

STUDIES
in
AFRICAN LINGUISTICS

MARCH 1971
Volume 2, Number 1

The logo for the journal, featuring the word "Moko" in a stylized, bold, black font with rounded letters and a thick outline, set against a white rectangular background.

Published by the Department of Linguistics
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University of California, Los Angeles

STUDIES IN AFRICAN LINGUISTICS

Published by the Department of Linguistics
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The University of California, Los Angeles

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Subscription: U.S. and Canada: \$7.00 per volume (three issues)
Overseas: \$8.00 per volume (air mail)
Single issue: \$3.00

Make checks payable to: African Studies Center

Studies in African Linguistics is published three times a year.

For subscription and editorial information please write:

The Editor, Studies in African Linguistics
c/o Department of Linguistics
University of California
Los Angeles, California 90024

Volume 2, Number 1, March 1971

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NOTES ON CONSTRUCTIONS WITH ʔ_n (ʔ_{em})¹

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In the Festschrift in honor of V. V. Struve, M. Korostovtseff [1967] recently published a study dedicated to various constructions employing the particle ʔ_n in Egyptian. His explanation of the particle ʔ_n , to be discussed below, was termed "ergative" and may be profitably contrasted with the traditional explanation, elaborated by Gunn [1924], that such constructions are essentially "emphatic" in nature. Neither the ergative hypothesis nor the emphatic hypothesis are mutually exclusive, but neither of these hypotheses seems fully satisfying as a guide to the usage of ʔ_n and the relation of ʔ_n constructions to other constructions seems never to have been discussed. Those with ʔ_r (ʔ_o) 'as to' which seem to have similar meaning, come most quickly to mind in this regard. I would, therefore, like to investigate these two hypotheses in turn (sections I and II), and finally discuss the theoretical implications of the questions raised by the behavior of interrogatives in these constructions (section III).

I. The Ergative Hypothesis

The general thesis proposed by Korostovtseff [1967] is to the effect that the particle ʔ_n serves to mark the logical subject of the sentence in certain constructions, including most notably, passive constructions and the participial statement of the form:

- (1) ʔ_n rmt sdm-y
 ʔ_n man hear-WH
"The man is the one who hears"

Since the particle ʔ_n marks logical subjects in both active and passive sentences, Korostovtseff suggests that the term "ergative" be used to describe these subjects. It is valuable that the generalization has

¹I would like to express my thanks to Russ Schuh, Robert Hetzron and Talmy Givón for their helpful comments, at various stages of the development of this paper.

been captured, to the effect that the element marked by ?n is always the logical subject, but the term ergative case is open to certain objections.

The objection to the use of such a term concerns the term "ergative" rather than the notion of "analytic cases" which Korostovtseff is at pains to defend. There can be no objection based on principle to speaking of analytic cases if this is found useful in grammatical description. The proper perspective, however, involved in considering the term "ergative" is provided by Fillmore [1968]. In that work Fillmore describes languages as being accusative, ergative, active and transitive on the basis of the distribution of pronouns sets that these languages exhibit. Of the two types relevant to the present discussion, accusative languages have one set of pronouns for the subjects of transitive and intransitive verbs and another set for the objects of transitive verbs. Ergative languages, on the other hand, have one set of pronouns for the subjects of transitive verbs and another set for both the objects of transitive verbs and the subjects of intransitive verbs. In more familiar terms, ergative languages used "direct object" pronouns for the subjects of intransitive verbs. By these criteria Egyptian and most European languages are accusative languages, with accusative and nominative oppositions in their case system, whether this case system is observable only in pronouns or in other situations as well.

There are situations, however, where "object" pronouns are used as subjects in Egyptian. In the case of adverbial predicates, for instance, the "dependent pronouns", otherwise used as objects, as in (2) can also serve as the subjects of adjectival constructions (3) and of the related constructions in which the predicate seems to be an invariable participle (4)²:

- (2) ?w m3.n.?' sw
 is see-PAST-I him
 "I saw him"

²Sander-Hansen [1963: par. 330-331] gives this construction greater prominence than do other grammarians, and terms it the sdm sw form.

(3) nfr sw
 happy him
 "He is happy"

(4) h'w sw
 one-who-rejoices him
 "He is joyful"

The same object pronouns illustrated in (2) to (4) also occur after certain particles, including negative ones:

(5) nn sw m pr
 not him in house
 "He is not in the house"

(6) ʔsk sw m pr
 lo him in house
 "Lo, he is in the house"

These may be contrasted with the ordinary:

(7) ʔw.f m pr
 is-he in house
 "He is in the house"

As it may be seen from the variety of uses shown above, the use of these object pronouns, termed traditionally and not inaccurately 'dependent pronouns', cannot be adequately described on the basis of transitive and intransitive predicates, and so do not warrant the term 'ergative'.

There is likewise no ergative distinction maintained in those pseudo-cleft constructions with the particle ʔn which are traditionally called "participial statements". In these both transitive and intransitive verbs may occur.

(8) CT 193B
 ʔn-k grt wpi-y wʒwt.k
 ʔn-I moreover open-Who your roads
 "I, moreover, am the one who opens your roads"

(9) Eb. 131 (30, 6-7)

ʔn whdw prr-y m bkn

ʔn fluid go out-WH from bkn

"The malignant fluid is that which goes out from the bkn"

(10) Rhind 28

ʔn 5 prʔ-y d3t m 10

ʔn 5 go out-WH remainder as 10

"Five is what leaves, with ten as a remainder"

It would seem, therefore, that Korovtseff's introduction of the term "ergative" runs counter to the normal definition of this term which is based on the distinction between transitive and intransitive predicates, and some other term should be sought to express the distinction Korostovtseff has in mind. More importantly, it is difficult to see how this way of viewing the problem can help to distinguish the above pseudo-cleft construction from various other constructions which seem to be approximately synonymous, a problem to which Korostovtseff did not address himself.

II. The "Emphatic" Hypothesis

The standard view of such participial pseudo-cleft constructions has been that they serve to "emphasize" the subject.³ This is the view that was proposed by Erman [1894] and followed and expanded by Gunn [1924] and Gardiner [1927]. These participial pseudo-cleft constructions correspond to English and French cleft and pseudo-cleft constructions as in (11):

- (11) (a) John is the one who did it.
 (b) It is John who did it.
 (c) C'est Jean qui l'a fait.

³Schenkel [1963:123] proposes that the ʔn of the participial pseudo-cleft construction be considered etymologically the same as the interrogative particle ʔn. In support of such a historical development he cites the use of the English pro-verb do in both interrogative and "emphatic" sentences. The analogy is misleading, as the emphasis involved in the English "He does want to go!" stresses that the verbal action is indeed being performed, and has no observable relation to emphasis operating on noun phrases.

It was felt that a sort of "emphasis" existed in such constructions, but a closer characterization of "emphasis" in grammatical terms was lacking. What the relation is of emphasis to other grammatical relations, such as those of subject, predicate, and predicate nominals, is absent in current Egyptological research.

A useful point of departure for attacking the problem of a closer characterization of emphatic structures is the comparison of other structures which seem approximately synonymous. The fact that topicalized constructions such as (12) have also been considered "emphatic" as well gives this problem a certain urgency.

(12) (a) Sin. B233

mw m ʔtrw, swr.tw.f mrʔ.k

water in river, drink-ONE-it wish-CIRCUMSTANTIAL-you

"...the water in the river is drunk only when you wish"

(b) Urk. V, 95

ʔr hm-y nb r3 pn, n 'k.n.f ...

as-for not know-Wh any utterance this, not enter he

"As for anyone who does not know this utterance, he shall not enter"

Although in the topicalizations illustrated in (12) the underlined topicalized element may stand in any sentence relation, such is not the case with the elements following ʔn in the participial pseudo-cleft constructions. In these it is always the subject which is emphasized.

As far as emphasized subjects are concerned, Gardiner [1928] provides a criterion for using ʔn constructions in preference to other possible means of emphasis. Gardiner's treatment of sentences with nominal predicates (including the participial pseudo-cleft constructions with ʔn) is unique in that it has recourse to a para-grammatical apparatus involving logical categories. In order to properly construct an Egyptian sentence with nominal predicate corresponding to (13):

(13) James is a sergeant.

it is necessary to bear in mind not only what the grammatical subject and predicate should be, but also what the logical subject and predicate

should be, as the interaction of these categories determines word order and copula agreement. Since the logical and grammatical relations do not necessarily coincide, one determines the logical predicate by matching the interrogative pronoun of the question form of the sentence with the noun member which corresponds to it in the answer. Thus in (13) "a sergeant" is the logical predicate since it corresponds to "what" in (14):

(14) What is James?

The dialectic involved in determining these logical relations must be borne in mind, when examining Gardiner's statement [1928: par. 227.2] concerning the nature of emphasis in pseudo-cleft constructions:

As the second of these examples shows, the effect of *in* thus placed before a grammatical subject in anticipatory emphasis (§148.1) may be to give it the value of the logical predicate. Only when this occurs can we render in English 'it is X who will'.

For no other "emphatic" construction does Gardiner say that it converts emphasized members into logical predicates.⁴

Therefore, if the difference between participial pseudo-cleft constructions and other emphasizing constructions, most notably the topicalizations of (12), lies on the logical plane, one must determine whether such relations of logic can be traced in purely grammatical terms. In this regard, there are various areas of Egyptian syntax where logical categories and relations are marked formally [Callender 1970:App. 1]. Although, from the perspective of the development of grammatical analysis, the term subject began as a term in logic, it is also commonly marked in a formal way, especially in languages with case systems. In the light of this, can Gardiner's apparatus of question and answer be converted into grammatical terms, and if so can the hypothesis be verified or disproved on the basis of grammatical rather than logical evidence?

⁴Gardiner [1950:par. 227.2] does not consider that *in* obligatorily gives the meaning of a logical predicate to the word following. One suspects that Gardiner's caveat is influenced by his translation of the first example.

The grammatical equivalent of Gardiner's relation between logical questions and answers is the relationship between the form questions take in Egyptian and the form their answers take. In the case of the participial pseudo-cleft constructions we do have a formal correspondence between the form of the question and the form of the answer. If the question is in the form of a pseudo-cleft construction the answer must be also.⁵

(15) Illahun VIII, 24-28

ʔn-m dd-y sw.....ʔn 20 dd-y sw

ʔn-What say-Wh it.....ʔn 20 say-Wh it

"What is that which expresses it? Twenty is that which expresses it"

Examples in the future are found more commonly. Although no overt Wh-form is present, the characteristic ʔn leaves no doubt as to the construction.

(16) Westcar IX, 6-7

ʔn-m ʔr.f ʔnʔ.f n.ʔ sy

ʔn-Who now bring-he to-me it?

"Who is the one who will bring it to me?"

..ʔn smsw....ʔnʔ.f n.k sy

ʔn eldest....bring-he to-you it

"The eldest....is the one who will bring it to you"

(17) Ebers 58, 11-12

ʔn-m ʔr.f ʔnʔ.f sw gmʔ.f sw

ʔn-who now bring-he it find-he it

"Who will bring it and find it?"

ʔn-k ʔnʔ.ʔ sw ʔn-k gmʔ.ʔ sw

ʔn-I bring-I it. ʔn-I find-I it.

"I am the one who will bring it. I am the one who will find it."

⁵Not all questions receive apposite answers, as for example the circumstantial account given by the shipwrecked sailor to the serpent's question, "ʔn m ʔnʔ-y tw?" "Who brought you?" in Shipwrecked Sailor 80.

(18) Harhotep 374-5

ʔn-m ʔr.f ʔnʔ.f n.ʔ

ʔn-Who now bring-he to-me

"Who is the one who will bring it to me?"

ʔn Hnmtt ʔnʔ.s n.ʔ

ʔn Khenmetet bring-she to-me

"Khenmetet is the one who will bring to me"

ʔn M'ndt wʔh.s n.ʔ

ʔn Maanedjet put-she for-me

"Maanedjet is the one who will place (it) for me"

In the light of the above correspondences, Gardiner's hypothesis about the logical relationship of question and answer is not only transformed into grammatical terms, but verified. A reordering of our understanding of the participial statement seems also to be in order if the correspondence of interrogatives and answers in participial statements is to be given its proper grammatical value.⁶

The value of giving such correspondences a central role in our explanation of participial pseudo-cleft constructions is for two reasons. Firstly, as I have suggested, in this correspondence we have a formal realization of a logical correspondence expressed in grammatical terms. This is in harmony with the definition of grammar as the relation of meaning to form. Secondly, by this formal relation of question and answer it is possible to delineate the participial pseudo-cleft construction from those other constructions conveying emphasis.

In Egyptian grammar the interrogatives *m* and *ʔst* are nouns. There is, therefore, no reason, in present theory, why they should not occur in extraposition (anticipatory emphasis), with or without the introductory particle *ʔr*, in sentences containing conjugated verbs. However, in actual fact, no sentences such as (19) occur:

⁶Cf. Postal [1971:1] "In the most general sense, I take grammar to cover the whole domain of how semantic interpretations are associated with phonetic representations."

- (19) *(ḥr) m, sdm.n.f nn
 (as to) who, hear-PAST-he this
 "Who heard this?"

It seems, moreover, that simple m cannot serve as the subject of even ordinary verbal sentences without topicalization. Gunn [1926] has shown that even those non-topicalized sentences thought to contain interrogatives, do not do so. In (20) Gunn interprets m not as an interrogative, but as the identically written interjection.

- (20) Rhind 22
 skm m s3wy r3-10 m l
 complete { what } 2/3 1/10 as 1
 { pray }
 (Gardiner) "What makes 7/10 up to 1?"
 (Gunn) "Make 7/10 up, now, to 1!"

Although we have no direct evidence from Middle Egyptian, evidence from Coptic indicates that in this later stage of the language interrogatives can indeed occur in extraposition, but only in rhetorical questions and not in questions for specification [Callender 1970:par. 110]:

- (21) Luke 14:28
 nim gar emmōtn e-f-weš ket u-pērgos
 who for of-you while-he-wants build a-tower
 "For who among you desiring to build a tower"
 mē n-f-na-hmo3s an en-šorp n-f-fi p-ōp
 PARTICLE not-he-FUT-sit not at-first and-he-carry the-count
 "will not first sit down and calculate"
 n-ḥf-tapanē de wenta-f e-dok-f evol
 of-his-treasure that has-he to-complete-it out
 "his wealth (to see) if he has (enough) to finish it?"

- (22) Luke 15:8
 e nim n-shime e-wnt-s mēte n-giskite
 rather who ATT-woman when-have-she ten ATT-shekels
 "Rather what woman having ten shekels,"

ne-s-serm wī evol nhēt-ū
 and-she-lose one out from-them
 "and losing one of them"
 me n-e-s-na-dere p-hēvs an
 rather not-FUT-she-FUT-light the-lamp not
 "will not light the lamp"
 ne-s-sehr p-ei ne-s-šine hn u-ōrd
 and-she-sweep the-house and-she-search in a-thoroughness
 "and sweep the house and search thoroughly"
 šante-s-he ero-s
 until-she-find about-it
 "until she finds it?"

Thus in questions for specification at least, one may clearly distinguish participial pseudo-cleft sentences from topicalization, which provides some justification for considering the correspondence of interrogatives to their answers as central in any explanation of these pseudo-cleft constructions.

Even where no overt question is attested, pseudo-cleft constructions seem to answer the implied question of the hearer. This can be seen in the spells of the Coffin Texts, where divinities are introduced to the deceased and their functions are described in answer to the implicit question "who are they?".

(23) CT I, 38b-40d

"This Osiris has gone forth to you, great and mighty, like Re went forth, great and mighty, on the eastern side of heaven. The gods who spoke on Horus's behalf when they overthrew Seth for him,"

ntsn mdw.sn hr-tp ny Wsīr NN pn
 In-they speak-they on-behalf of Osiris NN this

"they are the ones who will speak on behalf of this Osiris NN"

The implicit question is "Who will speak for this person (Osiris NN) to verify his right to be in heaven?"

(24) CT I, 192

"There is no goddess who will demand anything from you on the day qualities are evaluated before the Great One, Lord of the West. You will eat bread from the offering table of Re together with the nobles of the portal,"

ʔnk grt wpi-y w3wt.k

ʔn-I moreover open-WH roads-your

"for I am the one who opened your roads (after you overthrew your enemies and drove off his gang)"

The implicit question seems to be "Who will run interference for me so that I can get all these benefits?"

Similarly, in medical texts, after a process or disease has been described, the question of cause or agent arises.

(25) Ebers 102, 4-5

ʔr 3k-ʔb mht-ʔb ʔn t3w ny
as for destroy-heart, fill-heart, breath of

"As for 'destruction of the heart' and 'heart worry' a breath of"

hry-hbt ʔrr-y st
lector-priest do-WH it

"a lector priest is what produces it"

This etiology follows a discussion of a 'clouded heart', where no definition is given. Presumably 3k-ʔb and mht-ʔb were sufficiently well known to the reader that all that was needed was an answer to the question of the disease's cause.

