, and that there is a Yoruba nominalization àiyà 'not calling' from ya 'to call' which can be confused with aiya 'chest'.³ (It is very likely that those who devised the traditional orthography experimented with eiye 'bird' before aiya 'chest' since there is no counterpart of àiyà 'not calling' for their eiye 'bird'.)

Another example of the sort of inadequacy just mentioned is found

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1. cf. Bamgbose 1965 especially his remarks on the tilde, his comments on ai and ei spellings, his suggestion for syllabic nasals and his ninth proposal that tones must be indicated in all places. p.31.
 2. Bamgbose 1965: 7
 3. Bamgbose 1965: 7

in the use of the tilde for double vowels. According to Bamgbose, 'the tilde is satisfactory' if it is used only 'as an indicator of a double vowel'. But he added: 'since a double vowel implies two tones, in practice, the tilde indicates both the doubling and the tones'.¹

However, when the traditional orthography was devised it appears that the tilde was expected to indicate only vowel doubling and not tone marks.

This fact can be inferred from certain remarks of Lucas:

The circumflex (~) is used to denote a double vowel or an abbreviation. In either case, the proper accent (i.e. tone mark -SAB) of each of the vowels composing the double vowels or appearing in the abbreviated syllables is omitted. These features make the language difficult for Europeans to acquire, and, as a matter of fact, very few non-natives, ever learn to speak the language with any degree of accuracy. - Lucas 1948: 12.

Thus, one infers from Lucas' comments that the tilde (or circumflex) was never intended to indicate tone marks although some modern writers and users of Yoruba now imagine that it represents both the vowel doubling and tone indication. Furthermore the practice of not indicating tones on double vowels creates difficulties for learners of Yoruba as Lucas has said. Ida Ward confirmed Lucas' statement when she discussed "the inadequacy and misleading nature of the mark ~ " for what she transcribed with double vowels as "oorun [---], oorun [/ -] and oorun [___]".²

It cannot be denied that the failure to indicate tone creates difficulties for users of the traditional Yoruba orthography. Many Yoruba readers used to complain about the difficulties created by the lack of tone indication and inconsistencies in word division in Yoruba

1. Bamgbose 1965: 13. Note that the two tones represented by the double vowel need not be distinct e.g. in Bamgbose's post-deictic gonon 'exactly; even' - Bamgbose 1966: 114.

2. Ward 1952: 187.

newspapers like Irohin Yoruba and in other publications like Aworerin in the early 1960's, and it is gratifying that scholars like Bamgbose stood up to the task of solving their problems by making proposals directed towards a complete Yoruba orthographic reform.¹ However, many of those who complained about the inexplicitness of orthographic representations also complained about the punctiliousness of modern orthographic representations, and in particular, many people now resent multiple vowel representations and the unnecessary proliferation of tonal diacritics in Yoruba texts. Thus, many people have not yet accepted the underlying assumptions which led to the change of what was traditionally written as alanu to ālááánú 'kind person',² and some even fear the inconvenience such a representation will create for them not only as readers (whose reading speed will be reduced owing to the direct encouragement the quasi phonetic representations give to subvocalization), but also as writers since they will not only have to write out the extra two vowels in each ālááánú representation, but must also have to indicate all the tone marks.

The inadequacies of the traditional Yoruba orthography have been recognized for many years. For example, long before the Yoruba Orthography Committee came out with its recommendations in 1969 (i.e. about thirteen years before Bamgbose's Yoruba Orthography was published), Ida Ward recognized both the need to indicate tones and the dangers of any excessive use of tonal diacritics:

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1. e.g. Bamgbose 1965, and his recommendations to the Yoruba Orthography Committee.
 2. See Appendix II for a discussion of the multiple vowel representations.

Since to mark every tone with accents would overload the page with diacritic marks, a practical suggestion would be to mark those words only where meaning might be misunderstood if no tones were shown. The context will often help the Yoruba in a particular phrase, but there are cases in which context is little guide. Ward 1952: 192

It is suggested in Appendix II that a phonetic representation might follow each lexical entry in the Yoruba monolingual dictionary for the benefit of interested learners and users of the language. This would enable us to reduce the problems created by excessive tone marking in Yoruba written texts. For instance, with or without tone marks, many Yoruba lexical items which contain four or more syllables can hardly be confused with other words even in minimum contexts e.g. arugudu is only [arúgùdù] 'confusion', since the tendency to succumb to tonal ambiguity decreases the longer a Yoruba lexical item is. Hence, it is rather uneconomical to put all four tone marks on words like arugudu each time they are used since the punctiliousness in tonal indication does not necessarily lead to a reduction in actual or potential ambiguity. So, in this work, undue punctiliousness in tonal representations will be avoided.

The other modern Yoruba orthographic practice that will be avoided here is that of multiple vowel representations.¹ Multiple vowel representations were introduced to solve some problems mentioned below in Appendix II, but the problems multiple vowel representations create are even greater than the problems they were set up to solve. Apart from the problems that multiple vowels create (discussed in Appendix II), the principle of vowel multiplicity is itself undecidable. We may just examine two instances of vowel multiplicity from Bamgbose 1966.

1. See Appendix II for an appraisal of multiple vowel representations.

First Bangbose transcribed the word traditionally spelt as gan [gaa] with two on's (where on is his replacement for all an forms). Hence his post-deictic gonon 'exactly; even' is the traditional gan.¹ The only reason for this transcription is that the word is usually (though not always) pronounced with a long vowel. However, there is another word traditionally spelt as wonni 'those' which must be transcribed as wononni following Bangbose's transcription of gonon. In fact there is more justification for a representation wononni than for gonon since the former is normally pronounced with a long on whereas the latter is not always pronounced long. The reason for this difference in realization relates to the tone pattern on the on's in both words. In wononni, the first on is on a low tone while the second one is on the mid tone; and the necessity to indicate this tone change makes Yoruba people pronounce wononni as [wɔ̀nɔ̀ni]. Another reason for this extra length is the obligatory occurrence of a 'mid tone syllable'² between ni 'that' and any word which precedes it. What one finds in Bangbose's transcription is that what could justifiably be written as wononni following his model for gonon, was retained in its traditional spelling form wonni. This appears to be an inconsistency in orthographic representations.

However, as we ^{indicated} ~~should have indicated~~ in Chapter VI, the won of wonni 'those' is a plurality marker corresponding to another won of wonyi 'these' - the plural form of yi 'this'. But the won of wonyi has no

1. Bangbose 1966:114

2. The expression dealing with the introduction of 'a mid tone syllable' is taken directly from Bangbose 1966: 101, and its use should not be misconstrued as suggesting that we necessarily support his views on syllabicity.

The point about ni and the obligatory occurrence of a mid tone syllable in the preceding item was recognized by Bangbose in his footnote 60.

long on vowel like the won of wonni since the obligatory mid tone syllable always introduced before ni 'that' never occurs before yi 'this'. So, if Bangbose transcribes wonni as wononni following his practice for gonon or gan, he would be making a generalization about plurality in the determiner system of Yoruba difficult to state. Hence, one can say that he did not apply the multiple vowel rule to wononni or wonni since it would destroy a generalization. Thus, inconsistencies in multiple vowel representations are inevitable if we do not want to destroy generalizations in other aspects of grammar e.g. in syntax.

The second point about the undecidability of vowel multiplicity relates to the conditional lengthening of the final vowels of certain words. We can use a generalization from Bangbose's grammar for this discussion. Bangbose made the point that:

1. When an item precedes a consonant-initial item which is a nominal (E5), a mid tone syllable is added to the final syllable of the preceding item. Bangbose 1966: 101.

2 is derived through the application of rule 1:

2.

	PRECEDING ITEM
<u>iyáa</u> <u>bábáa</u> wa	<u>iyá</u> ; <u>bábá</u>
mother father our	
'our grandmother' ¹	

If 1 is a true generalization, then the additional vowels after iyá and bábá in 2 will be superfluous since anyone who knows the generalization can use it to predict the addition of the 'mid tone syllable' to items that precede consonant-initial nominals. As one can observe from Bangbose's orthographic practice (see Appendix II and Bangbose 1965: 33), we shall have iyá in some representations and iyáa in others or noó in

1. Bangbose 1966: 101

one place and noóó in others although these additional vowels are actually predictable.

We made the observation in the above paragraph on the assumption that 1 is a correct generalization. Actually 1 is incorrect or too strong since it ignores one of the differences between possessive forms and some appositive structures where the former will have the junction he proposed and the latter will not. For instance, following his orthographic practice, one has these pairs of representations:

- 3(a) bàbá Tade (father Tade) 'Tade who is a father' and
- (b) bàbáa Tade (father of-Tade) 'Tade's father'.
- 4(a) bàbá Yemi (father Yemi) 'Yemi who is a father'
- (b) bàbáa Yemi (Father of-Yemi) 'Yemi's father'
- 5(a) bàbá Kogbe (father Kogbe) 'Kogbe who is a father'¹
- (b) bàbáa Kogbe (father of-Kogbe) 'Kogbe's father'.

Note that the tone on the first syllable of the second nominal in each of the representations in 3 to 5 does not affect the tone on the extra vowel of the first nominal. The (a) examples in 3 to 5 violate Bangbose's rule (i.e. 1); probably due to his failure to examine examples of appositive structures involving proper nouns or personal names when making the generalization. But the violation of 1 even exists when no personal name is involved e.g. in:

- 6(a) bàbá kápintà (father carpenter) 'an elderly person referred to as 'father' who is a carpenter'
- (b) bàbáa kápintà 'the father of the carpenter'.

