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RAISING IN BERBER*

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Raising in Berber has been selected for study for two main reasons: firstly, this syntactic operation which has hardly received any attention up to now involves areas which are central to the understanding of the whole syntactic structure of Berber. Secondly, Raising in general is considered by Chomsky and most linguists as being a universal feature of natural languages. However, although Chomsky does not question the existence of Raising to Subject, which he subsumes under the general rule of NP movement, he seems to strongly reject the rule of Raising to Object, claiming that what this rule does can easily be carried out by means of one of his constraints, the "Tensed S Constraint". The goals of the present paper are twofold: on the one hand, it aims to show that although Chomsky considers Raising to Subject as an essentially movement rule, this rule seems to operate in Berber without syntactic movement. On the other hand, the paper aims to show that Chomsky's theoretical suggestions in the domain of Raising to Object are highly questionable, if not utterly wrong. A number of arguments supporting these two views are based on Berber data.

1. Introduction

The present paper is an exploration of the way Raising operates in Berber.[1] The analysis is essentially devoted to formulating arguments against

*I am deeply indebted to Russell G. Schuh (University of California, Los Angeles) and to an anonymous reviewer for their extremely enlightening comments on an earlier version of this paper.

[1]Berber is an Afroasiatic language which is essentially a spoken language without written tradition. The variety of Berber which is analysed in this paper is spoken by the Ayt Hssan tribe, situated in southeast Morocco, near

Chomsky's views on Raising in general. On the one hand, contrary to what Chomsky claims, Raising to Subject is not always a movement rule; it seems to be some sort of agreement copying rule in Berber. On the other hand, and again contrary to what Chomsky claims, Raising to Object should be maintained when analysing natural languages. Evidence lending strong support to these views comes from Berber data.

Raising is a syntactic operation which is closely linked to the whole mechanism of clause complementation. The term "Raising" here is understood within the framework of Standard Theory: it is a movement rule which has the function of extracting an NP from the subordinate complement clause (CC) and locating it in a specific syntactic position in the main clause (MC), either the subject or the object position. This is why Raising is widely known to be of two main types:

Raising to Subject, in which case the subject of the CC is raised to the subject position of the MC.

Raising to Object, in which case the subject of the CC is raised to the object position of the MC.

Fum E??am^{c}a, some fifty miles south of Azilal. Strictly speaking, this variety has characteristics of both Taslhit and Tamazight (two of the three major dialects of Berber, the third being Tarifit) because, geographically, the Ayt Hssan tribe is situated roughly between the two areas in which the major dialect groups are spoken. The author is a native speaker of this variety. Berber has a rigid unmarked surface VSO order and an alternative SVO order:

(i) i -sɣa hmad tigmmi 'Ahmed bought the house'
he bought Ahmed house

(ii) hmad i -sɣa tigmmi 'Ahmed bought the house'
Ahmed he bought house

Note that verbs in Berber are marked for subject agreement. The absence of overt subjects represented by full NP's makes Berber an instance of "pro-drop" languages (like Spanish for instance). But unlike Spanish, independent pronouns such as nttat 'she' in sentences like

(iii) nttat t -ffeɣ brra 'she went out'
she she went out

do not have an argument status when preverbal. These pronouns are some sort of parentheticals or emphatics. Throughout this paper, the flat structure V NP NP will be assumed.

The question that poses itself here is, "Is there any evidence for the existence of such rules in Berber?" Let us start by investigating Raising to Subject.

2. Raising to Subject (R to S)

The following parameters will be used as tests for the existence of R to S in Berber: verb agreement, subcategorisation, and coordination.

2.1. Verb agreement. Consider the following examples:

(1) a. t -dher is t -qallaq fadma[2] 'Fadma seemed to be angry'
she seemed that she angry Fadma

b. t -dher is fadma t -qallaq 'Fadma seemed to be angry'
she seemed that Fadma she angry

c. t -dher fadma is t -qallaq 'Fadma seemed to be angry'
she seemed Fadma that she angry

d. *t -dher fadma is t -qallaq fadma
she seemed Fadma that she angry Fadma

e. i -dher is t -qallaq fadma 'it seemed that Fadma was angry'
it seemed that she angry Fadma

f. i -dher is fadma t -qallaq 'it seemed that Fadma was angry'
it seemed that Fadma she angry

g. i -dher fadma is t -qallaq 'it seemed that Fadma was angry'
it seemed Fadma that she angry

h. *i -dher fadma is t -qallaq fadma
it seemed Fadma that she angry Fadma

According to the above examples, dher 'seem' takes both agreement (1a-d) and the neutral subject marker (1e-h). Agreement holds both when the subject NP fadma is in the CC (1a-b) and when it is in the MC (1c). The same thing can be said about the neutral subject marker as (1e-f) on the one hand and (1g) on the other hand show. No matter whether agreement holds or does not hold, the subject lexical NP cannot be given twice (hence the ungrammaticality of (1d) and (1h). When the embedded subject appears in the MC, agreement is slightly

[2]The word is 'that/whether' is established as a comp in Berber. For evidence, I refer the reader to Sadiqi [forthcoming].

preferred because the CC subject is nearer to the MC verb.

Semantically, the sentences with verb agreement and their counterparts with the neutral subject marker are of more or less equal acceptability in the sense that both of them assert that the proposition t-qallaq fadma 'Fadma was angry' which "seems" or "appears" to the speaker of these sentences is true. The semantic intuition is therefore that the sentences in question are synonymous, though not totally interchangeable: the sentences with verb agreement show more that the subject is involved in whatever is expressed by the MC verb. The semantic relationship between these pairs of sentences justifies their syntactic relationship.

Syntactically, if we compare (1a) and (1c) on the one hand, and (1e) and (1g) on the other hand, we will notice that the NP fadma is in the embedded CC in the first members of the pairs and in the MC in the second members of the same pairs. Thus, the complement subject is clearly raised to the MC subject position. However, this raising does not seem to be achieved by movement given the possibility of agreement/non-agreement in the sentences under study. More specifically, the fact that the MC verb in (1a) can agree with the subject of the embedded CC is good evidence that syntactic movement is not needed for this agreement to take place. Further, the fact that SVO is an alternative word order in Berber allows us to say that (1c) can be independently accounted for without positing movement. R to S in Berber seems therefore to be some sort of agreement copying rule.[3]

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[3]Note that in a pair of sentences like:

(i) t -/*i -tyaqqan fadma is t -zra fadma baba s
she it is sure Fadma that she saw Fadma father her

'Fadma is sure to have seen her father'

(ii) t -/*i -tyaqqan fadma is t -zra baba s
she it is sure Fadma that she saw father her

'Fadma is sure to have seen her father'

Raising to Subject is not involved because in both instances, the two subject positions can be filled by independently referring NP's:

Let's consider verb agreement from another angle. In Berber, when two subject NP's are coordinated, the verb agrees with the first of the conjoined NP's, except when the order of constituents is SVO, in which case the verb agrees with the conjunction of the two NP's. It might be worth testing these number agreement facts on the order/agreement variants and see in what way(s) these can help us decide whether the rule of R to S operates in Berber or not. Consider the following examples:

(2) a. i -dher /*dher -n is i -dda/*dda -n hmad d fadma
it seemed seemed they that he went went they Ahmed and Fadma
'it seemed that Ahmed and Fadma went'

b. i -dher /*dher -n is hmad d fadma is dda -n /*i -dda
it seemed seemed they that Ahmed and Fadma that went they he went
'it seemed that Ahmed and Fadma went'

c. i -dher /dher -n hmad d fadma is dda -n /*i -dda
it seemed seemed they Ahmed and Fadma that went they he went
'Ahmed and Fadma seemed to have gone'

d. hmad d fadma i -dher /dher -n is dda -n /*i -dda
Ahmed and Fadma it seemed seemed they that went they he went
'Ahmed and Fadma seemed to have gone'

Sentences (2a,b) are straightforward cases. (2a) is the basic structure. In each example, the top verb is inflected for the neutral marker i . As to the inflection on the lower verb, it depends on whether the subject precedes or follows the verb. Examples (2c) and (2d) show that agreement and non-agreement on the MC verb are both possible only when the conjoined NP's occur in the MC. More specifically, since the subject in (2c) is plural, the lower verb must therefore be plural. The top verb may either be singular, in which case it is "neutrally" inflected, or plural if it is not so inflected. It should also be pointed out that there is a third option, in which the top verb

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(iii) t -/*i -tyaqqan fadma is i -zra hmad baba s
she it is sure Fadma that he saw Ahmed father his
'Fadma is sure that Ahmed saw his father'

is not neutrally inflected. In such a case, the sentence is fine because that verb agrees with the first member of the conjunct. This is confirmed by the following facts: apart from coordination, verb agreement is also useful when a clause containing one of the R to S verbs is embedded within a higher clause. In such cases, dher or bayn 'seem' can either agree with that NP or take the neutral subject marker i 'it'. This is true even when the embedded dher or bayn clauses have their own subjects which are not coreferential with the subject NP. Consider the following examples:

(3) i -ssen hmad is dher -n /i -dher ifergasn qalqa-n
he knew Ahmed that seemed they it seemed children angry they
'Ahmed knew that the children seemed to be angry'
or 'Ahmed knew that it seemed that the children were angry'

(4) i -ssen hmad is i -dher qalqa-n ifergasn
he knew Ahmed that it seemed angry they children
'Ahmed knew that the children seemed to be angry'
or 'Ahmed knew that it seemed that the children were angry'

In other words, there does not have to be an agreeing subject marker in constructions of the type (4) where the sentence contains an NP embedded within another sentence.

Still within the framework of verb agreement, note that there are verbs which apparently resemble dher and bayn 'seem' in occurring with the neutral subject marker i 'it' but which, unlike them, do not allow verb agreement with the embedded subject no matter whether the latter is in the subordinate CC or in the MC. Among these verbs, we can cite ḥlu 'be good, nice', shu 'be true, healthy', xšen 'be bad, ugly', etc. Here are some examples:

(5) a. i -/*t -ḥla is t -dda fadma s ssuq
it she good that she went Fadma to market
'it is good that Fadma went to the market'

b. i -/*t -ḥla is fadma t -dda s ssuq
it she good that Fadma she went to market
'it is good that Fadma went to the market'

c. i -/*hla fadma is t -dda s ssuq
it good Fadma that she went to market
'it is good that Fadma went to the market'

Data like the above show that what occurs with verbs like dher and bayn 'seem' is R to S. Since verb agreement is not allowed with a verb like hlu 'be good, nice' even when the CC subject is in the MC (5c), then in agreeing with the MC verb dher (and bayn for that matter), fadma in sentences like (1c) must be raised to the MC subject position. This also means that verb agreement does not occur with any verb when the subject occurs in a different clause. It is only when it can in principle occur in the MC subject position that the CC subject can agree with its MC verb. The neutral subject marker i does not really help since it occurs even with non-Raising verbs. However, since the neutral subject marker alone on the one hand, and verb agreement alone on the other hand, can occur in constructions which do not allow R to S, the fact that both of them occur in constructions which involve R to S means that they are significant as a tool for recognising R to S in Berber sentences. If the neutral subject marker is replaceable by the appropriate subject agreement marker in CC's where the embedded subject occurs in the MC, then we have a case of R to S.

2.2. Subcategorisation. Another supporting argument for the existence of R to S in Berber is that the two verbs dher and bayn 'seem' are not subcategorised for taking a subject in the normal sense of the term. Compare the following instances:

(6) a. i -ffeɣ hmad 'Ahmed went out'
he went Ahmed

b. *i -dher hmad 'Ahmed seemed'
he seemed Ahmed

Note that like 'appear' in English, dher and bayn 'seem' have two meanings: the one that has been used up to now, and the one in which some quick visual appearance is involved. (6b) is ill-formed with the first meaning but all right with the second one. However, in the present case, the second meaning is irrelevant since it does not involve any clause complementation and thus

should not be taken to relate to the subcategorisation of the dher and bayn we are considering.

The two verbs dher and bayn usually occur only as main clause verbs followed by a complement clause. Their subcategorisation can be represented as follows:

(7) dher / bayn → [___ CC #][4]

However, if we go back to (1c), (1g), etc., we shall notice that the above subcategorisation seems, at first sight, to be violated since dher in these instances is followed by an NP. A closer look at the examples in question reveals that this violation is only apparent and can be accounted for. If we postulate a rule of R to S which explains the positioning of the CC subject in the MC subject position and if we assume that subcategorisation takes place in the underlying structure where the CC subject is still with its clause coelements, then no violation of the subcategorisation frame of dher (and bayn) has occurred.

2.3. Coordination. A further argument supporting the existence of the rule of R to S in Berber is that the NP which originates as the CC subject can be the subject of two coordinated predicates:

(8) t -uḥl fadma aha t -/i -dher is t -i -aɣ kra
she is tired Fadma and she it seemed that her it affected something
'Fadma is tired and seems to be ill'
or 'Fadma is tired and it seems that she is ill'

On the basis of verb agreement, Fadma in the above example seems to function as both the subject of uḥl 'be tired' and also of dher . However, since the subject agreement marker is retained on the lower verb, R to S looks like an agreement copying rule, not a movement rule.

---

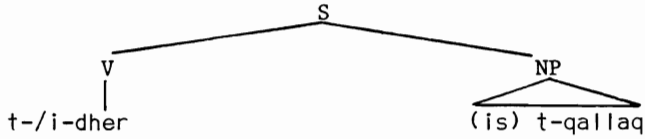
[4]However, given that sentences like (1a) are possible in Berber, another possible subcategorisation for dher and bayn 'seem' could be:

$$[_S \ AGR_i \ \_\_\_ \ [_S \ X \ NP_i \ ] \ ]$$

but the NP here does not occur in the same clause that dher appears in.

At the end of this section, which has presented some arguments in favour of the existence of R to S as an agreement copying rule in Berber, let us add that from the semantic point of view, sentences like (1a) and (1b) on the one hand, and sentences like (1g) on the other hand are understood in such a way that the MC subject NP and the following clause form jointly one single semantic unit or "clause" in this context. The sentence fadma is t-qallaq is indeed one such unit if we compare it to t/i-dher fadma for instance. Therefore, the logical or underlying structure of (1a) and (1b) on the one hand, and (1g) on the other hand should clearly indicate that it consists of two parts, [t/i-dher] and [fadma is t-qallaq], and that these two parts are connected in some way. Following from this and supporting the claim that in CC's, when R to S takes place, the sentence from which the subject NP is raised always functions as the logical subject of the sentence, we can represent this relationship in the following terms:

(9)



Overall then, there is enough evidence to support the existence of R to S in Berber. This rule obviously participates in subject formation and accounts for a number of syntactic phenomena relating to the subject. The fact that only two verbs trigger R to S and the fact that this rule does not cause any change in the tense, mood, etc. of the sentence in which it operates might suggest that although R to S exists in Berber, the rule is rather restricted. However, this seems to be a general feature of the rule itself. Let's add here that R to S operates only in declarative CC's since the two verbs which trigger this rule take neither interrogative nor infinitive CC's.

2.4. R to S Vs Subject Equi. R to S should be sharply distinguished from subject Equi. The latter basically involves the deletion of subject under identity. R to S is different from Equi in the sense that it does not delete the CC subject NP. Note in relation to Equi that this rule might not be relevant

in Berber since subject agreement markers always appear on the verb, a fact which means that the subject in Berber sentences is never totally lost. A very general problem must be kept in mind here: whereas in English, for example, we know when Equi has applied, in Berber we cannot really distinguish it from the simple anaphoric absence of the full NP (all relevant functions being fulfilled by the subject agreement markers). More specifically, given a Berber sentence like

(10) i -ssen hmad is ma i -njah
he knew Ahmed that FUT he succeed

we do not know whether it is subjectless, that is, corresponding to the non-English *'Ahmed knew to succeed', or whether it more directly corresponds to 'Ahmed knew (that) he would succeed'. This is part of the same problem as whether verbs with just subject agreement markers are subjectless or not. I shall continue to use the term "Equi" bearing in mind that in principle, it does not mean in Berber what it means in English or any other similar language.

3. Raising to Object (R to O)

Consider the following examples:

(11) a. i -ssen muha is i -ara hmad tabrat
he knew Muha that he wrote Ahmed letter
'Muha knew that Ahmed wrote the letter'

b. i -ssen muha hmad is i -ara tabrat
he knew Muha Ahmed that he wrote letter
'Muha knew that Ahmed wrote the letter'

According to the above examples, the following operation seems to have taken place:

(12) i-ssen muha hmad [[is] i-ara ___ tabrat]

Thus, hmad , which originates as the CC subject in (11a), seems to act as the MC direct object in (11b). To confirm this, we need tests which are capable of showing that the "moved" NP is indeed the MC direct object and that the bracketing occurs before, not after, the comp is . The following tests will be

used: verb agreement, passivisation, reflexivisation, clefting, and non-recursiveness.

3.1. Verb agreement. As we are investigating R to O, the test of verb agreement will be mainly based on the behaviour of the direct object clitic t 'him/her/it'. Note that there is a crucial difference between object (direct and indirect) clitics and subject agreement markers: as their name indicates, subject markers are essentially agreement markers while object clitics are pronominalised forms of full NP's. The latter have full argument status, but there is no evidence that the former do. Further, whereas subject agreement markers are obligatory, object clitics are not.

Direct object clitics in Berber can either replace direct object lexical NP's or copy them if the latter are preposed to the preverbal position, i.e. if the sentence is OVS:

(13) a. i -ara muha tabrat 'Muha wrote the letter'
he wrote Muha letter

b. i -ara -t muha 'Muha wrote it'
he wrote it Muha

c. tabrat i -ara -t muha 'Muha wrote the letter'
letter he wrote it Muha

In either case, as the above examples show, the direct object clitics get attached to the verb. Further, in the first case, the clitic carries specific semantic information whereas in the second case it marks a specific word order in Berber sentences. Note that when the direct object clitic replaces a full lexical NP, it cannot co-occur with it. If, for example, we replace the NP hmad in (11b) by the direct object clitic, we shall have:

(14) i -ssen-t muha (*hmad) is i -ara tabrat
he knew him Muha Ahmed that he wrote letter
'Muha knew him to have written the letter'

Note incidentally that the direct object clitic cannot co-occur with hmad even if the latter stays in its clause of origin:

(15) i -ssen-t muha is i -ara (*hmad) tabrat
he knew him Muha that he wrote Ahmed letter
'Muha knew him to have written the letter'

Needless to say, the lexical NP hmad cannot occur in both the CC and the MC at the same time.

Since the direct object NP and its corresponding direct object clitic cannot co-occur in the same construction when the latter replaces the former as (14) and (15) show, then some operation across clauses must have taken place. Further, since the direct object clitic does not attach to the embedded verb, then it logically does not belong to the embedded clause, in which case it automatically belongs to the MC.

Another thing to note is that the complement subject in sentences like (11b) can occur in the very initial position of the construction:

(16) hmad i -ssen-t muha is i -ara tabrat
Ahmed he knew him Muha that he wrote letter
'Muha knew that Ahmed wrote the letter'

In such cases, the presence of the direct object clitic is obligatory because the MC seems to have an OVS order. This is more evidence that the CC subject in sentences like (11b) is moved to the MC object position because otherwise it would not be able to participate in making the MC an OVS sentence and would instead do so with the CC. In other words, the NP in question is capable of moving within the MC and not the CC and this constitutes evidence that it pertains to the former.

Overall then, so far as verb agreement is concerned, the newly moved NP seems to take on the properties of direct object NP's. Note incidentally that as with R to S, pairs of sentences like (11a) and (11b) are synonymous.

In order for us to really show that R to O exists in Berber, we should be able to demonstrate that some sort of sentential boundary occurs between the newly moved NP and the comp introducing the CC or, in the absence of an overt realisation of the latter, between the MC object and the verb which was its erstwhile mate. To test this, two rules which are known, on independent evidence, to be clause internal in Berber, passivisation and reflexivisation, will be used. If the newly moved NP can participate in these two rules, then it belongs to the MC.

3.2. Passivisation. Passivisation is a rule which rearranges constituents within clause boundaries. In Berber, passivisation has the role of promoting the object of a sentence to the subject position and then deleting the subject altogether. Consider the following examples:

(17) a. i -ssen muha hmad is i -ara tabrat
he knew Muha Ahmed that he wrote letter
'Muha knew that Ahmed wrote the letter'

b. i -tya -ssan hmad is i -ara tabrat
he passive known Ahmed that he wrote letter
'Ahmed was known to have written the letter'

Given that hmad is moved to the object position in (17a) and after passivisation this same object becomes the subject of the passivised verb in (17b), then hmad seems to belong to the MC since the rule of passive operated within the boundaries of the MC. This point can be argued for more forcefully. In a sentence like

(18) i -ssen muha tabrat is t -i -ara hmad
he knew Muha letter that it he wrote Ahmed
'Muha knew that Ahmed wrote the letter'

the point is that tabrat is a topicalised[5] object in the CC and therefore Raising, which applies only to subjects in the CC, cannot have applied to it. This is confirmed by the fact that it cannot passivise:

(19) *t -tya -ssan tabrat is t -i -ara hmad
it passive known letter that it he wrote Ahmed
'the letter was known to have been written by Ahmed'

Note that, interestingly, the situation is different with NP's starting as CC subjects. Consider the following construction in which passivisation takes place within the CC:

(20) i -ssen muha is t -tya -ara tabrat
he knew Muha that it passive written letter
'Muha knew that the letter was written'

[5]Topicalisation will be dealt with in section 4.

(20) can undergo R to O:

(21) i -ssen muha tabrat is t -tya -ara
he knew Muha letter that it passive written
'Muha knew that the letter was written'

and can thus passivise:

(22) t -tya -ssan tabrat is t -tya -ara
it passive known letter that it passive written
'the letter was known to have been written'

Note that in this particular case, the rule of R to O must precede the rule of passive because it supplies the appropriate object which eventually becomes the subject of the passivised verb. Thus, if we compare (22) and (19), we shall notice that passivisation is blocked in the latter because the NP tabrat starts as the object of the embedded verb ara in the same construction (the subject being hmad), and being the object of the CC, tabrat cannot be the object of the MC and hence cannot participate in the passivisation of the latter. By contrast, passivisation is not blocked in (22) because the NP tabrat starts as the subject of the CC (cf. 20), then gets raised to the MC object position (cf. 21), and thus legitimately participates in the passivisation of the MC (cf. 22).

Overall then, passivisation constitutes strong evidence that R to O exists in Berber. It is possible in CC constructions only when the CC subject is raised to the MC object position or within the boundaries of the subordinate CC. Further, since passivisation is inherently limited to clause internal operations, the fact that it involves the CC subject in a sentence like (22) means that this subject belongs to the MC and that R to O is justified.