(26) Ebers 102, 6-9

"As far as the phrase 'an agglomeration has fallen on his heart' is concerned, it means a mass of heat has fallen on his heart. It means weakness and frequent swallowings from 'dnd',"

ʔn mh h3ty.f m snf ʔrr-y st
in fill heart-his with blood do-WH it

"the fact that his heart is full of blood is what produces it (resulting from drinking water and eating the sbyt-fish, and the hands get hot)"

(27) Ebers 103, 16-18

"All of them (the vessels of the body) come to the heart. They divide at his nose and are gathered at his buttocks"

(27a) ḥpr mrt phwy m-'.sn

happen-MANNER illness rectum because of-them

"the reason the illness of the rectum happens is because of them"

(27b) ḥn wsšwt sšm-y ḥwt

ḥn excretions guide-WH movement

"The excretions are what control movement"

(27c) ḥn mtw ny rdwy š3'-y mwt

ḥn vessels of legs begin-WH die

"The vessels of the legs are what die first"

In (27b) and (27c) we have the now familiar participial pseudo-cleft construction in parallelism with another construction containing a manner nominalization. This construction with a manner nominalization, termed the "emphatic sdm.f" in traditional terms, can be identified with complete certainty only for certain verb classes because of the defective nature of Egyptian writing, and in these cases the middle consonant of the verbal radical is doubled. In the case of (27a) the manner nominalization serves as the subject of the underlined predicate m-'.sn 'because of them'.⁷ Because of the parallelism one suspects that the type of "emphasis" may be the same. Any doubts based on defective writing are cleared up by (28) where the doubled middle radical of prr leaves no uncertainty.

⁷It is generally considered that this manner nominalization (emphatic sdm.f) serves to emphasize the adverbial predicate. The misleading nature of this view lies in that it ignores the fact that "emphatic" sdm.f can stand in other relationships than that of subject to an adverbial predicate in Middle Egyptian. One has, for instance, and emphatic sdm.f as the subject of an adjectival verb in Westcar 9:22, as the object of a preposition in Sin. B 225, and as a direct object in Louvre C, 14:9-10 and in Urk. IV, 9:16.

(28) Ebers 100, 18, 101-102

"As for any sort of 'bitterness',"

3k.s m ʔrt ʔ3bt prr.s m hp3

enter-MANNER-it from eye left leave-MANNER-it from navel

"where it enters is the left eye and where it leaves from is the navel,"

ʔn h3ty dd-y 'k.sn m mtw.f

ʔn heart cause-WH enter-SUBJUNCTIVE-they in vessels-his

"the heart is what causes it to enter his vessels"

If these pseudo-cleft constructions with "manner" nominalizations are indeed parallel with participial pseudo-cleft constructions, then they would be in complementary distribution, with the former clefting objects of prepositions and the latter noun subjects.

That the two constructions are in complementary distribution can be shown by the following examples where the clefting operates on interrogatives which are objects of prepositions, which excludes them being a form of topicalization. In (29) and (30) one sees the negative form of the manner nominalization with the characteristic negation *tm* and in (31) one can see the positive form.

(29) Westcar 6ff.

tm.t hnʔw hr-m

not-you row because of-what

"Why is it that you are not rowing?"

(30) Westcar 11, 21-2

tm.tw ms ʔnʔw hnw hr-m

not-one now bring vessels because of-what

"Why, pray tell, have grain vessels not been brought?"

(31) Sinuhe B 43

wnn r.f t3 pn mʔ-m m-hmt.f

be-MANNER then land this like-what without-him

"What will this land be like without him?"

From this one must conclude that in spite of the great formal

differences that exist between participial pseudo-clefting and manner nominalization pseudo-clefting, they are in complementary distribution. It also follows that one must distinguish two kinds of "emphasis" in Egyptian, that of pseudo-clefting which operates on interrogatives and that of topicalization which excludes interrogatives.

III. Theoretical Considerations

The important question of why interrogatives should be linked with cleft constructions remains to be explained. Unfortunately, however, it is not possible to explain this in more than a tentative way, and even this tentative explanation involves working with a conceptualization well known in Linguistics but little known in Orientalism, namely that of performative verbs.

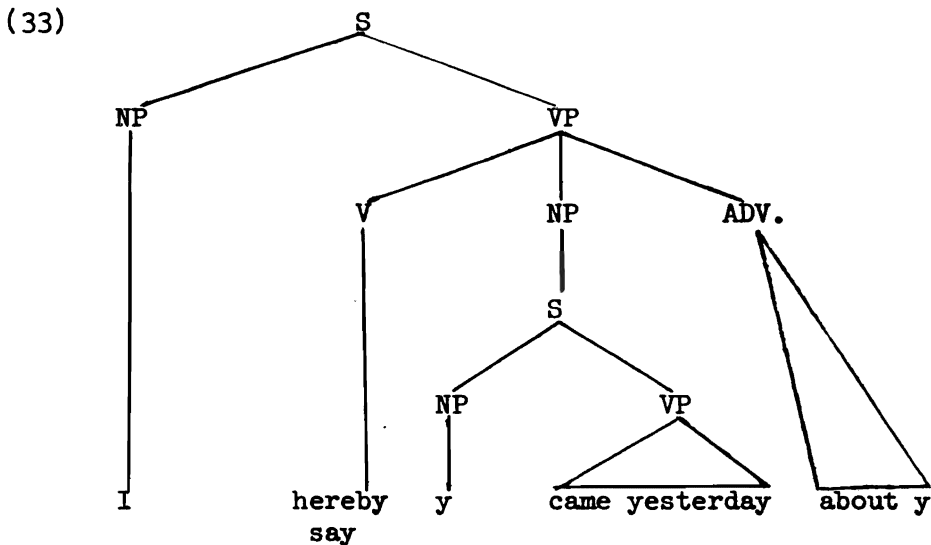
The discovery of performative verbs is due to the English philosopher J. L. Austin [1965] who noticed that certain verbs showed peculiar behavior when they were used in situations in which, by merely uttering them, an action was performed. They were **commonly** found in ceremonial contexts, and invariably had first person subjects, and only when so used could they have the adverb "hereby" attached, such as in (32):

(32) I hereby christen this ship The Nadezhda.

The implications that began to emerge from the work of linguists attempting to incorporate this observation into linguistic theory have led to a tentative solution of an extremely basic problem in linguistic theory. This problem involves the contradiction between the need for a unitary notion of sentence (which is dictated by the general scientific drive for maximum relevant generalization), and the existence of a variety of different sentence types, such as declaratory, interrogatory, and exclamatory sentences. This contradiction between a unitary sentence theory and the variety of sentence types was discovered to be soluble if every sentence in the language was considered to be the object (complement) of a performative verb in a higher sentence which could be optionally deleted, such as "I hereby say . . ." or "I hereby ask . . .". Although problems remain with this conceptualization, it is proving useful in present linguistic work, and is indispensable to the following

discussion.

Hetzron [1969] has argued that extraposed elements are the objects of the preposition "about" in a higher sentence (on the performative level). Although Hetzron has provided no justification for this statement, it is evident that it could be justified as an explanation for the use of "about, concerning, as for" and their synonyms in other languages (e.g. Egyptian *ʔr* 'as to'; Coptic *etve*) used to introduce items in extraposition. The structure for such sentences would, then, be approximately the following one:



(33a) As far as Y is concerned, he came yesterday.

(33b) As for Y, he came yesterday.

(33c) About Y, he came yesterday.

(33d) *ʔr* Y, *ʔw.f ʔwʔw m-sf*.

(33e) Y, *fnōw nsaf*.

(33f) *etve* Y, *fnōw nsaf*.

It will be remarked that in both the English and Egyptian constructions, the topicalized noun phrase must be recapitulated by a pronoun in the main clause of the sentence. This indicates that the extraposed noun phrase must be either definite, i.e., referring to a specific entity in the world, or generic, i.e., referring to a class or its representative member, but it means that the extraposed noun cannot be a

specific indefinite, as the following sentences show:

- (34a) definite: As for the man, I see him.
 (34b) indefinite generic: As for men, I see them.
 (34c) indefinite non-specific: As for a dog, I see one.
 (34d) indefinite specific: *As for a dog, I see him.

These categories may be illustrated by the following paraphrases:

- (35a) definite:
 As for the (one who is a) man, I see him every day.
 (35b) indefinite generic:
 As for the (ones who are) men, I see them every day.
 (35c) indefinite non-specific:
 As for a (one who is a) man, I see one every day.
 (35d) indefinite specific:
 *As for (John Doe, who is) a man, I see him every day.

Given that the above paraphrases are approximate representations of the underlying structures of the sentences in (34) we notice that all the admissible constructions contain the one and a following restrictive relative clause whereas the ungrammatical (35d) contains a proper noun (technically it should be a numbered variable) and a following non-restrictive relative. Since indefinite specifics can occur elsewhere as in (36a) and its paraphrase (36b),

- (36a) I met a man yesterday. I have known him for a long time.
 (36b) I met (John Doe, who is) a man yesterday. I have known him for a long time.

the reason for the ungrammaticality of (34d) must lie in some incompatibility of as for constructions with either proper nouns, as such, or with proper nouns when and only when they are modified by non-restrictive relatives. One can see in (37) that proper nouns as such are not incompatible with as for constructions:

- (37) As for John Doe, I have known him for a long time.

It would seem, therefore, that the explanation for the ungrammaticality

of (34d) must be sought in reference to distinctions between non-restrictive and restrictive relative clauses.

Restrictive relative clauses, as their name implies, specify or define the identity of their head noun by relating the head noun to that information which the speaker presupposes that the hearer knows. This is not the case with non-restrictive relative clauses.

Since non-restrictive relatives seem to have underlying co-ordinate constructions, which also stand in a paraphrase relation with them as in (38):

(38a) John, whom I'm sure you know, came yesterday.

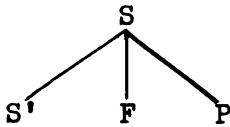
(38b) John, and I'm sure you know him, came yesterday.

the information provided by them is clearly secondary and parenthetical, and thereby non-presupposed. One may deduce, then, that the ungrammaticality of (35d) is related to the feature of presupposition. To be more specific, it seems that as for requires that the following noun phrase arise from the predicate of a restrictive relative clause, i.e. that it be a constituent of presupposed information. Any noun phrase arising from any other source will be excluded. This will provide an explanation for the exclusion of interrogatives, as we will see subsequently.

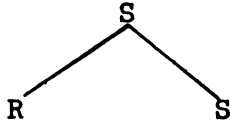
In contrast to this relatively simple derivation of extraposed constructions, cleft and pseudo-cleft constructions are still very badly understood. A number of analyses are discussed in the UCLA Integrated English Syntax, but all of the analyses are open to serious objections, although it seems clear that cleft and pseudo-cleft constructions should have a unitary derivation. Both Chomsky [Forthcoming] and Hetzron [1969:6] provide that there be a node for focus (Chomsky) or for restriction (Hetzron) which will serve to assign emphasis to sentence members and will form a constituent of transformations that will eventually yield cleft and pseudo-cleft sentences, among others. One therefore obtains the following representation:

(39) Chomsky: S → S' F P

(40)



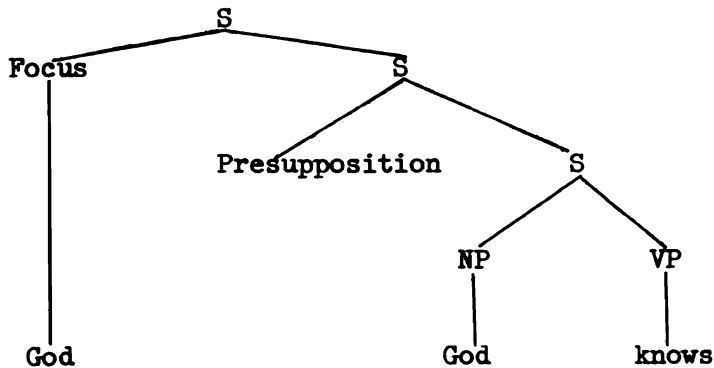
(41) Hetzron: (relevant part only)



Except for Chomsky's additional node P (presupposition), the analyses are parallel. One must presume, therefore, that in the course of derivation a feature "focus" (or "restriction") would be assigned to individual sentence constituents and this feature would then make the construction eligible for various focus transformations, including clefting and pseudo-clefting. The subject of such a focus "predicate" would be a sentence dominating a "presupposition" predicate and a sentential subject. For (42) therefore, one would have a tree (43):

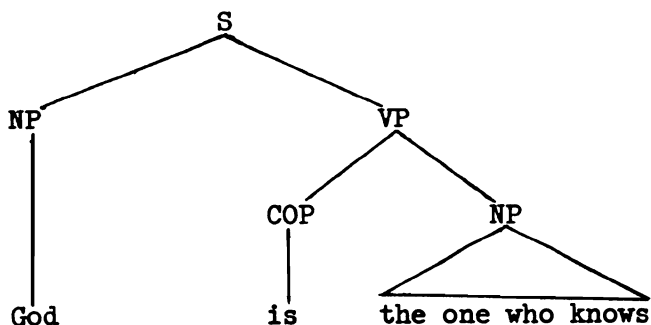
(42) God is the one who knows.

(43)



This, in turn, yields (44):

(44)



I would suggest that the justification for (43) is two-fold. On the one hand, a cleft sentence such as (45)

(45) It is God who knows.

seems to be able to be paraphrased, but only very approximately, by (46)

(46) 'God knows' is true as far as God is concerned.

which reproduces the focus/sentence predicational relationship of (43).

On the other hand it is possible to question the nexus of focus and subject, as in (47):

(47) Is it God who knows?

Such a question asks whether it is true concerning God that he is the one who knows. A question seems also to underlie the protases of normal, non-contrary to fact conditionals such as (48):

(48) If it is God who knows, then all is lost.

(49) Is it God who knows? Then all is lost.

If the relation of the node "focus" to its S sister node in (43) can be questioned, it is difficult to see how it could be anything but a predicate. It seems intuitively correct that Bach's observation [Bach 1968] that it is hard to imagine negation applying to anything but predicates is equally true of interrogation.

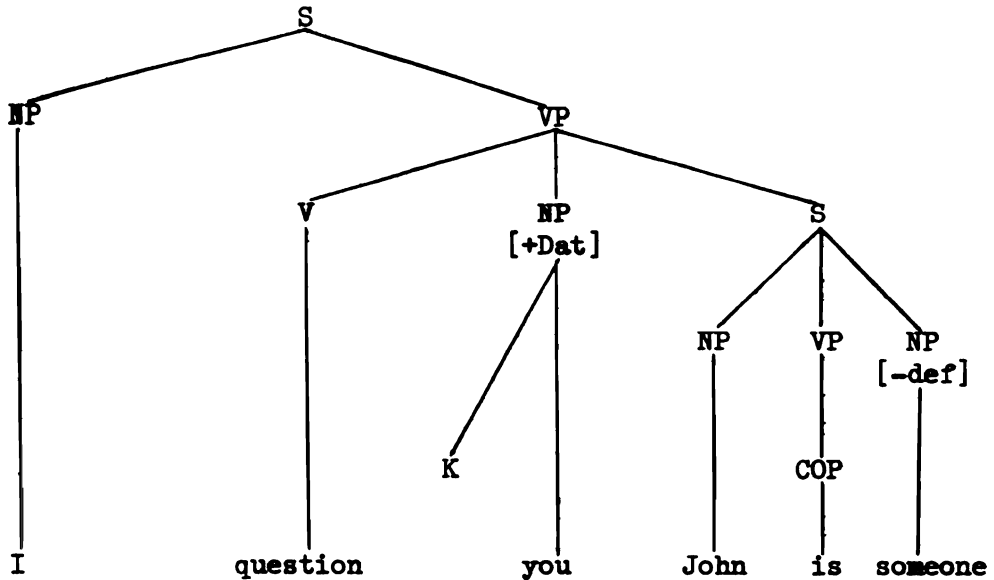
The role of restrictive relatives in pseudo-cleft sentences points up that restrictive relatives always convey presupposed information, since information not presupposed by the hearer would hardly be a firm basis for restricting the identity of a noun phrase.

The most important question, however, to be asked in this regard is why interrogatives should be found in these cleft and pseudo-cleft constructions and yet be excluded from topicalization. If one accepts the analysis of interrogatives provided by Kuroda [1968] and adopted, with slight modification by Stockwell [1969] and, in addition, if one provides a higher performative sentence, one gets the following

representation of (50)⁸:

(50) Who is John?