1. The use of bàbá in appositive structures looks like the use of titles e.g. Dr or Mr. Hence, the person called bàbá is not necessarily related to any of the people using bàbá 'father' as a title for him. The title bàbá is just a title of respect which may be interpreted as 'an elderly man'. cf. example 6. The word baba is pronounced either as [bàbá] or as [baba] .

Another weakness of 1 is the assumption that the 'consonant-initial item' that causes vowel lengthening in the preceding item should be a 'nominal'. This is not always so. For instance, vowel lengthening takes place in the (b) forms of the possessive structures of 3 to 6. But it is possible for the possessive formative ti 'of' to occur between the two nominals. And if this happens, the vowel in the first nominal is still lengthened although what it precedes is the genitive formative ti 'of' and not a nominal. Another formative which behaves like ti 'of' and which is not a nominal is ni 'that'.¹

Perhaps the main trouble with 1 is that almost every part of it has exceptions. For instance, not every item which precedes the 'consonant-initial' nominal obeys the rule. If the preceding 'item' is a verb, 1 will be the exception rather than the rule e.g. in:

7. mo lu jagunjagun nâ = (I beat soldier the) = 'I beat the soldier'

8. mo rí gèlè re = (I see head-tie your) = 'I saw your head-tie'

no vowel is added to lù 'beat' or rí 'see/saw'.

There are also exceptions as regards the tone of the added syllable. For instance, Bangbose treated 'items' like wa 'our', mi 'me, my' etc. (i.e. the pronouns) as nominals. However, if mi were substituted for wa in his example (i.e. 2 above), we would have:

1. Bangbose also recognized the limitations of the generalization. For instance, he observed that: "although not a nominal, the deictic ni 'that' makes this junction with a preceding item. E.g. igbaa ni 'that time'." 1966: fn 60. Then, with nominals, he observed that with awon kèfèrì 'the heathen' there is a "final mid tone: no syllable added" but with omoo won 'their children' there is still a final mid tone but with "syllable added". Hence, one can say that although the lexical item ti 'of' is also not a nominal it behaves like the nominals referred to by the generalization.

9(a) *ìyáa bàbáà mí* 'my grandmother', or the contracted form:

(b) *ìyáa bàba mí* 'my grandmother', but not:

(c) **ìyáa bàbáa mí*.

So, before *mí* (my) in 9 the rule fails to apply since the tone of the added syllable is low and not mid. Note also that the rule does not apply before *rè* 'your' in 8 where we have *gèlè rè* and not **gèlèè rè*. However, if *rè* 'your' were replaced by *rè* 'his/her' the rule will apply and so we would have *gèlèè rè* and not **gèlè rè*. Hence, it is very difficult to use the generalization (or rule) 1 above to justify vowel multiplicity since the generalization has too many exceptions. For rule 1 to be useful, it has to be reformulated and made dependent on context.

While a multiple vowel enthusiast may use the difference between the (a) and (b) forms of 3 to 6 to suggest that vowel lengthening could be represented to distinguish appositive from genitive structures, it does not seem this suggestion even holds for Bangbose's own example (i.e. 2) since *ìyá* 'mother' cannot be in apposition to *baba* 'father' in the Yoruba language.¹ Moreover, 1 was made to apply only to 'nominals' that start with consonants so that vowel lengthening should not take place in preceding 'items' if the 'nominals' start with vowels. However, if we have a personal name as the second 'nominal', rule 1 can also apply to nominals starting with vowels, e.g.

10. *bàbáa Ojo* (father of-Ojo) 'Ojo's father'.

With examples like 10 above, one notes that rule 1 is actually optional since the form *bàbá Ojo* (when rule 1 is not applied) is actually ambiguous

1. It seems 'mother' cannot be in apposition to 'father' in any language except in special uses of language e.g. in "Our Father-Mother God, all harmonious" in Science and Health with Key to the Scriptures by Mary Baker Eddy (p.16) Boston, Mass. USA.

between an appositive and a genitive structure. If we decide to double the final vowel for genitive structures generally, we shall put ourselves in a position where we cannot observe the ambiguity of expressions like bàbá Ojo, and we shall force an obligatory double vowel on 'the preceding items' of other genitive structures even when such vowel doubling is infrequent in the Yoruba language (e.g. in ilé Ojo 'Ojo's house'), and where there is no possibility of an appositive contrast since ilé Ojo can only be 'Ojo's house' and iya baba wa cannot be an appositive expression. Consequently, even if we appear reactionary in this work in our attitude to multiple vowel representations, it must be remembered that the implications and problems of the multiple vowel representation were hardly examined by any of those who proposed it as the panacea to all Yoruba orthographic problems. (See Appendix II below for a continuation of the discussion.)

To summarize the above discussion, the traditional Yoruba orthography is usually inexplicit in its attitude to tone representations and so it is difficult to follow (as observed by Ward). Then, a phonetic representation is not desirable on practical considerations since there are orthographic variants for the phonetic symbols, and a phonetic transcription is only workable when not very many examples are needed. The problem one faces then is that of determining the degree of explicitness needed for orthographic representations but the current proposals with respect to multiple vowel representation and detailed tone indication create too many decision problems to be regarded as ideal. Hence, the problem of orthographic representation in Yoruba has not yet been solved. A suggested solution, which is an extract from a paper presented by the present writer at the Seminar on Yoruba Language and Literature in Ife University in 1969 appears as Appendix II in this work. Since the

suggested solution has not yet been put into operation, we are constrained to use a more explicit representation than the one aimed at in Appendix II for the representation of Yoruba examples in this work.

We may end this section with a suggestion that could constitute a via media between vowel multiplicity and tonal multiplicity. Note from 1.21d, that there are six compound tones, (taken from Afolayan 1968). But four of these tones involve the compounding of the mid tone with either the low or the high tone. In order to simplify the orthographic representation of tonal diacritics, one may ignore the compounding of the mid tone with other tones since this will imply the elimination of the four diacritical marks - (˘), (˙), (˚), and (˛). In such cases, vowel doubling may be employed provided it does not lead to the double representation of single lexical items like Bangbose's iyá and iyáa 'mother', bábá and bábáa 'father' - (Bangbose 1966: 101), or nóò and nóòó 'the' (Bangbose 1965: 33) etc. So, we can stipulate that vowel doubling should be used only for indicating existing significant minimal contrasts between different lexical items e.g. the contrast between má 'do not' and máa 'continue to; going to' in má lo 'do not go' and máa lo 'be going; continue to go' respectively. At present, judging from most of the orthographic models available, it seems that phonetic realization is the main criterion used for vowel doubling although it is the least dependable and the least stable of all criteria for Yoruba orthographic representation.

~~1970~~ ~~CONCLUSION OF PRESENT WORK~~
~~The main purpose in this subsection is to introduce the reader who~~
~~has no previous knowledge of Yoruba to the Yoruba language, and in~~
~~particular, to certain features of Yoruba that we shall have to use later~~

APPENDIX II

THE ORTHOGRAPHIC SECTION OF "THOUGHTS ON A YORUBA MONOLINGUAL DICTIONARY"

The last methodological problem discussed here concerns the orthographic representation of Yoruba lexical items.¹ Problems of orthographic representations are peculiar to the Yoruba Monolingual Dictionary (YMD) because the lexicographical decisions taken on representations may eventually solve the problems of orthography once and for all. For instance, if at the lexicographical level, we decide to use a less explicit form as our orthographic representation supplemented with a phonetic transcription of the head word, we will no longer have to wade into endless orthographic controversies similar to those that have been in the air since the publication of Bangbose's Yoruba Orthography.

One should not be very dogmatic about the degree of explicitness required for orthographic representations since it may vary with words. For instance, it may be necessary for monosyllabic orthographic forms to be more explicitly represented than the polysyllabic ones (when taken out of contexts), since there are relatively more tonally distinguished minimal pairs among monosyllabic than polysyllabic words.

However, it appears that the traditional orthography will be found to be inadequate for our less explicit forms. For instance, it seems that modern eni tí, okúnrin, eniyón etc. may for various reasons, be preferred respectively to their traditional counterparts eniti, okanrin, enia etc. Hence, by less explicit here, we mean a less explicit form than the quasi phonetic representations of many modern writers but not necessarily an inexplicit representation.

We do not actually intend to propose an orthographic system that will represent the 'less explicit' representation suggested above. However, in view of the fact that certain inconsistencies are to be found in orthographic representations, we may just touch the subject briefly.