3.3. Reflexivisation. Reflexivisation[6] is a means of marking coreferentiality. Berber marks it only up through one single clause. In other words, re-

[6]Berber has two types of reflexives, (1) s (with) + ixf (head) + possessive pronoun and (2) ixf (head) + possessive pronoun. These reflexives inflect for the categories of person, number, and gender of the noun they

flexives in Berber seem to always occur in the same clause with the referents to which they are anaphors:

(23) a. i -iɣal hmad is i -uf akk mdden
he thought Ahmed that he was best of all people
'Ahmed thought that he was the best of all people'

b. *i -iɣal hmad is ixf ns i -uf akk mdden
he thought Ahmed that head his it was best of all people
*'Ahmed thought that himself was the best of all people'

c. i -iɣal hmad ixf ns is i -uf akk mdden
he thought Ahmed head his that it was best of all people
'Ahmed thought himself to be the best of all people'

The reflexive pronoun cannot occur as the subject of the CC, hence the ungrammaticality of (23b). The occurrence of this pronoun in (23c) is significant. In fact, since reflexivisation in Berber applies only to objects (direct or indirect) and since reflexive pronouns in sentences like (23c) act as direct objects of the MC but bear a structural relation to the CC (cf. the subject agreement markers), then they must be former CC subjects which achieved their final locus through the operation of R to O. The fact that the process of re-

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replace, which makes the latter easily traceable. The following are illustrative examples:

(i) zri- hmad s ixf ns *ixf ns 'I saw Ahmed himself'
saw I Ahmed with head his head his

(ii) i -jraḥ hmad ixf ns /*s ixf ns 'Ahmed cut himself'
he cut Ahmed head his with head his

The first type of reflexives functions as an intensifier of the NP it follows, whatever the function of the latter is. As to the second type, it replaces an NP which is identical to the subject NP but which functions as the object (direct or indirect) of that NP. This is why whereas the first type can be replaced by an adjective like uḥdit 'alone', the second type cannot and can instead be replaced only by an NP of some sort:

(iii) i -dda hmad uḥdit/*fadma/*a^{C}yyal ad /etc. 'Ahmed went alone'
he went Ahmed alone Fadma boy this

(iv) i -jraḥ hmad fadma/a^{C}yyal ad /*uḥdit/etc. 'Ahmed wounded Fadma/
he cut Ahmed Fadma boy this alone this boy/etc.'

flexivisation is carried out within the boundaries of the MC clearly indicates that reflexive pronouns in such cases belong to the MC and that there is no clausal boundary between the MC subjects and their reflexive pronouns.

3.4. Clefting. Clefting in Berber is a movement rule whose function is to locate a constituent in the focus position which happens to be the initial position in Berber and introduce the cleft marker a immediately after it.[7] In Berber, constituents cannot be clefted out of subordinate clauses:

(24) a. i -ssen muha is i -ara hmad tabrat
he knew Muha that he wrote Ahmed letter
'Muha knew that Ahmed wrote the letter'

b. *tabrat a i -ssen muha is i -ara hmad
letter cleft marker he knew Muha that he wrote Ahmed
'it was the letter that Muha knew Ahmed had written'

On the basis of this, an argument supporting the existence of R to O in Berber is that if we move the CC subject NP hmad to the pre-comp position, it can undergo clefting:

(25) a. i -ssen muha hmad is i -ara tabrat
he knew Muha Ahmed that he wrote letter
'Muha knew that Ahmed wrote the letter'

b. hmad a i -ssen muha is i -ara tabrat
Ahmed cleft marker he knew Muha that he wrote letter
'it was Ahmed that Muha knew had written the letter'

The fact that hmad in (25b), which originates as the CC subject (cf. 25a), can be subject to clefting confirms the assumption that it no longer belongs to the CC and that it is a constituent of the MC because if it were part of the subordinate clause, it would not cleft (cf. 25b).

3.5. Subcategorisation. Subcategorisation provides further evidence for the existence of R to O in Berber. As in English, for example, some verbs in Berber take R to O and others do not. A verb like amn 'believe' can be fol-

[7] the reader is referred to Ennaji and Sadiqi [1986].

lowed by either an object NP or a CC:

(26) a. umn -γ hmad
believed I Ahmed
'I believed Ahmed'

b. umn -γ is i -njah hmad g limtiḥan
believed I that he succeeded Ahmed in exam
'I believed that Ahmed passed his exam'

This would exclude just inanimate objects appearing without the CC:

(27) *umn -γ tigmmi
believed I house
*'I believed the house'

If we take (26b) as the starting sentence, then the following two sentences are the ones which suggest R to O:

(28) a. umn -γ hmad is i -njaḥ g limtiḥan
believed I Ahmed that he succeeded in exam
'I believed Ahmed to have passed his exam'

b. umn -γ -t is i -njaḥ g limtiḥan
believed I him that he succeeded in exam
'I believed him to have passed his exam'

If we assume that the NP hmad in (28a) above and the direct object clitic in (28b) are not derived by the movement rule of R to O but by derivation, then we shall have tremendous problems with subcategorising verbs like iγa 'think, believe' which do not take animate objects

(29) *iγal -γ hmad /flan /kra n urgaz
thought I Ahmed someone some of man
*'I thought Ahmed/someone/some man'

but which take a CC

(30) iγal -γ is i -njaḥ g limtiḥan
thought I that he succeeded in exam
'I thought that Ahmed passed his exam'

and allow the movement of hmad to the MC. Compare (31) with (28) above:

(31) a. iɣal -ɣ hmad is i -njah g limtihan
thought I Ahmed that he succeeded in exam
'I thought Ahmed to have passed his exam'

b. iɣal -ɣ-t is i -njah g limtihan
thought I him that he succeeded in exam
'I thought him to have passed his exam'

However, if we assume that subcategorisation applies to verbs in underlying structure and that the moved NP hmad in (31a) or its corresponding direct object clitic in (31b) originate as the CC cubject (cf. 30), then the subcategorisation of iɣal in cases like (31a) and (31b) is not violated. In other words, since R to O depends on subcategorisation, then movement is involved, and if the moved NP were still in the subordinate clause, then the MC verb should not affect what is moved in the embedded clause. Thus, it is only by positing a rule of R to O that the problem of subcategorising verbs like iɣal , which do not take animate objects, can be solved.

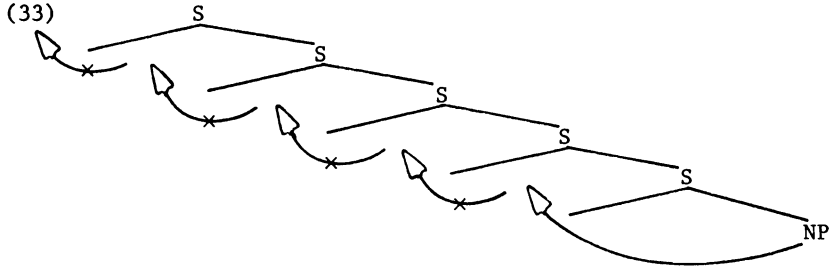
3.6. Non-recursiveness. A characteristic of the rule of R to O is that it is non-recursive in the sense that it is restricted to crossing constituents over only the immediate superordinate clause. This is compatible with the fact that, generally speaking, unlike subject NP's, object NP's are not supposed to move freely up in the structural tree. In what follows, we shall test these properties of the rule of R to O on Berber sentences and find out whether the existence of R to O in Berber is or is not confirmed. Consider the following instances:

(32) a. i -bayn t -nna fadma i -ssen hmad is t -qallaq malika
it seemed she said Fadma he knew Ahmed that she angry Malika
'it seemed that Fadma said that Ahmed knew that Malika was angry'

b. i -bayn t -nna fadma i -ssen hmad malika is t -qallaq
it seemed she said Fadma he knew Ahmed Malika that she angry
'it seemed that Fadma said that Ahmed knew Malika to be angry'

The NP malika , which functions as the subject of the most embedded sentence in (32), can move only to the next higher sentence. In other words, this NP cannot be separated from its original co-elements unless it moves just one step higher in the structural tree given that its movement to the other clause is blocked (cf. 32a). This is shown in the following configuration:

(33)



Since the rule of R to O in Berber is not recursive, it is obviously bounded. One should bear in mind however that presumably, alternate occurrences of R to O and Passive, for example, will allow repeated applications of the rule. Thus, a further argument for the existence of R to O in Berber is that this rule is non-recursive.

Overall then, all the arguments given in favour of the existence of the rule of R to O in Berber seem to indicate that the sequence NP COMP V X is not organised as a clause in Berber when the embedded subject is raised to the matrix clause, and only the part following the comp is the subordinate clause. In other words, the arguments given in support of the existence of R to O in Berber seem to indicate that there is a clause boundary before comp in CC constructions involving R to O. The NP raised to the MC object position occurs in all the positions in which the object NP occurs and also feeds into various other rules which can be applied to ordinary objects. The rule thus participates in object formation in Berber.

R to O operates in infinitive[8] CC's as well:

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[8]The notion of "infinitive" in Berber is an important issue, but for lack of space, I shall limit myself to the following: formally, the obligatory occurrence of the subject agreement markers on verbs makes it difficult to talk

(34) a. i -ra muḥa a i -ara hmad tabrat
he wanted Muha to he write Ahmed letter
'Muha wanted Ahmed to write the letter'

b. i -ra muha hmad a i -ara tabrat
he wanted Muha Ahmed to he write letter
'Muha wanted Ahmed to write the letter'

Everything that has been said about the operation of R to O in declarative CC's, including the replacement of the moved NP by the direct object clitic t 'him/her/it', applies to infinitive CC's.

R to O in infinitive CC's should be distinguished from another phenomenon which might apparently be confused with it. Consider the following examples:

(35) a. i -ra muha hmad a i -izar a<u>t</u>bib
he wanted Muha Ahmed to he see doctor
'Muha wanted Ahmed to see the doctor'

b. i -zz^{C}am muha hmad a i -izar a<u>t</u>bib
he urged Muha Ahmed to he see doctor
'Muha urged Ahmed to see the doctor'

Sentence (35a) involves R to O (the embedded subject hmad is raised to the MC direct object position). As to (35b), it involves Equi NP deletion (the embedded subject is deleted under coreferentiality with the direct object of the MC).

In spite of the fact that R to O does not occur with verbs like zz^{C}am 'urge', Equi NP deletion can optionally delete the CC subject of verbs like iri 'want' if it happens to be coreferential with the MC subject:

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about finite/non-finite clauses in Berber. However, from the grammatical point of view, the difference between the two clauses can be clearly shown on the basis of tense. The verb in Berber can occur in five tenses (past, "used to" form, present progressive, present habitual, and future). Each of these tenses is characterised by a specific form. In addition, the verb in Berber can occur in one of the following forms: /i___n/ form (participial form) and a + V (infinitive form). These forms are invariable, they never occur in V positions, and they are semantically incomplete. They are thus non-finite, as opposed to the finite forms.

(36) i -ra hmad a i -ddu 'Ahmed wanted to go'
he wanted Ahmed to he go

Note that R to O can operate in a sentence like (36) provided a reflexive pronoun is introduced because in such cases, the MC subject and direct object are identical:

(37) i -ra hmad ixf ns a i -ddu 'Ahmed wanted himself to go'
he wanted Ahmed head his to he go

R to O and Equi NP deletion do not apply freely to every verb in every context There, thus, has to be some way of specifying for each verb which rule(s) it can undergo and in what context(s).

3.7. R to O vs. Embedded Object Movement. Apart from the subject NP, the CC in Berber may include an object NP which can move to the pre-comp position, in which case it can easily be taken for a raised NP. This phenomenon occurs in the three types of CC as the examples below indicate:

(38) a. i -ssen muha tabrat is t -i -ara hmad _____[9]
he knew Muha letter that it he wrote Ahmed
'Muha knew that Ahmed wrote the letter'

b. i -ra muha tabrat a t -i -ara hmad _____
he wanted Muha letter to it he write Ahmed
'Muha wanted Ahmed to write the letter'

c. i -seqsa muha tabrat is t -i -ara hmad _____
he asked Muha letter whether it he wrote Ahmed
'Muha asked whether Ahmed had written the letter'

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[9]A note on the positioning of the verb "satellites" in Berber is in order here. The subject agreement markers have fixed positions (the first person subject agreement marker follows the verb stem whereas the third person subject agreement markers precede the verb stem, and the second person subject markers both precede and follow the verb stem). As to the object clitics (direct and indirect), they are movable. They follow the verb stem and the subject agreement markers if the verb is initial in a sentence; otherwise, if the verb is preceded by a pronoun, a comp, etc., the object clitics precede the verb stem and the subject agreement markers. In both cases, the indirect object clitics precede the direct object clitics.

Our task is thus to investigate the nature of this CC object movement and find out the extent to which it can be differentiated from R to O. For ease of reference, this movement is referred to as "embedded object movement".

In order to really understand the nature of the movement in question and distinguish it from R to O, we shall choose from the arguments given in support of R to O the ones that are felt to be relevant to the discussion of this phenomenon. The first argument we shall be looking at is verb agreement. The most apparent characteristic of embedded object movement is the obligatory presence of the direct object clitic t 'him/her/it' on the embedded verb. This clitic clearly shows that the NP tabrat in (38) is formally related to the embedded verb ara in the sense that tabrat and t are coreferential. This follows from the general principle of Berber which says that whenever a verb is preceded by its lexical direct object NP, i.e. in OVS sentences, a direct object clitic is automatically attached to this verb. Thus, since the moved NP and its corresponding direct object clitic in (38) do not involve any other verb except the CC verb, they must occur within the boundaries of the one and same clause, the CC. The presence of direct object clitics which do not replace lexical direct object NP's but which mark a specific word order formally clearly means that the moved NP belongs to the verb which carries the clitic, and since verbs signal clauses, the fact that tabrat in (38) belongs to ara , and not ssen , seqsa , or iri means that it belongs to the CC and not to the MC. This constitutes some evidence that no operation across clauses has taken place in (38) and that the sequence tabrat is t-i-ara hmad in the examples in question is organised as an independent sentence obeying the principles of OVS sentences in Berber. More evidence comes from the fact that the moved embedded object NP tabrat in (38) cannot be replaced by the direct object clitic in the way the NP raised to the MC direct object position can. Compare (14) and (15) to (39) below:

(39) *i -ssen-t muha is (t)-i -ara hmad
he knew it Muha that it he wrote Ahmed
*'Muha knew it that Ahmed wrote (it)'

The reason (39) is ill-formed is that in sentences like the ones given under

(38) for instance, the NP tabrat is not in the MC and therefore is not the MC direct object. Note that (39) is still bad with the NP tabrat in topic position initially:

(40) *tabrat i -ssen-t muha is (t)-i -ara hmad
letter he knew it Muha that it he wrote Ahmed
*'the letter Muha knew it that Ahmed wrote (it)'

Thus, unlike R to O which involves the addition of a clitic to the topmost sentence while at the same time not removing it from the embedded sentence, embedded object movement involves the addition of a clitic to the lower CC while at the same time blocking its occurrence in the topmost clause, and since the moved embedded object, unlike the NP raised to object position, cannot be replaced by the direct object clitic, it can hardly be said to belong to it.

The second argument we shall cite is passivisation. Passivisation is a strong and reliable means of differentiating between R to O and embedded object movement. The discussion which relates to this topic and which was given in section 3.2 clearly shows that by contrast to a CC subject which is raised to the MC direct object position, a non-subject CC NP (which can only be a direct object since only subjects and objects follow verbs in Berber sentences) cannot passivise. The embedded object is allowed to take part in the process of passivisation only within the boundaries of the CC as stated earlier. Hence, the moved embedded object, unlike the raised NP, is part of the CC and not of the MC. This means that the clause boundary in the three instances given under (38) is not between the NP tabrat and the comp is but between the MC subject muha and the NP tabrat

The third argument that can be invoked in this discussion of the status of the moved embedded direct object NP in relation to R to O is reflexivisation. In accordance with what has been said about this rule, namely that it operates when the direct object NP is identical to the subject NP, the moved embedded direct object NP in cases like the ones given under (38) should in principle participate in the rule of reflexivisation since it seems to occupy the direct object position in the MC. However, the following examples show the contrary:

(41) a. t -iɣal fadma is i -nɣa hmad ixf ns
she thought Fadma that he killed Ahmed head his
'Fadma thought that Ahmed killed himself'

b. *t -iɣal fadma ixf ns is (t)-i -nɣa hmad
she thought Fadma head his that it he killed Ahmed
*'Fadma thought that himself Ahmed killed'

Note that the ungrammaticality of (41b) is accounted for by the fact that this type of sentence is also bad as a simple sentence:

(42) *ixf ns (t)-i -nɣa hmad
head his it he killed Ahmed
*'himself Ahmed killed'

For our purpose, the fact that the moved embedded object NP cannot participate in reflexivising the MC means that it does not belong to it.

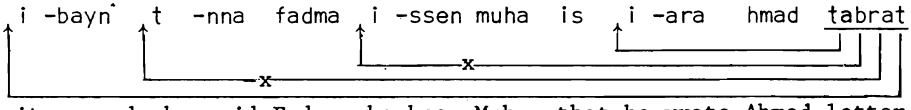
A further argument supporting the claim that embedded object movement is different from R to O comes from clefting. By way of example, let us cleft the NP tabrat in (38) and see what happens:

(43) tabrat a i -ssen-(*t) muha is *(t)-i -ara hmad
letter cleft marker he knew it Muha that it he wrote Ahmed
'it is the letter that Muha knew Ahmed had written'

The obligatory appearance of the direct object clitic on the embedded but not the MC verb is a formal indication that the clefted NP tabrat belongs to the embedded and not to the MC verb.

A final argument which clearly supports the claim that the embedded object movement is different from R to O is that though both types of movement are not recursive, the embedded object movement, unlike R to O, can shift the moved NP to the very initial position of a heavily complex sentence. Consider the following possibilities:

(44) a. i -bayn t -nna fadma i -ssen muha is i -ara hmad tabrat



it seemed she said Fadma he knew Muha that he wrote Ahmed letter
'it seemed that Fadma said that Muha knew that Ahmed wrote the letter'

b. tabrat i -bayn t -nna fadma i -ssen muha is *(t)-i -ara hmad
letter it seemed she said Fadma he knew Muha that it he wrote Ahmed
*'the letter it seemed that Fadma said that Muha knew that Ahmed wrote'

c. *i -bayn tabrat t -nna fadma i -ssen muha is (t)-i -ara hmad
it seemed letter she said Fadma he knew Muha that it he wrote Ahmed
*'it seemed the letter Fadma said Muha knew that Ahmed wrote

d. *i -bayn t -nna fadma tabrat i -ssen muha is (t)-i -ara hmad
it seemed she said Fadma letter he knew Muha that it he wrote Ahmed
*'it seemed Fadma said the letter Muha knew that Ahmed wrote'

e. i -bayn t -nna fadma i -ssen muha tabrat is *(t)-i -ara hmad
it seemed she said Fadma he knew Muha letter that it he wrote Ahmed
'it seemed that Fadma said that Muha knew that Ahmed wrote the letter'

Again, the presence of the direct object clitic t in all the well-formed instances is a reminder that the moved embedded object NP is a property of the subordinate CC and not of the MC. Compare this with the case of R to O where the embedded subject can move to the initial position providing it leaves a direct object clitic on the main and not the subordinate verb. The boundedness of R to O is also sharply contrasted with the unboundedness of the embedded object movement.

The conclusion that follows from the above discussion of the embedded object movement in relation to R to O is that the arguments supporting the latter fail to hold when applied to the embedded object movement. The two movements must, therefore, be different and their difference can be stated in the following terms: whereas R to O is a movement rule which basically involves a change in grammatical relations, i.e. the categorial status of the moved NP, the embedded object movement seems to be nothing more than topicalisation (which will be considered shortly) or some more general re-arranging rule which does not affect grammatical relations, i.e. the categorial status of the moved NP does not change.

4. Raising vs. Topicalisation

Raising in Berber should be differentiated from an apparently similar syntactic operation, *topicalisation*. First, whereas topicalisation basically in-

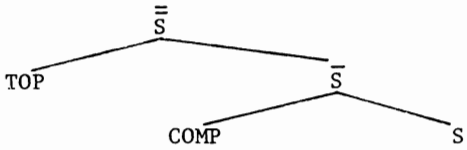
volves movement, Raising, as we saw, involves movement only when the complement subject is raised to the object position of the MC.

Second, whereas topicalisation does not involve any change in the grammatical relations of the moved constituent, Raising involves a change in the grammatical relations of the raised NP, i.e. the former complement subject becomes either subject or object of the MC.

Third, whereas Raising is known to move only NP's, a movement like topicalisation can, in principle, move any other constituent as well.

Fourth, if we push the difference between Raising and topicalisation a little further, we can say that whereas Raising clearly serves syntactic functions, topicalisation, in not changing the grammatical relations of the moved NP's, serves pragmatic functions more than it serves syntactic functions. In fact, topicalisation involves notions like "topic" and "comment" which are more related to discourse analysis than to sentence analysis. It could even be said that topicalisation does not involve movement.[10] One could, for example, argue that the NP tabrat in all the instances in which it acts as the moved embedded object starts off under the topic node which is "base-generated". This can be shown as follows:

(45)



Note incidentally that this type of analysis seems to suit Berber because of the presence of agreement markers in the complement clause, a fact which allows it to occur as an independent sentence following the TOP node.

5. Inadequacy of Chomsky's Framework

Chomsky has argued against R to O,[11] stating that apparent cases of this can be accounted for by more abstract and general principles, i.e. his con-

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[10]This is the position which Chomsky maintains. Not all linguists seem to agree with him; for many linguists, movement is involved in topicalisation.

[11]Chomsky [1977] accepts R to S which he subsumes under the general head-

straints or conditions on rules.[12] These conditions can be interpreted in either of the following ways: they can be given an absolute interpretation in the sense that what is claimed is that no rule in any language can ever under any circumstance cause violation of any of the constraints which it can be subject to; or these constraints can be given a relative interpretation in the sense that what is claimed is that in all languages, all rules are expected to obey the constraints in the neutral or unmarked case though it may happen that in the marked or exceptional case, the formulation of rules may include the condition that they in fact violate one or more constraints, that is to say, this particular condition has to be built into the formulation of such rules as an inherent part of them. This allows the possibility of having particular rules in given languages "violating" particular constraints.

So far as Berber is concerned, it is the second option which seems to be more appropriate. More specifically, Berber has clear surface violations of at least one of these constraints, the Tensed S Constraint (TSC). This constraint

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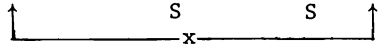
ing of NP movement/preposing. He allows this rule in non-finite clauses because otherwise it will violate one or more of his general constraints (cf. note 12). For a sentence like 'John seems to be right,' Chomsky proposes the following underlying structure: Δ seems [John *is* right], where Δ is an empty subject. In constructions which involve the element *it*, he postulates an underlying *it* in the same position, though he does not seem to maintain this view in his recent writings.