(51)



The UCLA Integrated English Syntax, therefore, provides that interrogative pronouns be derived from noun phrases marked [-definite]. Since we are searching for feature markings that explain the absence of such interrogatives from as for constructions, we must ask whether [-definite] constructions are excluded from as for constructions. The answer, it will be remembered, is negative, since (53) is completely grammatical:

(53) As for a man, I see one every day.

Interrogative pronouns, however, originate from underlying predicates, which by the nature of interrogatives as requests for information must have the feature [-presupposition]. Interrogatives are excluded, it seems, from all environments filled by entities whose identity is presupposed. Such is the case in subject position, with

⁸Ross [1970] presents evidence that positing a higher performative sentence can explain a number of syntactic irregularities otherwise unable to be accounted for. It is generally assumed that interrogative sentences should be handled in a similar way, but concrete arguments in support of this have yet to appear.

declarative intonation:

(53) *Who saw John.

The absence of interrogatives in the predicates of restrictive relative clauses is predictable but not informative since interrogatives are also excluded from non-restrictive relatives, as in the following:

(54a) *I know John Doe, who ate what.

(54b) *I know the man who ate what.

One may conclude, therefore, that the absence of interrogatives from as for constructions is because of incompatible features of presupposition, with interrogatives being marked [-presupposition] and as for expressions being obligatorily [+presupposition]. Since the subjects of sentences are normally presupposed as identified and the predicate is non-presupposed information, it is not surprising that interrogatives normally originate in predicate structures. The temptation to identify non-presupposition with predication, as has been done in traditional grammar, must be avoided, as interrogatives can be seen only to originate in predicates, and are not necessarily coextensive with the predicates in which they arise.

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ABBREVIATIONS

- CT De Buck, Adriaan. 1938. The Egyptian Coffin Texts. I. Chicago: University of Chicago Press.
- Eb./Ebers Grapow, H. 1958. Die Medizinischen Texte in Hieroglyphischer Umschreibung Autographiert. Berlin: Akademie.
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THE AGREEMENT OF NOMINAL PREDICATES IN LUGANDA¹

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1. Introduction

It is natural to expect in a language that has features of gender and number that subject nouns, which have inherent gender, will impose those features on at least some other categories which do not have inherent features. Such categories may include adjectives, demonstratives, pronouns, or verbs. Bantu languages provide a particularly fertile field for the investigation of grammatical agreement, since they probably have the most pervasive system of noun genders. Givón [1969] has discussed this phenomenon in Bantu, in which head nouns spread their gender (and number) features to virtually all categories that lack inherent gender. These categories are:

demonstratives	ordinals
intensifiers	pronouns
adjectives	copulas
numerals	verbs

The following sentence in Luganda is illustrative:

- (1) ebibala ebyo ebilungi ebisatu bye yalidde tebibadde bibisi
'Those three nice fruits which he ate were not ripe'

I will show below that in Luganda it is sometimes necessary for a subject noun to impose its gender on a predicate noun, and I will attempt to determine to what extent and under what conditions this can occur. We will also see that sometimes a predicate noun seems to impose its gender on a subject noun, and I will examine some of the implications of this vexing fact.

2. Generic versus specific and derived gender

First, one would expect a language to allow such sentences as:

¹I am grateful to my informant, Mr. S. Mugalasi, for the Luganda data, and to T. Givón for the Hebrew and Chibemba data as well as for some valuable suggestions. Any errors are my own.

(2) NP_x is NP_y

where NP_x is either specific or generic and NP_y is generic, even if both are of different genders. Examples (3) - (5) illustrate that this is, in general, true in Luganda, and in fact it is undoubtedly universal.

- | | | |
|------|----------------------|--|
| (3a) | effumbe kisolo | 'a civet (5/6) is an animal (7/8)' |
| (3b) | *ekisolo ffumbe | *'an animal is a civet' |
| (3c) | ekisolo ekyo ffumbe | 'That animal is a civet' |
| (3d) | *effumbe elyo kisolo | *' <u>That</u> civet is an animal' |
| (4a) | elyenvu kibala | 'a banana (5/6) is a fruit (7/8)' |
| (4b) | *ekibala lyenvu | *'a fruit is a banana' |
| (4c) | ekibala ekyo lyenvu | 'That fruit is a banana' |
| (4d) | *elyenvu elyo kibala | *'That banana is a fruit' |
| (5a) | nggaali nnyonyi | 'a crested crane (1a/2a) is a
bird (9/10)' |
| (5b) | *ennyonyi nggaali | *'a bird is a crested crane' |
| (5c) | ennyonyi eyo nggaali | 'That bird is a crested crane' |
| (5d) | *nggaali oyo nnyonyi | *' <u>That</u> crested crane is a bird' ² |

The starred forms do not, of course, indicate any constraint on mixing genders, but rather the universal constraint on semantic structure that definitional paths (see Bever and Rosenbaum [1970]) are one-way. It is a matter of set relations that can be illustrated by paraphrastic definitions whereby one must move up the path node by semantic marker node. Thus:

- (6) a woman is a human that...
 a human is an animal that...
 an animal is a living thing that...etc.

The starred forms (3d), (4d), (5d) would imply that other civets are not animals, other bananas are not fruits, etc., and so would be counterfactual to the set relations.

²Paired numbers like 5/6 are the usual way of naming Bantu noun genders, the pairing representing sg./pl. agreement 'classes'.

Like other Bantu languages Luganda uses several noun classes derivationally to express augmentation, diminution, and so on, and what we observed above holds with respect to these derived classes in most cases. Thus, for derived gender of non-human nouns (deriving into class 20/22, the augmentative gu-):

- (7a) enjovu nsolo (nnene) 'an elephant is a (big) animal'
 (7b) enjovu gusolo (gunene) 'an elephant is a huge animal'
 (7c) ogusolo ogwo njovu 'That huge animal is an elephant'
 (7d) *oguyovu gusolo (gunene) *'A huge elephant is a huge animal'

Example (7d) is ungrammatical; such agreement is probably blocked due to a semantic constraint on redundancy.

- (8a) *enjovu eno gusolo (gunene) *'This elephant is a huge animal'
 (8b) *oguyovu nsolo (nnene) *'A huge elephant is a huge animal'
 (8c) *ogusolo njovu *'A huge animal is an elephant'

These last three are starred for the same reasons as (b) and (d) in (3), (4), (5) above.

3. Derived gender of human nouns

Observe now the large group of exceptions to (7), (8) above, involving the derived gender of human nouns:

- (9a) omusomesa musajja (mubi) 'The teacher is a (bad) man'
 (9b) *omusomesa gusajja (gubi) 'The teacher is a huge (bad) man'
 (9c) *ogusomesa musajja (mubi) 'The huge teacher is a (bad) man'
 (9d) ogusomesa gusajja (gubi) 'The huge teacher is a (bad) man'

The sentences in (9) indicate that there is at least one case where the subject does impose its gender on predicate nouns. It is intriguing to notice, moreover, that whereas (7d) is ungrammatical on grounds of redundancy, that very redundancy is mandatory in the case of human nouns.

Derived gender in Luganda usually expresses abnormality and sometimes also pejoration. Thus omuntu omunene is a person who is big, but probably within normal limits, whereas oguntu is a person who is abnormally, and sometimes pejoratively, big. ogusomesa 'a huge teacher' is, then, by definition abnormal in size and so is not a normal

musajja 'man'. It is important to observe, in this connection, that in Bantu languages generally, nouns for people with defects such as blindness, deafness, lameness, etc., often appear in non-human or even inanimate noun genders:

- (10) Swahili: (a) kiziwi (7/8) 'deaf person'
 (b) kipofu (7/8) 'blind person'
- (11) Kirundi: (a) ikimuga (7/8) 'cripple'
 (b) igitumva (7/8) 'deaf person'

Such nouns in Luganda have been moved relatively recently into the human class 1a/2a, but with their old inanimate class prefixes frozen to their stems, as in:

- (12a) kasilu/bakasilu (from 13/14)
 'a mute, or idiot'
- (12b) kiggala/bakiggala (from 7/8)
 'deaf person'

Givón [1970a] has suggested that at an early stage of Proto-Niger-Congo nouns were classified by an n-ary, non-hierarchized system of semantically significant classes, with humans and animals together in the animate class 9/10. At a later stage speakers evidently reanalyzed their position in the world from an anthropocentric point of view. This precipitated a reanalysis of the noun classes; class 1/2 was created de novo, and human nouns were gradually moved into it. Accompanying the creation of this new class was the change in the noun universe into a binary system, hierarchized in the order: abstract, concrete, animate, human.

Now, if humans see themselves on top of a hierarchy in the noun universe and somewhat separated from the other nouns,³ it is not unlikely

³The separateness of human from non-human nouns may be seen in the fact that human nouns can not be conjoined with other nouns in many syntactic positions. Rather a comitative construction must be used (see note 5).

that deviations and abnormalities would assume greater importance in humans than in other kinds of nouns. People analyzing their language from an anthropocentric world view may very well consider abnormality in people to be of sufficient importance and concern to override the constraint on redundancy as expressed in (7d). It seems, then, that, at least for Luganda, we can extend Givón's [1969] rule of feature spreading to include the category [noun], just in case the noun has the features [+human, +derived gender] (and, of course, is in an environment following the copula), in addition to the other categories listed at the beginning of this paper.

4. Can predicate NP's impose grammatical agreement on subject NP's?

There is a much more vexing problem with regard to predicate NP agreement, illustrated in examples (13) - (16) below:

- (13a) ekisolo⁴ ekyo ffumbe 'That animal is a civet'
 7 7 5
- (13b) *ekyo ffumbe
 7 5
- (13c) elyo ffumbe 'That (one) is a civet'
 5 5
- (14a) ekibala ekyo mucungwa 'That fruit is an orange'
 7 7 3
- (14b) *ekyo mucungwa
 7 3
- (14c) ogwo mucungwa 'That (one) is an orange'
 3 3

⁴There are two words for 'animal': *kisolo* and *ensolo*. Though it is difficult to pinpoint which animals are considered one and which the other, it seems the former usually refers to the smaller carnivores such as civets, wild dogs and hyaenas. Class 7/8 (*ki-/bi-*) is often used derivationally as a kind of pejorative, thus compare the following:

alya nga nsolo	}	'He eats like an animal'
alya nga kisolo		

The former is said of one who eats continuously, the latter of a sloppy, gluttonous eater.

- (15a) ennyonyi eyo ngaali 'That bird is a crested crane'
 9 9 la
- (15b) *eyo ngaali
 9 la
- (15c) oyo ngaali 'That (one) is a crested crane'
 la la
- (16a) ekivuga ekyo ndere 'That instrument is a flute'
 7 7 9
- (16b) *ekyo ndere
 7 9
- (16c) eyo ndere 'That (one) is a flute'
 9 9

In (c) in examples (13) - (16) above not only must subject and predicate agree, but it appears that it is the predicate that spreads its gender feature to the subject - just the opposite direction from what we observe in normal cases of subject - predicate agreement. Moreover, in addition to the problem of the direction of agreement is the problem of the order of transformations. Givón [1969] has shown that feature spreading must precede anaphoric deletion transformations; examples (13) - (16) above seem to suggest that another feature spreading rule must follow head noun deletion. Thus we appear to have the following sequence of rules:

- (17) (a) features of subject-noun spread to Dem.
 (b) anaphoric deletion of subject noun.
 (c) features of predicate-noun spread to Dem., erasing the previous gender feature.

We find the same problem in topicalized sentences as well:

- (18a) ekisolo ekyo bakiyita ffumbe
 7 7 7 5
 'That animal, they call it a civet'
- (18b) *ekyo bakiyita ffumbe
 7 7 5

(18c) eyo baliyita ffumbe
5 5 5

'That one, they call it a civet'

(19a) ennyonyi eyo bagiyita ḡḡaali
9 9 9 la

'That bird, they call it a crested crane'

(19b) *eyo bagiyita ḡḡaali
9 9 la

(19c) oyo bamuyita ḡḡaali
la la la

'That one, they call it a crested crane'

Here, too, agreement is apparently going the wrong way (and in the wrong order).

Similar phenomena may be demonstrated in another Bantu language, Ichibemba (see Givón [1969]), where in topicalized and cleft constructions relative clauses are involved and a noun *umuntu* 'person' may be assumed to have been deleted. *Imfumu* 'chief' is a human noun, but of gender 9/10. It takes the agreement of gender 9/10, not that of 1/2. Thus, in cleft constructions:

(20a) nimfumu ì - à - ishile
9 9

'It's a chief who came'

(20b) *nimfumu ù - à - ishile
9 1

And in emphatic constructions:

(21a) imfumu ee - ì - à - ishile
9 9

'The chief is (indeed) the one who came'

(21b) *imfumu ee - ù - à - ishile
9 1

But in pseudo-clefts:

(22a) *ì - à - ishile niimfumu

(22b) ù - à - ishile niim9fumu
 | 9
 | |

'The one who came is the chief'

(from umuntu u - a - ishile... 'the person who came...')
 | |

So a third problem raised by these data, one highly important for linguistic theory, is the apparent irrecoverability of the deleted noun. In attempting to arrive at a solution I would like, if possible, to rule out a priori any explanation that does not allow recoverable deletion or does not maintain the subject-to-predicate direction of the normal rule of feature spreading.

5. Discussion

We may rule out the possibility that a sentence like

(13c) elyo ffumbe
 'That one is a civet'

be derived from an underlying sentence such as:

(23) *effumbe (cop) elyo
 'The civet is that one'

First, such a solution would be of no use for the topicalized sentences. Second, there is independent evidence (Givón [1969]) to show that demonstratives do not come from an embedded sentential source as do adjectives. Further, example (24) indicates that anaphora is definitely involved in the gapped structure below:

(24) ensolo eyo ffumbe, ogwo musu, eyo njovu...
 9 9 5 3 3 9 9
 'That animal is a civet, that one is a rat, that one's an elephant...'

Luganda, like most Bantu languages, uses one noun class (7/8) as a neutral gender in resolving gender conflicts arising in conjunction-

reduction.⁵ Thus:

(25) embwa elya; effumbe lilya ⇒
 9 9 5 5
 'The dog eats; the civet eats'

embwa n' effumbe bilya
 9 5 8
 'The dog and civet eat'

In Hebrew, a two gender language, the masculine gender is used as the neutral gender in conjunction-reduction. Thus:

(26) hashor oxel_; hapara oxelet ⇒
 m. m. f. f.
 'The ox eats; the cow eats'

hashor vehapara oxlim /* oxlot
 m. f.
 'The ox and cow eat'

But, like Luganda, Hebrew does not resort to the neutral gender in cases like (13) - (16). Note particularly (27d) - (27f) below:

- (27a) hadavar haze ze sefer 'This thing is a book'
 m. m. m. m.
 (27b) ?hadavar haze ze maxberet 'This thing is a notebook'
 m. m. m. f.
 (27c) *hadavar haze zot maxberet
 m. m. f. f.
 (27d) ze sefer 'This (is) a book'
 m. m.
 (27e) zot maxberet 'This (is) a notebook'
 f. f.

⁵For a detailed discussion of gender-conflict resolution in conjunction-reduction, see Givón [1970b]. See also the discussion of some interesting problems on the same topic in Xhosa in Voeltz [1971]

(27f) *ze maxberet

m. f.

In fact *ze* in (27b) is nearly acceptable, though *zoŋ* in (27c) is definitely out, indicating a preference for the masculine. It should be pointed out that (13c) - (16c) and (27d) - (27f) are not strictly parallel, since *ze* and *zoŋ* are demonstratives often used as copulas. But I think the problem of recovering a deleted subject-noun is manifested in both languages, as well as the problem of predicates imposing agreement on subject pronouns once the head noun has been deleted.

One alternative solution to our difficulty in Luganda would be to posit in the lexicon abstract classifier-nouns like:

- | | | |
|-------|-------|----------------------|
| (28a) | -solo | 'animal' |
| (28b) | -bala | 'fruit' |
| (28c) | -vuga | 'musical instrument' |

either (A) in every gender, or (B) with no gender specification at all. The former is less satisfactory because there may be other items already occupying those slots. For example there is already a noun *-solo* with the gender feature specification [+3/4] and with the same lexical tone, meaning 'tax'. At any rate, listing generic nouns unspecified as to gender, would be preferable since the noun in question need be listed only once. This would allow for recovery but it would still require that, at some late point in the cycle, a feature spreading would operate from the predicate to the subject. Moreover, to posit such abstract forms on the basis of these data alone, with apparently no other evidence for them elsewhere in the grammar is in some way an ad hoc complication of the grammar.