The most detailed work on Yoruba orthography apart from the Report of

1. Three methodological problems were discussed in the paper. The first is the problem of circularity in glossing, the second deals with the question of structural class indication and the third and last one is the one presented here.

the Yoruba Orthography Committee is Bangbose's Yoruba Orthography (1965). In Ayo Bangbose's monograph, two criteria for good orthographies were stated: first, "that it should represent all and only the significant sounds in the language; the second is that it should have only one symbol for each significant sound." (p.1). Both criteria can be summarized as 'any good orthography must be a phonemic one'. Note that the fact that it must be phonemic has already been shown in the first criterion while the second criterion is just a restatement of the principle of biuniqueness - one of the principles of phonemicization. There is actually nothing wrong with the two criteria except that they are made the criteria for 'a good orthography' rather than criteria for certain classes of 'new orthographies'. Besides, we do not know what a good orthography really is. An orthography that is good for the phonemicist is not necessarily good for all purposes. For instance, one cannot say that the French orthography satisfies Bangbose's criteria, but at least it has its own utility. Thus, the third person singular and plural forms in the conjugation of verbs are usually pronounced identically suggesting that they must be written identically following the two criteria above, but their different spellings e.g. il parle 'he speaks' and ils parlent 'they speak' provide us with some syntactic and semantic information that an identical spelling would have concealed from us. Hence, we feel that the idea of what 'a good orthography' is, is relative. If we are interested in proposing an orthography that should provide one with information about the phonemic structure of a language, Bangbose's orthographic criteria will be adequate for 'a good orthography'. But not all the users of an orthography are actually bothered by the phonemic structure of the language concerned. If all we want is that the orthography provides us with syntactic and semantic information, the aspect of French orthography that we examined above is desirable in an orthography. If however, the aim of the orthography is to help with writing, typing, reading or printing speed in this age when more use is being made of Yoruba in primary school and university courses, then many of the orthographic conventions at present being used are undesirable, although they may be useful for someone who wants to read aloud to others since they have been devised to help readers who do not look ahead, and to forestall what Professor Bangbose referred to as

'potential ambiguities'.¹ Bamgbose's criteria for 'a good orthography' may be adequate in theory for his own purposes, (the phonemicist's goal), but they are not necessarily suitable for all purposes. They are even not suitable for Yoruba where he conceded that his "completely logical and consistent orthographic system" has limitations since it can be rejected when applied to Yoruba n and l which ideally should be represented by a single letter because "the former is found only before nasalised vowels, whereas the latter is found only before non-nasalised vowels".²

Although the only reason given for the impossibility of having n and l represented by the same letter is that called 'a likely rejection', it seems that the actual reason for the impossibility of the innovation is that the first part of the last quotation in the preceding paragraph is wrong. Thus, contrary to Bamgbose's statement that n 'is found only before nasalised vowels', he himself provided an example which contradicts this assertion. viz. 'the spelling a following an n sound may represent an a sound as well. For example, náin "ninepence", náání "to have regard for", and for the personal name Adenáike.'³ In his first example, náin, n is followed by a

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1. A view held by Professor Bamgbose is that Yoruba orthography should account not only for present but also for potential ambiguities. Thus, the fact that alanu up to a point in history unambiguously referred to alááánú 'kind person' does not tell us what to do if we should later have a rival e.g. Wande Abimbola's alānū 'first born of a woman' (recently discovered from oral literature). It appears that the problems of potential ambiguities are really magnified since not all present ambiguities can be accounted for through vowel multiplicity and tonal niceties. For instance, no amount of tonal dexterity can disambiguate the ambiguity on ní in "okunrin kan ní Israeli gbogun ti ilegbona" - 'one man in Israel declares war on small-pox' or 'one man says that Israel declares war on small-pox', since ni - preposition is not tonally distinguishable from ní - verb. What explains the ambiguities is outside the item ni. For the first meaning, okunrin kan ní Israeli is a constituent noun phrase so that we have a mid tone on kan. For the second meaning, okunrin kan is the constituent noun phrase so that a grammatically conditioned high tone on the kan before a verb phrase disambiguates the sentence. Thus, segmental tonal niceties have not yet even accounted for present ambiguities, and it seems they will similarly be incapable of taking care of potential ambiguities.
 2. Bamgbose, A. Yoruba Orthography. Ibadan University Press 1965 p.6
 3. Bamgbose 1965: 9. Other examples of n before oral vowels can be found e.g. in the personal name Okunnowo or in contractions where the contrasts between n and l are even possible e.g. mo nu eti mi ---- monetimi 'I wipe my ear', versus mo lu eti mi ---- moletimi 'I bore a hole on my ear' (i.e. for an ear ring).

nasalized vowel, but in the second and third examples, néání and Adensáike, the same n is now followed by a non nasalized vowel. Thus, the significance of the two examples is not the fact that they demonstrate the need to change a to ǎ after n as suggested in the monograph, but that they indicate that the rejection or 'likely rejection' of the use of either n or l for both n and l is dictated by the facts of the Yoruba language (where n actually contrasts with l before the oral vowel a) rather than the imperviousness of the Yoruba people to the assimilation of the innovation of "a completely logical and consistent orthographic system" or their "unwillingness to make concessions".¹

While not proposing new criteria for 'good orthographies', it seems that we can adopt one suggestion in Bamgboṣe 1965 which was not stated as a criterion as adequate for our purposes. While explaining the case of English, it was suggested:

If the spelling of a language is a convention that has to be learnt by any person wanting to write the language, one will have no difficulty in accepting this situation, provided the conventions are definite and observed by everybody writing the language. English orthography, chaotic as it is, has a definite set of conventions which are observed by all writers using the medium.
Bamgboṣe 1965: 2.

It seems that this less ambitious condition from Bamgboṣe 1965 is an adequate criterion for a Yoruba orthography since it is not the responsibility of the Yoruba people to simplify the task of the phonemicist at the expense of writing, reading, typing and printing efficiency. One of the dangers of a quasi phonetic orthography similar to those that are being used by many Yoruba writers (e.g. Abraham 1958 and Delanoṣ 1969) is that it makes the printing of Yoruba works more tedious and consequently more expensive.² As a result of this, very few Yoruba works appeal to those publishers who often counterpoise printing costs with the saleability of the printed materials so that "at the University of Ibadan, the library has rows of shelves filled with books of English literature labelled in centuries as far back as the fifteenth century to the present day. The books of Yoruba literature do not even fill one-third of a row of shelves!"³ Moreover, a quasi phonetic

1. Bamgboṣe 1965: 30

2. See Abraham R.C. 1958 Dictionary of Modern Yoruba, University of London Press and Delanoṣ I.O. 1969 Dictionary of Yoruba Monosyllabic Verbs Ibadan University Press.

3. Bamgboṣe 1965: 4-5

orthography filled with multiple vowels with detailed tone markings and assimilated low tone conventions (see Bamgboṣe 1965 and 1966) will hinder reading and writing speed since the tonal detail and the irregularly spaced assimilated full stop convention would be a source of distraction rather than a help to the rapid reader or skimmer; and the detailed quasi phonetic writing will tend to encourage subvocalization (one of the obstacles of reading speed).

Besides, it is not demonstrable that any orthography that is considered chaotic from the phonemicist's point of view is necessarily chaotic for all purposes. It seems however that the price we must pay for our suggestion that orthographic representations should be supplemented with phonetic transcriptions after the head words in the dictionary is that there will now be double representations (the orthographic and the phonetic) in the dictionary, but this is not unique. The transcription of the phonetic form will also be found necessary for Bamgboṣe's proposals.¹ Then if we consider one of the recommendations of the Yoruba Orthography Committee that all tones or no tones must be represented on lexical items so that we can have àláàánú in one representation and alaaanu in others, we shall notice that this is

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1. The suggestion that a recovery of the explicit forms will be necessary for Bamgboṣe's system can be substantiated through an examination of his proposed changes. By proposal (6) p.31 (Bamgboṣe 1965), the syllabic nasal must be spelt n in all cases although it is realized as m [m] before labial consonants, and ng [ŋ] before velar consonants. It is the phonetic representation in the dictionary that will explicitly indicate the phonetic realizations of this syllabic nasal. Also, by proposal (4) *ibid*, on should replace o for the third person singular pronoun object following verbs ending in on. Now this suggestion is not made for the singular pronoun object following verbs ending in any of the other three nasalized vowels in, un, and en. Hence, certain nasalized vowels are orthographically represented as oral vowels e.g. the i representing [ɪ] in ó dín i "she fried it", while others in similar contexts and serving similar purposes are represented orthographically as nasalized vowels e.g. on for [ɔ̃] in ó pòn on "she put it (the child) on her back". But note that we still have an orthographic i for oral phonetic [i] for the third person singular object e.g. ó rí i "she saw it". Thus, orthographic i ambiguously represents the oral [i] and the nasalized [ɪ] whereas there is also an orthographic in of ó dín in which still represents the nasalized [ɪ]. Unless there is a phonetic representation in the dictionary supplemented with the information that a violation of the principles or criteria for good orthographies has taken place in the above *ad hoc* proposal, there is nothing to stop an unsympathetic reader from saying that orthographic representations obeying the proposals in Yoruba Orthography are 'chaotic'.

also another example of double lexical representations.¹

We may now like to make a few specific comments on the present orthography especially since the orthographic representation is of immense relevance to the YMD. We shall comment on some aspects of word representation. We shall not discuss problems of word division or punctuation here owing to lack of space although the former may be considered relevant to the monolingual dictionary. In discussing aspects of word representation, we shall just limit our examination to two matters: (a) the representation of one significant sound with one symbol (on for an and on), and (b) the question of multiple vowel representations. The reason for discussing the first question is merely to indicate that it is unnecessary for us to change the orthography where it seems that the orthography as it used to be can give us some useful information that will be lost if the orthography were regularized to conform to Bamgbose's two criteria. Note that in the case of the an - on alternation (as we shall discover later), the traditional orthography is actually not chaotic. The purpose of our examination of the second topic is to focus attention on the problems that the multiple vowel representations found in many recent works (e.g. Delano's Dictionary of Yoruba Monosyllabic Verbs) create for Yoruba lexicographers.

