

THE MAGICAL NUMBER TWO, BANTU PRONOUNS
AND THE THEORY OF PRONOMINALIZATION¹

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1. Introduction

The data in this paper are derived primarily from a number of Bantu languages, though the phenomena described are much more universal, and data from several other languages are briefly cited later on. A claim is made below that the data help us judge between three alternative approaches to pronominalization, rejecting two of them and selecting the third. This is not to suggest that the arguments below are conclusive. Certainly, the more interesting aspect of these data lies in the type of questions they raise, rather than in the actual solutions adopted. The three theories of pronominalization to be considered are:

- (a) Interpretive: Pronouns (rather than their referent nouns) are generated by the Base Rules. They then receive their semantic interpretation (or referents) through rules of Surface Semantic Interpretation (see [Jackendoff 1969]).
- (b) Transformational-1: Nouns (rather than pronouns) are generated by the Base Rules. Pronominalization is a transformational process comprised of two phases:

1. Depletion: The noun to be pronominalized is depleted of all features, including phonological matrices, except the feature [PRO] and the relevant agreement features;
2. Movement: If the location of the pronoun is not identical to that of the original noun, the pronoun is then moved to its new location;

- (c) Transformational-2: Nouns (rather than pronouns) are generated by the Base Rules. Pronominalization is a transformational process comprised of the two phases:

¹For the Swahili data I am indebted to Salma Mbaye, for the Luganda data to L. Walusimbi; the Bemba data are from my own field notes; the Hebrew, Spanish and Amharic data are my own. I am indebted to Ray Jackendoff, Andrew Rogers and Jeffrey Gruber for comments on an earlier draft of this manuscript.

1. Copying: The feature [PRO] as well as the relevant agreement features of the noun to be pronominalized are copied from the noun to the appropriate locus of the pronoun;²

2. Deletion: The original noun is then deleted (see [Givón 1969]); These three theories of pronominalization will be referred to henceforth as "I" (a), "T-1" (b) and "T-2" (c).

2. 'Optional' deletion of pronominalized object nouns

The first set of data to be considered involves the anaphoric ('in-fixed') object pronouns of Bantu. That is, the pronominalization of object nouns after their appearance in previous discourse. In Swahili we find the following situation:

- (1) ni-li-ona kitabu
I-past-see book
'I saw the book'
- (2) ni-li-ki-ona (when only one book is mentioned in
I-past-it-see previous discourse)
'I saw it'
- (3) ni-li-ki-ona kitabu (when several books were mentioned in
I-past-it-see book previous discourse, but the pronoun
'I saw it the book' refers to only one of them)

Sentence (3) above will appear more natural if a demonstrative is used:

- (4) ni-li-ki-ona kitabu hiki
I-past-it-see book this
'I saw it this book'

This is of course natural in view of the fact that the book in (3), (4) is one of several mentioned in previous discourse, and the demonstrative is used to narrow down the specificity to that one book.

²This is not to suggest that the feature [PRO] is generated by the Base Rules. Rather, I have used it here as a notational convenience, to stand for the particular grammatical conditions (such as previous mention in discourse) which govern pronominalization.

One may argue that (3) and (4) above represent a pattern of topicalization, and should perhaps be glossed with a comma intonation. However, a distinct topicalization pattern does exist in Swahili (including the intonation), as in:

- (5) kitabu (hiki), ni-li-ki-ona
 book (this), I-past-it-see
 'As to (this) book, I saw it'

Further, the topicalized pattern in (5) is in complementary distribution with the pattern of (3), (4) and (1), so that (6) and (7) below are ungrammatical:

- (6) *kitabu (hiki), ni-li-ki-ona kitabu (hiki)
 book (this), I-past-it-see book (this)
- (7) *kitabu (hiki), ni-li-ona
 book (this), I-past-see

The ungrammaticality of (6) above suggests that once the object noun is topicalized (or 'is the topic')³, the deletion step involved in pronominalization must be obligatory. This is of course natural, since the referential identity of a nominal in focus ('in topic') is presupposed to be known, so that the conditions requiring 'optional deletion', as in (3), (4) above, do not exist. The ungrammaticality of (7) may suggest that topicalization is not merely a late movement rule following pronominalization, but at the most a very early 'rule'³.