Finally, sentences like (29) and (30) show that it is highly unlikely that unspecified nouns as suggested in (28) exist. For we would then need *ekibala* 'fruit' for sentences with predicate adjectives and verbs, and *-bala* for those with predicate nouns. And even if that were the case, with respect to (13) - (16) we cannot know at the time of lexical insertion whether or not the subject noun is destined to

undergo anaphoric deletion:

- | | | |
|-------|----------------------|------------------------|
| (29a) | ekibala ekyo kinene | 'That fruit is big' |
| (29b) | ekyo kinene | 'That one is big' |
| (30a) | ekibala ekyo kyaagwa | 'That fruit fell down' |
| (30b) | ekyo kyaagwa | 'That one fell down' |

The explanation that I believe has the greatest merit is inspired by a paper by E. Voeltz [1971] wherein he demonstrates that there are post-cyclic, and even late phonological, constraints on gender-conflict resolution rules in conjunction-reduction in Xhosa. If that analysis is correct, as his data certainly support it, then it seems not unreasonable to suggest that Luganda has a surface repair rule which operates on strings such as (13b) - (16b) which are derived by transformational rules. It is this repair rule that imposes the gender feature of the predicate NP on the subject after the subject head noun gets deleted. At that late point, also, subject noun-predicate noun agreement, as seen in examples (7), (8), (9), may be handled.

The merit of this solution is that it would not tamper with the normal cyclical rule of feature-spreading which seems to govern most cases of agreement. Moreover, this explanation is not ad hoc, considering we now have evidence from another Bantu language, as well as from Hebrew, Spanish, and probably others, that this kind of rule is indeed required.

Even the not-so-careful reader will have observed that the question of recovery of the deleted noun is still unanswered. It seems that it must remain so, and that these data constitute an exception, if not a counter-example, to the notion of recoverability, unless we modify the constraints on deletion. Thus we can say that the recoverability constraint on deletions may be relaxed if it is really easy to figure out what was deleted, i.e. if and only if it is a classifier noun higher up on the definitional path and directly dominating the predicate noun. This modification of the constraints on deletion is, I believe, by itself sufficiently constrained, so that it does not reduce it to complete triviality.

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SURFACE CONSTRAINTS AND AGREEMENT RESOLUTION:
SOME EVIDENCE FROM XHOSA¹

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1. Introduction

It is the task of a grammar to separate the grammatical sentences of a language from the ungrammatical ones. In Chomsky [1965] this task was performed partly by transformations which acted as filters to screen prospective sentences. Recently it has been shown that the filtering function of the transformations is not always enough to predict the grammaticality of the sentences of a given language. In Spanish, for example, Perlmutter [1970] has shown that the placement and order of clitics cannot be predicted by the Chomsky model but must be determined by a surface constraint. Lakoff [1970] has gone even further in arguing that the traditional function of the transformations of relating individual or successive phrase markers (and thus stating the grammaticality of sentences) must be modified or extended to global rules, which permit reference to non-contiguous phrase markers, over parts or the entire derivation.

In the present paper I wish to argue that some constraints on grammaticality need to be even further removed from the transformations to apply after certain, late phonological rules have applied. To this effect I will consider data arising from problems in gender conflict resolution in the concord of conjoined noun phrases in Xhosa, a Bantu language of South Africa.

I will begin by discussing, at length, the data relevant to agreement conflicts in Xhosa. Two possible explanations for the grammaticality of certain sentences containing conjoined NP's of different genders will then be considered. Finally I will propose a post-

¹For the Xhosa data I am indebted to Tiyo Soga. This paper was first presented at the LSA, Summer 1970, under the misleading title, "Conjunction reduction in Xhosa and Zulu." The present version has benefitted from comments from and discussions with Talmy Givón and Charles Bird.

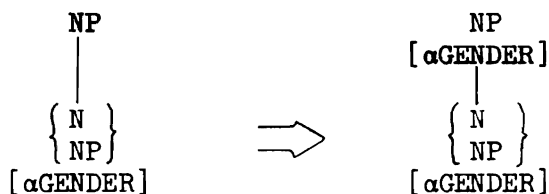
phonological constraint the operation of which will require a serious modification of our notion of 'normal' conditions for lexical insertion.

Givón [1969] has argued that the process of grammatical agreement, both in Bantu languages and universally involves two separate steps:

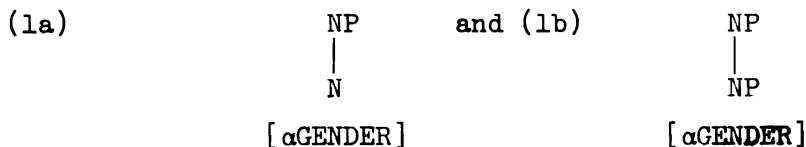
- (i) The transformational process of spreading the features of the nominal onto the verb (or unembedded modifier)
- (ii) the spelling of the agreement features by the second lexicon.

Givón further argues that agreement must be preceded by a universal convention which permits the feature gender (as well as all features of the noun) to 'migrate' upward from the noun and attach themselves to the NP node which dominates it. This convention can be formalized as:

(1) GENDER MIGRATION



Convention (1) is conjunctively ordered so that it applies both to the configuration

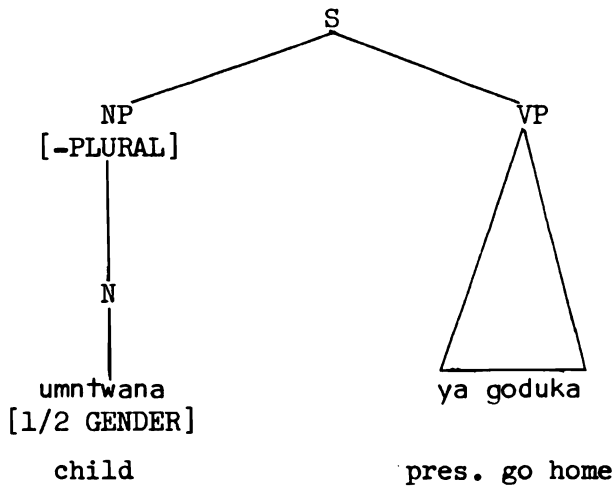


and in that order. (1) must be allowed to apply until all NP nodes dominating the N have been assigned the feature specification $[\alpha\text{GENDER}]$, where α can be either 1, 2, 3, or masculine, feminine, neuter, or 1/2, 5/6, 9/10, etc. as in Bantu languages.²

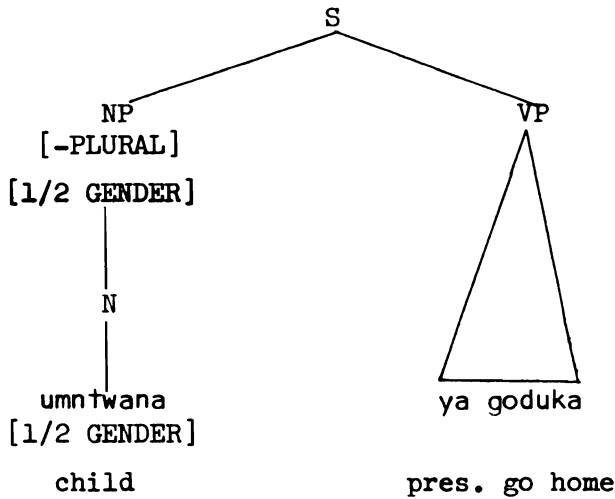
The application of (1) to the structure (2) yields (3) where the feature $[1/2 \text{ GENDER}]$ has migrated to the top NP:

²It is traditional to label the genders of Bantu languages 1/2, 3/4, etc.

(2)



(3)



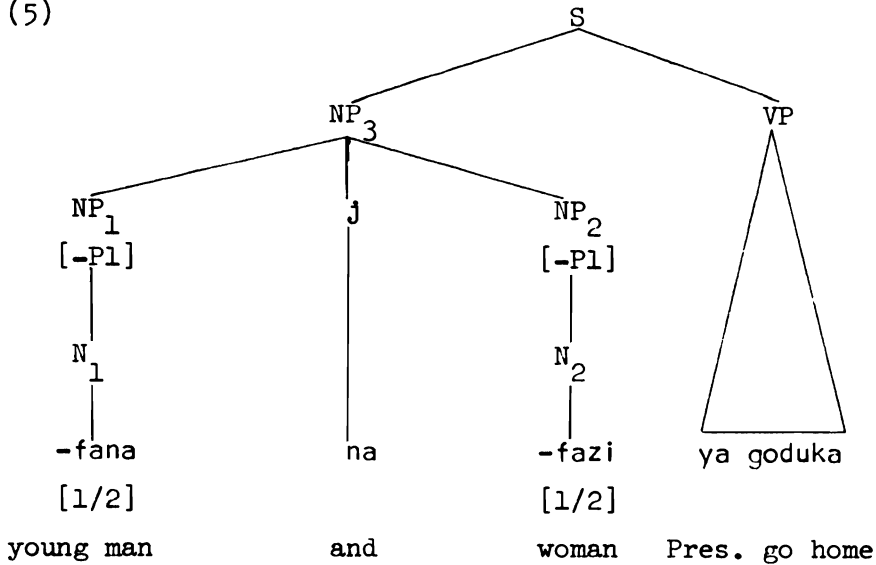
AGREEMENT step (i) copies the features [1/2 GENDER] and [-PLURAL] from the NP of (3) onto the verb, by step (ii) the correct agreement form, u, is spelled out by the second lexicon and ultimately we have the correct sentence (4):

(4) Umntwana uyagoduka
'The child is going home'

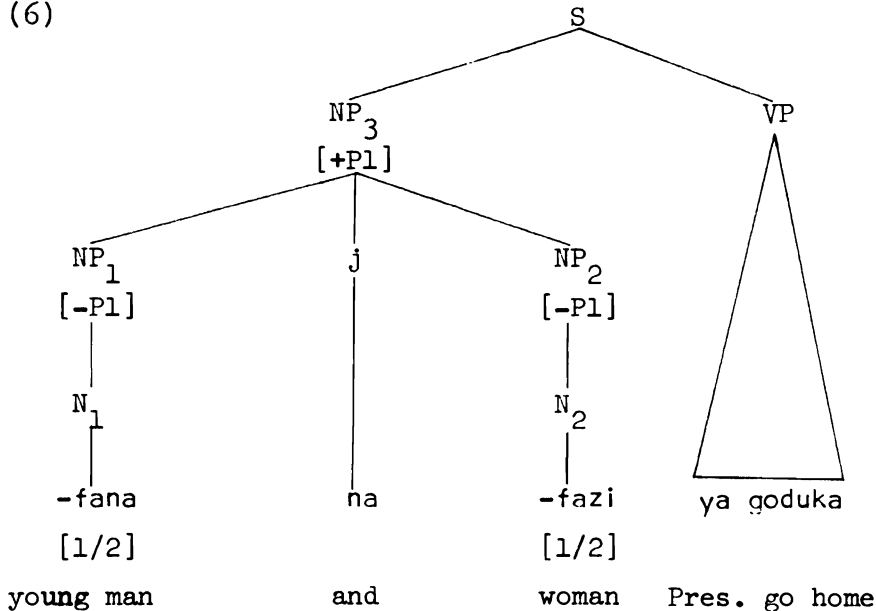
The second convention which is crucial in the operation of agreement is NA (number adjustment). By NA any NP dominating two or more conjoined NP's is automatically assigned the feature [+Pl] to account for the (probably universal) fact that conjoined NP's always govern plural agreement forms or plural pronouns. NA, for example, would

render (5) in which two singular NP's are conjoined as (6) where NP₃ has been marked [+Pl]:

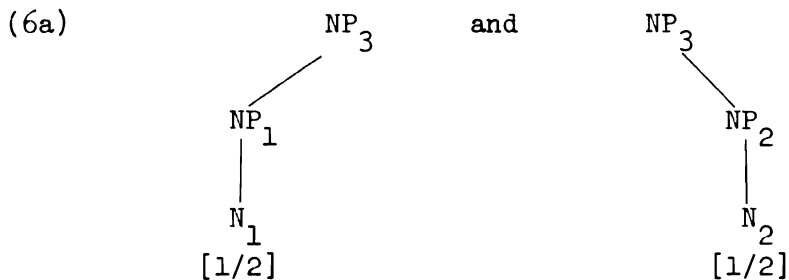
(5)



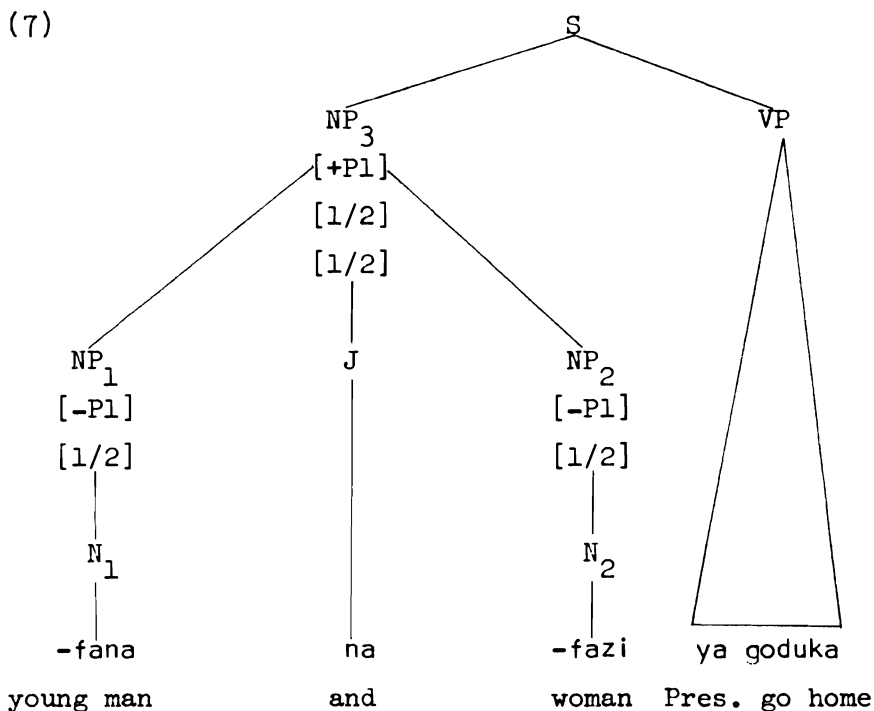
(6)



By the application of (1) NP₃ of (6) receives two instances of the feature specification [1/2] since NP₃ dominates both NP₁ and N₁ and NP₂ and N₂ and both of these configurations:



meet the structural description of (1):



Again, the agreement rule will first copy the gender and number features from NP₃ onto the verb and ultimately the second lexicon will spell out the agreement form *ba*:

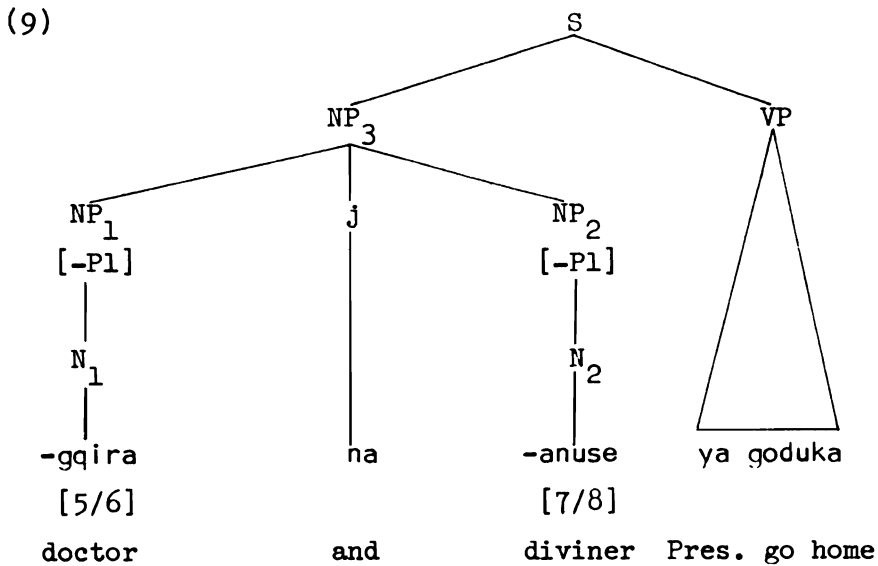
- (8) Umfana nomfazi bayagoduka
 'The young man and the woman are going home'

It is an empirical question whether the rule which spells out the agreement features on the verb (step (ii)) or the feature copying rule (step (i)) ever need to refer to more than one occurrence of a given feature specification on a given node and I know of no rule that needs to make reference to two or more such occurrences of the same feature

specification. For the present, then, I am assuming that in cases such as (7) where NP_3 has two instances of the same gender specification, [1/2], all but one instance of a given feature specification are deleted by convention. I will return to this issue below.