On the first problem, we find that the main reason for the suggestion that on - [ɔ̃] and an - [ã] do not constitute significant contrasts were stated in Bamgbose 1966. There, it was observed that "it ([ãɪ]) does not contrast with [ɔ̃] in single words in the speech of many Yorubas" and that "I (i.e. Bamgbose) know of no occurrence of [ã] in the speech of any

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1. We do not discuss the use of (-) to represent the mid tone, and we will not say anything about the suggestion that all tones or no tones should be represented. One may just note that the supplementation of the orthographic form with a phonetic representation is even necessary for those detailed orthographic representations that follow the decisions of the Yoruba Orthography Committee on tone representations. Thus, the u of alááánú is nasalized, but this is not indicated orthographically like the un of ikun 'mucous'. Besides, many people do not pronounce the word with three middle a's. Most Yoruba people actually have two vowels and use Bamgbose's assimilated low tone on the second vowel. There are even cases of people who have a gliding tone on a single vowel there. So, there is hardly any diachronic or synchronic evidence to support the representation alaaanu with or without the tone marks, and consequently, the detailed representations of polysyllabic words with multiple vowels following one of the recommendations of the Yoruba Orthography Committee cannot dispense with the extra phonetic representations in the dictionary altogether.

Yoruba which is not substitutable by [ɔ̃] in the speech of some other Yorubas".¹ (italics supplied). However, in the Ikale dialect of the Yoruba language, there are significant or 'phonemic' contrasts involving [ã] and [ɔ̃] in single words.² We shall illustrate this phenomenon with the example of the minimal pairs [ijɔ̃] "beads" versus [ijã] "arguments". The occurrence of significant [ã] - [ɔ̃] minimal contrasts in Ikale weakens the argument that "[ã] does not contrast with [ɔ̃] in single words".

Our stand on the [ã] - [ɔ̃] alternation is that [ã] should be the main member of the phoneme /ã/, and that, if there is any orthographic change at all, the change must be one in which an represents both an and on and not one in which on is used for the two variants of the 'phoneme'. Otherwise, there would be no change at all from the traditional representation, since from the traditional orthographic representation, we can at least obtain some diachronic information on the phonological structure of the Yoruba language.

We suppose an i.e. [ã] is the principal member of the phoneme standing for the an - on alternation for the following reason: we observe that in traditional Yoruba orthography, only very few oral consonants (b, p, gb, w, f) are followed by on whereas an is written after all the others (t, d, k, g, s, ʂ, j, y, r, h). Note that there is an exception for h where we have ahon 'tongue' versus fihan 'show'. Then, after the nasals too, m is followed by o and n is followed by a. If [ã] and [ɔ̃] are really members of the same phoneme, it seems the member with the greater range of distribution should be the principal member. Note that [ɔ̃] occurs only after labials or labio-velars whereas we cannot easily state the environment of [ã]. Besides, all the labials are pronounced with some lip rounding, [ɔ̃] is a rounded vowel, and labialization itself has been treated as [+rounding] in Chomsky and Halle 1968.³ Note that although Bamgbose 1966 treated Yoruba w as a velar consonant, Yoruba w cannot be pronounced without some lip rounding. Actually, it is a labio-velar. If we now state that [ã] - an is the principal member of the /ã/ phoneme, then it can be suggested that it is rounded to [ɔ̃] - on through assimilation after all rounded consonants.

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1. Bamgbose 1966: 8 footnote 20.
 2. I obtained the information about the Ikale examples from Funso Akere, a lecturer in English at the University of Ife.
 3. See Chomsky N.A. and M. Halle 1968. The Sound Pattern of English, Harper & Row, New York. pp.223, 224, 306 and 310.

There will be no exception to this condition (notwithstanding the inconsistencies of fihàn and ahón above). If however, we say that [ɔ̃] is the principal member, then we cannot explain the conditions under which this got modified to [ã] at all. Here, we assume that there was in fact a phonetic distinction (caused by assimilation) between [ã] and [ɔ̃], and that it was this distinction that the engineers of traditional Yoruba orthography decided to represent in writing as on after labials and labio-velars and an elsewhere. Whether this assumption is true or not, it does not invalidate the assumption that both [ã] and [ɔ̃] are produced by the Yorubas. It thus appears that the traditional Yoruba orthography provides us with some information about the diachronic status of the an - on alternation so that we either leave it as it is, or if we want to change it at all, we represent the two variants by an (the principal member of the phoneme).

Another point in favour of the suggestion that an is the principal member of the two variants is the fact that in the Ikale problematic cases, it is the [ã] form [ijã] 'arguments' which is identical with the Standard Yoruba form for 'arguments' traditionally spelt as iyán. Hence, for a dialect area which now makes phonological distinctions between [ã] and [ɔ̃], it is the [ã] form that it has in common with other Yoruba dialect areas. Nevertheless, there is no need to change the traditional orthographic practice on this point since some diachronic information about Yoruba phonology could be lost by the regularization of the an - on alternation. And besides, there is nothing chaotic about the traditional orthographic system on this point apart from rare cases like the ahón - fihàn examples.

If we say that there should be no change at all, then the Ikale cases could be settled easily. For instance, on occurs only after rounded consonants in Yoruba while an occurs elsewhere. In the Ikale example above, the contrast after [j] i.e. y proves that an or [ã] normally occurs for Ikale in circumstances where it would have occurred for Standard Yoruba, i.e. after [j] or y. Thus, for Ikale, and for Standard Yoruba, [ijã] = iyán 'arguments' obeys the normal rule of the language:- that [ɔ̃] occurs after labials and [ã] elsewhere. The contrast of [ijɔ̃] 'beads' for Ikale can then be represented orthographically as iyon. Since [ɔ̃] would not normally occur after [j], a non labial, in Standard Yoruba, this form iyon found in Ikale cannot be confused with any other Yoruba word. Thus, iyon and iyán could be made to represent significant contrasts in Ikale if we want the orthography to reflect the significant [ã] - [ɔ̃] contrast in that dialect area. Furthermore, it can be suggested that ahón 'tongue' should

be modified to ahan since [ɛ] does not occur after [h] - a non labial. But decisions such as the above, e.g. the representation of the iyon - iyán contrast and the regularization of ahon are not mandatory for a lexicographical system that transfers the task of explicit forms to phonetic representations after dictionary entries. They merely constitute the granting of "concessions" to meet the phonemicist's demands half way.

On the question of multiple vowel representations, we shall just concern ourselves with a few of the lexicographical problems involved since space does not permit us to discuss all the real problems. The justification for the introduction of 'double vowels' is that the tilde, formally used for double vowels indicates both the vowel doubling and the two tones usually involved so that words with different tone patterns like oòrùn 'sun' and òórùn 'smell' are identically and ambiguously represented as õrun.¹ Vowel doubling takes care of the ambiguity created by this tilde. Furthermore, the doubling of vowels is supposed to indicate significant contrasts. No point has ever been made for triple vowel representations found in "jòóórùn 'to suffer too much'" and "jòóòmù 'to be intelligent'" although the three vowels now do not imply three different tones as the two o's of òórùn above.² However, one of the implications of the double vowel representation suggested in Bamgbose 1965 is that wherever the phonetic transcription could suggest double, or triple or quadruple vowel representation, the orthographic form can do the same since the aim is to avoid the ambiguous tilde. But one can now note that the solution (i.e. vowel doubling) is even more problematic than the problem it was proposed to solve.

First, let us examine the implications of multiple vowels for the status of the 'word' in Yoruba. In Bamgbose 1965, there is the transcription of a sample text at the end which obeys the proposed orthography. From the representations there, we have dual representations of single words. For instance, we have nóò and nóóó 'the', àgbàdò and àgbàdoo 'maize', oko and okoo 'farm', kòkó and kòkóó 'cocoa', abà and abaa 'barn', ojú (of lójú alá) and ojúu 'face' etc. (*ibid* 33). One point in favour of having a representation of nóò 'the' with double vowels is that it contrasts with nó 'to spend'.

1. Bamgbose 1965 pp. 13, 16 and 17.

2. The quoted examples are from Delano *op cit* vol I p. 307. It appears that the gloss of jòóórùn as 'to suffer too much' is peculiar. A more general gloss could have been 'to take in bad odour'.

Now, we have three 'words' or three orthographic forms nó 'to spend', nòò 'the' and nòòó 'the' where nó is to nòò as nòò is to nòòó orthographically. For instance, in nòò or nòòó, no two consecutive vowels have the same tone. If the difference between nó and nòò is sufficient to make them two words as any Yoruba person will agree they are, one has yet to find convincing reasons why the same cannot be said of the representations nòò and nòòó. Suppose, the arguments about the contrast nó 'to spend' versus nòò 'the' were applied to other dual representations from Bamgbose 1965, then we would concede that kòkó and kòkóó etc. are different words. But since this is not the case, one of the difficulties created by vowel doubling in practice is that it makes the Yoruba word more unstable than it used to be in normal traditional orthographic scripts. And consequently, it creates a problem of the status of 'word' for the Yoruba language. The lexicographer is then unable to decide whether he should have two entries for each word e.g. okó = okóó, nòò = nòòó etc.

Moreover, anyone using the dictionary can no longer decide whether the lexicographer has transcribed Jésù "Jesus" as Jéésù or Jééésù (noting that very few speakers pronounce that name with a 'single' e sound). Hence, one would be at sea whether one would find Jésù or Jéésù or Jééésù, and whether one ought to look for it before or after jenje 'tiny' in the dictionary. Note that Jéésù would precede while Jésù cannot precede jenje in the alphabetical list of lexical items in the dictionary. While Bamgbose's orthographic practice (*ibid* 33) would predict Jéésù, and while his orthographic criteria could guarantee Jésù with a 'single' e we find that many of those who multiply vowels in their writing of Yoruba words (e.g. Delano *op cit* vol I, p.195) write the name as Jésù. Since Delano is a lexicographer, one can say that in Delano's dictionary, the Yoruba word for "Jesus" would appear after jenje, but in Bamgbose's dictionary, it will precede jenje and other possible words. So, the multiple vowel representation apart from violating even Bamgbose's two criteria for good orthographies, also makes the alphabetical listing of lexical items in dictionaries indeterminate if not impossible. We first observed this problem of indeterminacy in the alphabetical listing of lexical items in Abraham's Dictionary of Modern Yoruba 1958. While the multiple vowel representation cannot be blamed entirely for the difficulties one normally encounters in using Abraham's Dictionary, it seems it contributes more to the confusion in the alphabetical listing of items there than any other single factor.