[12]Following Ross [1967], Chomsky [1977] proposes a set of three constraints which have been subsequently subjected to refinements. For ease of exposition, I shall consider the Standard version of these constraints based on Chomsky's well-known article "On WH Movement". These constraints are given below:

1. Subjacency Condition (SC): No constituent can be moved out of more than one containing NP or S node (in any single rule application).
2. Tensed S Condition (TSC): No rule can involve X and Y in structures of the type .....X ..... [$_{\bar{S}}$ ..... Y .....] ..... X ..... where $\bar{S}$ is tensed and where Y is not in comp.
3. Specified Subject Constraint (SSC): No rule can involve X and Y in structures of the type ..... X ..... [$_{\bar{S}}$ α ..... Y .....] ..... X ..... where α is an $\bar{S}$ or an NP which contains a specified subject, (i.e. subject not containing Y and not controlled by X.

is illustrated by the following example:

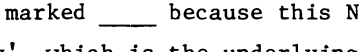
(46) a. COMP ___ seems [$_{S}$ COMP [$_{S}$ John likes Mary]]



b. *John seems ____ likes Mary

The NP 'John" in (46a) above cannot be extracted from its clause and be moved to the position marked ____ because this NP originates in a tensed clause, i.e. 'John likes Mary', which is the underlying form, and its movement out of the bracketed tensed S is blocked by virtue of the TSC, hence the ungrammaticality of (46b). By contrast, the movement of the NP 'John' is allowed in structures of the following type:

(47) a. COMP ___ seems [$_{S}$ COMP [$_{S}$ John to like Mary]]



b. John seems to like Mary

The reason is that in (47) above, 'John' is contained within an untensed S. Thus, the extraction of NP's is allowed out of untensed clauses but not out of tensed ones in English.

In Berber, examples like (11b) and (34b) show that extraction of NP's is possible from both finite and non-finite clauses. It might be argued that given the obligatory occurrence of subject agreement markers, R to O, like R to S, is not a chopping but a copying rule and hence is not expected to obey the constraints since the latter operate only in the case of chopping rules. However, the arguments given in support of R to O show that this rule involves movement. Further, subject agreement markers in Berber belong to the category V in the sense that they are an integral part of it. As such, these markers can hardly be seen as filled nodes since on the one hand, they co-occur with their coreferential lexical subject NP's, and on the other hand, having two nodes for the category "subject" is rather redundant. Furthermore, subject agreement markers do not occur in the exact place of subject lexical NP's (they precede, follow, or both precede and follow the verb stem) and hence are not likely to be copies of the lexical subject NP's they co-occur with.

Berber presents enough evidence for establishing the rule of R to O and arguments against Chomsky's views on this rule can be stated in a sharper way. One might go like this: contrast cases like the following where the embedded subject NP is moved to the matrix object position

(48) i -ssen muha hmad is i -ara tabrat
he knew Muha Ahmed that he wrote letter
'Muha knew that Ahmed had written the letter'

and those where the embedded object NP is moved to the pre-comp position

(49) i -ssen muha tabrat is t-i -ara hmad
he knew Muha letter that it he wrote Ahmed
'Muha knew that Ahmed had written the letter'

If we assume that transformations (for example Passive) are blind to grammatical relations,[13] then there is nothing to distinguish between hmad in (48) and tabrat in (49). But hmad passivises in the former example and other sentences like it while tabrat in the latter example and other sentences like it cannot as we saw earlier (cf. section 3.2). Why not? There must be some difference between them. The only plausible explanation is that hmad in (48) is in the MC while tabrat in (49) is in the subordinate CC and that grammatical relations are relevant to passive in Berber. If we accept this, then since in a sentence like (48), there is no independent lexical subject NP or subject agreement marker in the embedded clause (the subject agreement marker i of ara being coreferential with hmad in *i-ssen muha hmad is t-ara tabrat because t here means "she"), hmad must have been raised from that clause. This interpretation of Berber data which assumes the existence of the rule of R to O seems to be more natural and economical than the Chomskyan abstract analysis. The presence of the subject agreement markers and the object clitics renders this view even more so. This claim is also

[13] In most of his works, Chomsky does not use grammatical relations in crucial ways. For him, rules like passivisation and reflexivisation are not inherently restricted to clause internal operations. He uses a system of PRO's, traces (like *e*, *t*, etc.) to defend his point.

strengthened by the fact that Chomsky's TSC does not seem to be obeyed in Berber. Even a postulation of traces, PRO's, and the like is far too abstract and removed from the data. Note incidentally that even in so well studied a language as English, not every linguist, even from the same theoretical circle, agrees with Chomsky in his approach to R to O.

6. Conclusion

This paper has shown that data from Berber presents interesting facts about the syntactic rule of Raising. On the one hand, Raising to Subject, a rule universally accepted, exists in Berber not as a movement rule but as an agreement copying rule. On the other hand, Raising to Object, a movement rule in Berber, seems to be independently motivated and explains a number of syntactic phenomena in this language, and Chomsky's rejection of this rule does not allow a proper understanding of these syntactic intricacies.

REFERENCES

Chomsky, N. 1977. "On WH Movement." In P. Culicover, T. Wasow and A. Akmajian (eds.), *Formal Syntax*, pp. 71-132. New York: Academic Press.

Ennaji, M. and F. Sadiqi. 1986. "The Syntax of Cleft Sentences in Berber." To appear in *Studies in Language* 10(1).

Ross, J.R. 1967. "Constraints on variables in syntax." Doctoral dissertation, MIT. Available from Indiana University Linguistics Club.

Sadiqi, F. forthcoming. *Studies in Berber Syntax*. Würzburg: Königshausen & Newmann.

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TONE AND AFFIXATION IN HAUSA*

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In terms of their tonal behavior, Hausa affixes can be divided into two types. Tone integrating affixes (TIA's), all of which are suffixes, spread their tone(s) over the stem to which they are attached, overriding lexical stem tone in the process. Tonal assignment takes place in a regular right-to-left manner. Tone non-integrating affixes (TNI's) do not affect stem tone, the tone of resultant words simply being the sum of the parts. Most inflectional and derivational suffixes in Hausa, e.g. noun plurals and verbal grades, are tone integrating. Tone non-integrating affixes include a few suffixes, e.g. -wáa "participial" and -áa "feminine", and the prefixes bà- "ethnonymic" and má- "agential/instrumental/locational". Stems in Hausa typically drop their final vowel when a TIA is added; with most, but not all, TNI's, the stem-final vowel is retained.

0. Preliminaries

With respect to tone, Hausa has two different kinds of affixes. Some affixes affect the lexical tone of the stem by overriding it, while others do not affect the stem tone. This distinction, which to my knowledge has not been reported explicitly for a tone language (although it is probably not uncommon) is comparable in many respects to the differing behavior of affixes found in many languages with regard to stress placement (see Hyman [1977:70, note 10]). In this paper, I propose to document fully the distinction in Hausa between these two affixal types and to discuss the nature of the differ-

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ences between them.

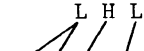
Hausa is a language with two basic tones: Hi, indicated á (or áa on a long vowel), and Lo, indicated à or àa . Falling tones are surface manifestations of Hi + Lo on a single heavy syllable, e.g. [Câa] = /.Cáà./^{HL} , [Cân] = /.Cán./^{HL} , etc. Hausa does not have rising tones: Lo + Hi on a single syllable is simplified to Hi [Parsons 1955:385n; Leben 1971]. Non-derived words typically have underlying tonal patterns that contain the same number of tones as syllables, e.g. (jáa)^{H} 'pull', (wàa)^{L} 'who?', (jàakíi)^{LH} 'donkey', (fáadìi)^{HL} 'fall', (wúta)^{HH} 'fire', (màcè)^{LL} 'woman', (yàamútsà)^{LHL} 'be mixed up', and (kárànta)^{HLH} 'read'.[1] Much less common are words that are underlyingly specified with more or less tones than syllables, e.g. (jíraa)^{H} 'wait for', (mânta)^{HLH} 'forget', and (shâidàa)^{LHL} 'witness', (< *shàídàa) .

With morphologically complex words, i.e. derived or inflected words, it is usually the case that there are more syllables than tones. The actual tones found on the words are accounted for by regular tonal assignment in a right-to-left direction,[2] e.g.

(1)

= /búhúnhúnàa/ 'sacks'

= /bàbbàbbàkú/ 'be well roasted'



= /cìnìkáyyàa/ 'mutual trade'

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[1]In this paper I have adopted the general approach and idiom of autosegmental phonology [Goldsmith 1979]. I have not, however, adhered to the principle that has been proposed for simplifying the representation of adjacent like tones, the "Obligatory Contour Principle" (see Leben [1978] and Odden [1986]).

[2]In most autosegmental works, tone is assigned in a left-to-right manner, a direction explicitly adopted by Clements and Ford [1979] as a general convention. While Hausa could, with some effort, be analyzed to conform with

Segments falling within the domain of a single tone pattern will be enclosed in parentheses. In keeping with the rule of right-to-left assignment, tone will be indicated attached to the right parenthesis. Tone marks on the vowels show the occurring tones after tone assignment, e.g.

(2) (kákkářàntá)^{HLH} 'reread'

(bàbbàbbàkú)^{LH} 'be well roasted'

(líkítóocíi)^{HH} 'doctors'

An important morphologically conditioned segmental change that accompanies affixation is the loss of stem-final vowels. In most lexical constructions, the stem-final vowel is automatically dropped when a suffix is added, e.g.

(3) hántàa 'liver' + únàa 'pl' → hántúnàa 'livers'

fìtá 'go out' + óo 'ventive' → fítóo 'come out'

Since this vowel dropping is so general, it will be taken for granted and not commented on in the individual cases.

Another segmental change that needs to be kept in mind so that the examples presented can be followed clearly is palatalization before front vowels. In the environment of i(i) and e(e) the alveolars s , z , t , and (less regularly) d become sh , j (= [ǰ]) , c (= [č]) , and j , respectively, while w palatalizes to y . This is a phonological rule of a very general nature that affects lexical as well as derived forms, e.g.

(4) géezàa 'shrub' + óocíi 'pl' → géezóojíi 'shrubs'

bàréewáa 'gazelle' + íi 'pl' → bàrèeyíi 'gazelles'

gúdù 'run' + èe 'totality' → gújèe 'run away'

máashìi 'spear' + úu 'pl' → máasúu 'spears'

háncìi 'nose' + únàa 'pl' → hántúnàa 'noses'

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this usual direction, the overall facts strongly suggest that as far as this language is concerned, tone assignment operates from right to left.

1. Tone Integrating Affixes

Affixes that override the tone of the stem are called tone integrating affixes (TIA's). Whenever the affix is added to a stem, the original tone of the stem is obliterated and the affixal tone extends over the entire word. All TIA's in Hausa are suffixes (with or without accompanying infixal changes); no prefixes are tone integrating. Tone integrating suffixes are indicated by an open right parenthesis, i.e. $...)^{T}$. The replacement of the stem tone by the affixal tone is accounted for by the following rule of parallel open parentheses.

(5) $(...)^{T_1} + ...)^{T_2} \rightarrow (.....)^{T_2}$

What this says is that the surface tone is arrived at by applying the suffixal tone to the entire word within one pair of parentheses and then assigning the tone in the required right to left manner, e.g.

(6) $(...)^{LHL} + ...)^{LH} \rightarrow (...)^{LH}$

wakiiliii + ai → (wakiilai)^{LH} /wàkìilái/ 'representatives'
representative pl

TIA's are found in a wide range of inflectional and derivational formations in Hausa. The following categories are illustrative only and do not exhaust the full inventory of word formation processes in the language.

1.1. Nominal plurals. Plurals in Hausa are formed by a large variety of suffixes often accompanied by infixation, gemination, or reduplication. All of the plural suffixes are TIA's, e.g.

(7) a. (taatsuuniyaa)^{LHLH} + ooCii)^{HH} → (táatsúuníyóoyíi)^{HH} 'folktales'

b. (riigaa)^{LH} + unaa)^{HL} → (ríigúnàa)^{HL} 'gowns'

c. (zoomoo)^{HH} + aayee)^{HLH} → (zóomàayée)^{HLH} 'hares'

d. (raanaa)^{HH} + aikuu)^{LH} → (ràanàikúu)^{LH} 'days'

e. (hankaakaa)^{LHL} + ii)^{LH} → (hànkàakíi)^{LH} 'crows'

f. (jiminaa)^{LHH} + uu)^{LH} → (jìmìnúu)^{LH} 'ostriches'

g. (yaatsaa)^{HL} + uu)^{HH} → (yáatsúu)^{HH} 'fingers'

In Parsons [1975:438ff.], examples such as jìmìnúu and yáatsúu are interpreted as manifestations of the same -uu plural marker. In my opinion, this approach seriously underestimates the importance of tone as an essential component of Hausa affixes. If one focuses on tone, one comes up with what is probably a more accurate grouping of plural forms. The form yáatsúu and other HH plurals with final -uu belong with the small class of HH plurals with final -aa , which includes very basic words such as mázáa 'men' (sg. míjìi), ɗíyáa 'children' (W. dialect) (sg. ɗìyáa); while plurals such as jìmìnúu represent a variant of the large high vowel LH plural class that includes words such as hànkàakíi 'crows', and bàrèeyíi 'gazelles'. It is hardly accidental that many words allow either -ii or -uu in this plural class, e.g. jìgàawúu = jìgàayíi 'sandy soil', kàntàngúu = kàntàngíi 'water pot necks'.

1.2. Derivational nouns. Nominal derivations, whether from noun or verb stems, are generally formed by suffixing a TIA, e.g.

(8) a. Abstract:
(yaaroo)^{HL} + antakaa)^{LHL} → (yàaràntákàa)^{LHL} 'childishness'

b. Abstract:
(shuugabaa)^{LLH} + ancii)^{HL} → (shúugábáncìi)^{HL} 'leadership'

c. Language:
(katsina)^{LHL} + ancii)^{HH} → (kátsínáncíi)^{HH} 'Katsina dialect'

d. Mutuality:
(soo)^{H} + ayyaa)^{LHL} → (sòoyáyyàa)^{LHL} 'mutual affection'
love

e. Excess/Habit:
(makara)^{LHL} + au)^{LH} → (màkàráu)^{LH} 'dilatory person'

f. "ANSQ":
(zurf-)$^{?}$ + ii)^{HH} → (zúrfíi)^{HH} 'depth'

With words such as fáaɗíi 'breadth', tsáamíi 'sourness', náuyíi 'heaviness', which Parsons [1955] calls "abstract nouns of sensory quality" (ANSQ's),

the stem never occurs independently. It either occurs in the ANSQ, e.g. zúrfíi 'depth', or in another derivation, e.g. zùzzúrfáa 'deep', zúrfàfá 'deepen'. Since ANSQ's constitute a lexically non-productive closed set, they have generally been treated as monomorphemic words that just happen to have HH tone and end in -ii . The interpretation offered here of ANSQ's as derived nominals containing a TIA seems analytically preferable in that it provides a simple explanation as to why these words all share a common phonological shape.

1.3. Nominalizations (verbal nouns and deverbative nouns). Verbo-nominal forms that generally translate as English present participles or gerunds are derived from verb stems by a variety of different means. With regard to what Hausaists call "secondary verbal nouns" (to distinguish them from the more regular, inflectional verbal nouns) it is not predictable what nominal form will correspond to what verb. All of the secondary verbal noun types are formed with tone integrating suffixes which override underlying verb stem tone,[3] e.g.

(9) a. (gina)^{HL} + ii)^{HL} → (gínìi)^{HL} 'building'

b. (haɓbi)^{LH} + ii)^{HL} → (háɓbìi)^{HL} 'shooting'

c. (ƭagangana)^{LHL} + ee)^{LH} → (ƭàgàngànée)^{LH} 'sitting with legs apart'

d. (jeefi)^{LH} + ii...aa)^{HL} → (jíifàa)^{HL} 'throwing'

Verbal nouns ending in -oo present an analytical problem that needs to be acknowledged although I shall not pursue it at this time. Contrary to the usually close fit between suffix and tone, at least in the case of disyllabic forms, oo-final verbal nouns appear with three different tone patterns: LH, HL, and (less often) HH, e.g.

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[3]Verbs are presented in what I consider to be their underlying lexical form. Since the final vowel is dropped and the stem tone overridden when a suffix is added, differences about the correctness of the abstract form that I have postulated are irrelevant here.

(10) a. LH: kòoyóo 'learning' (< kòoyí)
yàbóo 'praise' (< yàbí)

b. HL: róoròo 'harvesting' (< ròorí)
ríƙòo 'holding' (< rìƙí)

c. HH: 'áróo 'borrowing' (< 'arí)
ɗígóo 'dripping' (< ɗìgá)

1.4. Verbal extensions ("grades"). In the system of Parsons [1960] (modified by Newman [1973]), Hausa verbs occur in various morphological classes, termed "grades". While there is considerable difference of opinion in how the "primary" (more or less semantically neutral) grades should be analyzed, there is general agreement that the secondary (and tertiary) grades are formed by means of extensional suffixes. These are all tone integrating, e.g.

(11) a. Totality: $(\text{sayi})^{LH}$ + $\text{e})^{HL}$ → $(\text{sáyè})^{HL}$ 'buy up'

b. Efferential: $(\text{ƭuura})^{HL}$ + $\text{aƙ})^{H}$ → $(\text{ƭúuráƙ})^{H}$ 'push away'

c. Ventive: $(\text{dafa})^{HL}$ + $\text{oo})^{H}$ → $(\text{dáfóo})^{H}$ 'cook and bring'

d. Sustentative: $(\text{dafa})^{HL}$ + $\text{u})^{LH}$ → $(\text{dàfú})^{LH}$ 'be well cooked'

1.5. Statives and past participles. Adverbial statives and adjectival past participles are formed in a totally regular manner from any verb by suffixing a TIA, e.g.

(12) $(\text{zauna})^{HL}$ + $\text{e})^{LH}$ → $(\text{zàuné})^{LH}$ 'seated'

$(\text{dafa})^{HL}$ + $\text{e})^{LH}$ → $(\text{dàfé})^{LH}$ 'cooked'

(e.g. 'àbíncí yánàa dàfé 'the food is cooked')

$(\text{gaagara})^{LHL}$ + $\text{aCCee})^{LHH}$ → $(\text{gàagàrárrée})^{LHH}$ 'unmanageable'

$(\text{dafa})^{HL}$ + $\text{aCCee})^{LHH}$ → $(\text{dàfáffée})^{LHH}$ 'cooked'

(e.g. 'àbíncí dàfáffée nèe 'it is cooked food')[4]

[4]The past participle, with its tonally atypical LHH suffix, is probably derived historically from a regular LH-LH reduplicated form built on a sta-

1.6. Imperatives. Unlike other tenses/aspects in Hausa, which are indicated by a preverbal marker and do not affect the lexical tone (basic or derived) of the verb, the imperative is marked by a set LH tone pattern that overrides lexical tone.[5] Although the imperative is not marked segmentally,[6] one can still consider it to be a suffix, albeit a strictly tonal one, e.g.

(13) (tàashi)^{HL} + -Ø)^{LH} → (tàashí)^{LH} 'get up!'

(sunkuya)^{LHL} + -Ø)^{LH} → (sùnkùyá)^{LH} 'bend down!

1.7. Multiple suffixes. When a word contains more than one TIA, it is the outermost (rightmost) tone pattern that prevails, e.g.

(14) (daka)^{HL} + aCCee)^{LHH} + uu)^{LH} → (dàkàkkúu)^{LH} 'pounded' (pl.)
pound adj. pp pl.

(zaabuřa)^{LHL} + oo)^{H} + -Ø)^{LH} → (zàabùřóo)^{LH} 'gallop (here)!'
gallop Ventive Imp

2. Tone Non-Integrating Affixes

With tone non-integrating affixes (TNI's), the stem preserves its lexical tone and the tone of the word is made up of the juxtaposition of the two tonally specified constituents (stem and affix). TNI's are indicated by closed parentheses (...)^{T} to show that the affix is not able to incorporate the stem in its tonal domain. Given the basic pattern of right to left tone assignment

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tive-like stem, e.g. *dàfé-dàfé → dàfédfě (syncope with preservation of the L tone) → dàféffé (consonantal assimilation and L̂H to H simplification) → dàfáffée (lowering of /e/ to /a/ in closed syllables and final vowel lengthening of nominals and adjectivals).

[5]I'm simplifying the facts here: grade 1 and grade 4 verbs, for example, manifest LL rather than LH before noun direct objects. For a full discussion of Hausa imperatives, see Jaggar [1982].

[6]In Newman [1973:302], I suggested that the imperative of certain grades of verbs employed a segmental suffix -i (cognate with a similar suffix found in closely related Chadic languages) in addition to the distinctive tone pattern. While this could be correct, I now tend to think that the imperative is segmentally zero and that the -i that shows up with certain verbs is a reflex of the historically original (if not synchronically underlying) lexical final vowel.

in Hausa, it is not surprising that the prefixes (of which there are only two, leaving reduplication aside) are tonally non-integrating. In addition, there are a few tonally autonomous, non-integrating suffixes.

2.1. Referential marker. To indicate that a noun is definite and previously referred to, one adds a suffix $(n/\check{r})^{L}$. (Feminine singular nouns take /ř/ , the tap/roll ř being a reflex of syllable final *† , while plural and masculine singular nouns take /n/ .) The suffix is added to the stem with the stem tone and final vowel intact. If the stem ends in a high tone, the suffixal low surfaces as a falling tone on the word-final syllable; if the stem has a final low tone, the suffixal tone does not surface. (The shortening of the stem-final vowel in the examples is due to a general, low-level P-rule that automatically shortens vowels in closed syllables.)

(15)	(jaakii)^{LH} + (n)^{L}	→	jàakîn (< jàakíìn)^{LHL}	'the donkey'
	(saataccee)^{LHH} + (n)^{L}	→	sàatáccên	'the stolen one'
	(riigaa)^{LH} + (ř)^{L}	→	rìigâř	'the gown'
	(guugaa)^{HL} + (ř)^{L}	→	gúugàř	'the rubbing'
	(harsunaa)^{HL} + (n)^{L}	→	hársúnàn	'the languages'
	(zoomaayee)^{HLH} + (n)^{L}	→	zóomàayên	'the hares'

2.2. Participial ending. In the continuous/progressive tenses, verbs in certain grades add a participial ending (-waa)^{LH} when not followed directly by an object. (The verb can be intransitive or it can be transitive with the postverbal object not present, either because it has been preposed or because it is understood.) The high tone of the suffix associates with the syllable /waa/ while the low tone floats and combines with a preceding high tone to produce a falling tone.[7] If the stem-final vowel already has low tone, the

[7]Given the representation (waa)^{LH} for this suffix, there shouldn't be a floating tone. Both the H and the L should associate with the syllable /waa/, the resultant $\widehat{LH}$ automatically simplifying to H. This suggests that a better representation for this suffix would be (Vwaa)^{LH} , where V is a tone-

low tone of the suffix merges with it.