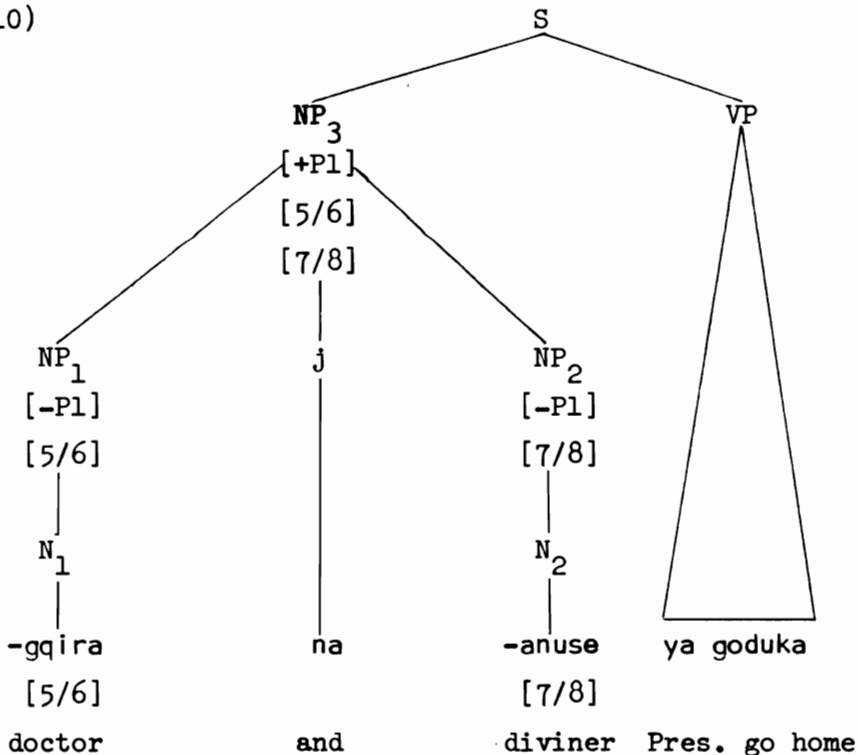
2. Some Xhosa data

Consider now the application of (1) to a structure essentially identical to (5) in which two nouns of different genders have been conjoined:



By conventions NA and (1) we obtain:

(10)



The convention reducing identical instances of a feature specification does not apply to NP₃ since the feature specifications are distinct. If step (i) of agreement were allowed to apply to (10) it would copy either of the two gender features, [5/6] or [7/8], from NP₃. After lexical insertion with either of these features on the verb to trigger the corresponding concord we would have either sentence (11) or (12), both of which are starred.³

(11) Iqgira nesanuse *ayagoduka (with 5/6 concord)

(12) Iqgira nesanuse *ziyagoduka (with 7/8 concord)

Neither the concord for PLURAL, 5/6, as in (11), nor that for PLURAL, 7/8, as in (12) is grammatical. The only way to express 'The doctor and the diviner are going home' is to extrapose one or the other of the conjoined NP's to the end of the sentence and have the remaining NP control the agreement:

³Some speakers accept Iqgira nesanuse bayagoduka (with 1/2 agreement) for (11) and (12).

- (13) Igqira liyagoduka nesanuse
'The doctor is going home with the diviner'
- (14) Isanuse siyagoduka nigqira
'The diviner is going home with the doctor'

In pronominalization we can observe the same problem of gender resolution. Thus, while the pronominalization of conjoined nouns of identical genders is fine, as in (15), the pronominalization of nouns of non-identical gender again leads to ungrammatical sentences, (16) and (17).

- (15) Ndibona bona (i.e. umfana nomfazi)
 [1/2] [1/2] [1/2]
'I see them' (i.e. the young man and the woman)
- (16) *Ndibona wona (i.e. igqira nesanuse)
 [5/6] [5/6] [7/8]
'I see them' (i.e. the doctor and the diviner)
- (17) *Ndibona zona (i.e. igqira nesanuse)
 [7/8] [5/6] [7/8]
'I see them' (i.e. the doctor and the diviner)

In fact in Xhosa it is not possible to resolve agreement conflict of conjoined nouns of different genders so that:

Constraint X on conjunction

All sentences containing conjoined NP's of different genders involving agreement or pronominalization are starred.

There are two types of exceptions to this constraint. The first arises from all of those cases where the phonological form of the pronoun for the conjoined nouns happens to be the same. This applies, as evident from Table 1, below, in the spurious case of genders 1/2 and 1a/2a, where both the pronoun and each of the agreement forms are identical, and in the plurals of gender 7/8, 11/10 and 9/10 where the pronoun *zona* is shared and the secondary (weak) concord is identical. If genders 1/2 and 1a/2a are to be considered different at some point in the grammar, then in (18) and (19), with secondary and primary concord

XHOSA PRONOUNS AND ADJECTIVAL CONCORDS

GENDERS		PRONOUNS		ADJECTIVAL CONCORD			
<u>sg</u>	<u>pl</u>	<u>sg</u>	<u>pl</u>	secondary		primary	
<u>sg</u>	<u>pl</u>	<u>sg</u>	<u>pl</u>	<u>sg</u>	<u>pl</u>	<u>sg</u>	<u>pl</u>
1	2	yena	bona	u	ba	m	ba
1a	2a	yena	bona	u	ba	m	ba
3	4	wona	yona	u	i	m	mi
5	6	lona	wona	li	a	li	ma
7	8	sona	zona	si	zi	si	zi
9	10	yona	zona	i	zi	in	zin
11	10	lona	zona	lu	zi	lu	zin
14		bona		bu		bu	
15		kona		ku		ku	

TABLE 1.

respectively, the *ba* is ambiguous, permitting reference to both 1/2, PLURAL and 1a/2a, PLURAL. Similarly in (20), *bona* can be either PLURAL, 1/2 or PLURAL, 1a/2a. These sentences are thus grammatical.

(18) Abanakwethu noodadewethu bayagoduka
 [1/2] [1a/2a] [1/2]/
 [1a/2a]
 'My brothers in law and my sisters are going home'

(19) Abanakwethu noodadewethu bahle
 [1/2] [1a/2a] [1/2]/
 [1a/2a]
 'My brothers in law and my sisters are beautiful'

(20) Ndibona bona (i.e. abanakwethu noodadewethu)
 [1/2]/ [1/2] [1a/2a]
 [1a/2a]
 'I see them' (i.e. my brothers in law and my sisters)

In (21) the weak concord, *zi*, is acceptable as the agreement form for both 7/8 and 9/10 PLURALS and in (22), *zona*, can be pronoun of either of these same genders:

(21) Izandla neendlebe zibomvu
 [7/8] [9/10] [7/8]/
 [9/10]
 'The hands and the ears are red'

(22) Ndibona zona (i.e. izilo neentaka)
 [7/8]/ [7/8] [9/10]
 [9/10]
 'I see them' (i.e. the animals and the birds)

In short, when on the systematic phonemic level the agreement forms for these different genders show neutralization, conjunction (reduction) may take place.

The second type of exception to the constraint arises from the application of a late-level phonological rule which merges two otherwise distinct predicates under certain conditions.

Above we noted that 7/8, 9/10 and 11/10 shared the secondary (weak) concord form as well as the pronoun which they take for their plural. It was not pointed out that they differ in terms of the primary (strong) concord. As evident from Table 1., the concord form for 7/8, PLURAL is zi, while 9/10 and 11/10 have zin. Now, the distinction between primary and secondary concord is particularly relevant in the inflection of adjectives.⁴ By far the majority of Xhosa adjectives take the secondary (weak) concord. To this set belong bomvu 'red', lula 'light', ntsundu 'dark brown', nzima 'heavy' and others. There are eleven adjectives which take the primary (strong) concord:

(23)	(a)	-bi	bad	(b)	-ni?	of what sort?
		-dala	old		-ngaphi?	how many?
		-de	long, tall		-ncinane	little, small
		-futshane	short		-ninzi	much, many
		-hle	good, beautiful			
		-khulu	great			
		-tsha	young			

There exists in Xhosa a late-level phonological rule which reduces all instances of geminate consonants to one occurrence of that consonant.

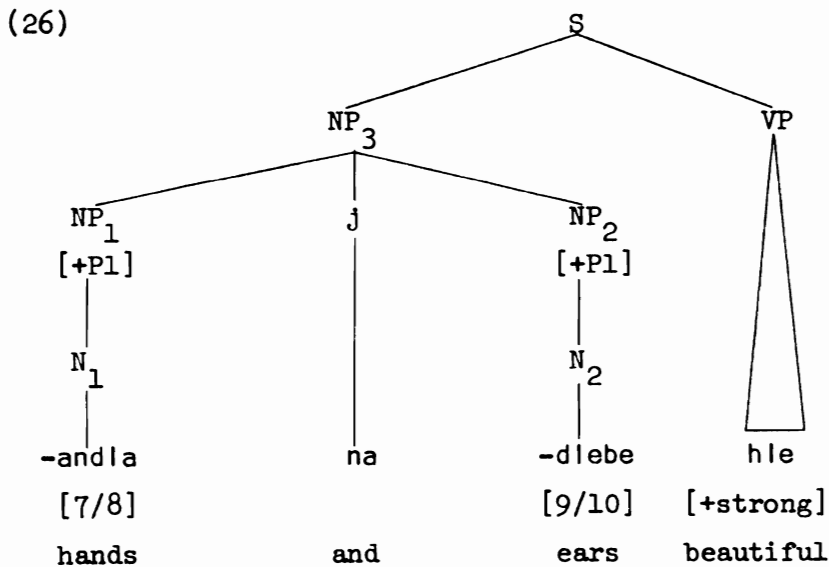
(24)	C	C	→	C
	[αF _i]	[αF _i]		[αF _i]

where F_i may be any feature by which the given segment is specified. Rule (24) states that in all those cases in which two given consecutive segments agree in the specification of each of the features specifying that segment one segment is deleted (absorbed). It does not apply to the singular of -nama 'weak, unsteady person', but reduces the would-be plural *izin nama to izinama:

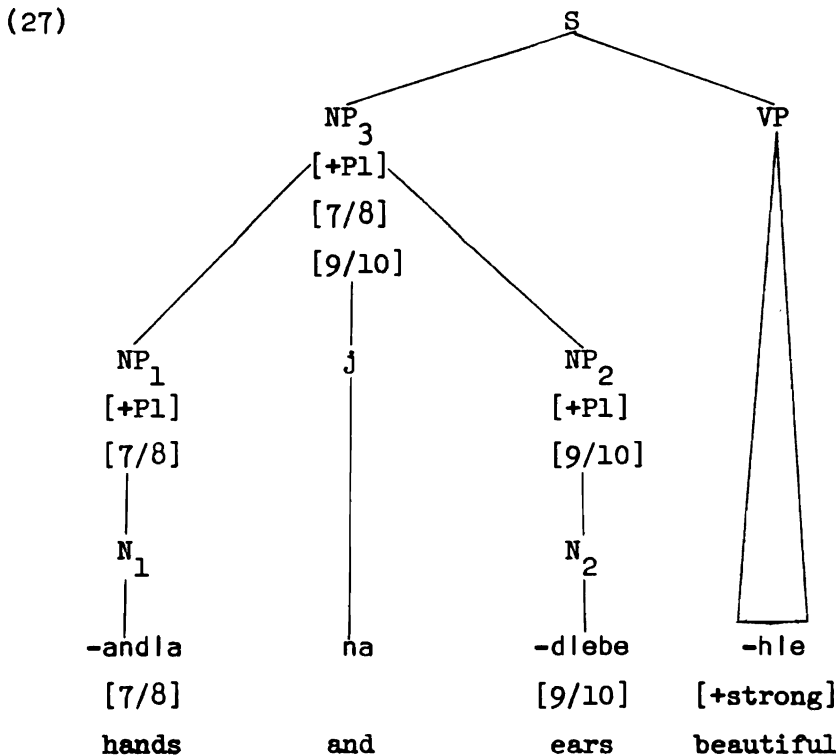
⁴For an extensive discussion of the difference between strong and weak adjectives see the study by A. C. Jordan [1967].

- (25) izin-nama → izinna (by Rule (24))
 ulu-nama → ulunama

Consider now the conjunction of two nouns from gender 7/8 and 9/10 with a strong adjective as predicate. At the point at which the feature-migration convention (1) would apply, we have the structure (26):



By (1) we get the expected (27) in which NP_3 again has two different gender specifications:



By copying the feature specification of either 7/8 or 9/10 onto the verb and spelling the corresponding strong concord, (27) would become either (28) or (29), neither of which is grammatical:

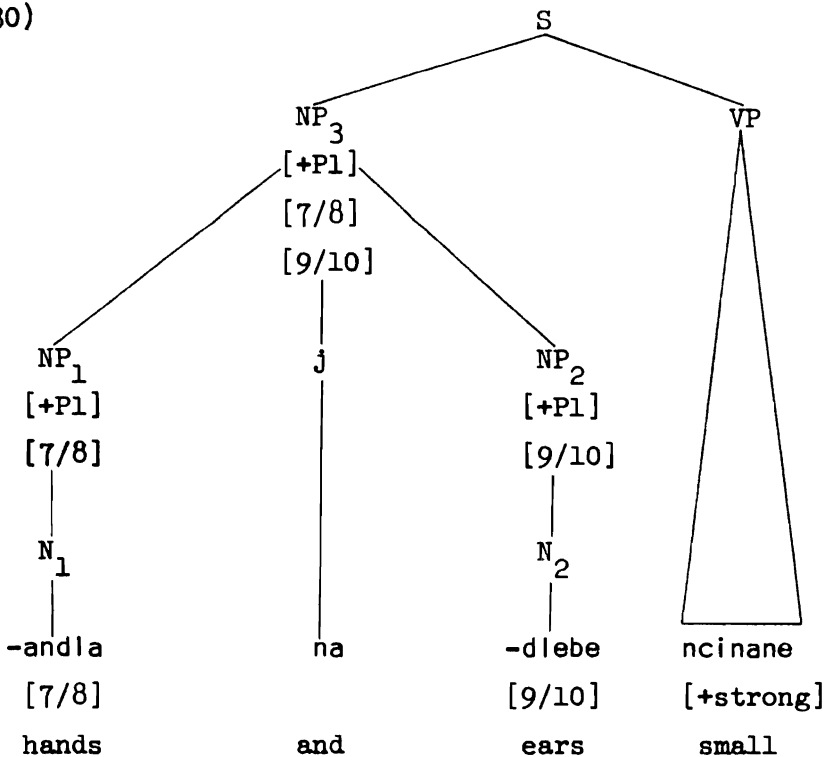
(28) *|zandla neendlebe zihle
 [7/8] [9/10] [7/8]
 'The hands and the ears are beautiful' (7/8 agreement)

(29) *|zandla neendlebe zintle
 [7/8] [9/10] [9/10]
 'The hands and the ears are beautiful' (9/10 agreement)

The ungrammaticality of (28) and (29) is clearly the result of the inability of the grammar to find a common agreement form for the two genders involved and clearly reflects our constraint on conjoined NP's.

Consider then (30), which is identical to (27), except that it has a nasal-initial strong adjective as its predicate:

(30)



By copying either the 7/8 or the 9/10 gender feature from NP₃ onto the predicate and by spelling the appropriate concord, zi and zin respectively, (30) becomes either (31) or (32):

(31) Izandla neendlebe zi-ncinane

(32) Izandla neendlebe zin-ncinane

zin-ncinane meets the structural description of the late phonological rule (24) and is reduced to zincinane; (24) does not apply to zi-ncinane, however, so that the two predicates are neutralized:

(31) zi-ncinane → zincinane

(32) zin-ncinane → zincinane (by (24))

By the application of rule (24) we obtain the grammatical sentence (33) which can be derived either via (31) or (32):

(33) Izandla neendlebe zincinane

'The hands and the ears are small'

We can now revise constraint X on conjunction:

(34) Constraint on Conjunction

All sentences containing conjoined nouns of different genders involving agreement or pronominalization are starred unless

- i. the conjoined nouns belong to genders which share the deep phonological form of the concordial morphemes;
- ii. the surface form of the concord morphemes are rendered identical by phonological merger due to a late phonological rule.

3. Discussion

Constraint (34) lends itself to two, theoretically quite distinct, interpretations: (i) the rule feature interpretation; and (ii) the global rule interpretation. Under neither of these interpretations is the conjunction of any nouns blocked **regardless of the gender** to which they belong.

The rule feature interpretation would place the burden of ruling out starred sentences on lexical insertion. All concords and all pronouns are marked for all of those genders to which they permit reference. The pronoun *zona*, for example, which can spell any pronominalized NP containing any combination and number of the features 7/8, 9/10 and 11/10 (but none containing any other gender feature), would be specified as follows in the second lexicon:

- (35) ZONA
- $$\begin{array}{l} [+PRO] \\ \left\{ \begin{array}{l} [7/8] \\ [9/10] \\ [11/10] \end{array} \right\} \\ [+P1] \end{array}$$

A condition must be placed on the grammar in general that the lexical insertion is sensitive to all and only the features on the node onto which the lexical entry is placed. All P-markers containing unfilled nodes are starred. Note that this type of formulation follows directly

from the filtering function of the transformations, and all lexical insertions are, in some sense, obligatory transformations.