The main import of the contrast between (2) and (3), (4) is that in the latter pronominalization proceeds without deletion while in the former with. This 'optional co-existence' of object nominals with their pronouns is typical in Swahili and Luganda. In ChiBemba, a closely related Bantu language, the deletion step in pronominalizations of this

³It is quite clear to me that topicalization is not a movement rule, as is quite often suggested. Rather, the notions of 'topic:comment', 'focus' and other presuppositions are expressed in the Deep Structure, and then condition particular 'topicalized' constructions. It is obvious that we know very little about the precise way in which these notions are to be formally expressed in the grammar.

type is obligatory:

- (8) n-à-mona icifabo
I-past-see book
'I saw the book'
- (9) n-à-cí-mona
I-past-it-see
'I saw it'
- (10) *n-à-cí-mona icifabo
I-past-it-see book

If constructions such as the Swahili (3), (4) above or their Luganda equivalents represent a non-topicalized, non-iterative pattern, which is the case to the best of my knowledge, then the data presented above pose severe difficulties for theories "I" and "T-1".

Theory "I" claims that it is the pronouns themselves that are generated in the Base. This would account for the data from ChiBemba, but not for those of Swahili and Luganda, where a seemingly intermediate stage does in fact exist, where both nouns and pronouns co-occur. The fact that only two nominal elements may co-exist -- but not three or more -- finds no natural explanation in "I". Jackendoff (in private communication) has argued that this is merely a function of the way one states the rule. This may be true in the case of "I", but at least one of the other theories is itself constructed in a way which allows for that intermediate step. Besides, at the most "I" would allow for the co-existence of a pronoun with its semantic interpretation as a certain noun, but never with that noun itself on the surface.

Theory T-1 is also unequipped to handle the co-existence phenomenon, since it makes no provision for an intermediate step in which both the noun and the pronoun exist. Thus, although initially the format of depletion-cum-movement seems to be a mere notational variant of copying-cum-deletion, the data presented here suggest that the two alternative transformational solutions are different in more than just a trivial way.

Theory T-2 allows for data of both the Swahili/Luganda type and the

ChiBemba type. The second step of pronominalization, deletion, may be waived in some languages under well defined semantic circumstances. So that earlier suggestions that 'optional deletion' is involved in Swahili are really erroneous, if one takes seriously the notion that pre-suppositions, topic-comment and focus are to be represented in the Deep Structure.

3. 'Double relative pronouns' in Bantu

In this section a phenomenon superficially akin to 'co-existence' will be described. Initially I thought its import was similar to that of 'co-existence'. I now doubt this. However, this phenomenon nevertheless raises intriguing questions. In particular, it may lead one to define a universal path through which relative-clause embedding and relative pronouns have arisen.

Most of the cases of 'double relative pronouns' in Bantu involve prepositional objects. This is probably not an accident and I will return to discuss this briefly later on. In one case only, from SeTswana (for this I am indebted to Jeff Gruber, in private communication), we find this phenomenon appearing in direct object relative pronominalization:

- (11) monna yo ke-m-monyé
 man whom I-him-saw
 'The man whom I saw...'

It is important to notice that in all the examples below involving 'double pronominalization', the second pronoun, much like in (11) above, is the same pronoun used in normal anaphoric pronominalization, and situated at the same locus.

Turning to Swahili now, we find no double pronouns for relativized direct objects:

- (12) ni-li-ona kitabu
 I-past-see book
 'I saw the book'

- (13) kitabu ni-li-cho-ona
 book I-past-which-saw
 'The book that I saw...'⁴
- (14) kitabu amba-cho ni-li-ona
 book which I-past-see
 'The book that I saw...'⁴

For objects of the associative NA, however, we find:

- (15) ni-li-kuwa na kitabu
 I-past-be with book
 'I had a book'
- (16) kitabu ni-li-cho-kuwa na-cho
 book I-past-which-be with-it
 'The book that I had...'
- (17) kitabu amba-cho ni-li-kuwa na-cho
 book which I-past-be with-it
 'The book that I had...'