As space does not permit us to discuss possible solutions to the multiple

vowel problem, we may just suggest some alternatives without necessarily showing preference for one or the other. It is possible to restore the tilde and stipulate that wherever the tilde is used, it represents only vowel length and not tone indication. In such cases, only the phonetic representation in the dictionary can indicate the tonal contour of words on which the tilde is used. While this suggestion has the disadvantage that it makes it impossible for one to recognize without lexicographical assistance whether orthographic òrun is òòrun 'medicine' or òórun 'sweat', or whether órun is òòrun 'the sun' or òórun 'smell', it avoids the complications which multiple vowel representations create for the status or the 'word' in Yoruba, and the confusion in the alphabetical listing of lexical items in dictionaries caused by the indeterminacy of the number of vowels to represent orthographically in certain words is reduced. Note that there is a measure of individual variation in vowel doubling in the pronunciation of many Yoruba words so that while Chief Delano could have three o's in jàòòòrun (1969: ~~100~~ I, 307), most Yoruba speakers, except those who speak extremely slowly cannot have more than two o's e.g. jàòòrun. While the decision of the Yoruba Orthography Committee against the use of the tilde (see Report) may make it difficult for this suggestion to succeed, it must be remembered that the principal fault of the original tilde is that it represents various tonal contours and not the fact that it indicates vowel length.

An alternative suggestion might be the introduction of compound tones on single vowels e.g. ([∨]) for low-high, ([^]) for high-low, ([˘]) for mid-low, ([˘]) for low-mid, ([˘]) for mid-high, and ([˘]) for high-mid. Our fear about this solution is that we shall have too many superscripts, hence, we may not consider it further especially now that we have the advantage of a phonetic representation in the dictionary from which the explicit forms could be found. Thus, the six additional tone marks produce only redundant information - redundant in the sense that they repeat on orthographic forms information that can always be recovered from the phonetic forms. Note that if this alternative form were adopted, then the Yoruba words for 'the sun' and 'smell' will constitute minimal pairs, but if double vowels were used, it is hardly possible to find two Yoruba words using double vowels that are real minimal pairs. For instance, òòrun and òórun in the preceding paragraph are not minimal pairs since the tonal contrast between òòrun and òórun occurs on two different vowels for each word.

Since we have already decided not to take any positive decision on the multiple vowel problem, we leave the ultimate decision on this topic to the

Yoruba people hoping that while making their decision, they will take the overall interests of all those connected with the Yoruba language into account. Although the Yoruba people may not be expected to devise their orthography to help the lexicographer (just as they are not expected to help or satisfy the phonemicist), it seems the problem of accessibility of lexical items is just as vital to the Yoruba lexicographer as it is to the grammarian, the semanticist, the phonemicist, the lonely machine intelligence worker who would like to store aspects of the Yoruba lexicon into computers, and it is also very useful to the author of Yoruba novels, or to any student who might be urged to find some Yoruba words in the dictionary when needed without imagining whether he would have used two or three vowels at certain parts of those words in his own peculiar pronunciation of the same words. Hence, it is not the assumption that the lexicographer's needs could be more important than the phonemicist's, but the considerations of the ultimate value and utility of the monolingual dictionary as well as considerations of reading, writing, typing and printing efficiency that should influence the decisions of the Yorubas on whether and where to modify their orthography or not.

APPENDIX III

THE CALCULUS OF THE YORUBA UNIVERSAL QUANTIFIER NEGATION PROCESS¹

1.

PRELIMINARIES

We wish to propose that the Yoruba universal quantifier gbogbo 'all' is so different from other Yoruba quantifying terms (e.g. the relative quantifiers)² like púpò 'many' and dié 'few' that it will be prudent for one to suggest that they belong to two different syntactic categories in underlying representations. Lest this work should become voluminous, we shall exclude the numerals which can also be called quantifiers and which can be described exactly like púpò 'many' and dié 'few'. We shall conduct the argument in two parts. First, we shall briefly compare the surface syntactic characteristics of gbogbo with those of púpò and dié, and from that, one can infer that there are some significant differences between the two groups of quantifiers. Then, we shall use the similarity in the behaviour of the Yoruba universal quantifier under negation to negated propositions containing the universal quantifier of the predicate calculus to suggest that the Yoruba universal quantifier cannot be derived directly³ from a predicate like the relative quantifiers. The similarity between the universal quantifier in Yoruba and in the predicate calculus shall be illustrated from the way null sets are specified in both systems. First, let us compare the surface syntactic characteristics of the Yoruba

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1. Here, we examine points of similarity between the Yoruba universal quantifier and the quantifiers of the predicate calculus. The aim of this section is to show why it is necessary to treat the Yoruba universal quantifier separately from the other quantifiers in the language, in spite of their semantic relatedness.
 2. Relative quantifiers are distinguished from absolute (numeral) quantifiers in chapter V.
 3. 'Direct derivation' is the type of derivation in which a predicative adjective with or without any 'morphological' or phonological modification becomes an attributive adjective. When we talk of deriving directly in this case, we refer to such derivations. Nevertheless, it may be argued that gbogbo could be arrived at through a combination of features that can be predicatively represented e.g. 'that which leaves no remainder' or 'that which is total' or 'that which covers an entire universe of discourse' etc. If gbogbo could be derived from such representations, (see section V - 'Concluding Remarks' below), it may be suggested that it is also derived from predicates, but note that there is no direct phonetic relationship between gbogbo 'all' and the phonologically distinct predicative representations that could be proposed for it. Hence, it cannot be derived directly from a predicate.

universal quantifier gbogbo with the relative quantifiers diè and púpò.

Yoruba relative quantifiers have the characteristics of nouns and so, they can function as 'heads' of noun phrases, but the universal quantifier cannot function as the head¹ of a noun phrase. According to Bamgbose, the head of the noun phrase is "that element which can operate in a nominal group of only one element". (italics supplied). Hence, we can have 1 and 2 but not 3:

1. diè kú kí a tó dé ilé (few die before we can arrive home) 'a few of them died before we came home'.
2. púpò kú kí a tó dé ilé (many die before we can arrive home) 'many of them died before we came home'.
3. *gbogbo kú kí a tó dé ilé (all die before we can arrive home)

In 1, 2 and 3 the first word in each representation is a subject noun phrase 'of only one element'.

Furthermore, since gbogbo cannot constitute a single element NP, it cannot be the only (lexical) item that follows a transitive verb in a verb phrase. Hence, we can have 4 and 5 but not 6:

4. Mo rí diè (I see few) 'I saw a few'
5. Mo rí púpò (I see many) 'I saw many' i.e. 'I saw many of them'
6. *Mo rí gbogbo (I see all) for 'I saw all' i.e. 'I saw all of them'

Instead of 6, one must have mo rí gbogbo won 'I saw all of them'

Moreover, the relative quantifiers can occur as parts of partitive constructions, but the universal quantifier does not occur in any partitive construction. So, we can have 7 and 8 but not 9:

7. diè nínú wa kò gbọ Gẹ̀sì (few among we not hear English) 'a few of us do not understand English'
8. púpò nínú wa kò gbọ Gẹ̀sì (many among we not hear English) 'many of us do not understand English (or the English language)'
9. *gbogbo nínú wa kò gbọ Gẹ̀sì (all among we not hear English) 'all out of us do not understand the English language'.

Note that even the numerals which we will not discuss in this exercise can participate in partitive constructions e.g. méjọ nínú wa 'eight of us'. Hence, gbogbo is likely to be in a different class from the other quantifiers in the language.

Now, suppose we decide that all quantifiers shall be derived directly

1. The term 'principal' was substituted for 'head' in 5.51.

from some verb phrase representations so that isu méta 'three yams' isu díè 'few yams', and isu púpò 'many yams' will be derived respectively from the structures:

10. isu tí ó jé méta (yam which it is three) 'yams which are three (in number)' or 'three yams'

11. isu tí ó jé díè (yam which it is few) 'yams which are few'

12. isu tí ó jé púpò (yam which it is many) 'yams which are many';

we shall discover that gbogbo must still be an exception. (There is an alternative representation of 12 viz. isu tí ó pò (yam which it many) 'yams which are many'. But we shall ignore such alternatives here.) Now, we find that there is no form with the universal quantifier gbogbo corresponding to 10, 11 and 12. So, we do not have:

13. *isu tí ó jé gbogbo (yam which it is all) '*yams which are all'

Hence, gbogbo again behaves differently from the other quantifiers. Although 10 to 12 sound slightly archaic or rare, they are grammatical and acceptable. 13 on the other hand is not only ungrammatical but also impossible. From 10 to 13, we find that the universal quantifier must be distinguished from the others if we intend to derive quantifiers from predicates (higher or lower). The grammaticalness of ó jé díè vis-a-vis the ungrammaticalness of *ó jé gbogbo 'they are all' puts the universal quantifier gbogbo in a different syntactic category from the relative quantifiers. Besides, the fact that gbogbo is a bound item which cannot stand alone in a noun phrase whereas the relative quantifiers and the numerals are free items which can operate as the only element in a noun phrase 'of only one element' is enough to suggest that the universal quantifier gbogbo deserves a separate treatment from the others. Now, we shall suggest that the bound Yoruba universal quantifier is similar to the bound universal quantifier of the predicate calculus. The purpose of this suggestion is to show that there may be a distinction in Yoruba which is similar to that being made between quantifiers and predicates in the predicate calculus.¹ In other words, if it is

1. It is not being claimed that the word 'predicate' in the predicate calculus is totally isomorphic to the term 'predicate' in syntax. Nevertheless, they are so similar that the distinctions being drawn between predicates and other elements in the predicate calculus can still be drawn between the predicates in syntax and other terms.