The application of this condition to (35) and the NP onto which (35) may be inserted is straightforward. Note that the gender features on (35) are stated conjunctively so that *zona* can replace any of the NP's in (36) but none of the NP's in (37):

(36)	NP	NP	NP
	[+P1]	[+P1]	[+P1]
	[7/8]	[9/10]	[7/8]
	[11/10]	[11/10]	[9/10]

(37)	NP	NP
	[+P1]	[+P1]
	[7/8]	[11/10]
	[5/6]	[3/4]

Similarly the specification in the lexicon of concord morphemes which permit ambiguous reference will mark each concord form for all the genders possible. Thus *zi* (7/8, 9/10 and/or 11/10) has the gender specification (38) in which the features are, again, stated conjunctively so that it can be spelled out as an agreement form for the genders 7/8, 9/10 and 11/10, but not any others:

(38)	ZI
	[+P1]
	[-strong]
	{ [7/8]
	{ [9/10]
	{ [10/11]

The correct derivation of sentences falling under (34.ii) is more complex. The grammar can not, first of all, allow common reference to strong concords of 7/8 and 9/10 and 11/10. Their lexical entries should remain distinct:

- (39) (a) ZI (b) ZIN
- | | |
|-----------------------------|---|
| [+P1]
[7/8]
[+strong] | [+P1]
[+strong]
{ [9/10] }
{ [11/10] } |
|-----------------------------|---|

As has been demonstrated, however, it is always when a strong adjective with an initial nasal is a predicate that rule (24) can merge the otherwise distinct (39a) and (39b) and thus render a grammatical sentence. It is proposed, then, that we split the strong adjectives into two groups, the Nasal-initial (= (23b)) and the non-Nasal-initial (= (23a)), and that we modify our entry for the 9/10 and 11/10, [+[__nasal]] concord so that it agrees with that of 7/8:

- (40) (a) ZI (b) ZIN
- | | |
|--|---|
| [+P1]
[+strong]
{ [7/8] }
{ { [9/10] } }
{ { [11/10] } }
{ [+[__nasal]] } | [+P1]
[+strong]
[-[__nasal]]
{ [9/10] }
{ [11/10] } |
|--|---|

The rule feature analysis correctly predicts the grammaticality of any sentences containing conjoined NP's. It suggests that P-rules are redundancy conditions holding between lexical entries. It is questionable, however, whether this analysis correctly explains why sentences such as (33) are indeed grammatical. It fails to capture the fact common to both exceptions to constraint (34) that the grammaticality always comes about as a result of merger, either in the lexicon, or in the derivation of the sentence.

To this end let us consider assigning the task of deriving all and only the grammatical sentences containing conjoined NP's to a Global Rule. A global rule, Lakoff states, is a 'well formedness condition on configurations of corresponding nodes in non-adjacent trees' (Lakoff [1970:637]). Superficially (34.ii) meets the type of condition exemplified in Lakoff, in that the grammaticality of (30) is dependent on the

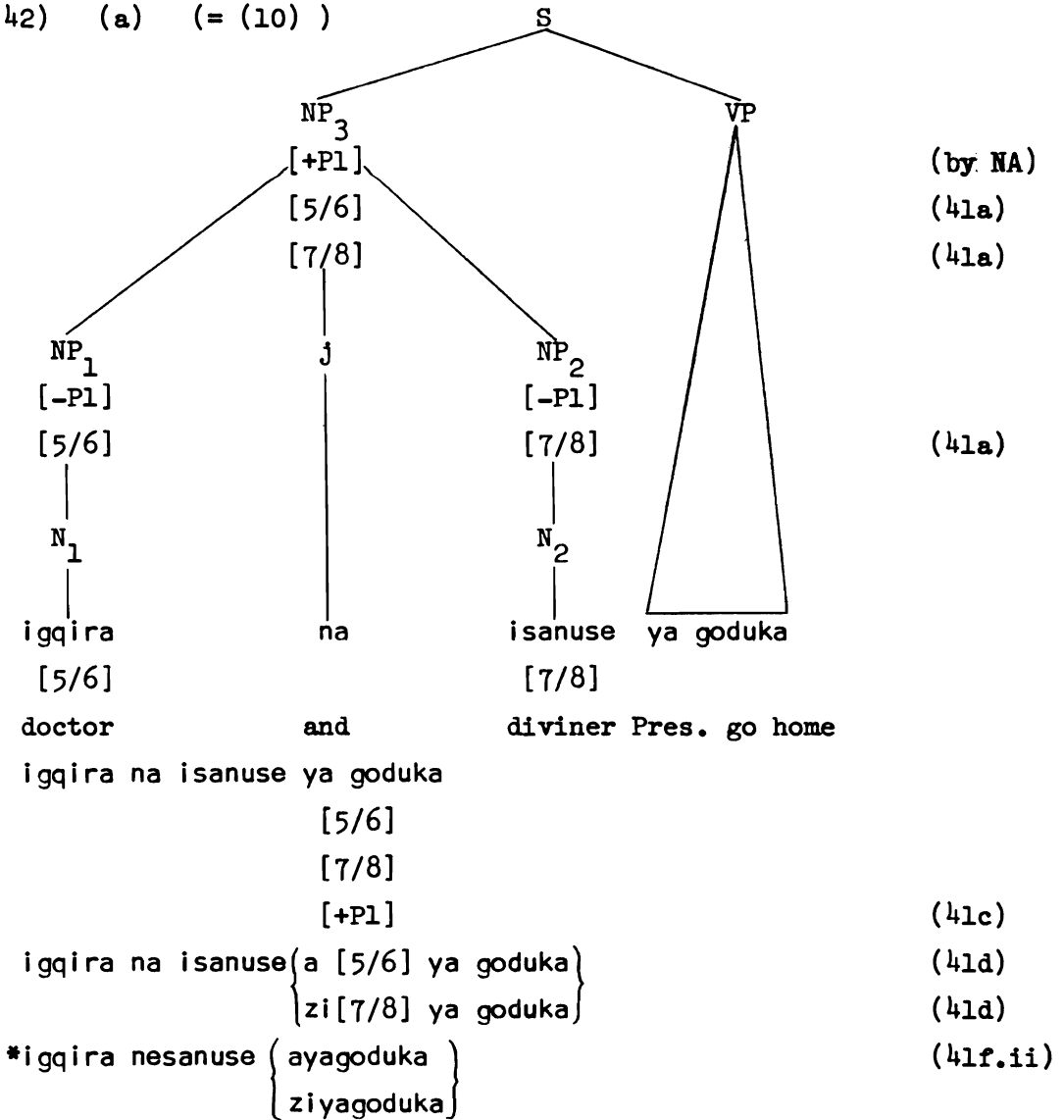
output of (24) and that agreement (i) and (ii) intervene between (30) and (24). Or, if the global rule is to refer to agreement and (24), any possible constraint on conjunction must be placed on or after agreement but before (24). Either of these formulations are predicated on the condition that agreement copies only one of the two possible gender features from the NP (in (30)).

In a language which marks grammatical relationships with various forms of agreement, it is the task of the rule of agreement to define the grammatical relationships for each of the members of the subject which governs the particular predicate. To copy only one feature of the possible two would fail to show the subject-verb relationship on which the grammar of Xhosa insists. To have the agreement rule copy both of the gender features of (30) and have both of the concord forms inserted on the verb would eliminate any need for a global rule since now the condition of well formedness can be ordered after (24) and there would no longer be two adjacent trees to refer to. Let me propose, then, that all sentences containing conjoined NP's must follow these steps:

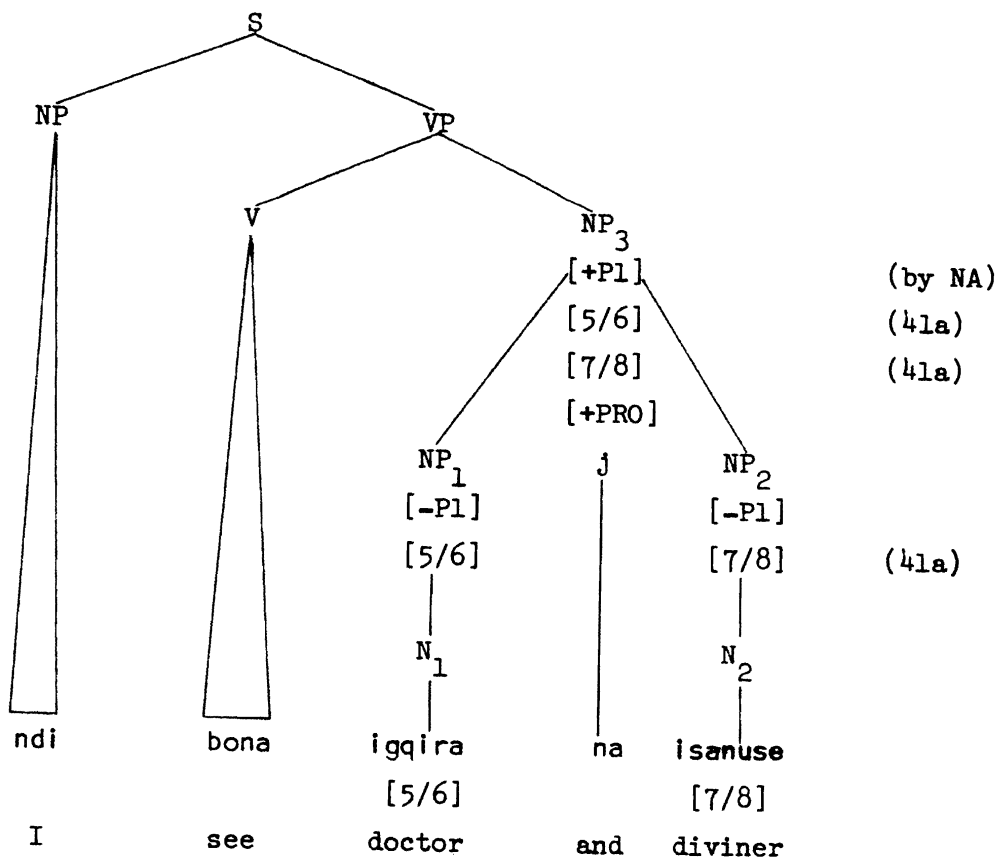
- (41)
- (a) Convention (1), which raises all gender features to the top NP dominating the conjoined NP's.
 - (b) All instances of nondistinct feature specifications are reduced to one such instance.
 - (c) Agreement (i) copies all features from the top NP onto the predicate.
 - (d) Second lexical lookup permits insertion of a concord or pronoun for each of the gender features on the predicate or on the NP, respectively.
 - (e) (24) applies to each concord-predicate form in the derivation.
 - (f) (i) All instances of segmentally identical predicates (concord and verb/adjective) or pronouns are reduced to one.
 - (ii) All derivations containing distinct predicates or pronouns on the same node are starred.

Some sample derivations are provided in (42).

(42) (a) (= (10))



(42) (b) (= (16 + 17))



ndi bona { wona } (41d)

[5/6]

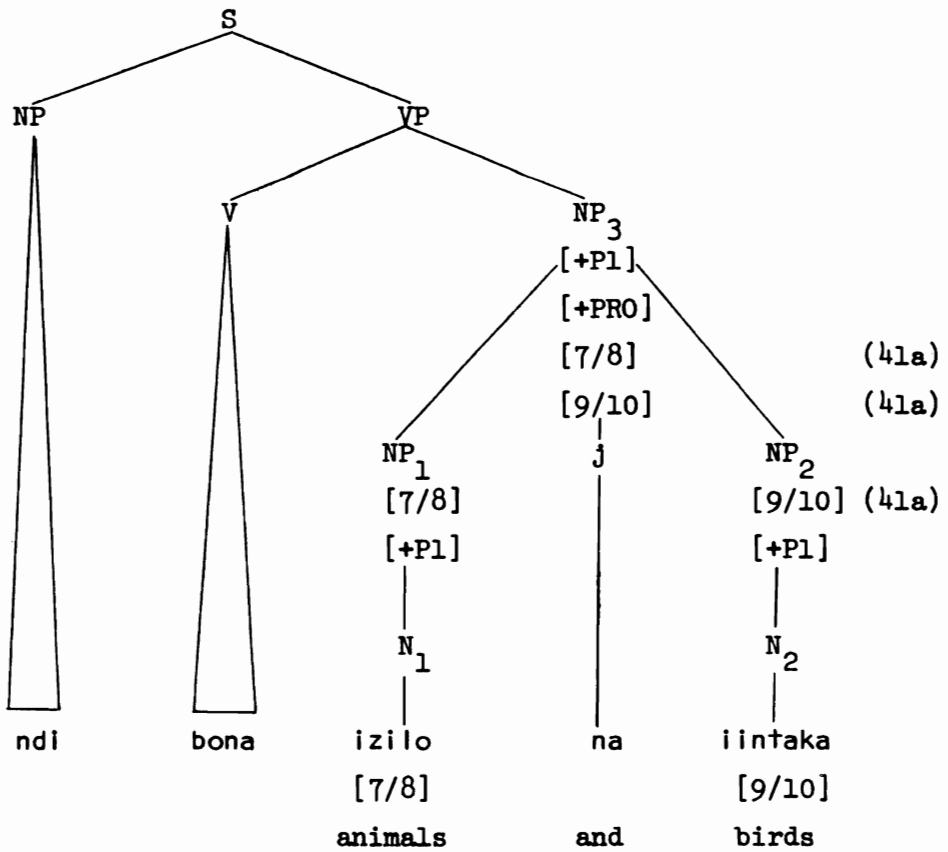
{ zona } (41d)

[7/8]

*ndibona { wona } (41f.ii)

{ zona }

(42) (c) (= (22))



ndi

bona

{ zona [7/8] }
{ zona [9/10] }

(41d)

(41d)

ndi

bona

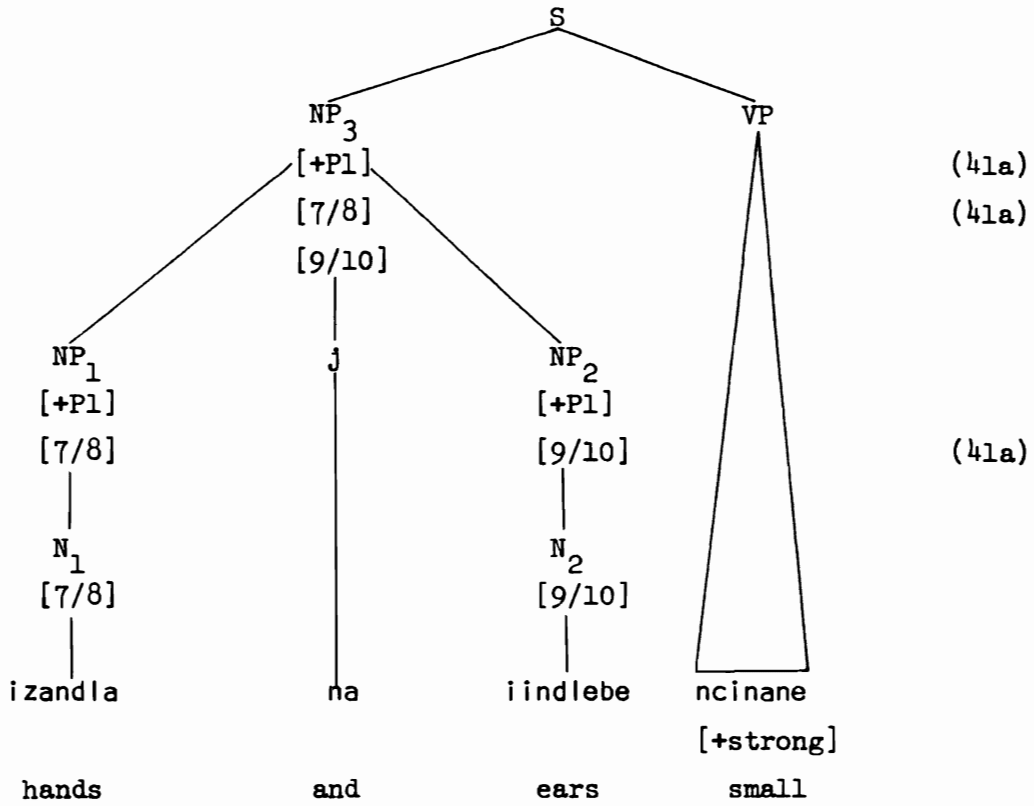
zona

(41f.i)

Ndibona zona (i.e. izilo neentaka)

'I see them' (i.e. the animals and the birds)

(42) (a) (= (30))



izandla na iindlebe { zi [7/8] ncinane } (41d)
 { zin [9/10] ncinane } (41d)

inzandla na iindlebe zi ncinane [9/10] (41e)

inzandla na iindlebe zincinane (41f.i)

Inzandla neindlebe zincinane

'The hands and the ears are small'

In (42a) neither (41a) nor (b) apply. (41c) copies both of the gender features, 5/6 and 7/8, onto the verb. These features are replaced by the corresponding concords by (41d). Notice that the application of both (41e) and (41f) requires that the predicate be repeated for each extra occurrence of a gender feature. (41f.ii) determines that the two predicates are distinct and the sentence is starred. (42b) follows essentially the same steps. This time two pronouns are inserted and again (41f.ii) rules the derivation ungrammatical. The derivations of (42 c and d) are largely parallel to those of (41 a and b). Note that in (42 c and d) the predicates are identical so that they can be merged by (41f.i) and the sentences are grammatical.