(16) (dafaa)^{HL} + (-waa)^{LH} → dáfàawáa 'cooking'

(koomoo)^{H} + (-waa)^{LH} → kóomôowáa 'returning here'

(bincikee)^{HLH} + (-waa)^{LH} → bíncìkêewáa 'investigating'

(sayaɾ̃)^{H} + (-waa)^{LH} → sáyâɾ̃wáa 'selling'

2.3. Feminine inflectional ending. Historically, Hausa had a toneless suffix *-aa (which took its tone from the immediately preceding tone) that was used for feminine gender inflection and overt characterization (see Newman [1979] and Leben [1971]).[8] Due to the operation of vowel and glide epenthesis, this suffix now appears as /yaa/ , /waa/ , /iyaa/ , and /uwaa/ , as well as /aa/ . Originally the surface tones of the suffix were (H)H or (L)L depending on the stem-final tone. With the operation of the rule of low tone raising (a rule that changes LL to LH in final position if the last vowel is long [Leben 1971]) the originally LL /iyaa/ and /uwaa/ forms became LH. Since there is real doubt whether low tone raising still functions as an active phonological process in Hausa (Newman and Jaggar [1983]), I prefer to analyze (-aa)^{H} synchronically as a tonally specified TNI rather than as a toneless suffix that

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bearing but segmentally non-specified vowel (a postulation that may have some historical justification). One should note that with verbs in grade 7, the u-final grade, the L of the suffix does not result in a falling tone, e.g. dàfúwáa 'being well cooked' (< dàfú) , not *dàfûwáa . There are two very different explanations for this, both consistent with the postulation of underlying LH tone for the -wáa suffix. The first is that a falling tone on /u/ can't occur for the simple reason that Hausa does not permit contour tones on light syllables. The second, proposed by Gouffé [1982], is that the /waa/ that appears with u-grade verbs is not in fact the same as the -wáa suffix that we are dealing with. Rather it is a primary verbal noun suffix -aa , preceded by an epenthetic glide /w/ , whose phonological similarity to the -wáa suffix is accidental.

[8]Leben [1971] accounts for the occurring tone of the underlyingly toneless suffix by a specific rule of tone copying. In a later paper [Leben 1978], he interprets the suffix as getting its tone from a more general autosegmental process of left-to-right tone assignment. In my opinion, Leben's earlier formulation was the correct one.

recapitulates the historical process. In either event, what is important is that the suffix is added to a full stem complete with tone and final vowel, e.g.

(17) (beebee)^{HH} + (aa)^{H} → béebíyáa 'deaf mute' (fem.)[9]

(shuuʃii)^{HL} + (aa)^{H} → shúuʃìyáa 'blue' (fem.)

(ʃaatoo)^{HL} + (aa)^{H} → ʃáatùwáa 'huge' (fem.)

(baaʃoo)^{LH} + (aa)^{H} → bàaʃúwáa 'foreign' (fem.)

2.4. Feminine derivational ending. A small number of Hausa nouns indicating animate beings (mostly humans and large animals) have corresponding female forms ending in /nìyáa/ , with three syllable stems, and /ányàa/ (or /ínyàa/) with CVCV stems, both < *-ánìyáa . Viewed historically, the suffix is almost certainly bimorphemic, being made up of a derivational HL suffix *ánÈ (where E was /e/ or /i/) plus the toneless feminine inflectional suffix *-aa (Leben [1971, 1978]). Synchronically the two components of the suffix are indistinguishable. The (-niyaa)^{HLH} allomorph operates tonally as a non-integrating affix in that it does not override the initial tone of the stem, e.g.

(18) (makaafoo)^{LHL} + (niyaa)^{HLH} → màkámnìyáa or màkáunìyáa
(< *màkáfnìyáa) 'blind woman'

(maraayaa)^{LHL} + (niyaa)^{HLH} → màráinìyáa 'orphan' (fem.)

(sarkii)^{LHH} (< *sàráakí) + (niyaa)^{HLH} → sàráunìyáa
(< *sàráknìyáa) 'queen'

(jinjirii)^{HLH} + (niyaa)^{HLH} → jínjinnìyáa
(< *jínjírnìyáa) 'infant'

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[9]In Leben [1971:215], the feminine form is given as béebìyáa with HLH tone, thereby engendering an elaborate analysis to explain the relationship between this and the HH masculine form. The fact is that the feminine form has all high tones, as would be expected, and the HLH citation is simply an unfortunate typographical error copied from the usually reliable dictionary of Abraham [1962:95].

Note that the final vowel of the stem is dropped when the suffix is added, unlike the normal case with TNI's. The weakening of the resultant syllable-final consonants to glides follows from the well described changes known as Klingenheben's laws (Klingenheben [1927/28]; Schuh [1974]; Newman and Salim [1981]).

Masculine/feminine pairs illustrating the /ányàa/ allomorph— /ínyàa/ in a few words—are given in (19).

(19) záakìi , záakányàa 'lion', 'lioness'
báràa , bárányàa 'servant'
kúusùu , kúusányàa 'rat'
bóokáa , bóokányàa 'native doctor'
yáaròo , yáarínyàa 'boy', 'girl'

In all of the examples in (19) the initial tone of the stem is high, thus the corresponding feminine form would appear as it does whether the suffix were tone-integrating or not. To test whether the suffix is a TIA or a TNI, i.e. anyaa)^{HL} or (anyaa)^{HL} , one would need to find a receptive masculine stem with initial low tone. I know of only one such word, namely màazóo (= màajíi) 'harnessed antelope', whose feminine counterpart is máazányàa ! On the basis of this example, we can identify anyaa)^{HL} as a TIA, e.g.

(20) (maazoo)^{LH} + anyaa)^{HL} → (máazányàa)^{HL}

This result seems natural and would hardly be surprising were it not for the fact that the /-nìyáa/ allomorph of the same feminine derivational morpheme was shown above to be tone *non*-integrating, i.e. the feminine form corresponding, for example, to (mùtûm)^{LHL} 'man, inhabitant' is mùtúunìyáa (< mùtúmnìyáa) not *mútúunìyáa .

2.5. Agentials, instrumentals, and locationals. Like so many other Afroasiatic languages, Hausa has a ma- prefix that serves to form nouns of agent, instrument, and place from verb stems, e.g.

(21) mářùbùucíi 'writer' < řúbùutá 'to write'
mábúuɗíi 'opener' < búuɗè 'to open'

májéemáa 'tannery' < jéemè 'to tan'

The tone of these forms can be accounted for in a number of ways. One approach, which I previously adhered to, interpreted the agential, for example, as being built with a discontinuous morpheme plus an overall tone melody, i.e. ma...ii^{HL*H}. I would now suggest that the ma- prefix is a nominalizer that co-occurs with, but is not part of the same morpheme as, the suffix -ii and, moreover, that the ma- has intrinsic high tone which does not affect the tone pattern of the rest of the word. The tonal difference between the agential and the instrumental forms, for example, has nothing to do with the initial ma- —this is indeed the same prefix in both cases—but is due to the segmentally identical but tonally distinct tone integrating suffixes ii)^{LH} "agent" vs. ii)^{HH} "instrument". Most locationals employ a suffix -aa)^{HH} (historically derived from *-ii plus the feminine *-aa) while others use the same -ii)^{HH} suffix as the instrumentals.

(22) (ma)^{H} + (gina)^{HL} + ii)^{LH} → (ma)^{H}(ginii)^{LH} → mágìnǐi 'builder'

(ma)^{H} + (kařanta)^{HLH} + ii)^{LH} → (ma)^{H}(kařancii)^{LH} → mákàřàncǐi 'reader'

(ma)^{H} + (doogara)^{LHL} + ii)^{HH} → mádóogárǐi 'a prop'

(ma)^{H} + ('aikata)^{HLH} + aa)^{HH} → má'áikátáa 'work place'

(ma)^{H} + (sauka)^{LH} + ii)^{HH} → másáukǐi 'lodging place'

Note that in the case of the agentials, treating the prefix as a tonally autonomous component allows the tone melody of the suffix to be assigned in a regular right to left fashion whereas incorporating the prefix in the tone melody necessitated the clumsy HL*H formula which required special expansion of the internal L.

The feminine agential has its own tone integrating suffix -iyaa)^{HLH} and is not derived from the masculine stem by the addition of the toneless -aa, as has been argued ingeniously by Leben [1971, 1978] (cf. the contrary opinion

of Churma [1975]).[10]

(23) (máhàiffíi) + iyaa)^{HLH} → (máháifìyáa)^{HLH} 'mother'
father
(má'àikàcíi) + iyaa)^{HLH} → (má'áikácìyáa)^{HLH} 'fem. worker'
(mákàřàncíi) + iyaa)^{HLH} → (mákářáncìyáa)^{HLH} 'fem. reader'

With all ma- constructions, the plural is formed by a tone integrating suffix that is added to the derived word including the TNI prefix,[11] e.g.

(24) (mágìnîi) + aa)^{HLH} → (mágìnáa)^{HLH} 'builders'
(mábúuʃîi) + ai)^{LH} → (màbùuʃái)^{LH} 'openers'
(má'áikátáa) + uu)^{LH} → (mà'àikàtúu)^{LH} 'work places'

2.6. Ethnonyms. Nouns indicating a person's nationality or origin or qualities associated therewith are formed with a prefix ba- (see Newman [1984]), and they usually manifest a set LH*L tone pattern, e.g. bàkátsínèe 'a Katsina man'. The analysis just presented for ma- words applies equally to ba- words. The prefix ba- is tonally autonomous; it has intrinsic low tone and does not get its tone from the overall tone melody as previously thought. The set tone pattern associated with ethnonyms comes not from ba- , but from the

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[10]I would offer the following speculation as to how the present agential forms historically came about. Originally, the feminine was formed from the masculine by the addition of the toneless suffix *-aa . (In accordance with the general rules of feminine formation [Newman 1979], high tone -i plus -aa was realized as -aa without an epenthetic glide.) The plural made use of a suffix *-an and HLH tone. Thus, with a root such as gîná 'build with mud', the three forms of the agential 'potter' would have been *mágìnîi (m), *mágìnáa (f), *mágìnán (pl). Subsequently, word-final nasals were lost in Hausa, a change well documented by Schuh [1976], thereby resulting in plural forms such as mágìnáa , which were no longer distinguishable from the feminine forms. At this point Hausa innovated and created a new feminine derivational suffix -iyaa with its own intrinsic tone pattern on the model of the surface -iyaa feminine endings so widespread in the language.

[11]The feminine and plural formations suggest some kind of cyclic operation in the word building rules. While má- , for example, is a tonally autonomous TNI to begin with, once it fuses with a stem it becomes subject to the tonal properties of any subsequently added TIA.

tone-integrating suffix -ee)^{HL}, e.g.

(26) (ba)^{L} + (katsina)^{LHL} + ee)^{HL} → (ba)^{L}(katsinee)^{HL} →
bàkátsínèe 'a Katsina man'

(ba)^{L} + (turai)^{HH} + ee)^{HL} → (ba)^{L}(turee)^{HL} →
bàtúrèe 'a European'

Ethnonyms without the -ee suffix, mostly C-final stems, occur with varying tones depending upon the tone of the stem. This is significant evidence that the tone pattern is not a property of the ba- prefix per se. The non-ee forms either end in the stem vowel with no suffix or, more often, add a tone non-integrating suffix -ii, which originally was a toneless postthetic vowel Many stems now have alternative ethnonyms with and without the -ee suffix, thereby highlighting the difference in tone resulting from the presence or absence of a TIA, e.g.,

(27) (ba)^{L} + (goobir)^{LH} + (ii)^{H} → bàgòobíríi 'a Gobir man'

(ba)^{L} + (masar)^{HL} + (ii)^{H} → bàmásàríi 'an Egyptian'

(ba)^{L} + (gwaari)^{HH} + (ii)^{H} → bàgwáaríi 'a Gwari man'

(ba)^{L} + (zamfara)^{LLL} + (ii)^{H} → bàzàmfàríi 'a Zamfara man'

cf. (ba)^{L} + (zamfara)^{LLL} + ee)^{HL} → bàzámfárèe

(ba)^{L} + (zagzag)^{HL} + (ii)^{H} → bàzázzàgíi 'a Zaria man'

cf. (ba)^{L} + (zagzag)^{HL} + ee)^{HL} → bàzázzágèe

cf. (ba)^{L} + (nufee)^{HH} + (Ø) → bànúfée 'a Nupe man'

cf. (ba)^{L} + (nufee)^{HH} + ee)^{HL} → bànúfèe

Plural ethnonyms are normally indicated by suppletive forms which add a tone integrating suffix -aawaa (with tone pattern LH or HH) to the underlying stem, e.g. hàusàawáa 'Hausa people', 'ábzínáawáa 'Asben people'. When the ethnonym is used adjectivally, however, a regular plural marker can be suffixed to the derived stem including the prefix, e.g.

(28) (bàřúumèe) + ai)^{LH} → (bàřùumái)^{LH} 'Roman (pl)'
(as in Roman swords)

(bà'ábzìnǐi) + ai)^{LH} → (bà'àbzìnái)^{LH} 'Asben (pl)'
(as in Asben horses)

3. Discussion

Having surveyed a considerable range of affixes we are now in a better position to say something about the tone integrating, tone non-integrating dichotomy. To begin with, assignment to TIA or TNI is not haphazard. It appears that the typical, unmarked case in Hausa is for derivational and inflectional suffixes to be tone integrating. The affixes that need explaining are the TNI's, the ones that leave the stem tone unperturbed. These do not constitute a single coherent class; rather, the individual affixes appear as TNI's because of one or more of the following factors. (a) Prefixes in Hausa are tonally autonomous and non-integrating, i.e. the stated norm only applies to suffixes. (b) Clitics, unlike true suffixes, are non-integrating because they are semi-independent and tonally autonomous. The referential markers—derived from the definite articles *nà and *tà —though phonologically bound to the preceding nominal stem, are nevertheless clitics with a different status from that of suffixes such as the plural. (c) Formerly toneless suffixes that have only historically recently acquired a distinct tonal specification, e.g. the feminine -áa and the ethnonymic -ǐi , are non-integrating presumably because they are tonally too weak to spread their tone. (d) Suffixes that segmentally are not integrated sufficiently to cause the stem vowel to drop, the deletion being a regular feature of TIA's, are tonally non-integrating. The participial ending -̀wáa , which one would characterize on syntactic and semantic grounds as a close verbal inflection, is weakly linked morphologically since it is added to a segmentally intact stem rather than being fused to it.[12]

[12]Grade 7 verbs with /waa/ have as an alternative a contracted, phonologically fused form, e.g. yànkúwáa = yànkóo 'cutable'; tàunúwáa = tàunóo 'chewable'; sàyúwáa = sàyóo 'buyable'. This may be evidence in support of Gouffé's view (see footnote 7) that the surface /wáa/ seen here is not the same as the -̀wáa morpheme.

(e) Finally, one is left with the problem of the feminine derivational ending -ányàa/-nìyáa , where one allomorph is tone integrating and the other non-integrating. From what we have seen throughout the paper, it is clear that it is the -nìyáa variant that is aberrant, i.e. as a derivational suffix that is added to a stem less the final vowel it should be tone integrating. The only explanation that I can offer at this point is that sàráunìyáa 'queen', màkáunìyáa 'blind woman', and the three or four other words that make up this small class are simply listed in the lexicon as such. That is, while historically -nìyáa may have functioned as a (semi-)productive derivational suffix, synchronically the stems with -nìyáa constitute lexically frozen forms.

4. Conclusion

This paper presents a model for viewing the influence of affixal processes on tone in Hausa. Two types of affixes are distinguished: tone integrating and tone non-integrating. Tone-integrating affixes, all of which are suffixes are specified with a distinct tone pattern that extends over the entire word within its domain, thereby obliterating the underlying stem tone. The tone of the word containing the suffix is arrived at by right-to-left assignment of the suffixal tone pattern. TIA's include nominal plurals, verbal grades, statives, past participles, verbal nouns, and nominal derivations such as abstract, language, agential (co-occurring with the prefix má-) and ethnonym (co-occurring with the prefix bà-). Tone non-integrating affixes do not affect the tone of the stem to which they are attached. The tone of the resultant word is simply the sum of the tones of the juxtaposed parts. TNI's include the agential/instrumental/locational prefix má- , the ethnonymic prefix bà- , the referential clitic ǹ/ř , the feminine inflectional marker —áa (and variant forms), and the progressive participial ending -wáa .

Of the two kinds of affixes, tone-integrating is clearly the norm for Hausa inflectional and derivational suffixes. This preference correlates with a segmental modification in Hausa, namely the dropping of stem final vowels when a suffix is added. The segmental and tonal behaviors combine in such a way that suffixation in Hausa becomes very much a synthetic process by which stem and affix fuse to produce a tightly bound new word.

REFERENCES

Abraham, R.C. 1962. *Dictionary of the Hausa Language*, 2nd ed. London: University of London Press.

Churma, Donald G. 1975. "Is Hausa a suprasegmental language?" In R.K. Herbert (ed.), *Proceedings of the 6th Conference on African Linguistics*, pp. 106-115. Columbus: Department of Linguistics, Ohio State University.

Clements, George N. and Kevin C. Ford. 1979. "Kikuyu tone shift and its synchronic consequences." *Linguistic Inquiry* 10:95-108.

Goldsmith, John. 1979. *Autosegmental Phonology*. New York: Garland.

Gouffé, Claude. 1982. "Notes de morpho-syntaxe haoussa: note n° 1 - le nom verbal primaire en -aa du 'degré 7'." *Bulletin des Études Africaines de l'INALCO* 2(3):97-104.

Hyman, Larry M. 1977. "On the nature of linguistic stress." In L.M. Hyman (ed.), *Studies in Stress and Accent*, pp. 37-82. (Southern California Occasional Papers in Linguistics, 4.) Los Angeles: Department of Linguistics, University of Southern California.

Jaggar, Philip J. 1982. "Monoverbal imperative formation in Hausa: a striking case of analogical realignment." *Journal of African Languages and Linguistics* 4:133-156.

Klingenheben, A. 1927/28. "Die Silbenauslautgesetze des Hausa." *Zeitschrift für Eingeborenen-Sprachen* 18:272-297.

Leben, William R. 1971. "The morphophonemics of tone in Hausa." In C.-W. Kim and H. Stahlke (eds.), *Papers in African Linguistics*, pp. 201-218. Edmonton: Linguistic Research, Inc.

Leben, William R. 1978. "The representation of tone." In V. Fromkin (ed.), *Tone: A Linguistic Survey*, pp. 177-219. New York: Academic Press.

Newman, Paul. 1973. "Grades, vowel-tone classes and extensions in the Hausa verbal system." *Studies in African Linguistics* 4:297-346.

Newman, Paul. 1979. "Explaining Hausa feminines." *Studies in African Linguistics* 10:197-226.

Newman, Paul. 1984. "Ethnonyms in Hausa." *Studies in African Linguistics* 15:301-320.

Newman, Paul and Philip J. Jaggar. 1983. "Synchronic exceptions to Low Tone Raising in Hausa." Paper presented at the Fourteenth Conference on African Linguistics, University of Wisconsin.

Newman, Paul and Bello Salim. 1981. "Hausa diphthongs." *Lingua* 55:101-121.

Odden, David. 1986. "On the role of the Obligatory Contour Principle in phonological theory." *Language* 66:353-383.

Parsons, F.W. 1955. "Abstract nouns of sensory quality and their derivatives in Hausa." In J. Lukas (ed.), *Afrikanistische Studien*, pp. 373-404. Berlin: Akademie-Verlag.

Parsons, F.W. 1960. "Tne verbal system in Hausa." *Afrika und Übersee* 44: 1-36.

Parsons, F.W. 1975. "Hausa and Chadic." In J. Bynon and T. Bynon (eds.), *Hamito-Semitica*, pp. 421-458. The Hague: Mouton.

Schuh, Russell G. 1974. "Sound change as rule simplification? A study of consonant weakening in Kanakuru and Hausa." In E. Voeltz (ed.), *Third Annual Conference on African Linguistics*, pp. 95-101. Bloomington: Indiana University.

Schuh, Russell G. 1976. "The history of Hausa nasals." In L.M. Hyman et al. (eds.), *Papers in African Linguistics in Honor of Wm. E. Welmers*, pp. 221-232. *Studies in African Linguistics*, Supplement 6.

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VERB SERIALIZATION AND LEXICAL REANALYSIS: THE CASE OF COMPOUND VERBS IN EDO

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This paper examines a category of compound verbs which features a particular kind of affix morpheme, with a view to determining the nature of the relation between this affix and other homophonous forms in the language which synchronically belong to different grammatical categories. In line with findings from similar studies of serial verb constructions in languages such as Mandarin Chinese and Yoruba, we have shown through our Edo data not only that certain verbs undergo grammaticalization and lexical re-analysis historically in the context of serial constructions to become prepositional case markers and adverbs synchronically, but also that some of these grammaticalized forms do undergo further lexical reanalysis and semantic depletion and ultimately become incorporated as affixal morphemes in compound verbs.

1. Introduction[1]

Verb serialization, or the serial verb construction, is a common and widely attested syntactic characteristic of Kwa languages. It is a construction in which the predicate of the sentence/clause consists of two or more verbal elements realizing different kinds of functional relationships. The Edo sentences below feature varieties of this construction type:[2]

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[1]Edo language belongs to the North-Central branch of the Edoid group of Kwa [Greenberg 1963] or Benue-Kwa [Elugbe and Williamson 1977].

[2]For all Edo texts used in this paper, tone is marked as follows: v́ for High tone, v̀ for Low tone, v̄ for Downstepped High tone, and Downstepped Low tone is left blank.

(1) òzó ř u l é[3] le èʊàɽé ɽ ē 'Ozo quickly cooked and ate'
Ozo quickly+Pt cook food eat

(2) íɽà̀ lèlé azàɽí kpàá 'they left with Azari'
they followed Azari leave

(3) ɔ́ dígwɛ ɽìʊyà̀ íɽà̀ 'he knelt and begged them'
he knelt beg them

(4) ɔ́ ř yé T̄ɣó xɛ ʊɛ́ 'he reserved money for me'
he took money wait me

(5) òzó yā ōwɛ́ kpolóó 'Ozo swept with a broom'
Ozo used broom sweep

Various aspects of the serial verb phenomenon have constituted the subject of study in the past decade and a half [Stalke 1970; Hyman 1971; Awobuluyi 1973; Bamgbose 1973, 1974; Li and Thompson 1973, 1974; Lord 1973, 1975, 1977, 1984; Givon 1975; Ekundayo and Akinnaso 1983]. Issues addressed in these various studies include the question of the historical derivation of the construction and problems of its syntactic analysis and semantic interpretation synchronically. Some studies attribute the development of verb serialization to the reduction of inflectional or "grammatical" morphology [Li and Thompson 1974; Givon 1975], while others trace its origin to a consecutive type of coordination [Hyman 1971]. Synchronically, the underlying syntactic structure(s) assigned to serial verb constructions have ranged from coordination and subordination [Li and Thompson 1973; Bamgbose 1973] to coordination only [Hyman 1971; Awobuluyi 1973].