In the writings of many generative semanticists e.g. in Lakoff 1970, one finds examples of quantifiers derived from predicates in English. But the fact that some English quantifiers like 'many' can be derived from predicates does not necessarily make all quantifiers (especially the universal quantifier all) predicatively derivable.

possible to derive the relative quantifiers directly from some higher or lower predicates, the universal quantifier will not be derivable directly from predicates since it is similar in behaviour to the other universal quantifier which is actually distinguished from predicates in the predicate calculus. We shall make use of the fact that the universal quantifier in Yoruba and the one in the predicate calculus deny propositions and specify null sets the same way to illustrate our point.

2. NULL SET SPECIFICATION WITH THE YORUBA UNIVERSAL QUANTIFIER

Examine the following sentences:

14. *gbogbo wa ni ó lè sọ èdè Gẹ̀sì* (all we is he can speak language English) 'all of us can speak the English language'
15. *gbogbo wa ni kò lè sọ èdè Gẹ̀sì* (all we is not can speak language English) 'all of us are unable to speak the English language'
16. *gbogbo wa kó ni ó lè sọ èdè Gẹ̀sì* (all we not is he can speak language English) 'not all of us can speak the English language'
17. *kì í se* *gbogbo wa ni ó lè sọ èdè Gẹ̀sì* (*it isn't* all we is he can speak language English) 'it is not all of us who can speak the English language'
18. *kì í se pé* *gbogbo wa ni ó lè sọ èdè Gẹ̀sì* (*it isn't* that all we is he can speak language English) 'it is not the case that all of us can speak the English language'
19. *kò sí* (*òkan*) *nínú wa tí ó lè sọ èdè Gẹ̀sì* (*òkan* is optional) (not exist (one) among we who he can speak language English) 'none of us can speak the English language'

The universal quantifier *gbogbo* occurs in 14 above. Then, from 15 to 19, we illustrate five different ways of denying the assertion in 14. In 15, we used the sentence negation formative *kò* 'not'. In 16 and 17 we used two constituent negation formatives *kó* 'not' and *kì í se* 'it isn't'. In 18, we used the sentence negation formative *kì í se pé* 'it is not the case that + S', and in 19, where the formative *gbogbo* cannot occur, we have the 'real' negation of the assertion in 14. So, although 15 to 19 deny the assertion in 14, they are not synonymous. Only 15 and 19 can be considered as 'true' negated forms of 14 since it is in both 15 and 19 that the number of people that can speak the English language is zero. Thus, if we are twenty in number, and if from one to nineteen of us can speak English, 16, 17 and 18 will still describe the situation adequately,

but neither 15 nor 19 will be appropriate in such circumstances.¹

Now, suppose we think of a limiting case in which the least possible number of people that can speak English is specified. Let that limiting case be represented by 20 below in which only one person can speak English. Only the sentences from 15 to 19 that deny this limiting case by specifying that a null set of people can speak English could be described as the true negation of 14. Thus, we have:

20. *òkan nínú wa lè sọ èdè Gẹ̀sì* (one among we can speak language English)
'One of us can speak the English language'.

Now, 15 completely denies 20 since it denies all of us the ability to speak the English language, so it is a true negation of 14. 16 does not deny 20 since it does not rule out a case where even many of us can speak English. For 16, only all or the 'totality' of those of us that can speak English is denied. 17 is similar to 16 because only the constituent all is denied or negated there also. Moreover, 17 (like 16) does not rule out cases where many of us can speak English. 18 is however difficult since it is ambiguous as between the denial of the whole of utterance 14 or the 'totality' of the quantifier. Note that while the whole of 14 occurs after ki í se pé in 18 and after ki í se in 17, it is in 18 and not in 17 that the whole of 14 is denied since we have a that + S construction there. In 17, ki í se denies only the constituent gbogbo. Now, 18 neither denies nor asserts 20. Each of the different interpretations in the constituent negated forms 16 and 17 and the sentence negated form 15 is possible for 18. Thus, 18 covers the case when none of us can speak the English language as well as when some of us (or at least one of us) can speak English. Since 18 ambiguously describes cases where none or some or many of us can speak English, we shall not regard it as a true negation of 14. Now, 19 denies 14, and it completely denies 20 since it states that 'not one of us exists' who can speak English. But it is only in 19, a true negation of 14, that gbogbo cannot occur. The

1. We shall make a distinction between the negation in 16, 17 and 18 and the one in 15 and 19. We shall call the latter the 'real' or 'true' negation of 14 since it constitutes a complete denial of 14 whereas in the former, 14 is not completely denied. This distinction between the true negation and the other negation of an argument is not made in the predicate calculus, but one can say that any distinction between null set specification through the use of quantifiers and a mere denial of the totality of the set specified by the universal quantifier in the predicate calculus is similar to the one we have made.

negation in 19 is done by an existential statement kò sí (not exist) i.e. 'it does not exist'.¹ It is not accidental that one of the negated forms that are complete denials of 14 is the existential sentence 19. For instance, Yoruba has no single formative analogous to English none, nobody, nothing etc., but it expresses the senses of such lexical items existentially. Thus, nobody is kò sí eni kan (not exist person one), nothing is kò sí nìkan (not exist thing one), and none is kò sí (òkan) (not exist (one)). The Yoruba word for zero i.e. òfo does not express the sense of none and it cannot be used in partitive constructions like 6. Thus, there is no *òfo nínú wa '*zero of us' analogous to kò sí nínú wa 'none of us'. For the rest of this discussion, we shall try to show that quantifier negation in Yoruba reflects the negation of propositions that contain quantifiers in the predicate calculus, and that the negation operation in the Yoruba quantifier system tends to show that the Yoruba quantifier system is similar to the quantifier system of the predicate calculus so that the sharp distinction being drawn between quantifiers and predicates in the predicate calculus will make it possible for one to suggest that the Yoruba universal quantifier is not derived directly from any predicate.

3. PREDICATE CALCULUS EQUIVALENTS OF SOME YORUBA SENTENCES

We shall give the predicate calculus equivalents of the relevant sentences from 14 to 20 above. Suppose for àwa 'we' we have 'persons who are here'. We shall omit other features of àwa 'we' like ~~àwà~~^{+D} etc. since there are cases like 20 above where òkan nínú wa 'one of us' does not necessarily imply

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1. The item sí of kò sí can only occur in negative contexts. So, the affirmation of kò sí 'it does not exist' is ó wà 'it exists'. Thus, wà and sí can be represented as a single lexical entry where wà occurs as the positive form of sí. Kò sí is not one single word since there are environments where it is possible to separate them (i.e. kò and sí) e.g. in (i) ní ibi tí kò bá tí sí èrù Ọlorun, kò lè sí aláfià 'where there cannot be any fear of God, there cannot be peace.' There are certain ways in which wà can occur after kò. First, except in archaic dialectal forms, it does not follow kò directly like sí. Secondly, whenever wà follows kò, the subject of wà must obligatorily precede kò in the surface structure representation. For instance, in (i) here, the subject aláfià does not precede kò, so wà cannot replace sí there. But if we have (ii) aláfià kò lè sí níbè, this can be replaced with (iii) aláfià kò lè wà níbè 'peace cannot be there'. It seems there is an alternative to ó wà in partitive constructions. (See example 33 for the use of a rí 'we see' as the alternative form.)

'I' i.e. the first person singular pronoun although 'one' must be singular. Then we can represent 'be a person' with 'P', 'be here' with 'H', 'speak English' with 'Se', 'all' (the universal quantifier) with 'V', the existential quantifier with '∃' (where ∃ = there exists one). '⊃' means 'if-then', '&' means 'and' and '~' is the logical negation 'not'. Let 'y' be the variable to be used. Then we can represent 14 as:

$$21. (\forall y) ((Py \& Hy) \supset Sey)$$

i.e. for all y, if y is a person and y is here, then y speaks English.