Now, notice that the second pronoun is the regular anaphoric pronoun for objects of the associative NA, as in:

- (18) kitabu kile, ni-li-kuwa na-cho
 book that, I-past-be with-it
 'As to that book, I had it'

Let us now turn to 'possessor-object':

- (19) ni-li-chukua gombe ya mtu
 I-past-take cow of man
 'I took the man's cow'

⁴The two relativization patterns in Swahili are, for most tenses, notational variants with, seemingly, no semantic correlates whatever. The second pattern, using the subordinator amba- (formerly 'say'), is to be found in all tenses, while the first, 'infix pronoun' pattern is limited to only some of the tenses. One tense, the -a- 'habitual present', exhibits a third pattern. What is of interest for the present paper is that double pronominalization appears in all three patterns.

- (20) ni-li-chukua gombe ya-ke
 I-past-take cow of-him
 'I took his cow'
- (21) mtu ni-li-ye-chukua gombe ya-ke
 man I-past-whom-take cow of-him
 'The man whose cow I took...'
- (22) mtu amba-ya ni-li-chukua gombe ya-ke
 man whom I-past-take cow of-him
 'The man whose cow I took...'

As is evident from (20) above, the second pronoun is again the very same one used in anaphoric pronominalization.

In the case of complex locative objects, whose construction involves the surface 'possessive' case, we find:

- (23) tu-li-zungumza juu ya kitabu
 we-past-talk on of book
 'We talked about the book'
- (24) tu-li-zungumza juu ya-ke
 we-past-talk on of-it
 'We talked about it'
- (25) kitabu tu-li-cho-zungumza juu ya-ke
 book we-past-which-talk on of-it
 'The book that we talked about...'
- (26) kitabu amba-cho tu-li-zungumza juu ya-ke
 book which we-past-talk on of-it
 'The book that we talked about...'

The use of the second pronoun in anaphoric pronominalization is shown in (24) above.

Reason adverbs in Swahili too are constructed with the surface 'possessive':

- (27) ni-li-kuja hapa kwa sababu ya mtu huyu
 I-past-come here for reason of man this
 'I came here because of this man'

- (28) ni-li-kuja hapa kwa sababu ya-ke
 I-past-come here for reason of-him
 'I came here because of him'
- (29) mtu ni-li-ye-kuja hapa kwa sababu ya-ke
 man I-past-whom-come here for reason of-him
 'The man because of whom I came here...'
- (30) mtu amba-ye ni-li-kuja hapa kwa sababu ya-ke
 man whom I-past-come here for reason of-him
 'The man because of whom I came here...'

Sentence (28) shows the second pronoun to be the normal anaphoric pronoun. The next case involves a locative object concord, again with the 'possessive' involved on the surface:

- (31) tu-li-fika kwa watu wale
 we-past-come to people those
 'We came to (the place of) those people'
- (32) tu-li-fika kwa-o
 we-past-come to-them
 'We came to (the place of) them...' ('we came to their place')
- (33) watu tu-li-o-fika kwa-o
 people we-past-whom-come to-them
 'The people to whose place we came...'
- (34) watu amba-o tu-li-fika kwa-o
 people whom we-past-come to-them
 'The people to whose place we came...'

Luganda exhibits similar phenomena in complex-locative constructions (which again show the use of surface 'possessive');

- (35) a-ii ku-ngulu kwa enyumba
 he-be on-top of house
 'He is on top of the house'

- (36) a-li ku-ngulu kwa-yo
 he-be on-top of-it
 'He is on top of it'
- (37) ku-nyumba ku-ngulu kwa-yo kwe a-li⁵
 on-house on-top of-it where he-be
 'On the house on top of which he is...'
- (38) enyumba ku-ngulu kwa-yo gye a-li-(ko)⁵
 house on-top of-it which he-be-(on)
 'The house on top of which he is...'