A recurrent topic in verb serialization analysis is the question of the categorial status of the so-called "serial verbs" or "co-verbs", especially in relation to their homophonous full verbs. Typical in languages with verb serialization is the situation whereby a single phonological form synchronically functions as a verb, preposition, adverb, etc. in different grammatical con-

[3]Most of the non-ideophonic manner adverbials in Edo derive historically from verbs and so retain certain verbal characteristics, among which is the ability to mark tense, mainly tonally.

texts. Consider, for example, the Yoruba word kpèlú , discussed in Lord [1973:280ff.], which synchronically functions as a verb, preposition, conjunction, and adverb as in (6-9) respectively:

(6) fémĪ kpèlú àwɔ́ ólè (verb)
Femi be-included among PL thief 'Femi is one of the thieves'

(7) mɔ̄ wà nínbè kpèlú ākĪ (preposition)
I be there with Akin 'I was there with Akin'

(8) fémĪ kpèlú ākĪ gé ɛ̄rā̄ (conjunction)
Femi with Akin cut meat 'Femi and Akin cut meat'

(9) fémĪ nĪ ɔ̄rúkɔ̄ mì kpèlú (adverb)
Femi FOCUS name my also 'Femi is my name too' (as well as someone else's)

As Lord convincingly argues, all four categorial variants of the word are traceable historically to a single original comitative verb which has undergone grammaticalization in different syntactic contexts. Thus, what may appear to be a synchronic oddity is seen to conform to some regularity in a diachronic process.

The present study similarly aims to show how certain phonologically identical but synchronically diverse units functioning as verb, preposition/adverb, and verbal affix may be shown to be historically related. In particular, it will be shown that the verbal affix in a variety of compound verbs in Edo originated historically from a verb which has undergone grammaticalization and lexical re-analysis in contexts including serial verb constructions.

2. The Compound Verb

In this study, a distinction is made between bi- and multi-morphemic verbs which are the result of Verb-Noun combination on the one hand and those which are composed of two verbal morphemes or a verb and particle/formative. The former are regarded as complex verbs, while the latter are compound verbs. Examples (10-13) illustrate the former, while (14-17) illustrate compound verbs:

(10)	nǐyɛ̀ (v.)	<	nà[4] (v.) narrate	+	ìyɛ̀ (n.) news	'report'
(11)	mwègbé (v.)	<	mù (v.) carry	+	ègbé (n.) body	'prepare'
(12)	myɛ́sɔ̀ (v.)	<	myè (v.) see	+	èsɔ̀ (n.) hardship	'suffer'
(13)	mwóhù (v.)	<	mù (v.) carry	+	òhù (n.) anger	'be angry'
(14)	fyà̱ɾé (v.)	<	fyà̱ (v.) cut	+	ɾè (v.) eat	'bite'
(15)	mùhɛ̀́ (v.)	<	mù (v.) carry	+	hɛ̀́ɛ́ (v.) begin	'start, begin'
(16)	lègàá (v.)	<	lèɛ́ (v.) flow	+	gàá (v.) around	'surround'
(17)	yà̱ré (v.)	<	yà̱á̱ (v.) be surplus	+	rè (part.) ?	'be more than enough'

The concern of this paper is with compound rather than complex verbs.

There are two kinds of compound verbs, depending on whether they are made up of Verb+Verb or of Verb+Particle. In this study, we shall be concerned with the latter category. Example 17 above represents a typical example of the verb+particle type of compound verb. Other examples of this morphological type are illustrated by the following:

(18)	ř̌yɔ̀ré (v.)	<	ř̌yɔ̀ (v.) rise	+	rè (part.) ?up	'wake up'
(19)	yèré (v.)	<	yè (v.) recall	+	rè (part.) ?up	'remember, recall'
(20)	fùré (v.)	<	fù (v.) cool	+	rè (part.) ?down	'be calm, peaceful'

[4]Verbs in Edo have grammatical rather than lexical tone. The tone marked on these forms represents the imperative mood.

(21)	twòré (v.)	<	twò (v.) drop	+	rè (part.) ?down	'descend, dismount'
(22)	yǎ̀ré (v.)	<	yǎ̀ (v.) shine	+	rè (part.) ?out	'brighten (of the sun)'
(23)	fyǎ̀gbé (v.)	<	fyǎ̀ (v.) cut	+	gbè (part.) ?to	'bless'
(24)	kùgbè (v.)	<	kù (v.) join	+	gbè (part.) ?to	'combine'
(25)	bìgbé (v.)	<	bì (v.) push	+	gbè (part.) ?against	'shut'

Morphologically, these verbs each consist of two morphemes, a root and an affix. The root morpheme is the free verb from which the compound verb derives its meaning. The affix morpheme generally has no precise meaning, but typically conveys a vague deictic or prepositional meaning.

Syntactically, the root morpheme retains its transitivity value in some contexts of occurrence. Thus, in certain clausal constructions, it is immediately followed by its Object NP, and this leaves the affix isolated as a post-verbal free form. Compare, for example, (27) and (28) with the other sentences from (26) to (30):

(26) òzó řeřé řyɔrè òwyè ʼnà 'Ozo woke up early this morning'
Ozo early+Pt wake up morning this

(27) òzó yē enì vɛ̄́ rē 'Ozo remembered my name'
Ozo recalled name my ?up

(28) èkó fū ozò ègbé rē 'Lagos is comfortable for Ozo'
Lagos made cool Ozo body ?down

(29) òzó twōrè ʊè ĺbà 'Ozo descended from the slab'
Ozo descended at slab

(30) òvɛ̀ yǎ́re né 'the sun is out already'
sun brightened already

3. Re as Verb and Co-verb/Adverb

3.1. Functions of re . The surface structure NP V NP re of (27) and

(28) shows remarkable similarity to the surface form of one variety of serial verb construction:

(31) òzó lā ūgbó rē 'Ozo came through the farm'
Ozo passed farm come

(32) òzó lelé azàɽí rē 'Ozo came with Azari'
Ozo followed Azari come

(33) òzó lā Ṫmɔ́tò ré 'Ozo came in a car'
Ozo entered car come

(34) òzó yā ōwɛ́ rē 'Ozo came on foot'
Ozo used foot come

Examples (31-34) represent a variety of modality serialization in which the first verb in the series is interpreted as modifying the second verb. The second verb, re , is homophonous with the particle in (26-30), but from the meanings of (31-34) it is clear that the re in the latter set is a full-fledged verb. There are a number of significant differences between the type of sentences of (26-30) and that of (31-34), but it would be instructive to consider first a third kind of construction in which yet another variety of re occurs:

(35) ɔ̀ tyé ozó rē 'he summoned Ozo'
he called Ozo come

(36) ɔ̀ dɛ́ emyówō ré 'he bought some meat here (to speaker)'
he bought meat come

(37) ɔ̀ gbé ēhɛ̀ ré 'he caught some fish here (to speaker)'
he caught fish come

(38) ɔ̀ gbɛ́ ebé rē 'he wrote a letter here (to speaker)'
he wrote letter come

Again, with the same surface structure of NP V NP re , it would seem that there is no structural difference between (31-34) on the one hand and (35-38) on the other, especially as the literal gloss of re in the latter set has been given as 'come'. However, semantically, the re in (35-38) expresses an adverbial rather than verbal meaning, and it functions as a deictic modifier of the first verb, which is also the main verb in the series. Thus, whereas (31-

34) wrould be analysed underlyingly as constituting two conjoined clauses, (35-38) are underlyingly single clause constructions in which the second surface verb is in fact a verbal particle. This is supported by the paraphrase values of the sentences, shown in (39a,b):

(39) a. òzó lā ūgbó rē = òzó lā ūgbó + òzó rēè
Ozo passed farm Ozo came
'Ozo crossed the farm + Ozo came'

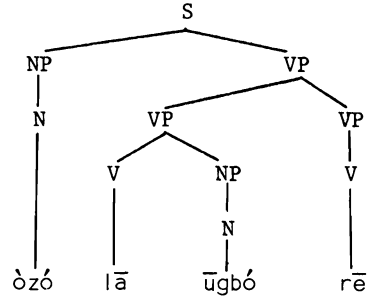
b. òzó lelé azàɾí rē = òzó lelé azàɾí + òzó ʋē azàɾí rēè
'Ozo followed Azari + Ozo and Azari came'

but for (35) we have:

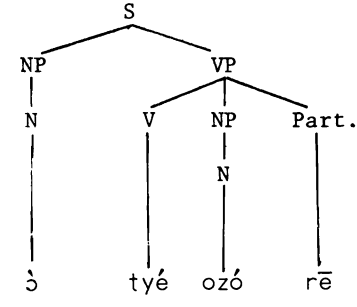
(40) ɔ̀ tyé ozó rē = ɔ̀ tyé - rē òzó[5]
he called come Ozo
'he summoned Ozo'

Diagrammatically, the synchronic underlying structures of (31) and (35) may be represented roughly as (41) and (42) respectively:

(41)



(42)



Further justification for the above analysis derives from the different occurrence possibilities for adverbs in the two kinds of sentences. Normally, adverbial modifiers occur in the immediate pre-verb position in clauses with-

[5]This, however, does not occur as an acceptable surface form, even though it paraphrases accurately the sense of (37). The particle always occurs after the Object NP in sentences of this nature; but see section 3.2.

out modal constituents,[6] as is illustrated in (43) and (44) below:

(43) a. òzó rī eʊàɽé 'Ozo ate (some food)'
Ozo ate food

b. òzó gyɛ̄ɛ́gyɛ̄ rì èʊàɽé 'Ozo hurriedly ate (some food)'
Ozo quickly+Pt eat food

(44) a. òzó lō ʊíɛ́ 'Ozo lay down'
Ozo lie

b. òzó fɛ̄kò lòʊìɛ́ 'Ozo lay down gently'
Ozo gently+Pt lie

Accordingly, semantically appropriate adverbs may occur before either of the two verbs in (31-34) to yield grammatical sentences:

(45) a. òzó gyɛ̄ɛ́gyɛ̄ là úgbó rē 'Ozo quickly came through the farm'
Ozo quickly+Pt pass farm come

b. òzó lā ūgbó gyɛɛ́gyɛ̄ rē 'Ozo arrived quickly through the farm'

(46) a. òzó kā lelè àzàɽí rē 'Ozo previously came with Azari'
Ozo first+Pt followed Azari come

b. òzó lelé azàɽí kà ré 'Ozo came previously with Azari'

(47) a. òzó kā la ímótò ré 'Ozo first came in a car'
Ozo first+Pt enter car come

b. òzó lā Tmótò kà ré 'Ozo first came in a car'

(48) a. òzó fɛ̄kò yà ówè ré 'Ozo carefully came by foot'
Ozo carefully+Pt use foot come

b. òzó yā ōwè fèkó rē 'Ozo carefully came by foot

However, in the case of (35-38), adverbs may occur only before the first verb and not re to yield acceptable sentences. This accounts for the ungrammaticality of the (b) sentences below:

(49) a. ò řèřé tye òzó rē 'he summoned Ozo early'
he early+Pt call Ozo come

b. *ò tyé òzó řèřè ré

(50) a. ò řèřé dɛ èmyówò ré 'he bought meat over early'
he early+Pt buy meat come

b. *ò dɛ́ emyówò řèřè ré

[6]The only exceptions to this rule are ideophonic adverbs, which occur only post-verbally.

(51) a. ɔ̀ ř̀èř́é gbe éhɛ̀ ré 'he caught some fish here early'
he early+Pt catch fish come

b. *ɔ̀ gbé ēhɛ̀ ř̀èř̀è ré

(52) a. ɔ̀ ř̀èř́é gbɛ̃ èbé rē 'he wrote a letter here early'
he early+Pt write letter come

b. *ɔ̀ gbɛ́̃ ebé ř̀èř̀è ré

The restriction of adverbs from occurring before re in the above sentences confirms the non-verbal status of re in such constructions. This further shows that sentences like (35) have only one underlying verb and are therefore structurally distinct from those like (31) which have two underlying verbs. The former type belongs to the category of construction which has been designated in the literature as the co-verb sentence, in which one of the two surface verbs is identified variously as a "co-verb", "verb in series", "serial verb", "prepositional case marker", etc. [Li and Thompson 1974; Lord 1973; George 1975]. As has been argued above, whereas re in (31-34) is an underlying verb, in (35-38) it is not. Syntactically, it is an adverb which semantically expresses a deictic meaning.

However, on the basis of the phonological identity and semantic similarity of the two forms, one cannot but infer the possibility of a historical link between them in line with the kind of historical relationship that has been postulated between co-verbs functioning as prepositional case markers, on the one hand, and their homophonous verbal counterparts, on the other, in languages such as Yoruba, Igbo, and Mandarin Chinese. Thus, the co-verb re in (35-38) can be said to have developed historically from the verb re , the latter having undergone a process of grammaticalization and lexical reanalysis in the particular constructional context in which it does not function as the main verb of the sentence.

The process of lexical re-analysis has both semantic and syntactic dimensions. It entails a reduction in its original semantic content and scope as a verb, while syntactically, it means a loss of distributional independence, having become incorporated into the categorial scope of the verb as a particle in a phrasal verb formation.

3. The compound verb context. A subsequent stage in the grammaticalization process is reflected in the compound verb context (cf. (18-25) above), in which the verb and particle coalesce to yield a single lexical unit. At this stage, the original verbal particle, with its deictic meaning, combines with its governing verb. Its identity as a separate morpheme is preserved only in its phonological form which remains invariant.

The strongest evidence of the lexicalization of the verb + particle structure is the ability of the new form to combine with vowel prefixes to form derived nouns, in the same way that nouns are derived from simple monosyllabic (CV) verbs. Compare (53-55) below with (56-61):

(53) a. tà (v.) 'say' b. ò-tá (n.) 'speech'

(54) a. gyɛ̀ (v.) 'laugh' b. ò-gyɛ́ (n.) 'laughter'

(55) a. vã̀ (v.) 'shout' b. à-vã́ (n.) 'thunder'

(56) a. fùré (v. intr.) < fù + rè 'be calm, peaceful'
b. ó-fùré (n.) 'peace'

(57) a. fyã̀gbé (v.) < fyã̀ + gbè 'bless, increase'
b. à-fyã́gbɛ̄ (n.) 'blessing'

(58) a. kùgbé (v.) < kù + gbè 'unite, combine'
b. à-kúgbɛ̄ (n.) 'unity'

(59) a. sì-kòkó (v.) < sì + kòkó 'gather, collect'
b. à-sí-kokó (n.) 'assembly, gathering'

(60) a. dègbé (v.) < dè + gbè 'hit'
b. ò-dègbé (n.) 'collision'

(61) a. yèré (v.) < yè + rè 'remember'
b. à-yèrè (n.) 'remembrance'

The point must be made, however, that the development of the above kind of compound verbs in Edo is yet at an incipient stage. Hence, unlike the case in Igbo, for example (cf. Lord [1975, 1977]), there are indeed very few examples of compound verbs readily attestable in Edo. Besides, many of the forms be-

have rather unstably as lexical units, especially in syntactic contexts. For example, many combinations involving transitive verbs always split to accommodate the Object NP of the verb immediately after it, thereby isolating the particle as a separate word:

(62) a. òzó yē enín ímà ré 'Ozo remembered our name'
Ozo recalled name our up

b. *òzó yēre èní ímà

(63) a. òzó sT̄ T̄yó ímà kòkò 'Ozo assembled our money'
Ozo pulled money our together

b. *òzó sT̄kòkó íyó ímà

However, it is also the case that when the Object of the verb is a complex NP, i.e. involving one or more relative clauses, rather than a simple phrase, the verb and its particle may occur together as a single word, with the Object NP following:

(64) a. òzó yē ɛʊ̀ɛ̀ nè í xáma ǎɽɛ̀ ré
Ozo recalled matter Rel I told him up

'Ozo remembered what I told him'

b. òzó yēre, èʊ̀ɛ̀ nè í xáma ǎɽɛ̀
Ozo remembered matter Rel I told him

'Ozo remembered what I told him'

(65) a. òzó sT̄ ìbìɛ́kà `hyá négyèɽè nè ì ré eʊá, nè í má
Ozo pulled children all little Rel cli. pron. be there Rel cli. pron. Neg
hé rì èʊàɽé kokó
yet eat food together

'Ozo assembled all the little children who were there who had not yet eaten'

b. òzó sT̄kokó, ìbìɛkà `hyá négyèɽè nè ì ré eʊá, nè í
Ozo assembled children all little Rel cli. pron. be there Rel cli. pron.
má hé rì èʊàɽé[7]
Neg yet eat food

'Ozo assembled all the little children who were there who had not yet eaten'

[7]In fact, in a sentence such as this, the (b) version is preferred to its

The re-ordering of constituents in the (b) sentences seems to be pragmatically motivated, as it not only eliminates the otherwise increased distance between the verb and its particle, thereby reinforcing their semantic unity, but, by having the complex Object NP moved to the end of the clause, it also facilitates its processing. More importantly, this sentence type does constitute important evidence of the transitional process from the verb + particle stage to the compound verb stage.

The tables below summarize the historical stages in the transition from a full-fledged verb to a grammaticalized verbal affix, using re and gbe as examples.

Table 1: re (v.) 'come' > -re (affix)

Historical Stages	*Distributional Contexts*	*Examples*
I: Full verb	(i) As main verb in a minimal sentence	òzó rē owà ʊ́ɛ̀ Ozo came house my 'Ozo came to my house'
	(ii) As main verb in a serial construction	ɔ̀ yá ōwɛ̀ ré he used foot come 'he came on foot'
II: Co-Verb/ Adverb	As a modifying verb in a serial construction	òzó voxó èřā́ rē ozo bent tree come 'Ozo bent the tree over'
III: Verbal affix	In a compound verb	òzó řyɔ̄re né Ozo woke up already 'Ozo has already woken up'

corresponding (a) form. It is also worth noting that in the (b) sentences above, there is usually a pause after the compound verb (marked here by the comma), and the intonation pattern up to this point is comparable to that used for an intransitive clause, i.e. as though no Object is anticipated. The eventual addition of the complex Object NP comes with noticeable force, probably intended to sustain its complex structure, as well as to compensate for its "displacement" by the particle.

Table 2: gbe (v.) 'hit' > -gbe (affix)

Historical Stages	*Distributional Contexts*	*Examples*
I: Full verb	(i) As main verb in a minimal sentence	òzó gbē azàɾí Ozo hit Azari 'Ozo hit Azari'
	(ii) As main verb in serial construction	òzó yā eřā gbe àzàɾí Ozo used stick hit Azari 'Ozo hit Azari with a stick'
II: Co-Verb/ Preposition	As a serial verb in a serial construction	òzó bī ɛ̄khù gbè àzàɾí Ozo pushed door hit Azari 'Ozo pushed the door against Azari'
III: Verbal affix	In a compound verb	ɛ̀xù bígbe gbè àzàɾí ówɛ̀ door shut hit Azari foot 'the door shut against Azari's foot'

4. Conclusion

In this paper, we examined a category of compound verbs in Edo which features a particular kind of affix morpheme, with a view to determining the nature of the relation between this affix and other homophonous forms in the language which synchronically belong to different grammatical categories. In line with findings from the study of serial verb constructions in languages such as Mandarin Chinese and Yoruba, we have shown through our Edo data not only that certain verbs undergo grammaticalization and lexical reanalysis historically in the context of serial constructions to become prepositional case markers and adverbs synchronically, but also that some of these grammaticalized forms do undergo further lexical reanalysis and semantic depletion and ultimately become incorporated as affixes to the main verbs with which they occurred as co-verbs in serial constructions, at an earlier stage.

REFERENCES

Awobuluyi, O. 1973. "The modifying serial construction: a critique." *Studies in African Linguistics* 4:87-111.

Bamgbose, A. 1973. "The modifying serial construction: a reply." *Studies in African Linguistics* 4:207-217.

Bamgbose, A. 1974. "On serial verbs and verbal status." *Journal of West African Languages* 9:17-43.

Ekundayo, S.A. and F.N. Akinnaso. 1983. "Yoruba serial verb string commutability constraints." *Lingua* 60:115-133.

Elugbe, B.O. and Kay Williamson. 1977. "Reconstructing nasals in proto-Benue-Kwa." In A. Juillard (ed.), *Linguistic Studies Offered to Joseph Greenberg*, Vol. 2, pp. 333-363. Suatoga, CA: Anma Libri.

George, I. 1975. "Typology of verb serialization." *Journal of West African Languages* 10,1:78-97.

Givon, T. 1975. "Serial verbs and syntactic change: Niger-Congo." In C. Li (ed.), *Word Order and Word Order Change*, pp. 47-112. Austin: University of Texas Press.

Greenberg, J.H. 1963. *The Languages of Africa*. The Hague: Mouton.

Hyman, L. 1971. "Consecutivization in Fe?fe?." *Journal of African Languages* 10:29-43.

Li, C.N. and S.A. Thompson. 1973. "Serial verb construction in Mandarin Chinese: subordination or coordination?" In *You Take the High Node and I'll Take the Low Node*, CLS 9, pp. 96-103 . Chicago: Chicago Linguistic Society.

Li, C.N. and S.A. Thompson. 1974. "Co-verbs in Mandarin Chinese: verbs or prepositions." *Journal of Chinese Linguistics* 2:257-278.

Lord, C. 1973. "Serial verbs in transition." *Studies in African Linguistics* 6:23-48.

Lord, C. 1975. "Igbo verb compounds and the lexicon." *Studies in African Linguistics* 6:23-48.

Lord, C. 1977. "How Igbo got from SOV serialization to SVO compounding." *Studies in African Linguistics Supplement* 7:145-155.

Lord, C. 1984. "The development of object markers in serial verb languages." In *Syntax and Semantics*, Vol. 15, pp. 277-299. New York: Academic Press.

Stahlke, H. 1970. "Serial verbs." *Studies in African Linguistics* 1:60-69.

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ADJECTIVES AND ADJECTIVALIZATION PROCESSES IN ẸDO*

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Real adjectives are few in Niger-Congo languages. Welmers [1973] warns that we should be suspicious of what is traditionally called adjectives in these languages. In this article, an attempt is made to describe the processes of expressing adjectival concepts in Ẹdo. Like many natural languages, Ẹdo adjectives and verbs are hardly separable; areas of similarity are analyzed. Taking a critical look at some words which have been erroneously called adjectives, we discover that they are in fact relative clauses. An examination of their underlying structures reveals the sources of their singular and plural forms. Finally, we identify some real adjectives (some of which are derived from adjectival verbs) on the basis of their inability to occur alone without "qualifying" nouns.

1. Introductory Remarks

Traditionally, adjectives are defined as words which "qualify" nouns because they give the attributes of persons and objects. In this respect, adjectives are said to belong to a separate part of speech from nouns, verbs, prepositions, and so on. However, it has since been observed that the different parts of speech "not merely grade into each other but are to an astonishing degree actually convertible into each other" [Sapir 1921:118]. In most cases, verbs, adverbs and nouns are the recipient parts of speech. Sapir illustrates with Yana in which "the adjective is a verb" while "adverbs and prepositions are either nouns or merely derivative affixes in the verb". Faced with the

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problem of distinguishing between Yoruba verbs and adjectives, Madugu [1976] wonders whether they have merged or they are just emerging.