And for 16 and 17 which negate the constituent gbogbo 'all' in Yoruba, we can have the negation sign directly attached to the universal quantifier of the predicate calculus e.g. in 22:

$$22. \sim (\forall y)((Py \& Hy) \supset Sey).$$

Since 18 is clearly ambiguous, it cannot have a unique predicate calculus representation. If the argument of 14 can be represented as P preceded by the universal quantifier so that 14 (or 21) is given as $(\forall y)P$, then, 18 can be given the two representations in 23(a) and (b):

$$23(a) \quad \sim (\forall y)P$$

$$(b) \quad (\forall y) \sim P.$$

But the above process is not to be interpreted as that of arbitrarily selecting either 23(a) or 23(b) for the predicate calculus equivalent of 18.¹ Now, for 15 which uses the sentence negation kò, and where the NEG occurs after the emphatic particle (and consequently in the embedded sentence that follows the emphatic particle - ni 'is'), we shall have 24:

$$24. (\forall y)((Py \& Hy) \supset \sim Sey)$$

Observe that NEG precedes ni in 14 to 17, and it also precedes the Relative marker tí (that, who, which) in 19. What occurs after ni in 14 to 17 and

1. The problems of discovering which underlying representations could lead to 'it is not the case that' on the surface, or in an intermediate structure belong to 'Negation' as a whole and are not investigated here. The problems are even more acute when no quantifiers are involved e.g. (i) 'It is not the case that Mary advised John to shoot Robert on the head.' In (i) what is denied could be Mary (if Marguerita advised John), or John (if Mary advised Amos), or advised (if Mary ordered John), or shoot (if Mary advised John to stab Robert), or Robert (if the victim was Lynda), or the head (if the target had been the leg), or on (if John was to shoot Robert near the head). If we derive a sentence like 18 from anything similar to 23(a) or 23(b), then, we will be suggesting that (i) too should be derived from only one of its seven possible interpretations. Hence, in syntactic descriptions, 'it is not the case that' may still be a significant problem which involves focus and presuppositions. We will therefore refrain from using 18 in our subsequent discussions.

ti in 19 is a complete embedded sentence. Since 18 is ambiguous and can be given the interpretation 23(a) or 23(b), we shall stop using it for our subsequent discussion. But even if we do not exclude 18 from our discussions we will still find that 15 is the only example in which the NEG under discussion occurs inside that embedded sentence. So, although 15 is a complete denial of 14, it does not negate the quantifier gbogbo 'all', but the argument of the embedded sentence. This is also reflected in 24 (the predicate calculus equivalent or representation of 15) where ' \sim ' occurs after ' \supset ', and not together with any quantifier. We now find that only 15 and 19 can be complete denials of 14 and that these complete denials are the only examples from 15 to 19 which do not negate the universal quantifier itself. The logical equivalence of 15 and 19 can be observed in 29 below. Now, let us complete the representation of 15 to 19 into predicate calculus forms. For 15, we have the representation in 24 above.

22 and 24 can respectively be interpreted as:

25(a) Not for all y is it true that if y is a person and y is here, then y speaks English. [NEG the quantifier all]. and

(b) For all y , if y is a person and y is here, then y does not speak English. [NEG the embedded sentence].

Note that 25 truly interprets 15 to 17 above. We have already decided to forget 18 (see footnote p.414). Now, let us examine 19 which does not have the universal quantifier, and which is similar to 15 since it completely denies 14 by specifying a null set. The predicate calculus representation of 19 is 26:

26. $\sim(\exists y)((Py \ \& \ Hy) \supset \ Sey)$

i.e. there is no y for which it is true that if y is a person and y is here, then y speaks English. [NEG an existential quantifier].

So far, we have seen that there is no way of specifying null sets in Yoruba if the universal quantifier is negated. The only ways of specifying null sets are those of 19 (i.e. 26) and 15 (i.e. 24). In the former case, we could deny 14 completely and specify a null set by negating an existential quantifier. In the latter case, we keep the universal quantifier positive but negate the argument or sense of the sentence. Thus, in Yoruba, it is not $\sim(V)$ but $\sim(\exists)$ that can specify null sets or deny (V) completely. The next question one might ask is whether $\sim(V)$ can specify null sets (or deny (V) completely) in the predicate calculus. If it does, then we would have failed to prove the total similarity of the Yoruba universal quantifier to the bound universal quantifier in the predicate calculus. And so, it

will be impossible for us to show that the Yoruba universal quantifier is not a predicate. But if $\sim(\forall)$ cannot be used to specify null sets in the predicate calculus, then we shall need no further evidence before we can suggest that the relationship between the universal quantifier and predicates in Yoruba could mirror the relationship between quantifiers and predicates in the predicate calculus.

4. NULL SET SPECIFICATION WITHIN THE PREDICATE CALCULUS

Now, let us examine how null sets can be specified in the predicate calculus. Suppose in the predicate calculus, we have P and Q standing for any formulas with no restrictions on the variables or quantifiers within them unless explicitly stated. For the purpose of this exercise, we may use only P. We may experiment with two laws of quantifiers from the predicate calculus which show how either quantifier can be eliminated in favour of the other. We need these laws of elimination because it must be possible for us to specify null sets if we have only the universal quantifier at our disposal.

27. (Equation 1). $(\forall)P \equiv \sim(\exists y)\sim P^1$

in words = "For everything, P is true if and only if there is not anything for which P is untrue." i.e. "Everything has property P iff nothing lacks property P."

28. (Equation 2). $(\exists y)P \equiv \sim(\forall y)\sim P$

i.e. "Something has property P iff not everything lacks property P."

27 and 28 show how one quantifier can be eliminated in favour of the other.

The possibility of 27 and 28 shows that it must be possible for us to specify

1. The order in which the laws of quantifiers - Eq. 1 and Eq. 2 - has been written down here is not really significant since one can be obtained from the other by merely changing the polarity sign of both quantifiers and propositions on either side of ' \equiv '. See footnote 2 p.427 for further comments on the relationships of 27 to 28. In this work, we represent the universal quantifier with $(\forall y)$ 'for all y'. The more popular practice is to leave out (\forall) and just write it as (y) . Only very few authors like Church and Hartley Rogers Jr. use (\forall) . Since we often single out the universal quantifier in our discussions, and since we deal with human language where such quantifiers are represented with formatives, our preference of the form having (\forall) standing for the universal quantifier to the abbreviatory alternative (y) here is justifiable. Perhaps one of the requirements for the calculus of the Yoruba universal quantifier will be its representation by (\forall) since the universal quantifier in human language can be negated directly.

null sets given only one of the two quantifiers. We have already seen how null sets are specified with the existential quantifier in Yoruba. Now, let us derive a corollary of 28 that can be used for specifying null sets through the universal quantifier in the predicate calculus. By applying the rule $\sim\sim Q = Q$, multiply the quantifiers on both sides of ' \equiv ' in 28 by \sim giving:-

29. Corollary 1. $\sim(\exists y)P \quad (Vy)\sim P$

i.e. 'Nothing has property P is everything lacks property P'.^{1, 2}

In 29, we find that the universal quantifier can be used in propositions in which null sets are specified provided that the whole of the formula 'P' that follows it is denied. If we relate this observation to the Yoruba sentences above, we shall find that the right hand side of the formula in 29 corresponds to sentence 15 or formula 24 where 'for all y, if y is a person, and y is here, then y does not speak English'. The left hand side of the same 29 corresponds to sentence 19 or formula 26 where 'there is no y for which it is true that if y is a person and y is here then y speaks English'. In other words, 29 (or the corollary of 28) from one of the laws of quantifiers in the predicate calculus shows that both Yoruba and the predicate calculus specify null sets the same way whenever the universal or existential quantifier

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1. We find that $\sim P$ does the work of sentence negation in the calculus. Thus, no matter how each language negates its sentences (whether in the verb phrase or outside it), the net result of the negation process is $\sim P$. In our representations from 21 to 26, we put this sentence negation after the implication sign in 24. The exact position of \sim in the spelling out of $\sim P$ for any particular sentence will depend on the negation mechanisms of particular languages. However, the same $\sim P$ will still be appropriate for a predicate calculus equivalent.
 2. We know that all we have to do to obtain an equivalence for corollary 1 is to multiply only the quantifiers on both sides of ' \equiv ' by \sim because if we multiply both the quantifiers and P's on both sides of 28 by \sim we shall arrive back at 27, and if we do the same for 27, we shall arrive at 28. On the other hand if we multiply only the quantifiers by \sim and retain the polarity of P, the result will still be normally interpretable in natural language e.g. that of 29. We can find a corollary for 27 too by using the same technique viz.

Corollary 2. $\sim(Vy)P = (\exists y)\sim P$

i.e. 'Not everything has property P iff there is something which lacks property P'.

What we have done here can be called 'selected quantifier negation' since we select the quantifiers in equivalence sets and negate them. Whether selected quantifier negation is legal or not, the fact that its interpretation in any human language is natural and logical is enough justification for it.

is used. Before one can make any inferences on the similarity between null set specification in Yoruba and in the predicate calculus, it will be necessary to complicate our Yoruba examples further, and compare the complicated versions with the predicate calculus.

Let us exempt 14 and 15 from the further complications we intend to introduce for reasons that will soon become apparent. Now, we want to negate 16 to 19 further. Because of our earlier comments on 18, we shall leave it out also. Instead of 16, 17 and 19, we can now have:

30. *gbogbo wa kó ni kò lè sọ èdè Gẹ̀sì* (all we not is not can speak language English) 'not all of us are unable to speak the English language'

31. *kì í sẹ̀ gbogbo wa ni kò lè sọ èdè Gẹ̀sì* (it isn't all we is not can speak language English) 'it is not all of us who are unable to speak the English language'

32. *kò sí (òkan) nínú wa tí kò lè sọ èdè Gẹ̀sì* (not exist (one) among we who not can speak language English) 'none of us is unable to speak the English language'

The complication in 30, 31 and 32 consists of negating either P or (\forall) where it was never negated in (15), 16, 17 and 19. 30 will come from both 15 and 16 since a $\sim(\forall)$ operation on 15, or a P operation on 16 will produce 30. So, our reason for excluding 15 earlier is now clear. By the further complication process, we would now have two negated elements in each sentence which will be translatable to the right hand side of either Eq. 1 (i.e. 27) or Eq. 2 (i.e. 28) from the predicate calculus. We cannot get a form similar to 30, 31 and 32 from 14 unless we negate both (\forall) and P simultaneously, but even if we do so, we are going to get either 30 or 31. Hence, our reason for excluding 14 from this operation is also now clear.