In evaluating the steps of (41) one can see a considerable parallel, both in content and function, between (41b) and (41f.i). The close similarity between these two steps is not accidental it seems, and one might suggest that even for conjoined NP's of identical genders all features are copied from the top NP, thereby eliminating (41b), and that all identical features be merged during lexical insertion, or after lexical insertion by (41f.i). Such a modification seems inherently correct. Under the present formulation (with (41b)) the conjunction of same gender nouns is interpreted to be somewhat different, a position which might be consistent with the traditional semantic function of the noun-class system (see Givón [1971] for a discussion); but such is no longer the case today. The elimination of (41b) is compatible with the explanation for the exception to (34), namely that the grammar does not provide the concordial morphemes for gender resolution and that any occurrence of grammatical sentences containing conjoined nouns of different genders is purely accidental.

(41) is consistent with the formalisms provided by the grammatical theory within which we presently operate. It does not meet the description of global rules since it in no way requires reference to two or more non-adjacent P-markers. It does, however, require an extension of the notion 'multi-categorial attachment' (Gruber [1967]) (which has been shown (see Givón [1969] to be required for the notion of transitivity in such words as 'eat' for Bemba), to allow the insertion of

more than one lexical entry under a single node.

4. Summary

The data presented in this paper suggest that some constraints on grammaticality must be ordered after the application of rather late phonological rules.

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DEPENDENT MODALS, PERFORMATIVES, FACTIVITY,
BANTU SUBJUNCTIVES AND WHAT NOT¹

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1. Introduction

In this paper I will discuss two types of subjunctives, termed the subjunctive of coercion and the subjunctive of uncertainty. Of the two, the first is found in all Bantu languages, while the second is found — to my knowledge — only in ChiBemba. These two subjunctives correspond to the two main functions of the Romance subjunctive, as, for example, in Spanish:

(1) subjunctive of coercion:

Le dice a Juan que vaya

'He is telling Juan that he (Juan) must go'

(2) subjunctive of uncertainty:

Temo que no venga

'I am afraid that he won't come'

I will attempt to show that the Romance grouping of these two functions under the same morphologically-marked category is not accidental, and that a substantially similar phenomenon underlies both subjunctives of ChiBemba.

The suggestion that subjunctive tenses or moods are dependent tenses is not new. Recently Robin Lakoff [1968] has given many arguments in support of this contention in Latin, some of them tying up to the theory of performative verbs (in this connection see also Ross [1970]). It is customary within such a framework to refer to dependent tenses as transformationally derived, thus contrasting them with tense-aspect-modal

¹This paper derives in part from materials presented in my dissertation [Givón 1969:part 3. and 1970:part 4.]. I am indebted to Robert Stockwell, Paul Schachter, George Lakoff and Larry Horn for comments and suggestions. Most of the Bantu data cited are from my own field notes on ChiBemba. For the LuGanda data I am indebted to Livingstone Walusimbi. Other data are my own.

features generated by the base rules of the grammar. I will attempt to show that the term 'transformationally derived' is inappropriate here, and should be replaced by 'spelled in the second (post-cyclic) lexicon'.

While adopting essentially the same position as R. Lakoff [1968] concerning the dependent status of subjunctives, I will attempt to show that some phenomena associated with Bantu subjunctives require further elaboration of this position. Following a coercive-manipulative verb in a Romance language (i.e. verbs such as 'order', 'force', 'tell', 'insist', etc.) the verb of the sentential complement must obligatorily appear in the subjunctive form. The same is true for complements of a group of uncertainty verbs (such as 'fear', 'doubt', 'not know', etc.). Thus, in Spanish, (3) and (4) below are ungrammatical (relative to the interpretations of (1) and (2), respectively):

(3) *le dice a Juan que va

(4) *temo que no viene

In ChiBemba, however, one finds a contrast between subjunctive and non-subjunctive complements in both environments, a fact which complicates the analytic task considerably. The implications of this phenomenon and its deep relation to the analysis of the semantic structure of subjunctives will be pursued in considerable detail later on.

2. Dependent tenses and the second lexicon

For the purpose of the discussion here, the notion 'dependent tense' will be defined as 'a tense-aspect-modal which cannot appear in an independent, kernel, unembedded sentence'. I am aware that this definition is not altogether satisfactory, and some of the more common pitfalls associated with it will be discussed later on. The customary reference to 'transformational source' of dependent tenses lumps together two distinct phenomena:

- (a) Spelling in the (post-transformational) second lexicon, and
- (b) Selectional restrictions holding between the main verb and the modality of the complement verb;

Both phenomena are obviously post-cyclical or supra-cyclical, in the sense that they involve a grammatical environment wider than the unem-

bedded 'kernel' sentence itself. The first, however, does not by itself involve any aspects of the semantic structure of the tense-aspect-modal features. Thus, note the following example from Swahili, involving the 'narrative-sequential' -KA- tense:

- (5) a-li-kuja, a-KA-la, a-KA-enda
'he came (past), he ate, he left'
- (6) a-na-kuja, a-KA-la, a-KA-enda
'he is coming (present), he is eating, he is leaving'
- (7) a-ta-kuja, a-KA-la, a-KA-enda
'he will come (future), he will eat, he will leave'

It is clear that the rule which involves the replacement of the independent tenses above (-li-, -na-, -ta-) by the dependent tense -ka- does not involve the semantics of those tenses, but only the spelling. An earlier transformational approach to this problem would have inserted -li-, -na- and -ta- in all respective positions, and then changed them post-cyclically through repair rules (see Chomsky [1965]). In my terms, (5), (6), (7) above are just another proof that no tense-aspect-modality morphemes receive their spelling in the first (pre-cyclical) lexicon, but rather all of them receive it in the second (post-transformational) lexicon. An analysis of English ought to convince the linguist that the situation there is substantially identical.

Another example, this time mixed, involves the gerundive adverbial dependent tense in ChiBemba. ChiBemba has three continuous past tenses, one present-continuous and three continuous future tenses. Thus, for example:

- (8) a-àlélé-imba
'he was singing (long ago)'
- (9) a-léé-imba
'he is singing (now)'
- (10) a-kàláá-imba
'he will sing (tomorrow)'

In the following dependent-environment, however, while the semantic distinction is not eradicated, it is fully neutralized in the spelling:²

- (11) a-à-isa a-léé-imba
'he came (long ago) singing' ('he came and he was singing then')
- (12) a-léé-isa a-léé-imba
'he is coming (now) singing' ('he is coming and he is singing now')
- (13) a-kà-isa a-léé-imba
'he will come (tomorrow) singing' ('he will come and will be singing')

'Tense agreement' in English, as in:

- (14) I told him that she would not come

is again an illustration of the purely-spelling phenomenon of dependent tenses, and as such constitutes another argument for the post-cyclic spelling of modality morphemes. Further arguments may be found in Givón [1969:part II].

With respect to the subjunctive tenses of ChiBemba, it is again likely that in several respects they demonstrate the same neutralization of semantic distinction at the spelling level only. Thus, note the following:

- (15) a-à-ebele John ukuti a-y-e
'he told John (long ago) that he should leave (then)'
- (16) a-léé-eba John ukuti a-y-e
'he is telling John (now) that he should leave (now)'
- (17) a-kà-eba John ukuti a-kà-y-e³
'he will tell John (tomorrow) that he should leave (tomorrow)'

²This example also illustrates the problem of selectional restrictions, since of all the possible aspects which may appear in independent modalities, the gerundive adverbial admits only continuous tense-aspects.

³Verbs in future tenses do, however, require future subjunctives.

However, one may argue that the complement verb in all these cases is not marked for the particular time features, but is rather universally marked for [future], and that the rest is merely the consequence of the time features of the independent tense of the main verb preceding it. This may well be true, but then notice that in (15) and (16) above, although [future] must be specified in the underlying semantic structure of the complement modality, it is not spelled on the surface. This again constitutes an argument for spelling in the second lexicon. The same applies also to the subjunctive of uncertainty:

- (18) n-à-twiishika nga John a-inga-isa
'(long ago) I doubted that John would come'
- (19) n-déé-twiishika nga John a-inga-isa
'I doubt (now) that John would come'
- (20) n-kà-twiishika nga John a-inga-isa
'I will doubt (tomorrow) that John would come'

While a certain [future] modality seems to be associated with all these complements, it is not spelled by the variety of independent future tenses available in ChiBemba (-|éé- 'later today', -á|áá- 'within a few hours', -kà- 'tomorrow', -ká- 'after tomorrow'), but rather, by the invariant -inga-. This clearly supports the claim about second-lexical spelling.

3. Dependent tenses and semantic-selectional constraints

A characteristic situation for dependent tenses is the reduction, sometimes drastic and other times partial, of the number of semantic distinctions which may appear in dependent environments, as against those which may appear in independent environments (for detailed discussion of this see Givón [1970:part 4]). ChiBemba has 24 independent tense-aspects: 13 past tense-aspects, 2 habitual tense-aspects, 2 present-progressive tense-aspects and 7 future ones. Within those it observes 4-5 aspectual distinctions. In most dependent tenses this wealth is reduced to no temporal distinction, and only one aspectual distinction (continuous/simple). This is the case with the subjunctive

of uncertainty, where we find:

(21) n-déé-twiishika nga John a-inga-isa
'I doubt that John would come' (simple)

(22) n-déé-twiishika nga John a-inga-láá-isa
'I doubt if John would be coming' (continuous)

In the case of the subjunctive of coercion, the reduction is only slightly less drastic, and we find 5 tenses:

(23) n-déé-eba John ukuti a-y-e
'I am telling John that he should leave' (present, simple)

(24) n-déé-eba John ukuti a-lèé-ya
'I am telling John that he should be leaving' (present, continuous)

(25) n-kà-eba John ukuti a-kà-y-e
'I will tell John that he should leave' (future, simple)

(26) n-kà-eba John ukuti a-kàléé-ya
'I will tell John that he should be leaving' (future till tomorrow, continuous)

(27) n-ká-eba John ukuti a-káléé-ya
'I will tell John that he should be leaving' (future after tomorrow, continuous)

In contrast with the phenomenon discussed in the preceding section, this reduction is not a mere morphological neutralization on the surface, but rather represents the absence of full semantic marking (non-specification) in these dependent-tense environments. One may wish to deal with it in one of two ways:

- (a) By making the Base Rules responsible for generating the modality features context sensitive, with disjunctive ordering (or negative environment conditions) employed to block the full expansion of certain features in specific dependent environments;
- (b) By formulating post-cyclic constraints which would block the

distribution of certain semantic features in those environments; Solution (a) above was essentially adopted in Givón [1970:part 4]; it assumes context sensitivity in the base rules. This may be distasteful to some, although it is clear to me that if one generates all semantic features by a corpus of rules which is an extension of our 'normal' (categorial) base rules -- i.e. if one adopts the generative semantics format (as in Gruber [1967]), some lower level 'feature rules' are bound to be context sensitive, since features do not cross-classify freely. Thus, for example, in (28) below (taken from Givón [1970:part 4, table 6]) the feature [-continuous] may be further expanded to [+lingering] only in the context of the time divisions [-before today] or [+before yesterday] for past tenses. This context sensitive nature of the rule is masked by the format, but may be exposed by the notational variant in (28a):

(28) [[-cont.], ($\left\{ \begin{array}{l} [-\text{before today}] \\ [+before\ yest.] \end{array} \right\}$)] \rightarrow ([+linger])

(28a) [-cont.] \rightarrow ([+linger]) / ($\left\{ \begin{array}{l} [-\text{before today}] \\ [+before\ yest.] \end{array} \right\}$)

Solutions (a) and (b) above may well be notational variants of each other. A more serious objection to (a) involves the nature of the environments which must be stipulated in context sensitive rules in order to account for reduced semantic structures: they are typically extra-kernel (and thus, in my terms, supra-cyclic) environments. In the case of subjunctives, one must mention the dominating main verb in a higher sentence. In the case of sequential-narrative tenses (see (5), (6), (7) above) one mentions a conjoined preceding sentence. In the case of conditionals one mentions the preposed 'if-S...' clause. Base rules, however, are typically a pre-cyclical component, designed to allow for the maximal possible expansion of all categories-features regardless of their embedded or non-embedded status. Thus, adopting solution (a) may be tantamount to making an erroneous claim about the scope and function of the strictly-generative component of the grammar. This argument is, however, admittedly formalistic and at the moment I see no empirical evidence which could decide it in a more convincing fashion.

In addition to the context sensitivity phenomenon shown above, another phenomenon, more properly selectional, is also involved here. First, I have already suggested above that some modality feature such as [future] is always involved in both subjunctives of ChiBemba. In more precise terms, this amounts to a selectional restriction holding between verbs of uncertainty and verbs of coercion, and the modality features of their complement verb. This is again not a surprising discovery. A similar restriction must also hold between intentional modal verbs such as 'want', 'plan', 'intend to', 'decide' etc. and the modality of their complement verbs -- even if that modality winds up being reduced to an infinitival form, as in:

- (29) n-dée-fwaaya uku-bomba
 'I want to work'

Other verbs select other modalities. For example, the verbs 'remember' and 'forget' must in some sense select a [past] feature in their complement, even if it is not spelled on the surface, at least in some of their usages.⁴

Some tense restrictions between the modality of main verbs and that of their complements may also fall under this general heading, regardless of the surface disappearance of the complement tense marker. Thus:

- (30) I saw him arriving

may be interpreted only as:

- (31) He arrived, and I saw it

but never as:

⁴A counter-example to this is of course: 'I will remember to come tomorrow'; but here 'remember' functions as a modal rather than factive verb (though it still has the factive-implicature, as 'I remembered to come' implies 'I came'. For further discussion of factive implicatures, see Karttunen [1970]). Another counter-example is: 'I just remembered that he will come tomorrow'. Here 'remember' is used as a factive verb, meaning that the speaker presupposes the truth of 'He will come tomorrow', and perhaps 'something already presupposed to be true' in some sense implies 'past'.

- (32) *He is arriving, and I saw it
 *He will arrive, and I saw it

Finally, one may note that factive presuppositions (as per the verbs 'know', 'realize', 'discover') or factive implicatures (as per the verbs 'force', 'prevent', 'cause'; for details see Karttunen [1970]), must also fall under this general umbrella. That is, one may argue that factivity or existentiality is a sentence modality, and that some verbs select only sentences possessing this modality. This will be discussed further later on.

To sum up this section, the second phenomenon discussed above, in contrast with the first, clearly involves specific lexical items or groups of lexical items. One could of course express this context sensitivity by cumbersome base rules, but it seems clear to me that it is best expressed as part of the context sensitive conditions holding during lexical insertion of specific lexical items, that is, selectional restrictions. The fact that the selectional restrictions of many verbs are formulated in terms of modals or verbs in a lower (complement) cycle is not at all disturbing. Rather, it suggests that McCawley's [1968] concept of cyclical lexical insertion of verbs is indeed correct. In this framework, lower cycle modality is available as the environment for the insertion of verbs or modals in a higher cycle, but not vice versa. If one could find an example of selectional restrictions of a complement verb which are formulated in terms of the dominating higher verb, it would then constitute a counter-example to this framework.