The syntactic behaviour and semantic interpretation of adjectives have been and will be, for a long time to come, topics for recurrent and intense debate. Ross [1969] argues strongly that adjectives are in fact noun phrases but Chafe [1970:96] analyzes the verbal characteristics of some of them from the viewpoint of the "centrality for the verb" and concludes that they are "stative verbs". With regard to the Yoruba language (a language genetically related to Ẹdo), Afọlayan [1972] calls them "predicative adjectives" but Awobuluyi [1972] hastens to reject this designation and recommends the name "adjectivisable verbs". Omamor [1986] describes the same phenomenon in Okpe and Uvwie, both Edoid languages, employing the term "quality verbs". All these point to the inconclusiveness of previous approaches and the need for further analyses of fresh data from a variety of languages in order to understand their universal characteristics.

In the case of Niger-Congo languages, Welmers [1973:274] strongly warns analysts to "be suspicious of 'adjectives'; some of them are not". If it is the case that adjectives have merged with other syntactic categories in these languages, the question then is why have they merged and with what syntactic categories have they merged? Even more importantly, in the absence of real adjectives, how do speakers of these languages "qualify" nouns or give nouns attributes? A closer look at Ẹdo verbal and relativization systems is likely to give a clue to these questions.

Our aim in this study is to investigate how adjectival concepts are expressed in Ẹdo and how some real adjectives are derived from other syntactic categories through adjectivalization processes. We shall employ the term "adjectivalization" as a transformation process in the sense of Lyons [1977:396] "to refer to the process whereby attributive adjectives and adjectival phrases and clauses (including relative clauses) are derived from a variety of predicative structures".

Ẹdo (also called Bini) is a member of the Edoid group of languages [Elugbe 1979] which belongs to the Kwa group within the Niger-Congo family of African

languages [Greenberg 1963]. It is the main language of the ancient Kingdom of Benin. Much has been said about the artistic sophistication of the kingdom especially in bronze casting, but few systematic studies of the language have been done.

We have drawn the data for this study from our intuitive native speaker competence in the language with the assistance of informants. We have also elicited data from *Ita Ẹdagbọn Mwẹn* written by Jacob Egharevba, a renowned Ẹdo writer and authority on Ẹdo history.

2. Characteristics of Ẹdo Verb System

Ẹdo verbs can be divided broadly into action verbs and adjectival verbs. This division is not so clear-cut because syntactically, they behave alike in many respects. In fact, it can be argued that it is a hair-splitting exercise trying to make formal distinctions between them. We observe, however, that some adjectival verbs undergo some syntactic processes such as relativization and tonal changes which can transform them into attributive adjectives. Action verbs cannot undergo such transformations. We shall discuss the processes in section 4. Moreover, on semantic grounds, we observe that unlike Ẹdo action verbs, adjectival verbs, which have been erroneously called adjectives, give the inherent qualities or attributes of persons and objects that co-occur with them. Consider the following examples:[1]

(1) Òsàrọ́ khìán 'Osaro is going'
Osaro go

(2) Òsàrọ́ zùrọ́ 'Osaro is foolish/stupid'
Osaro foolish/stupid

---

[1]In the Ẹdo orthography we adopted, nasalized vowels are marked by a following nasal consonant as follows: in = /ĩ/ , ẹn = /ɛ̃/ , an = /ã/ , ọn = /ɔ̃/ , and un = /ũ/ . However, nasality is unmarked by /n/ if a nasal consonant precedes a nasalized vowel as in mìẹ́ 'see' in which the vowels are nasalized by the preceding nasal consonant. The seven oral vowels in Ẹdo which are i , e , ẹ , a , ọ , o and u in the orthography approximate respectively to /i/ , /e/ , /ɛ/ , /a/ , /ɔ/ , /o/ , and /u/ . The double consonants are realized phonemically as follows: gb = /g͡b/ , gh = /ɣ/ , kh = /x/ , kp = /k͡p/ , mw = /m̃ʊ̃/ , rh = /ɾ/ , rr = /r/ and vb = /ʊ/ (see Amayo and Elugbe [1983]).

The action verb khìán 'go' in (1) states an action performed by the subject NP but zùrǫ́ 'foolish/stupid' in (2) qualifies or gives the inherent attribute of the subject NP. In transformational generative grammar terms, the verb in (1) only has the syntactic feature [+VB] but zùrǫ́ in (2), in addition to the feature [+VB], also possesses the feature [+ADJ] because of its attributive function. It is this latter function that makes some analysts mistake it for a pure adjective. In order to function purely for epithetic purposes or as an attributive adjective, it must undergo some transformations. Such transformations include reduplication which results in zùrǫ̀zùrǫ̀ in the following sentence:

(3) òkpìá ǫ́kpá zùrǫ̀zùrǫ̀ tótà yè ágá 'one foolish/lazy man sat on the
man one foolish/lazy sit on chair chair'

Relativization can also make zùrǫ́ function as a pure adjective. First, it gives the structure nè ǫ̀ zùrǫ́ which glosses literally as 'that he foolish' but for purely attributive functions, it is reduced to nézúrǫ̀ as in the following sentence. In its present form, the pronoun ǫ̀ is deleted.

(4) òkpìá nézúrǫ̀ lẹ̀ẹ́ fùá 'a foolish/lazy man ran away'
man foolish/lazy run away

Perhaps a more plausible underlying form for nézúrǫ̀ , which will account for the tonal changes on u and ǫ is the occurrence of the relativizer nè 'that' and the derived nominal èzúrǫ̀ 'foolish person'. Both approaches, however, have relativization underlying them. Even the reduplicated form can be relativized as follows:

(5) òkpìá nézùrǫ̀zùrǫ̀ lẹ̀ẹ́ fùá 'a foolish/lazy man ran away'
man that-foolish/lazy run away

It is important to note that attributive adjectives cannot be derived from action verbs through reduced relative clauses. Thus, (1) cannot be transformed into (6) as follows:

(6) *Òsàrǫ́ nèkhìán... 'Osaro that is going...'
Osaro that-go...

The foregoing discussion clearly shows that there are semantic and syntactic motivations for subdividing Ẹdo verbs into action and adjectival verbs even though not all adjectival verbs can undergo these transformations. We prefer the designation "adjectival verbs" to Chafe's [1970:88-89] "stative verbs" because some of them will fail "the rule of thumb" test by answering the question "What happened?" or "What is happening?". For example, we can answer such questions by saying Òsàrọ́ ghọ̀ghọ́rè or Òsàrọ́ ghọ̀ghọ́ which will translate literally as "Osaro happied" and "Osaro is happying" respectively. It would appear, therefore, that there is a cline from verbs which are inherently action to those which are inherently adjectival. Between these extreme cases are those verbs which are partly action and partly adjectival.

We shall now examine some of the similarities between action verbs and adjectival verbs with a view to showing that adjectival verbs which are often mistaken for adjectives are in fact verbs.

2.1. Occurrence in the predicate. Ẹdo is basically an SVO language. Its sentence structure permits the occurrence of only an action verb or an adjectival verb to form the predicate of a simple sentence if the verb is intransitive, but whenever it is transitive, a noun phrase can occur after it. This means that an action verb or an adjectival verb can occur in the frame # NP - (NP) # where # represents sentence boundary. Here are some examples:

(7) òkhùò nìí mòsé 'that woman is beautiful'
woman that beautiful

(8) Òsàrọ́ ghọ̀ghó ègiè vbè ẹ̀gùàè 'Osaro was happy for his title in the palace'
Osaro happy title in palace

Sentence (8) further illustrates the occurrence of a prepositional phrase after the object noun phrase.

A predicative adjective can be derived from (7) through the process of reduplication and the occurrence of a form of copula as follows:

(9) òkhùò nìí yè mòsèmòsè 'that woman is beautiful'
woman that be beautiful

A reduced relative clause in which the pronoun of the antecedent noun does not

occur (see section 3) can result in a modifying adjective as follows:

(10) òkhùò némòsèmòsè tótà 'a beautiful woman is sitting'
woman that-beautiful sit

Reduplication in these cases also has implications for intensity. The final vowel of the adjectival verb mòsé in (7) can also be lengthened for the purposes of adjective formation and intensity. For example:

(11) òkhùò nìí yè mòsèè 'that woman is intensively beautiful'
woman that be beautiful

The verb ghọ̀ghọ́ 'happy' in (8) cannot undergo these transformations because it is partly an action verb and partly an adjectival verb. It combines the roles of describing the state of 'being happy' and what Osaro did. Other action verbs in Ẹdo such as gó 'shout', lé 'cook', mìẹ́kué 'admit' and so on, cannot undergo these transformations.

2.2. Consonant commencing. Like all Ẹdo verbs, adjectival verbs begin with consonants and end with vowels. The common syllable structures are CV for the monosyllabic verbs and CVV and CVCV for the disyllabic verbs. For example:

(12)

CV Structure		CVV Structure		CVCV Structure	
kọ́n	'foolish'	màá	'good'	kpọ̀lọ́	'big'
dín	'brave'	khùá	'heavy'	khèrhé	'small'
tọ́n	'hot'	bàá	'red'	dìmwí	'deep'
tán	'long/tall'	sìé	'black'	hòghá	'light'
yó	'high'	vbòó	'ripe'	pẹ̀rhẹ́	'low'
vọ́n	'full'	fuá	'white'	fùrré	'cool'
vbẹ́	'wide'	tùá	'tight'	wẹ̀nrẹ́n	'slim'
bún	'many/much'	khọ̀ọ́	'hostile'	mòsé	'beautiful'

2.3. Simple Past Tense inflection. Some adjectival verbs form their simple past tense or simple completive tense by taking the inflectional suffix which other verbs also take. The vowel that occurs in the verb stem largely determines the nature of the vowel that occurs in the suffix. For example:

(13) a. Adjectival verbs ending in oral vowels

Adjectival Verb Stem		Simple Past Form	
ghọ̀ghọ́	'happy'	ghọ̀ghọ́+rè	'happy+Past'
yó	'high'	yó+rò	'high+Past'
vbẹ́	'wide'	vbẹ́+rè	'wide+Past'
bàá	'difficult'	bàá+rè	'difficult+Past'
sìé	'black'	sìé+rè	'black+Past'
fú	'calm/quiet'	fú+rù	'calm/quiet+Past'
vbòó	'ripe'	vbòó+rò	'ripe+Past'

b. Adjectival verbs ending in nasalized vowels

Adjectival Verb Stem		Simple Past Form	
dìmwí	'deep'	dìmwí+rìn	'deep+Past'
kọ́n	'foolish'	kọ́n+rẹ̀n	'foolish+Past'
tán	'tall/long'	tán+rẹ̀n	'tall/long+Past'
màá	'good'	màá+rẹ̀n	'good+Past'
vọ́n	'full'	vọ́n+rẹ̀n	'full+Past'

The rule for the formation of the simple past tense suffix can be tabulated as follows:

(14) a. Oral Vowels

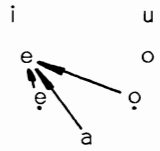
Verb Stem Vowel	Past Tense Suffix
i	-ri
e	-re
e	-re
a	-re
ọ	-re
o	-ro
u	-ru

b. Nasalized Vowels

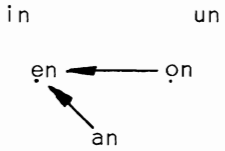
Verb Stem Vowel	Past Tense Suffix
in	-rin
ẹn	-rẹn
an	-rẹn
ọn	-rẹn
un	-run

On simple vowel charts, the system of vowel selection can be diagrammed as follows:

(15) a. Oral Vowels



b. Nasalized Vowels



Using the Chomsky and Halle [1968] features, these vowel charts presuppose the following vowel features:

(16)

	i	e	ẹ	a	ọ	o	u	in	ẹn	an	ọn	un
high	+	+	-	-	-	+	+	+	-	-	-	+
back	-	-	-	-	+	+	+	-	-	-	+	+
low	-	-	+	+	+	-	-	-	+	+	+	-
round	-	-	-	-	+	+	+	-	-	-	+	+
nasal	-	-	-	-	-	-	-	+	+	+	+	+

Considering the high frequency of occurrence of -re as a simple past tense suffix, we shall regard it as the underlying form (also see Amayo [1976]). If we now see the vowels in (15) in terms of high and low, we easily discover that all low vowels take the suffix -re . In the case of low nasalized vowels, a nasal lowering rule will first apply because /en/ does not occur in Ẹdo. As regards the high vowels, they all assimilate the qualities or features of /e/ . These rules can be stated as follows:[2]

(17) a. Quality and Nasality Assimilation

$$e \rightarrow \begin{bmatrix} \alpha\text{high} \\ \langle\beta\text{round}\rangle \\ \langle\beta\text{back}\rangle \\ \gamma\text{nasal} \end{bmatrix} / \begin{bmatrix} \alpha\text{high} \\ \langle\text{-low}\rangle \\ \beta\text{back} \\ \gamma\text{nasal} \end{bmatrix} \quad r\_\_ \quad [\text{Past suffix}]$$

b. Nasal Vowel Lowering

$$\begin{bmatrix} V \\ \text{-high} \\ \text{+nasal} \end{bmatrix} \rightarrow [\text{+low}]$$

[2]I am very grateful to Professor Russell G. Schuh who proposed these rules and also to Dr. B.O. Elugbe who helped to examine a large body of data and confirmed the suitability of the rules.

It should be noted that the simple past tense suffix is only manifest when the verb occurs sentence finally. There are no obvious phonological reasons for the deletion of the suffix so we believe that it is a grammatical rule that -re and its variants are deleted before object noun phrases. Transitive verbs do not take the -re suffix except when they are used intransitively. Thus (18) is grammatical but (19) is not.

(18) Òsàrọ́ ghọ̀ghọ́rè 'Osaro was happy'

(19) * Òsàrọ́ ghọ̀ghọ́rè ègiè 'Osaro was happy for a title'

See the first part of sentence (18) for the grammatical form of (19). We should add, however, that time adverbials, prepositional phrases and embedded sentences tend to violate this rule by occurring after the suffix. For example:

(20) àlìmoí vbórò nódẹ̀ 'an orange became ripe yesterday'
orange ripe+Past yesterday

(21) àlìmoí vbórò vbè òkhuàè 'an orange became ripe in the basket'
orange ripe+Past in basket

(22) àlìmoí ná vbórò àdéghẹ̀ ù hòó 'this orange is ripe if you want'
orange this ripe+Past if you want

2.4. Comparative construction formation. Ẹdo action and adjectival verbs can be employed in comparative constructions. The comparison of persons and objects is done through a verb serialization process in which sẹ̀ẹ́ 'pass' or 'more than' serves as a post modification of the preceding verb. On the other hand, sẹ̀ẹ́ can occur alone as the main verb of a sentence and still perform a comparative function. Here are some examples. In (23), it serializes with an action verb and in (24) with an adjectival verb.

(23) Òsàsẹ́rè gbé sẹ̀ẹ́ Òsàgié kèvbè Ìviè 'Osasere dances better than
Osasere dance pass Osagie and Ivie Osagie and Ivie'

(24) Òsàsẹ́rè tán sẹ̀ẹ́ Òsàgié kèvbè Ìviè 'Osasere is taller than Osagie
Osasere tall pass Osagie and Ivie and Ivie'

Omoregie [1983:57] identifies the use of sẹ́hiá 'more than all' or 'pass

all' for the superlative constructions. There are no number restrictions on the use of sẹ̀ẹ́ in Ẹdo so we believe that positing sẹ́hiá for the superlative construction is unnecessary.

2.5. Occurrence with auxiliaries. Adjectival verbs can be preceded by auxiliaries and such auxiliaries help or modify these adjectival verbs as well as mark tense in the same manner they modify and mark tense in action verbs. For example:

(25) ĺràn ghá ghòghó 'they will be happy'
they Aux-Fut. happy

(26) Òsàrọ́ rá vbẹ̀ ùvún nìĺ 'Osaro is going to widen that hole'
Osaro Aux+Fut widen hole that

Ghá and rá in (25) and (26) respectively are variants of Ẹdo future tense auxiliaries. However, rá is commonly used to indicate that the action of the verb it modifies is about to commence. Amayo [1980] makes a distinction between rá as a future tense marker and as a marker of an action that is about to commence by positing a downstepped tone before the verb it modifies as follows:

(27) a. ọ̀ rá !kpòlóó 'he will sweep'

b. ọ̀ rá kpòlóó 'he is about to sweep'

The downstepped tone is represented by the exclamation mark in (27a) Therefore, (27a) is a more distant future than (27b).

2.6. Nominalization processes. Adjectival verbs can be nominalized following the same process of nominalizing other verbs in Ẹdo. All Ẹdo nouns commence with vowels and end with vowels while all verbs commence with consonants and end with vowels. Therefore, in order to nominalize verbs, vowels are obligatorily prefixed to them. Here are some examples of nominalized action verbs:

(28)	Action Verb Stem		Derived Nominal	
	gié	'laugh'	ògié	'act of laughing'
	dá	'drink'	èdá	'act of drinking'
	tótà	'sit down'	ìtótà	'act of sitting down'

tuẹ́	'greet'	òtué	'act of greeting'
vẹ́n	'wrestle'	èvẹ́n	'act of wrestling'

Nominals are similarly derived from adjectival verbs as follows:

(29)

Adjectival Verb Stem		Derived Nominal	
ghọ̀ghọ́	'happy'	òghọ̀ghọ̀	'happiness'
mòsé	'beautiful'	ìmòsè (òsé)	'beauty'
sìkán	'tough/stringy'	ìsìkàn	'something tough/stringy'
lọ̀ghọ́	'difficult'	òlọ̀ghọ̀	'difficulty'
zùrọ́	'stupid/lazy'	èzúrọ̀	'stupidity/laziness'

In some cases, nominals are derived through a process of simultaneous prefixation and suffixation. The prefix in such cases is u- while the suffix is -mwẹ . Here are some examples:

(30)

Adjectival Verb Stem		Derived Nominal	
wẹ̀nrẹ́n	'slim'	ùwẹ́nrẹ́mwẹ̀	'slimness'
khuẹ̀rhẹ́	'soft'	ùkhuẹ́rhẹ́mwẹ̀	'softness'
tìnnié	'small'	ùtínnié́mwẹ̀	'smallness'
kpọ̀lọ́	'fat'	ùkpọ́lọ́mwẹ̀	'fatness'
dìmwí	'deep'	ùdímwímwẹ̀	'depth'

Some action verbs also derive their nominals through this process of prefixation and suffixation. For example:

(31)

Action Verb Stem		Derived Nominal	
lé	'cook'	ùlémwẹ̀	'act of cooking'
hú	'foam'	ùhúmwẹ̀	'act of foaming'
kpé	'wash'	ùkpémwẹ̀	'act of washing'
rhòó	'praise'	ùrhómwẹ̀	'act of praising'
rhùọ́	'boast'	ùrhuọ́mwẹ̀	'act of boasting'

From the foregoing discussion, there is no doubt that in many respects Ẹdo action verbs and adjectival verbs must be identical in their syntactic behaviours. However, in the absence of many true adjectives in Ẹdo, adjectival verbs help to give the attributes of nouns that co-occur with them. As we

shall discover in sections 3 and 4, many modifying or real adjectives are derived from adjectival verbs.

3. Relative Clause as an Adjectival Construction

Relativization is a highly productive process of expressing adjectival concepts in Ẹdo. This involves sentence embedding and reduction of the embedded sentence by elision processes. Elision is so prevalent in Edo that Welmers [1973:42-43] says "an investigator may well be tempted to wonder how even a native speaker of Ẹdo knows what the final vowel of a given verb actually is." In this study we have analyzed unelided structures in order to be able to account for all the transformations.

There are competing approaches to relativization which we do not wish to analyze here. We, however, favour the NP-S analysis as discussed in Chomsky [1965:137-138] because it can adequately account for the relativization processes in Ẹdo. In this approach, relativization is only possible when there is an identity condition between an NP in the matrix sentence and an NP in the constituent sentence. Consider the following examples in which action verbs occur in the relative clauses:

(32) òkhùò nọ́ lẹ́rè ọ̀nà khín 'this is the woman who ran away'

(33) ìkhùò ní lẹ́rè ènà khín 'these are the women who ran away'

The deep to surface derivational stages for (32) will be as follows:

(32) a. S_1 [òkhùò woman S_2 [òkhùò lẹ́rè] woman run+Past ọ̀nà this-one khín be] Base

b. S_1 [òkhùò woman S_2 [ọ̀ she lẹ́rè] run+Past ọ̀nà this-one khín be] Pronominalization

c. S_1 [òkhùò woman S_2 [nè that ọ́ she lẹ́rè] run+Past ọ̀nà this-one khín be] Relativizer insertion

d. S_1 [òkhùò woman S_2 [nọ́ that-she lẹ́rè] run+Past ọ̀nà this-one khín be] Elision

In the case of (33), the derivational stages will be as follows:

(33) a. [ìkhùò [ìkhùò lẹ́rè] èná khín] Base
S_1 women S_2 women run+Past these-ones be

b. [ìkhùò [íràn lẹ́rè] èná khín] Pronominalization
S_1 women S_2 they run+Past these-ones be

c. [ìkhùò [nè íràn lẹ́rè] èná khín] Relativizer insertion
S_1 women S_2 that they run+Past these-ones be

d. [ìkhùò [ní lẹ́rè] èná khín] Elision
S_1 women S_2 that-they run+Past these-ones be

Relativization takes place in these examples because there are co-referential relations between the NP in the matrix sentence and the NP of the embedded sentence. Adjectival relative clauses which are erroneously called adjectives in Ẹdo [Omoregie 1983:49-58] follow the same derivational processes. For example:

(34) Òsàrọ́ rhié òkhùò nọ̀mósè 'Osaro married a beautiful woman'
Osaro marry woman beautiful

The derivational stages for (34) will be as follows:

(34) a. [Òsàrọ́ rhié òkhùò] [òkhùò mòsé] Base
S_1 Osaro marry woman S_2 woman beautiful

b. [Òsàrọ́ rhié òkhùò] [ọ̀ mòsé] Pronominalization
S_1 Osaro marry woman S_2 she beautiful

c. [Òsàrọ́ rhié òkhùò] [nè ọ̀ mòsé] Relativizer insertion
S_1 Osaro marry woman S_2 that she beautiful

d. [Òsàrọ́ rhié òkhùò] [nọ̀mòsé] Elision
S_1 S_2

The singular or plural form of the antecedent NP in the matrix sentence determines the singularity or plurality of the adjectival relative clause. For example, if ìkhùò 'women' had occurred in S_1 of (34), the subsequent relativization of S_2 could have produced nìmòsé 'beautiful'. What changes ọ̀ in nọ̀mòsé to ì in nìmòsé in the surface realization must be the pluralization and pronominalization of the NP in the relative clause which is in identity with the antecedent NP. A plausible underlying form of nìmòsé will be nè íràn mòsé in which íràn 'they', a third person pronoun, is the plural counterpart of ọ̀ 'he/she/it', a third person singular pronoun. Elision deletes è from nè (as in nè ọ̀ mòsé) and also -ràn is elided from íràn

'they'. This explains the source of their singular and plural forms as in the following surface realizations:

(35)	Singular	Plural	Gloss
	nọ́yó	níyó	'high/tall'
	nọ́huánrẹ̀n	níhuánrẹ̀n	'holy'
	nọ́fuá	nífuá	'white'
	nọ́wánrẹ̀n	níwánrẹ̀n	'elder'
	nọ̀bàá	nìbàá	'red'
	nọ̀khọ̀rhiọ́n	nìkhọ̀rhiọ́n	'ugly'
	nọ́khuá	níkhuá	'grand/big'
	nọ́bígọ́	níbílógọ́	'bent'
	nọ́tánrẹ̀n	nítánrẹ̀n	'tall/long'
	nọ́khiọ́maẹ̀n	níkhiọ́maẹ̀n	'old'

The simple past tense suffix -rẹ̀n (see 2.3 above) obligatorily occurs in nọ́huánrẹ̀n 'holy', nọ́wánrẹ̀n 'elder' and nọ́tánrẹ̀n 'tall/long' as a part of the derivational process. Thus, the sentence èmwá níhuánrẹ̀n tótà will translate as 'holy people are sitting'. It does not in any way mean that the people were formerly holy. In a sense, it is similar to the participial use of 'delighted' in the English sentence 'I am delighted to see you'. In the case of the occurrence of -ló in níbílógọ́ 'bent', it is to mark the plural or iterative form of the verb stem bí 'push' which becomes bìló 'push repeatedly' while gọ́ 'curve' which occurs after it gives the direction.