Let us now test the possibilities of 30 to 32. Suppose, as in an earlier case, we are twenty in number. Then there are three possible general situations. By situation A, all the twenty of us can speak English; by situation B, from one to nineteen can speak English, and by situation C, none of us can speak English. Since 16 and 17 are formally equivalent and are both represented by 22, we can expect that 30 and 31 too will be formally equivalent. By 30 and 31, we negate the universal quantifier as well as the sentence; so 30 and 31 formally correspond to $\sim(\forall y)\sim P$ i.e. the right hand side of 28. 32 however negates the existential quantifier and also negates the sentence, so, it corresponds to $\sim(\exists y)\sim P$ i.e. the right hand side of 27. Let us see how their equivalence counterparts pattern in situations A to C.

We can start with 32. By 32, situation A is the only possible one

since 32 denies that any of us lacks the property P (i.e. the ability to speak English). Hence, neither B nor C is possible for 32. If we look at formula 27 too, we shall find that the left hand side of that formula is situation A. And so, once more, the surface structure representations of sentences in the Yoruba language agrees completely with what we have in the predicate calculus.

Both 30 and 31 (i.e. the right hand side of 28) deny that all of us lack property P (i.e. the ability to speak English). So, since what they both deny is situation C (in which all of us lack property P, or in which none of us can speak English), C is now ruled out. However, neither 30 nor 31 is specific on how many of us can speak English so, if only one of us, or even if nineteen of us can speak English, 30 and 31 (i.e. the right hand side of 28) will be correct. Hence, they admit of situation B. Whether situation A could be accommodated in 30 and 31 is however a controversial matter since it depends on the presuppositions that are being denied.¹ The most important fact here is actually the fact that none of 30 to 32 admits of situation C where a null set is specified. So, the only way of specifying null sets by the universal quantifier in the predicate calculus is by keeping the universal quantifier positive (cf. 15, 24 and 29) and negating the 'P' or the proposition that follows the quantifier. As we have already observed in our discussion of 29 above, this also agrees completely with the null set specification procedure in the Yoruba language.

Furthermore, paradoxically enough, the same surface sentence can even

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1. It is only through some strong emphasis on the presuppositions being negated that situation A could be accommodated in 30 and 31. Before 30 or 31 can accommodate situation A, one must add: "In fact, you are completely wrong since all of us can speak English". Since there is still no formal way of representing 'in fact' or 'you are completely wrong', we think this argument is beyond the scope of the predicate calculus. As discourse features like 'in fact, you are completely wrong' are also not parts of the Yoruba quantifier system, we think the argument is also unrelated to our discussion here. What the argument actually states is that $(\exists y)$ does not deny $(\forall y)$ or more precisely, $(\exists y)P$ does not deny $(\forall y)P$ since "At least, one person suffers from German measles" does not rule out the case when 'everyone suffers from German measles.' In other words, the argument states that $(\exists y)P$ is not identical with $(\forall y)P$ which is correct since we can only state $(\forall y)P \supset (\exists y)P$ as an implication or a tautology but never as an identity since $(\exists y)P \neq (\forall y)P$. Hence, we can say that formally, 30 and 31 also reject situation A although they are vague as to whether 'many of us' or just 'a few of us' are covered by the argument of the proposition.

be presupposed from 16 and its negation 30 since 20 above can be covered by both 16 and its negation 30. Similarly, 20 above, or even other manifestations of situation B can be covered by 17 and its negation 31. This is so because of the vagueness of negated universal quantifiers in human language and also in the predicate calculus. The negation of the universal quantifier occurs on the right hand side of 28 for 30 and 31 just as it occurs in formula 22 for both 16 and 17. On the other hand, where the existential quantifier is negated (i.e. where situation B is inadmissible) there is no such vagueness. Hence, 19 does not share any common surface representation with its negated forms 14 and 32. The left hand side of 27 is 14, and the right hand side is 32; and only situation A is admissible for both. The left hand side of 29 is 19, and the right hand side is 15; and both admit of situation C alone. So, we see that in Yoruba and in the predicate calculus, only the negated universal quantifier is vague. This vagueness occurs everywhere we used negated universal quantifiers (whether in the Yoruba examples or in the predicate calculus) in this work. The negated existential quantifier is however unequivocal. In other words, both Yoruba and the predicate calculus even agree here on which negated quantifier is unequivocal, and which one is vague.

Note that since it is possible for us to eliminate one quantifier in favour of the other, it should be possible for one to make the vague/unequivocal dichotomy given only one quantifier. Since the negated universal quantifier is vague, we must then expect the positive universal quantifier to be unequivocal, and since the negated existential quantifier is unequivocal, we must expect the positive existential quantifier to be vague. Actually, that is the true position. For the vague positive existential quantifier, the Yoruba sentence will be:

33. a rí nínú wa tí kò lè sọ èdè Gẹ̀sì (we see among we who not can speak language English) 'there exist some of us who cannot speak the English language'.

Thus, the universal quantifier in Yoruba and the universal quantifier in the predicate calculus are even so similar in vagueness that one will find it difficult to escape the charge of dogmatism if one denies that they could be identical.

5.

CONCLUDING REMARKS

To a certain extent, one may say that the Yoruba universal quantifier gbogbo is not dissimilar to its English counterpart all. But one finds

that they are really not identical. For instance, if one assumes that the 'free' nature of all versus the 'bound' nature of gbogbo is only a matter of surface structure characteristics (e.g. in 34 below), one will still have to recognize that the problem of the differences of the English and Yoruba universal quantifiers extends beyond the observed limits. Thus, the absence of single Yoruba formatives for none and nothing is probably linked with the fact that the Yoruba universal quantifier itself is a bound form. Since the English universal quantifier is free in surface structure, we can have all or none as a grammatical form, but the sense of this cannot be expressed with quantifiers alone in Yoruba. Hence, for :

34(a) 'Give me all or none'

one could only have:

(b) fún mi ní gbogbo won tàbí má fún mi rará (give me Trf all them or don't give me at-all) 'Give me everything, or give me nothing'.

In 34(a) it is possible to argue that surface all and none are derived from underlying 'all of them' and 'none of them' respectively. And consequently, one can say that the quantifiers are bound in underlying representations but may be free in surface structure. In Yoruba however, the universal quantifier is bound both in underlying representations and in surface structure. Consequently, the Yoruba universal quantifier cannot be an adjective. Note that Yoruba adjectives are free forms in surface structure at least, and they can all be used as the only item in a noun phrase of 'only one element'. Almost without exception, Yoruba grammarians treated gbogbo as an adjective.¹ Thus, 'the adjective' gbogbo will now have to be the only exception to most of the known characteristics of Yoruba 'adjectives'. Bamgbose, one of the few linguists known to have officially recognized the other (i.e. the main) characteristics of gbogbo through his treatment of the item as a 'post deictic' even dwarfed this achievement by commenting in footnote 76 that gbogbo is also a pure 'adjective' when it precedes a 'rankshifted qualifier', "because it is only in this structure that a deictic (immediately following the rank-

1. For the various ways gbogbo has been treated, one can refer to Bamgbose 1966: 114 and fn. 76, Abraham 1958: 246, Ward, 1952: 75, Gaye and Beecroft 1923 at least. There is a consensus on the point that gbogbo is an adjective. Probably, Abraham's additional treatment of gbogbo 'as noun preceding another noun which has plural sense' (p.246) might have influenced Bamgbose's treatment of gbogbo as the 'head' of a noun phrase as we observed earlier. But this point is really difficult to make.

shifted qualifier) can follow it." (p.114)

The most significant point against the assertion that gbogbo is an adjective in the popular sense of adjective i.e. what Ida Ward described as 'descriptive adjective'¹ especially the subsection on 'indefinite adjectives'² is the one just made on the bound characteristics of gbogbo vis-a-vis the free characteristics of Yoruba 'adjectives'. Since gbogbo cannot be nominalized, cannot be emphasized, and cannot be free either in underlying representations or in surface structures like relative quantifiers, absolute or numeral quantifiers and adjectives, one hardly needs any further evidence to demonstrate that it ought to be treated in a different way from the other items. The rather misleading treatment of gbogbo as 'adjective' by Yoruba grammarians might then have been caused first by a failure to note the differences in the behaviour of English all and its Yoruba counterpart gbogbo, or secondly by a direct transfer of the syntactic and other features of English all to Yoruba gbogbo just because they are semantic equivalents, and thirdly through a failure to recognize that the semantic relatedness of the Yoruba universal quantifier to the relative quantifiers does not ipso facto imply that they are syntactically identical.

One may note that the syntactic characteristics of gbogbo in Yoruba are similar to the formal characteristics of the universal quantifier in the predicate calculus. In the calculus, variables may be bound by quantifiers or may be free, but quantifiers are never free since they always quantify something whenever they occur.

The similarity in vagueness is also significant. For instance, when Barbara Partee observed that "some men are married and happy" is not synonymous to "some men are married and some men are happy" (i.e. $(\exists x)(Mx \ \& \ Hx) \neq (\exists x)Mx \ \& \ (\exists x)Hx$), she was making use of the vagueness of the positive existential quantifier. Then, when she suggested that if 'some' were replaced with 'all' the sentences will be synonymous, she was comparing the vagueness of the positive existential quantifier with the unequivocal nature of the positive universal quantifier.³ Hence, one may say that the similarity of gbogbo to (V) is so great that the only valid syntactic treatment that it can be given is one which treats it differently

1. Ward 1952: 72

2. Ward 1952: 75

3. See Partee B.H. "Negation, Conjunction and Quantifiers. Syntax versus Semantics" in Foundations of Language 6 (1970) 153-165.

from the relative quantifiers. In chapter VI above, this item has been treated together with other items that cannot be nominalized or emphasized in the Yoruba noun phrase.

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