4. Seemingly independent subjunctives

An apparent counter-argument to my contention that subjunctives are dependent tenses may cite the fact that verbal in the subjunctive form may appear in utterances that are not dominated by higher verbs on the surface. R. Lakoff [1968] has discussed the same phenomenon in Latin, and has shown evidence for positing a higher (performative) verb in instances of this kind. Both subjunctives of ChiBemba may appear in seemingly independent utterances:

- (33) subjunctive of coercion:
 a-y-e 'he may/should/must leave'
 a-léé-ya 'he may/should/must be leaving'
- (34) subjunctive of uncertainty:
 a-inga-isa 'he might come'
 a-ingaláá-isa 'he might be coming'

There are several reasons why the solution of positing a higher verb is attractive.

a. Paraphraseability

The utterance (33) above is multiply ambiguous and may be paraphrased correctly by either one of the following:

- (35) n-déé-fwaaya ukuti a-y-e 'I want him to leave'
 (36) n-déé-koonkomeshya ukuti a-y-e 'I order/demand that he leave'
 (37) n-déé-sumina ukuti a-y-e 'I permit/allow that he may leave'
 (38) n-déé-koshya ukuti a-y-e 'I encourage/suggest that he should leave'
 (39) n-déé-soka ukuti a-y-e 'I urge that he must leave'
 (40) n-déé-sosa ukuti a-y-e 'I say/demand that he should leave'

All these verbs may take a subjunctive complement in ChiBemba (and require a subjunctive complement in Romance). There are two other facts about these paraphrases which are of great significance: First, the paraphrase is good only if the first person pronoun is employed. Thus, (41) and (42) below could not correctly paraphrase (33):

- (41) u-léé-fwaaya ukuti a-y-e 'You want him to leave'
 (42) a-léé-fwaaya ukuti a-y-e 'He wants him to come'

Second, the paraphrase is good only if the present tense is employed. Thus, (43) and (44) below cannot correctly paraphrase (33):

- (43) n-àlf-fwaaya ukuti a-y-e 'I wanted him to leave'
 (44) n-kà-fwaaya ukuti a-kà-y-e 'I will want him to leave'

But these two requirements, first person speaker and present tense, are precisely the requirements for the appearance of a performative verb! Another requirement for a performative, that of second person hearer (at least implied), also seems to be satisfied. Thus, note that while (39) is a correct paraphrase of (33), (45) below is not:

(45) n-dée-mu-soka ukuti a-y-e 'I urge him that he should leave'

But, in contrast, (46) is a correct (and more specific than (39)) paraphrase of (33):

(46) n-dée-ku-soka ukuti a-y-e 'I urge you that he should leave'

Similar facts are observed with respect to the subjunctive of uncertainty. Thus, (34) above may be paraphrased by either:

(47) n-dée-twiishika a-inga-isa 'I doubt that/if he'll come'

(48) n-dée-subila a-inga-isa 'I hope that he will come'

(49) n-dée-tina nga a-inga-isa 'I am afraid that he might come'

(50) n-shiléeé-ishiba a-inga-isa 'I don't know if he will come'

As above, the paraphrases hold only with first person speaker and present tense. The similarity of these requirements to those of performatives could of course be accidental, though I rather doubt that.

b. Distribution

There are several environments in which a performative may not be inserted. One of them is a restrictive relative clause. Another is questions. Another is 'if-S...' clauses in conditionals. On the surface these environments hold nothing in common. However, one may argue that each one of them precludes performatives for a specific reason. First, performatives by definition have no truth value. However, restrictive relative clauses (modifying non-generic nominals) are pre-supposed to be true. Second, a performative cannot be inserted under another performative. But questions involve a performative. Further, questions involve the presupposition that the utterance questioned must have some truth value. Thus:

(51) Did John come?

implies:

(52) Either John came or John did not come

and:

(53) Who came?

implies:

(54) Someone came

Third, (non-counter-factual) conditionals involve, in some deep sense, [future] modality. But performatives by definition involve [present] only. If a potentially performative verb is inserted in an 'if-S...' clause of a conditional, it loses its performative function:

(55) I promise to give you my notes (performative)

(56) If I promise to give you my notes, would you help me then?
(non-performative)

With respect to counter-factual conditionals, whose 'if-S...' clauses do not admit performatives either, they involve a (negative) factive presupposition, i.e.:

(57) Had he come, I would have seen him

implies:

(58) He did not come

However, as I have suggested above, performatives have no truth value. It is therefore natural not to find them in this environment.

Now, the grammatical environments which do not admit performatives are precisely those which do not admit the 'seemingly independent' subjunctives. Thus, for rel. clauses:

(59) umuana uyo a-à-ile... 'The child who left...'

(60) umuana uyo a-kà-ya... 'The child who will leave...'

(61) umuana uyo a-léé-ya... 'The child who is leaving...'

but:

(62) *umuana uyo a-y-e...

(63) *umuana uyo a-lèé-ya...

nor:

(64) *umuana uyo a-inga-ya...

Sentences (62), (63), (64) may be rendered grammatical if the appropriate higher verb is added. However, the verb will then lose its performative function:

(65) umuana uyo n-déé-koonkomeshya a-y-e...

'That child that I am ordering to leave...'

(66) umuana uyo n-déé-tina nga a-inga-isa...

'The child that I'm afraid will come...' ('The child whose coming I fear...')

The same restriction holds with respect to questions:

(67) bushye, a-à-isa? 'Has he come?'

(68) bushye, a-kà-isa? 'Will he come?'

but:

(69) *bushye, a-is-e?

(70) *bushye, a-inga-isa?

Finally, neither subjunctive may appear in conditionals in the 'if-S...' clause:

(71) nga John a-kà-isa, niinshi Mary a-kà-ya

'If John comes (tomorrow), then Mary will leave (tomorrow)'

(72) à-u-isa, ... 'Had you come, ...'

à-u-láá-isa, ... 'Had you been coming, ...'

but:

(73) *nga John a-is-e, niinshi Mary a-kà-ya

(74) *nga John a-inga-isa, niinshi Mary a-kà-ya

(75) *à-u-inga(l^áá)-isa, ...

(76) *à-u-is-e, ...

To conclude this section, then, I would like to suggest that although at the moment more solid proofs (of the type presented by R. Lakoff [1968] for Latin) are not available, the facts of paraphrase and distribution clearly point out in the direction of a higher verb solution for the seemingly independent subjunctives. I believe it is most likely that the ultimate solution will indeed mesh up with a wider theory of performative verbs.

5. Subjunctives in contrast with other complements

The life of the linguist would have been made considerably easier if Bantu subjunctives were obligatorily chosen following certain verbs, as in the case in Romance languages as well as in most Bantu languages. Unfortunately, there are those Bantu languages in which, following verbs of coercion or verbs of uncertainty, subjunctive complements may contrast with non-subjunctive ones. In this section I will attempt to both describe this phenomenon and discuss its implications with respect to the theory of grammar.

a. Subjunctive of coercion

In ChiBemba one finds the following three-way contrast:

(77) Finite ('tensed'):

John a-à-koonkomeshya Robert a-à-boombele

'John forced Robert to work' ('John ordered Robert (long ago)
and Robert worked (long ago)')

John a-à-eba Robert a-à-boombele

'John told Robert to work (and Robert did work, long ago)'

(78) Infinitive:

John a-à-koonkomeshya Robert uku-bomba

'John forced Robert to work'

John a-à-eba Robert uku-bomba

'John told Robert to work (and Robert did work)'

(79) Subjunctive:

John a-à-koonkomeshya Robert a-bomb-e

'John ordered Robert to work' (and Robert may or may have not complied)

John a-à-eba Robert a-bomb-e

'John told Robert to work' (and Robert may or may have not complied)

A coercive verb in ChiBemba, then, can either have or not have factive implicatures. The subjunctive form of the complement is spelled in the second lexicon only if the complement does not have a factive implicature.

A parallel situation appears in Luganda:

(80) Factive, non-subjunctive:

John yà-lagira bu-lagizi Robert oku-kola

'John forced Robert to work'

John yà-waliriza bu-waliliza Robert oku-kola

'John made Robert work'

John yà-tegeka bu-tegesi Robert oku-kola

'John prepared Robert for work -- (and Robert worked)'

John yà-kkiriza bu-kkiriza Robert oku-kola

'John allowed Robert to work -- (and Robert worked)'

John yà-ziyiza bu-ziyiza Robert oku-kola

'John prevented Robert from working'

(81) Non-factive, subjunctive:

John yà-lagira Robert a-kol-e

'John ordered Robert to work'

John yà-waliriza Robert a-kol-e

'John insisted/demanded/convinced/ordered Robert to work'

John yà-tegeka Robert a-kol-e
 'John prepared Robert to work'
 John yà-kkiriza Robert a-kol-e
 'John allowed Robert to work'
 John yà-ziyiza Robert a-kol-e
 'John forbade Robert to work'

Thus, the subjunctive complement form is 'spelled out' in Luganda only if no factive implicature is involved. If one is involved, the infinitive form is 'spelled', in addition to a cognate object nominalization of the main verb itself. Where both Luganda and ChiBemba differ from English radically, is at the lexicalization level of dealing with factivity. English lexicalizes a different main verb if a factive implicature is present. While Luganda and ChiBemba lexicalize the same main verb, but a different complement form.

At the moment, I see two ways of taking care of this phenomenon:

- (a) Through a context-sensitive base rule: Assume that a semantic category [subjunctive] is optionally generated in the environment of complements of coercive verbs;

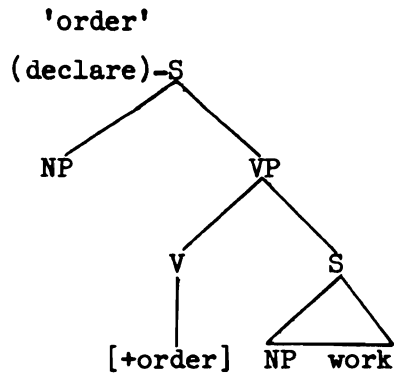
This solution has considerable drawbacks. First, as I have already indicated earlier, supra-cyclic (extra-kernel) environments in context-sensitive base rules are somewhat undesirable. Second, it is clear that we are dealing here with a sub-set of the phenomena of factivity. The category [subjunctive] is semantically empty, it merely signals that no factive implicature is involved. We would thus be making an absurd claim that a marked category is generated in the absence of a marked semantic entity.

- (b) Through incorporating the factive implicature as part of the deep structure of the utterance. Then, given its presence, the (post-cyclic) second lexicon would 'spell' non-subjunctive forms of complements; while if a factive implicature is not present, a subjunctive complement form will be spelled.

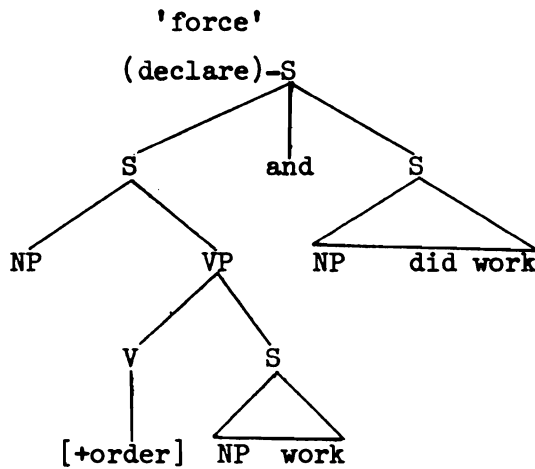
The formalisms associated with this type of solution may vary. One may assume that a conjunction may be involved in the deep structure where

factivity is assumed, so that the difference between 'order' and 'force' (both -koonkomeshya in ChiBemba) may be expressed as:

(82)



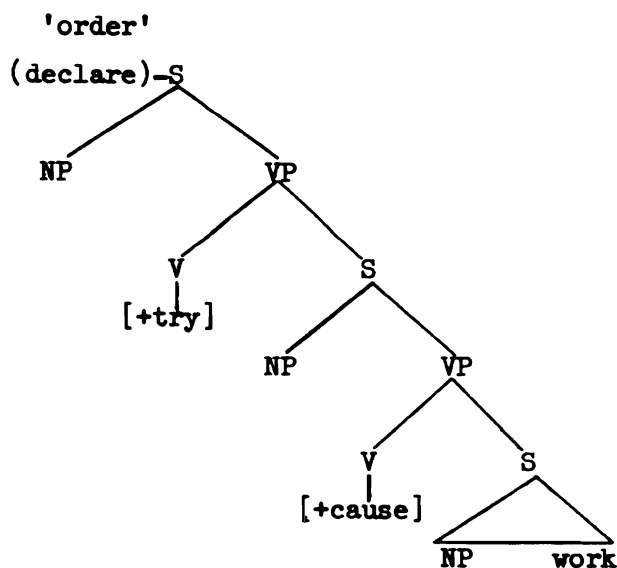
(83)



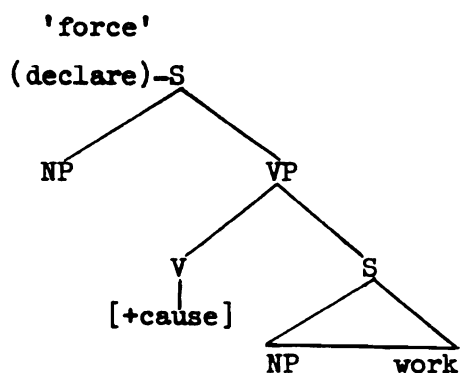
Factivity under this type of solution may arise from a proposition embedded directly under the top performative 'declare'.

Alternatively, one may wish to ascribe the difference between 'force' and 'order' to the presence of a factivity-suspending verb such as 'try' in the deep structure of 'order', so that:

(84)



(85)



Finally, one may assume, as I have suggested earlier, that factive implicature is a sentence modality, associated with the complement sentence in the case of 'force', 'make', 'cause', 'prevent', but not in the case of 'order', 'demand', 'insist', 'forbid'. At the moment this solution seems to me to be the most attractive, although admittedly I see no compelling empirical grounds to justify this gut reaction.⁵

⁵The status of the verb 'try' is nevertheless quite intriguing. It nullifies the factive implicature of any coercive verb inserted under it. Further, it seems to nullify the factivity of factive-cognition verbs such as 'know', 'discover'. Thus, one may not embed 'I discovered that John came' under 'try', but only 'I discover whether John came':

*I tried to discover that John came

I tried to discover whether John came

'Whether', 'if' by themselves may be inserted only in the absence of factivity of the proposition embedded under them.

b. Subjunctive of uncertainty

This subjunctive form presents somewhat less of a headache. First, within the group of cognition verbs,⁶ only the non-factive ones, such as 'doubt', 'hope', 'fear', 'think', 'guess', 'believe' may take this complement form. This strongly suggests some common denominator between the two subjunctive phenomena in ChiBemba. Factive verbs such as 'know', 'be sure' etc. may not take this subjunctive complement. However, their negatives may:

- (86) *n-déé-ishiba a-inga-isa
 n-shiléé-ishiba a-inga-isa (negative, non-factive)
 'I don't know if he'll come'
 n-déé-ishiba ukuti a-à-ishile (factive, tensed)
 'I know that he came'

Some non-factive verbs become factive by negation, and their negatives may not take the subjunctive complement, as in 'doubt':

- (87) n-déé-twiishika a-inga-isa
 'I doubt if he'll come'
 *n-shi-léé-twiishika a-inga-isa
 n-shi-léé-twiishika ukuti a-à-ishile
 'I don't doubt that he came'

Other non-factive verbs remain non-factive in negation, though this may be due to neg-raising ('afraid', 'believe'):

- (88) n-déé-tina nga a-inga-isa
 'I am afraid that he might come'
 n-shiléé-tina nga a-inga-isa
 'I'm not afraid that he might come' (but perhaps also: 'I'm
 afraid that he might not come')

⁶In Givón [1969:part 3.] I have labeled this group 'quote verb'. It is clear to me now, however, that the few expression verbs in this group ('say') are incidental, and that the common denominator is cognition.

Following non-factive verbs of cognition (in my terminology here 'verbs of uncertainty'), one may find a contrast between subjunctive and tensed (finite) complement verbs. However, no change in the factivity is here involved. Rather, the contrast seems to be between fully specified tense-aspect-modality and unspecified modality. It is thus reminiscent of the contrast between infinitive and finite-tensed complements following verbs of coercion, see above.

- (89) n-twiishika nga a-inga-isa
'I (always) doubt if he may come'
- (90) n-twiishika nga a-léé-isa
'I always doubt that he is then coming'
- (91) n-twiishika nga a-kà-isa
'I always doubt if he'll come the next day'
- (92) n-twiishika nga a-ǝ-isa
'I always doubt if he always comes'

This contrast, as well as the contrast between the infinitive and finite complements of coercive verbs, raises the general question concerning the optionality of applying some of the generative rules of the base. For further discussion of this problem, in relation to many other dependent tense-aspect-modals, see Givón [1970:part 4.].

6. Conclusion

I have attempted to sketch out some of the problems arising from Bantu subjunctives. Most of these problems are rather universal. The fact that one must invoke as varied an assortment of grammatical devices as second lexical spelling, post-cyclic constraints, factive modality, performative verbs and optional generation in the base rules, should not necessarily be construed as discouraging. In analyzing dependent tenses such as 'subjunctive', one is indeed dealing with a complex phenomenon where many areas of the grammar intersect. It would be surprising to see phenomena of this kind disposed of in a neat, one compartment manner. The fact that many of them have thus far resisted solution rather successfully, should testify to their potential complexity. This same

complexity may well serve to illuminate and give independent justification to portions of the theory of grammar which have until now remained relatively underdeveloped.

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