There are some adjectival relative clauses that fail to follow the derivational processes we described above. For example, consider the ordinal numbers such as nókàrò 'first', nógiévà , and so on. Whereas nókàrò and its plural níkàrò can be derived from nè ọ́ kárò and nè íràn kárò respectively, nógiévà cannot be derived from *nè ọ̀ giévà because *giévà does not occur as a lexical item in Ẹdo. Only ógiévà 'second' occurs as an alternative way of saying nógiévà . A probable source of nógiévà will be nè ọ̀ rè ógiévà which glosses literally as 'that it be second' Elision deletes e from nè and also ọ̀ rè 'it be'. The plural form should have come from nè

íràn rè ógiévà 'that they be second' but elision reduces it to nógiévà which is the same as the singular form. We believe that this derivation will account for all cardinal numbers.

4. Adjectival Qualifiers

Real adjectives which function as noun qualifiers can be derived from some adjectival verbs through a process of tonal change and in some cases through reduplication. These derived adjectives can also take the relative clause marker ne but the pronoun of the antecedent NP does not occur in them. As a result, they cannot be pluralized as we observed in the case of adjectival relative clauses in 3. Here are some examples:

(36)

Adjectival Verb	Derived Adjective	Adjectival Relative Clause	Derived Adjective	Gloss
khùìkhùì	-	nọ̀khùìkhùì	nékhùì	'black'
pẹ̀rhẹ́	pẹ̀rhẹ̀	nọ̀pẹ̀rhẹ́	népẹ̀rhẹ̀	'low'
wẹ̀nrẹ́n	wẹ́nrẹ́n	nọ̀wẹ̀nrẹ́n	néwẹ́nrẹ́n	'slim'
khèrhé	khèrhè	nọ̀khèrhé	nékhèrhè	'small'
khuẹ̀rhẹ́	khuẹ̀rhẹ̀	nọ̀khuẹ̀rhẹ́	nékhuẹ̀rhẹ̀	'soft'
mòsé	mòsèmòsè	nọ̀mòsé	némòsèmòsè	'beautiful'
muẹ̀muẹ́	muẹ̀muẹ̀	nọ̀muẹ̀muẹ̀	némuẹ̀muẹ̀	'weak/idle'
pìrhí	pìrhìpìrhì	nọ̀pìrhí	népìrhìpìrhì	'clumsy'
sìkán	sìkànsìkàn	nọ̀sìkán	nésìkànsìkàn	'stringy'
tùnẹ́	túnẹ́	nọ̀tùnẹ́	nétúnẹ́	'small'
sùkú	sùkùsùkù	nọ̀sùkú	nésùkùsùkù	'confused'
hòghá	hóghá	nọ̀hòghá	néhóghá	'light'
zìghí	zìghìzìghì	nọ́zìghírì	nézìghìzìghì	'disorderly'
tìnniẹ́	tínniẹ́	nọ̀tìnniẹ́	nétínniẹ́	'tiny'
lùghú	lùghùlùghù	nọ́lùghúrù	nélùghùlùghù	'disturb, e.g. dirty water'

All the adjectival verbs tabulated above possess the characteristics of verbs discussed in section 2. However, in the nominalization process, khùìkhùì becomes ẹ́khùì 'blackness' even though *khùì does not occur as a lexical item.

My informants agree that sùkú , and lùghú can possibly be nominalized but this is not frequently done. Their nominals have probably gone into disuse with time. All the other adjectival verbs can be nominalized by prefixing vowels to them. As regards the adjectival relative clauses, they can be pluralized as nìkhùìkhùì , nìpẹ̀rhẹ́ , nìwẹ̀nrẹ́n , and so on. The adjectival verbs that occur in them retain their verbal characteristics. In fact, nọ́zìghírì and nọ́lùghúrù obligatorily take the simple past suffix in their derivation.

The derived adjectives on the other hand, cannot occur alone in the sentence except in the environment of the nouns they qualify. They are postposed to such nouns as it is commonly the case in Niger-Congo languages [Welmers 1973:262]. They do not possess the characteristics of verbs discussed in section 2. The only exception is that they commence with consonants and end with vowels. The adjectives derived from adjectival verbs and those derived from adjectival relative clauses can be used interchangeably to qualify nouns without any difference in their semantic interpretation. For examples:

(37)	èvbàré khèrhè	=	èvbàré nékhèrhè	'small food'
	ìrrí wẹ̀nrẹ́n	=	ìrrí néwẹ̀nrẹ́n	'tiny rope'
	ódó pẹ̀rhẹ̀	=	ódó népẹ̀rhẹ̀	'low mortar'
	òkhùò mòsèmòsè	=	òkhùò némòsèmòsè	'beautiful woman'
	èmwá muẹ̀muẹ̀	=	èmwá némuẹ̀muẹ̀	'weak people'

There are a few Ẹdo adjectives which are not derived from adjectival verbs. Consequently, they cannot occur in adjectival relative clauses. Examples include the second elements in the following structures:

(38)	ùkpó ọ́gbọ̀n	'new year'
	èvbàré èsì	'good food'
	ọ̀mwá dán	'bad person'
	èmwá kpàtàkì	'important people'
	ímọ́tò wọ̀rọ̀	'long car'
	èrhán túkpúrú	'short tree'

All these adjectives cannot occur alone in a sentence without the noun they qualify preceding them.

We can see the need to take Welmers' warning about adjectives seriously when we consider the fact that ọ́gbọ̀n 'new' in (39) is an adjective because occurring alone in the sentence makes it ungrammatical but its antonym ọ̀wiẹ̀yí 'old' in (40) is not an adjective because it can occur alone.

(39) *ọ́gbọ̀n ẹ̀ré Òsàrọ́ dẹ́rè 'it is a new one Osaro bought'
new it-is Osaro buy+Past

(40) ọ̀wiẹ̀yí ẹ̀ré Òsàrọ́ dẹ́rè 'it is an old one Osaro bought'
old it-is Osaro buy+Past

Ọ̀wiẹ̀yí 'old' as used in (40) is a nominal but it can also be used as an adjective as in :

(41) ímọ́tò ọ̀wiẹ̀yí ẹ̀ré Òsàrọ́ dẹ́rè 'it is an old car Osaro bought'
car old it-is Osaro buy+Past

4.1. Ideophonic adjectival qualifiers. Another group of adjectives we would like to examine is the ideophonic adjectival qualifier. A great deal has been said about the syntax of ideophones as qualifiers of nouns, adjectives, verbs and even complex sentences. Ideophonic adjectival qualifiers are particularly productive in Ẹdo for expressing adjectival concepts. Their use is very suitable for free expressions of a speaker's idiosyncratic feelings about persons and objects. For example, one speaker can describe a person's lazy and clumsy movement as gùkọ̀gùkọ̀ while another speaker can describe it as zùrọ̀zùrọ̀ . Innovations and borrowings from other languages are common occurrences in their usage.

The derivational process of reduplication, and sometimes obligatory triplication, is employed in the formation of ideophonic adjectival qualifiers. Some of the derived adjectives we identified in (36) such as pìrhìpìrhì 'clumsy', sìkàn-sìkàn 'stringy', zìghìzìghì 'disorderly' and lùghùlùghù 'disturb' are in fact ideophonic adjectival qualifiers but we included them there because they are derived from adjectival verbs. The ones we shall discuss below do not commonly have verbal forms. They include:

(42) sìlòsìlò 'entangled'
lìkpàlìkpà 'rough surface'

wẹ̀lẹ̀wẹ̀lẹ̀ 'easy'
bùyẹ̀bùyẹ̀ 'weak'
gúlúgúlú 'deep'
yàmàyàmà 'ill-mannered'
gbàkàgbàkà 'strong/healthy'
dúdúdú 'quite dark'
sẹ̀sẹ̀sẹ̀ 'spotless/immaculate white'
kánkánkán 'strong/hard'

The last three examples are obligatorily triplicated. Thus, we cannot say *dudu , *sẹsẹ or *kankan . In a sentence, an ideophonic adjectival qualifier occurs as follows:

(43) òkpìà yàmàyàmà ẹ̀ré Òzó khín 'Ozo is an ill-mannered man'
man ill-mannered it-is Ozo be

Like other Ẹdo adjectives, ideophonic adjectival qualifiers follow the nouns they qualify. They also cannot occur alone in a sentence. The reduplication of some ideophonic adjectival qualifiers is for the purpose of number agreement with the nouns they qualify. For example:

(44) Òsàrọ́ biẹ̀lẹ́ èmọ́ gbàkàgbàkà 'Osaro gave birth to strong/
Osaro give-birth children strong/healthy healthy children'

Reduplication takes place in (44) because of the occurrence of the plural noun èmọ́ 'children'. The verb biẹ́ 'give birth' also takes the suffix -le for the same purpose. The singular counterpart of (44) will be:

(45) Òsàrọ́ biẹ́ ọ̀mọ́ gbàkà 'Osaro gave birth to a strong/
Osaro give-birth child strong/healthy healthy child'

5. Conclusion

This study cannot be said to be exhaustive but our description has been detailed enough to show that although real adjectives are few in Ẹdo, as it is the case in Niger-Congo languages, there are other effective systems of expressing adjectival concepts. We examined what we call adjectival verbs, adadjectival relative clauses, and adjectival qualifiers. It is observed that what is expressed by adjectives in some languages is expressed by a class of

verbs in Ẹdo. These verbs differ from other verbs because they perform some qualificative functions in the sentence. Real adjectives can be derived from some of these adjectival verbs.

We also examined the underlying forms of relative clauses and accounted for their number agreement with their antecedent noun phrases. Finally, we identified some real adjectives whose sole function in the sentence is to "qualify" nouns. We have deliberately ignored the use of associative constructions, determiners, numerals, and quantifiers even though they perform qualificative functions. These will be topics for future investigations.

REFERENCES

Afọlayan, Adebisi. 1972. "The predicative adjective as a grammatical category in Yoruba." In Ayọ Bamgbọṣe (ed.), *The Yoruba Verb Phrase*, pp. 73-102. Ibadan: Ibadan University Press.

Amayo, Airẹn. 1976. "A generative phonology of Ẹdo (Bini)." Unpublished Ph.D. thesis, University of Ibadan.

Amayo, Airẹn. 1980. "Ẹdo." In M.E. Kropp Dakubu (ed.), *West African Language Data Sheets*, Vol. 2, pp. Ẹdo 1-8. Leiden: West African Linguistic Society in cooperation with African Studies Centre.

Amayo, Airẹn and Ohi Elugbe. 1983. "Ẹdo orthography." In Kay Williamson (ed), *Orthographies of Nigerian Languages*, Manual II, pp. 1-11. Lagos: National Language Centre.

Awobuluyi, Oladele. 1972. "Predicative adjectives in Yoruba: a critique." In Ayọ Bamgbọṣe (ed.), *The Yoruba Verb Phrase*, pp. 103-118. Ibadan: Ibadan University Press.

Chafe, Wallace L. 1970. *Meaning and the Structure of Language*. Chicago: The University of Chicago Press.

Chomsky, N. 1965. *Aspects of the Theory of Syntax*. Cambridge, Massachusetts: The MIT Press.

Chomsky, N. and Morris Halle. 1968. *The Sound Pattern of English*. New York: Harper and Row.

Egharevba, Jacob. 1972. *Itan Edagbọn Mwẹn*. Ibadan: Ibadan University Press.

Elugbe, B.O. 1979. "Some tentative inferences from comparative Edoid studies." *KIABARA: Journal of Humanities* Vol. 2, Rains Issue, pp. 82-101. Port

Harcourt: University of Port Harcourt.

Greenberg, J. 1963. *The Languages of Africa*. Bloomington: Indiana.

Lyons, John. 1977. *Semantics*, Vol. 2. Cambridge: Cambridge University Press.

Madugu-George, Isaac S. 1976. "Yoruba adjectives have merged with verbs: or are they just emerging?" *The Journal of West African Languages* 11(1-2): 85-101.

Omamor, Augusta P. 1986. "Adjectives and adjectivalisation in some languages of the Western Delta of Nigeria." Paper presented at the 17th West African Languages Congress, Ibadan.

Ọmọregie, Osarẹn S.B. 1983. *Ẹdo Grammar for Schools and Colleges*. Lagos: Thomas Nelson (Nigeria) Limited.

Ross, John R. 1969. "Adjectives as noun phrases." In David A. Reibel and Sanford A. Schane (eds.), *Modern Studies in English*, pp. 352-360. Englewood Cliff, New Jersey: Prentice-Hall, Inc.

Sapir, Edward. 1921. *Language*. London: Harcourt, Brace and World, Inc.

Welmers, W. 1973. *African Language Structures*. Berkeley: University of California Press.

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THE TEMPORAL ROLE OF EASTERN BANTU -ba AND -li*

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In the eastern Bantu languages forms of the verb 'be', -ba and/or -li , are commonly employed in complex constructions in which they take sentential(-like) complements. Though often considered to be semantically empty in these constructions, they are analyzed here as shifters, having both referential and indexical properties. As such they function to establish additional parameters to the temporal framework in which the narrated event is to be interpreted.

1. Introduction

In eastern Bantu languages forms of the verb 'be', -ba and/or -li , are often employed in complex constructions in which they take a sentential(-like) complement. In these constructions we commonly find tense/aspect markers both on the matrix verb, i.e. the particular form of 'be', and on the complement verb. One conventional explanation of this phenomenon has been to consider the so-called auxiliary verb 'be' to be a semantically empty support for tense markers, an approach not unlike that of early generativists with respect to the English auxiliary verb 'do'. Another approach has been to state in a vague manner that the time of the event is more specifically asserted. In this paper I want to propose that -ba and -li , in those languages that utilize them in such complex constructions, are not semantically empty but

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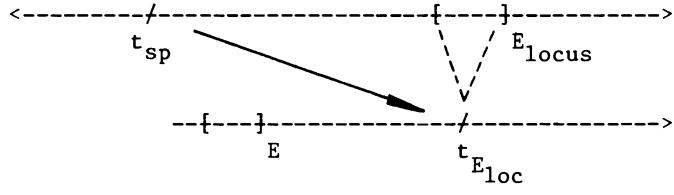
function to establish additional parameters to the temporal framework in which the narrated event is to be interpreted, thereby indicating more precisely the temporal location of the event. More specifically, I will argue that -ba and -li function as shifters, having both referential and indexical properties.

2. Establishing a Locus of Orientation

For all languages it would appear that the speech act itself serves to establish the primary locus for temporal orientation. Whatever the particular structure of the tense/aspect system may be, events (as named by verbs) are normally marked and interpreted temporally with respect to the time of the speech event (t_{sp}) in those languages that grammaticalize tense distinctions. However, it is not the case that languages are restricted to one grammatically relevant locus of orientation. There are at least a few languages which, in addition to the speech event, utilize a second (or even third) event as another locus of orientation for the temporal representation of events, and, more significantly for the present analysis, they refer to and index this event-locus grammatically.

In effect, the grammaticalization of this second event-locus establishes a second temporal continuum, dependent on the time of the speech event for its proper interpretation. Thus, in those languages that grammaticalize a second locus we find a potential for complex temporal frameworks in which the narrated event is to be interpreted. Such a framework, in which the second locus is situated posterior to the speech event, is schematized in Figure 1.

Figure 1. Complex temporal framework



For the eastern Bantu languages it is my claim that the auxiliaries -ba and -li are grammatical vehicles for the indexing of this second event-locus

and are referential in that they refer to a second locus. The "value" of the locus shifts according to context as a different event is indexed to serve as the event-locus. In order to support this claim I will present evidence that neither -ba nor -li is simply a tense support and show that they do, in fact, index events from context. Finally I will suggest how the two differ in those languages that employ both of them in the same types of complex constructions.

3. Evidence Against -ba and -li as Tense Supports

Conventional explanations of complex 'be' constructions have assumed, incorrectly, that the auxiliary verb, whether -ba or -li , simply serves to carry the tense marking for the construction. Evidence of usage from a number of languages argues against this assumption. Consider first some cases in which the tense marker on the auxiliary verb does not indicate the time of the event.

(1) Kinyarwanda (J 61) [Botne 1981]

a. uza:garuke ejó kare, n-za:-ba n-â:-gi-som-ye[1]
2s-fut-return tomorrow early 1s-fut-be 1s-pst-7-read-comp

'come back early tomorrow, I'll have read it (before then)'

b. Yohaní n(i á:zana ibito:ke makúmyǎ:biri, n-ra-bá n-z(a:-e:ng-a
John if 3s-bring bananas twenty 1s-nfut-be 1s-fut-brew-perf

'if John would bring 20 bananas (today), I will brew (some beer) (after today)'

(2) Ciyao (P 21) [Whiteley 1966:214]

a. ngáli juvávééceeté sooní pélé-po
not-be rel-3s-speak-asp again that time (after)

tu-li tw-a-más-ilé góná
1p-be 1p-pst-finish-asp sleep

'no one spoke again, that was after we had gone to sleep'

---

[1]Abbreviations used in the examples are:

T	= tense marker	nfut	= near future	perf	= perfective
asp	= aspect marker	pst	= past	pass	= passive
fut	= remote future	comp	= completive		

b. tw-a-lí-jí mkusyóómá bálúá katémá kámwapítágá-ko
lp-pst-be-? in-to read letter time 12-2p-pst-pass-asp-loc

nímlole nganitumkólanga
that's-reason not-1p-2p-greet-asp

'we were reading a letter when you were passing, that's why we didn't greet you'

In Kinyarwanda the future is sub-divided into two phases, later today (marked by -ra-) and after today (marked by -za:-). In (1a) the reading of the book will occur before early tomorrow morning, hence today. Yet -ba is marked with the distant future marker -za:- , indicating after today. Clearly, the time of the event and the temporal phase indicated, specified by the tense marker on -ba , do not correspond. Similarly, in (1b) 'brewing' will occur after today, but auxiliary -ba is marked with -ra- , later today. Again we find a discrepancy in the time referred to by the tense marker and the time of the event. An analysis that assumes -ba to be simply a support for tense cannot explain this tense usage.

In the Ciyao examples -li is covertly marked for non-future, the future marker being the prefix ti- or tu- (the tu- in these examples being the 1st person plural marker and not the future). The overt tense marker for past, -a- , is found on the complement verb, and not on the auxiliary. Since -li can occur with the past marker, as shown in (2b), we need to consider why it does not do so in (2a), a case that would appear to warrant its occurrence. The fact that -li may or may not take a particular tense marker strongly suggests that it is not an empty form serving to support tense morphemes, but rather that there are contextual factors which require the expression of certain temporal relations.

Another bit of evidence refuting the notion of "tense support" can be found in cases where both the auxiliary verb and the complement verb have the same tense marker, as in examples (3-5). If the auxiliary is truly only a tense support, then why should there be a need for two markers that have the same time reference?

(3) Siswati (S 43) [Ziervogel and Mabuza 1976:187]

ba-ɬawu-be ba-ɬawu-cala nakuvakala kukhala inkwela
3p-fut-be 3p-fut-start when-to be audible to produce sound whistle

'they will be about to start when the whistle sounds'

(4) Kirundi (J 61)

niya azaná ubwă:ʦi bw'ínzu, ʦu-zo:-ba ʦú-zo:-sáka:ra inzu
if 3s-bring thatch of house 1p-fut-be 1p-fut-thatch house

'if he would bring the thatch (tomorrow), we will thatch the house (after tomorrow)'

(5) Lamba (M 54) [Doke 1938:305]

n-ā-li n-ā-mu-wona lēlo
1s-pst-be 1s-pst-him-see today

'I have seen him today'

Note that for Siswati and Kirundi the complement verb is not restricted to the same tense marker as found on the auxiliary; other possibilities exist, as in (6-7).

(6) Siswati [Ziervogel and Mabuza 1976:187]

ba-ta(wu)-be ba-Ø-nats-é inkantini, hhayi tjwala
3p-fut-be 3p-T-drink-asp liquor not beer

'they will have drunk liquor, not beer'

(7) Kirundi

ní wazá mukwe:zi kuúza ʦu-zo:-ba ʦw-â:-saka:-ye inzu
if 2s-come month to come 1p-fut-be 1p-pst-thatch-comp house

'if you come next month, we will have thatched the house'

These examples suggest that the complement verb is marked with respect to some locus other than the speech event, otherwise we would expect a past interpretation in (7). The presence of -ba or -li and the appropriate tense affix signals the location of this other locus, hence the need for the tense marker on the auxiliary.

A final piece of evidence, and perhaps the most compelling, is found in imperative constructions. In these cases we find two possible constructions, one with auxiliary -ba and one without. Both have the same temporal mean-

ing, yet they differ significantly in their implications.

(8) Cinyanja (N 31) [Hetherwick 1914:149]

a. ba khala pansi pang'ono pano
be sit on ground a little here

'sit down on the ground for a little here (while I do something else)'

b. khala

'sit (down)!'

(9) Kinyarwanda [Botne 1983:259]

a. ba wi:caye hasí
be 2s-sit-comp on ground

'sit down on the ground (while I do something else)'

b. icara

'sit (down)!'

From the parenthetical commentary in the (8a) and (9a) examples it is clear that the presence of -ba affects the meaning of the utterance over and above any notion of time. It is also clear that -ba does not carry any tense marker in the (a) examples that differentiates the complex construction from the simple one found in (b). Thus, -ba cannot be considered to be a meaningless, empty support element in a complex construction.

These few examples from a variety of eastern (and southern) languages are sufficient to demonstrate that the conventional assumptions about the roles of -ba and -li are incorrect and that there is much more to the functions of these auxiliaries than a tense support hypothesis can handle.

4. -ba and -li as Shifters

The tense support hypothesis, as we have seen, does not account for the observed occurrences of the complex 'be' constructions. In place of this hypothesis I propose that these auxiliaries are best treated as shifters, that is, as sign vehicles that have both referential and indexical functions. They refer to a second locus of orientation which, as part of the temporal framework, must be situated temporally with respect to the speech event. For

this reason it is not surprising that the auxiliary verb may take a variety of tense markers, as would a main verb in simple constructions. The tense marker simply indicates the relationship between the primary locus (the speech event) and the secondary locus. That is, the tense marker indicates whether the time of the event-locus ($t_{E_{loc}}$) is anterior, posterior, or contemporaneous with t_{sp}. The particular "value" of $t_{E_{loc}}$ is not specified by the auxiliary verb; rather, it comes from the context of the utterance. Thus, the value (or "meaning") of the auxiliary shifts according to the context and the exact event that it indexes as the locus.

There are, then, three properties of these complex 'be' constructions that are salient here: (1) they establish a second locus of orientation; (2) they index an event from context that serves as the "cognitive" value of the second locus referred to; and (3) they indicate that the event E is to be interpreted directly with respect to this second event-locus ($t_{E_{loc}}$). The first and third of these properties are interconnected; that is, if a second locus is grammatically established (by use of -ba or -!i), then E must be interpreted with respect to this locus.

Consider explicitly how this works by comparing the two examples from Kirundi, repeated here as (10a) and (10b).

(10) Kirundi

a. niya azaná ubwǎ:tsi bw'ínzu, tu-zo:-ba tú-zo:-sáka:ra inzu
if 3s-bring thatch of house 1p-fut-be 1p-fut-thatch house
'if he would bring the thatch (tomorrow), we will thatch the house (after tomorrow)'

b. ní wazá mukwe:zi kuúza tu-zo:-ba tw-â:-saka:-ye inzu
if 2s-come month to come 1p-fut-be 1p-pst-thatch-comp house
'if you come next month, we will have thatched the house'

In both sentences the auxiliary -ba is marked by the remote future marker -zo:-, hence, the second locus of orientation has been situated posterior, and specifically after today, with respect to the time of the speech event. However, both the "value" attached to this locus, i.e. the event indexed, and the relationship of the event narrated in the complement clause to this second

locus differ. In (10a) -ba indexes the event 'bring thatch', and it is with respect to this particular event that the actual thatching of the house will take place, specifically on some day after the day on which the thatch is brought, hence the use of -zo:- on the complement verb. In (10b) -ba indexes 'come next month'; the past affixes, -a:- and -ye , on the complement verb indicate the temporal relationship of the event 'thatch house' with respect to this specific event. These two complex temporal frameworks can be represented schematically as shown in Figure 2.

How the narrated event is to be interpreted temporally with respect to the indexed locus is indicated by the affixes attached to the complement verb. In many cases this relationship will be determined in terms of aspectual distinctions, specifically, what aspect of the event E is to be focused on with respect to the state of affairs at $t_{E_{loc}}$. A few languages, such as Kirundi, maintain tense distinctions similar, if not identical, to those expressed between E and t_{sp} in simple constructions. Luganda (J15), Kiswahili (G42), and Siswati (S43) are illustrative of the aspect type, Kinyarwanda (J61) and Ciyao (P21) of the tense type.

(11) Luganda [Ashton et al. 1954:292]

a. bwe nnamulaba, yali asoggola lumonde
when 1s-pst-her-see 3s-pst-be 3s-dig up potatoes

'when I saw her, she was digging up potatoes'

b. bwe nnamulaba, yali alusoggoze
3s-pst-be 3s-them-dig up-comp

'when I saw her, she had dug them (potatoes) up'

(12) Kiswahili [Ashton 1944:250, Wilson 1970:247]

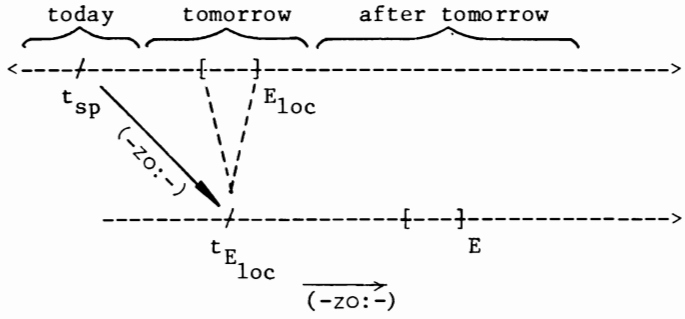
a. hapo majajazi yalipokuwa yanatoka bandari,
then dhows 6-pst-when-be 6-pres-leave harbor

kulisikilizana kelele
17-pst-be heard noise

'just as the dhows were leaving the harbor, a noise was heard'

Figure 2. Complex temporal frameworks in Kirundi

(10a)



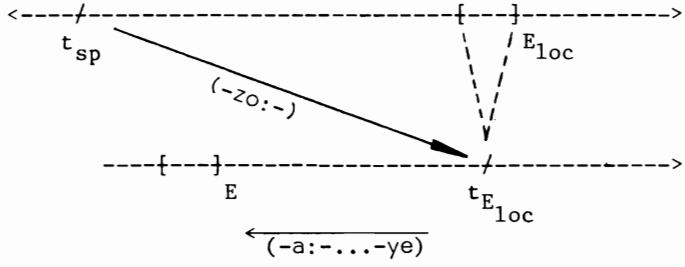
t_{sp} = time of speech event

$t_{E_{loc}}$ = time of E_{loc} indexed by -ba

E_{loc} = bring thatch

E = thatch house

(10b)



t_{sp} = time of speech event

$t_{E_{loc}}$ = time of E_{loc} indexed by -ba

E_{loc} = come next month

E = thatch house

b. nilikasirika sana kwa sababu alikuwa akilala mkutanoni
1s-pst-be angry very because 3s-pst-be 3s-cont-sleep meeting-at

'I was very angry because he was sleeping at the meeting'

(13) Siswati [Ziervogel and Mabuza 1976:187]

a. batawube bahamba nabafikako bangani bakhe
3p-fut-be 3p-travel when-3p-arrive-loc friends his

'they will be traveling when his friends arrive'

b. batawube bahambile nabafikako bangani bakhe
3p-travel-comp

'they will have traveled (completed), when his friends arrive'

(14) Kinyarwanda [Botne 1981, 1983]

a. uza:garuke nímugóro:ba, ndabá na:rwe:nze
2s-fut-return evening 1s-nfut-be 1s-pst-it-brew-comp

'come back this evening, I will have brewed it (beer)'

b. n'â:zana ibito:ke, ndabá nze:nga urwâ:gwa
if-3s-bring bananas 1s-nfut-be 1s-fut-brew banana beer

'if he would bring some bananas, I will brew some banana beer (after today)'

(15) Ciyao [Whiteley 1966:214]

a. puváíkagá ambújé-wo uwé ní tuli
when-3s-arrive-asp grandfather-dem my 1p-be

tumasílé kúlyá
1p-finish-asp to eat

'when my grandfather arrived we were finished eating'

b. ngáli juvávééceeté sooní pélé-po tuli
not-be rel-3s-speak-asp again that-when 1p-be

twamásilé góná
1p-pst-finish-asp sleep

'no one spoke again, that was after we had gone to sleep'

From these data it should be apparent that both -ba and -li play significant roles in establishing one locus of the temporal framework in which the event is to be interpreted. How the event will be interpreted with respect to this locus depends on the type of tense/aspect system a particular lan-

guage employs for these constructions. The nature of this system may depend, in part, on whether constructions are made with -ba or with -li .

5. Differentiating -ba and -li

We have seen that both -ba and -li function to establish a second locus of orientation, but as yet there has been no indication of how they differ. Of the dozen or so languages examined five utilized both -ba and -li constructions. By comparing the sense of the two types of constructions in some of these languages we gain some sense of the difference in effect of using one or the other (and even both together) of the auxiliaries. Consider first the case of -li in some constructions that have locative complements (the (a) examples that follow):

(16) Kinyarwanda [Botne 1981, 1983]

a. ari mukwe:nga[2] 'he's (in the midst of) brewing'
3s-be in-to brew

b. are:nga 'he's brewing'
3s-pres-brew

(17) Ciyao [Whiteley 1966]

a. túlí mkutává nyúmba 'we are (in the midst of) building a house'
1p-be in-to build house

b. tukútává nyúmba 'we are building a house'
1p-pres-build house

(18) Cigogo (G 11)

a. nili mundya 'I am (in the midst of) eating'
1s-be in-eat

b. nkulya 'I am eating'
1s-pres-eat

While both the (a) and (b) examples can be used to speak of an event on-going at the time of the speech event, they differ subtly but significantly in their meanings. The -li + locative constructions (either mu- or m- plus

[2]In Kinyarwanda the suppletive form of 'be', -li , is realized as -ri except after a nasal such as the first person singular subject marker n- , where we find ndi .

infinitive) indicate that at the moment of speaking the speaker is actually engaged physically in the event that is being described. On the other hand, the examples in (b) are all "general" present tenses indicating that the subject is involved in the named event, but it is not the case that the subject is necessarily actually performing the activity (he may be resting, for example). Hence, the use of -li picks out a particular *moment* in the event for focus.

This role of -li is even more apparent in a construction like that found in Kinyarwanda in which the locative construction occurs as the sentential complement of -ri .

(19) Kinyarwanda [Botne 1981]

Gasaná azá, narí ndí mukwe:nga, nyumá arakazwa
Gasana 3s-come 1s-pst-be 1s-be in-to brew then 3s-be angry-pass

n'û:ko ntă:muramukije
it's because neg-3s-pst-him-greet-comp

'when Gasana came I was in the midst of brewing; he became angry because I didn't greet him properly (at that moment)'

At a particular moment in the past the speaker was engaged in brewing beer, which involves mashing up bananas with the hands. He was not able to greet Gasana properly, i.e. by embracing him with both arms, at the moment of arrival because he was occupied.

This "punctual" nature of the -li construction can be contrasted directly with the same locative type construction in -ba . Consider the following example from Ciyao, and compare it with the example in (17a).

(20) Ciyao [Whiteley 1966:190]

tú$v^{!}$é mkutává nyúmba ní tááce kútukámúsya
1p-be in-to build house and fut-3s-come to-us-help

'we will be building a house (w/implication of *continuity*) and he'll come and help us'

Here we find a durative, continuous notion ascribed to the event 'build', whereas in (17a) the -li construction picks out and focuses on a particular moment of the event. This "durative/momentaneous" opposition is found not on-

ly in these 'be' + locative constructions, but also in the 'be' + sentential complement constructions. A clear distinction can be observed in Kinyarwanda where we find -ba and -li constructions opposed in the past tense.

(21) Kinyarwanda [Botne 1981]

a. nabâ:ye nǐ:ga ntégereje Mihigo
1s-pst-be-comp 1s-study 1s-wait-comp Mihigo
'I studied while waiting for Mihigo'

b. ukó umugoré wé yaréraga umuhǔ:ngu wâ:bo
while wife his 3s-pst-tend-impf son their
yabága yî:ga kúri iniversite
3s-pst-be-impf 3s-study at university
'while his wife was caring for their son, he studied at the university'

c. nári nî:ze mbere yó kubónana na mwâ:limú
1s-pst-be 1s-study-comp before to meet with teacher
'I had studied before seeing the teacher'

The -ba auxiliary, unlike -ri , can be marked for quantitative aspect, that is whether or not the event-locus represents a single instantiation of the situation or multiple occurrences. In (21a) we find the former, in (21b) the latter. In both instances there is emphasis on the fact that the situation occurred over a period of time. In (21c) there is no indication of an interval or of duration of the event; rather, the event is treated as a whole with no indication of its temporal dimension.

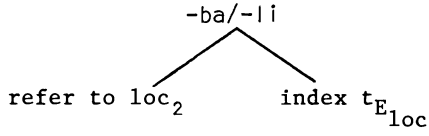
These constructions with -ri always appear to have the sense of "E occurs before a point $t_{E_{loc}}$ " or "a moment in E". In effect, we might say that -ri indexes a particular critical moment in the relationship of events spoken of and, hence, might be considered to index a temporal juncture. By contrast, -ba constructions appear to emphasize the durative, continuous nature of the situation.

6. Summary and Some Conclusions

I hope, in this brief paper, to have provided evidence against the view that -ba and -li are semantically empty morphemes and in favor of the

view that they serve an important temporal function. I have argued that they have a dual function. They are *referential* in that they refer to a second locus of orientation and *indexical* in that they index an event from context. This dual function suggests that they are best treated as shifters, in much the same way as, for example, demonstrative pronouns. The dual nature of these two verbs can be visualized as the figure below suggests.

Figure 3. Function of -ba and -li



(The value associated with loc_2 depends on the pragmatic value of $t_{E_{loc}}$, i.e. on what is indexed as the locus.)

The perspective I have presented here of -ba and -li as referential indices provides the basis for explaining much of the semantic and pragmatic behavior of complex "be" expressions throughout the eastern Bantu region. In particular, it explains how temporal relations among several events are indicated grammatically and suggests how and why they come to be used at a particular point in discourse.

I have explored here some of the aspects of meaning of the auxiliaries -ba and -li . If we are to come to some fuller understanding of temporal modalities as expressed in such complex constructions as these "be" constructions we need to explore more closely the uses of the many other auxiliary verbs found in these languages. And we need to be wary of passing off various elements as "empty" or "meaningless", for it may simply be that we have failed to observe the subtle roles they may play.

REFERENCES

Ashton, E.O. 1976. *Swahili Grammar*. London: Longman Group.

Ashton, E.O. et al. 1954. *A Luganda Grammar*. London: Longmans, Green & Co.

Botne, Robert. 1981. "On the nature of tense and aspect: studies in the semantics of temporal reference in English and Kinyarwanda." Unpublished PhD Dissertation, Northwestern University.

Botne, Robert. 1983. "The semantics of tense in Kinyarwanda." *Studies in African Linguistics* 14:235-263.

Doke, Clement M. 1938. *Textbook of Lamba Grammar*. Johannesburg: Witwatersrand University Press.

Hetherwick, Rev. Alexander. 1914. *A Practical Manual of the Nyanja Language*. Nyasaland and Northern Rhodesia: African Lakes Corporation, Ltd.

Whiteley, W.H. 1966. *A Study of Yao Sentences*. Oxford: Clarendon Press.

Wilson, P.M. 1970. *Simplified Swahili*. Nairobi: East African Literature Bureau.

Ziervogel, D. and E.J. Mabuza. 1976. *A Grammar of the Swati Language (Siswati)*. Pretoria: J.L. Van Schaik Limited.

ERRATA:

We regret the following errors in Torben Andersen's article, Volume 17, Number 1, 1986:

p. 60: The sentence beginning on line 4 should read as follows:

"Whereas the final vowel can be either [+ATR] or [-ATR] in V̀CV̀ and V̄CV̄ stems, it can only be [-ATR] in V́CV́ stems and only [+ATR] in V́CV̋ stems."

pp. 64-65: Note corrections in lines 3 & 4 of Table 3 and in line 7 of Table 4 in the portions of the tables reproduced below:

Table 3. Reflexes of proto-Moru-Madi *ɛ , *e , *ɔ , *o

		W.Lugbara	E.Lugbara	S.Madi	N.Madi	Lulubo	Moru Miza	Proto-Moru-Madi
*ɛ	'neck'	ɔ̄mbɛ̄	ɔ̄mbɛ̄	ɛ̄mbɛ̄	ɛ̄mbɛ̄	ɛ̄mbɛ̄	cɛ̄mbɛ̄	*(k-)ɔ̄mbɛ̄
	'to give'	fɛ̀	fɛ̀	hwɛ̀	kɛ̀	kwɛ̀	-	*kwɛ̀
	'arrow'	ʾjɛ́	ʔɛ́	ɛ́ʔɛ́	ɛ́ʔɛ́	ɛ́ʔɛ́†	-	*ɛ́ʔɛ́
	'white'	ɛ̄mvɛ̄	ɪ̄mvɛ̄	ɪ̄ŋgwɛ̄	ɪ̄ŋgwɛ̄	ànɡwɛ̄	ɔ̀ndʒɛ́	*-ŋgwɛ

Table 4. Regular and irregular reflexes in Western Lugbara of high tone in proto-Moru-Madi

		W.Lugbara	E.Lugbara	S.Madi	N.Madi	Lulubo	Moru Miza	proto-Moru-Madi
i	'house'	dzɔ̋	dzɔ́	dzɔ́	zɔ́	dzɔ́	zɔ́	*dzɔ́
ii	'urine'	ɔ́drɛ̋	ɔ̄drɛ́	ūdré	ūdwé	ɬɖwé	kūdré	*(k-)ɔ̄drwé
iii	'grass'	ásɛ̋	āyɪsɛ́	āyɪsé	āyɪsé	āyɬ	kʌ̄yɬ	*(k-)ʌ̄yɬ(-sé)
iv	'dog'	ɔ̀tsɛ̋	ɔ̀tsɔ́-ɔ́	ɔ̀tsɛ́	ɔ̀kɛ́	ɔ̀kɛ́	kɔ̀cɛ́	*(k-)ɔ̀kɛ́
v	'yesterday'	ádzɛ̋¯	ádzɛ́¯	ádzɪnɪ̄	ágɪnɪ̄	ágɪnɪ̄	-	*ágɛ́nɪ̄
vi	'granary'	èrɔ̋	èrá	èrɔ́	èrɔ́	èrɔ́	cìrɔ́	*(k-)èrɔ́
vii	'hare'	ètɔ́-ɔ́	ɔ̀tɔ́-ɔ́	ɪ̀tó	ɪ̀tó	ɪ̀t̪ó	cìtɔ́-ŋwá	*(k-)ɪ̀tó
viii	'witch-doctor'	ɔ́dzɔ́-ɔ́	ɔ́dzɔ́-ɔ́	ɔ́dzɔ́	ɔ́zɔ́	ɔ́zɔ́	kɔ́zɔ́	*(k-)ɔ́dzɔ́

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PUBLICATIONS RECEIVED

William D.E. Coulson, "Palestinian objects at the University of Minnesota," *Occasional Papers on the Near East* 2(2):1-28, 1986. Malibu: Undena Publications (P.O. Box 97, Malibu, CA 90265). $4.50.

[From the introduction]: "A collection of 66 vases, 8 lamps, 5 figurines, and a group of miscellaneous sherds, of which the two best are included in this catalogue, forms part of a recent bequest to the University of Minnesota by the late Andrew J. Sarazyn of Marshall, Minnesota."

Robert Hedinger, *The Manenguba Languages (Bantu A.15, Mbo cluster) of Cameroon*. London: School of Oriental and African Studies, 1987. Pp. 306. £15.00.

[From the introduction, p. 17]: "The Manenguba languages are spoken on and around the Manenguba mountain range situated in the south-western part of the Republic of Cameroon. The aim of this study is to compare the different languages and dialects with a view to reconstructing aspects of the phonology and the noun class concord system and vocabulary of the common proto-language, and to make a classification of the languages and dialects which expresses the relationships between them and their development from the proto-language." In addition to the Introduction, the chapter titles are Reconstruction of Proto-Manenguba, Sound Changes and Reflexes of PM Sounds, Aspects of the Noun Class and Concord System, Proto-Manenguba and Proto-Bantu, and Classification of the Manenguba Languages. There are Appendices consisting of a comparative word list, an English index to the list, and word lists from 19th century publications.

Alan S. Kaye, *Nigerian Arabic-English Dictionary*. Bibliotheca Afroasiatica, 2. Malibu: Undena Publications (P.O. Box 97, Malibu, CA 90265), 1986. Pp. viii, 90. $35.00/cloth, $25.00/paper.

[From the abstract]: "[This] is the companion volume to the author's *A Dictionary of Nigerian Arabic*, which was published in 1982 (Bibliotheca Afroasiatica, Volume 1). It lists the approximately 6000 lexemes with some illustrative sentences alphabetically from Arabic to English using the same transcription as the 1982 volume. Although most Arabic dictionaries are organized under a triconsonantal root, the loss of laryngeals and pharyngeals as well as other developments have brought about a "mutilated" root situation. Therefore, it was decided to arrange the data alphabetically rather than under a historical root."

Periodicals

Afrikanistische Arbeitspapiere. Institut für Afrikanistik, Universität zu Köln, D-5000 Köln 41, FEDERAL REPUBLIC OF GERMANY. Regular subscriptions DM 40; student subscriptions DM 28.

Quarterly journal "devoted to African Studies in the broadest sense: descriptive or historical linguistics, history, literature, ethnology. [It] publishes articles, miscellaneous ideas, descriptions of research projects, informations, from time to time also monographs." Four volumes have appeared each in 1985 and 1986, plus a "Sondernummer", *A Small Sketch of Ewe* by Thilo Schadeberg.

Fragmentos, Volume 1, Number 1, January 1986. Departamento de Língua e Literatura Estrangeiras, Universidade Federal de Santa Catarina, Trinidade, 88.000 Florianópolis, SC, BRAZIL.

[From the cover letter]: "... *Fragmentos* [is] a publication of the Federal University of Santa Catarina (Brazil) which comes out twice a year. The review is mainly dedicated to language and literature areas other than Portuguese. The articles may be written in Portuguese, Spanish, French, German, Italian or English." The first number includes four linguistic articles, one entitled "Les réponses *oui* et *non* en français bantouisé" by J-P Angenot and J. Vincke.

Méga-Tchad, No. 2, 1986. ORSTROM, Laboratoire d'Archéologie Tropicale et d'Anthropologie Historique, *Méga-Tchad*, 70-74 route d'Aulnay, 93140 Bondy, FRANCE.

Semiannual newsletter for scholars interested in the history and prehistory of the Chad basin. This issue contains summaries of some of the papers presented at a colloquium held in Paris, September 11-12, 1986, resolutions passed there, a list of those in attendance, and a partial bibliography of recent publications dealing with the Chad basin.

Nilo-Saharan Newsletter, No. 1, October 1986. Send correspondence to Angelika von Funck, Afrikanistik II, Universität Bayreuth, Postfach 10 12 51, 8580 Bayreuth, FEDERAL REPUBLIC OF GERMANY.

[From the "Editor's Note"]: "This is the first edition of the resurrected Nilo-Saharan Newsletter which was formerly edited by M. Lionel Bender ... The new Newsletter will appear once a year. Its purpose is to facilitate communication and cooperation among linguists, anthropologists, and historians working in the area where Nilo-Saharan languages are spread."

OTHER RECENT PUBLICATIONS

Simha Arom, *Polyphonies et polyrythmies instrumentales d'Afrique Centrale*. Ethnomusicologie, 1. Paris: SELAF (5, Rue de Marseille, 75010 Paris), 1986. 2 volumes, pp. 914. 580 FF.

Vincent Dehoux, *Chants à penser gbaya*. Ethnomusicologie, 2. Paris; SELAF (5, Rue de Marseille, 75010 Paris), 1986. Pp. 214. 246 FF.

Kenneth Katzner, *The Languages of the World*, revised edition. New York: Routledge & Kegan Paul, Inc. (29 West 35th Street, New York, NY 10001, USA), 1986. $13.95/paper.