And, similarly:

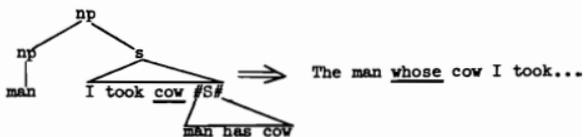
- (39) a-li mu-nda wa-nyumba
 he-be in-side of-house
 'He is inside of the house'
- (40) a-li mu-nda wa-yo
 he-be in-side of-it
 'He is inside of it'
- (41) mu-nyumba mu-nda wa-yo mwe a-li⁵
 in-house in-side of-it where he-be
 'In the house inside of which he is...'
- (42) enyumba mu-nda wa-yo gye a-li-(mu)⁵
 house in-side of-it which he-be-(in)
 'The house inside of which he is...'

Some of the constructions above involving the surface 'possessive' (the Bantu -a- link) are fascinating for reasons not directly connected with the main theme of this paper. Thus, if one assumes that 'straight possession' arises from an embedded sentence (so that 'The cow of the

⁵Here the two relativization patterns seem to have a slight meaning correlate, akin to Engl.: 'On top of the house on which/where I stand...' vs. 'The house on top of which I stand...'. The first requires, in Luganda, the relative pronoun agreement of the locative gender (kwe, mwe); the second requires gender 9/10 agreement, for enyumba 'house' (gye).

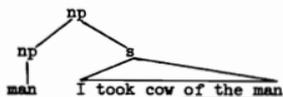
man...' is derived from 'the cow #the man has a cow#_s...'), then the whose relative pronominalization of English represents a breach of Ross's Complex NP constraint, since it removes (or 'copies', in my terminology) an NP embedded two levels below:

(43)



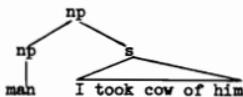
On the surface, it seems that while English lexicalizes the possessive in relativization as a single pronoun whose, Bantu languages keep two separate pronouns -- the relative and the anaphoric. However, 'whose' may well be a double pronoun itself, so that (43) above yields after the first cycle and rel. embedding:

(44)



What may follow now is anaphoric pronominalization, to yield:

(45)



It is worth noting that Bantu languages seem to lexicalize this rel. clause as in Swahili:

- (46) mtu amba-ye ni-li-chukua ombe ya-ke
 man whom I-past-take cow of-him
 'The man whose cow I took...'

Thus, the seemingly great typological difference between Bantu and English here may be the result of differences in lexicalization -- where English has a lexeme ('whose') which can absorb ('spell') both the relative and the anaphoric pronoun, while Bantu languages do not,

so that they lexicalize two different pronouns in these constructions.

What may emerge out of this discussion is the following: perhaps anaphoric pronominalization was, at least historically, a necessary step in relative pronominalization. Rather, that anaphoric pronominalization is the general (and non-cyclic) case, while relative pronominalization (cyclic because of the cyclicity of embedding) is merely a special case which grew out of it in a very restricted set of environments.

The evidence for this formulation is abundant. First, the fact that the double-pronouns in Bantu always include, as the second member of the pair, the normal anaphoric pronoun. Next, it is fairly clear that relative pronouns are a later development in English, arising from a merger of a subordinator ('that') and an anaphoric pronoun; so that (47) below was rendered in Anglo-Saxon as something like (48):

(47) The man who came...

(48) The man that he came...

and (49) as something akin to (50):

(49) The man whose cow I took...

(50) The man that I took his cow...

The next example is taken from Bambara,⁶ where it seems that in many instances the embedded sentence is not embedded at all. Rather, a marker (min) is put after the relativized noun in the 'matrix' sentence. Thus, (51) below represents a conjunction (in time-sequence) of two sentences, while (52) represents relativization:

(51) n ye ce ye, o ye mbumu san
I past man see, he past knife buy
'I saw the man, (and) he bought a knife'

⁶For this I am indebted to Karen Courtenay. Bird [1966] has an extensive discussion of Relativization in Bambara, though I do not necessarily subscribe to all the details of his analysis.

- (52) n ye ce min ye, o ye mbumu san
 I past man that see, he past knife buy
 'I saw the man who bought the knife'

The particle min may be called 'rel. pronoun', though it is invariant and there is no evidence that it is anything but a subordination marker. One may thus say that both Bambara and Anglo-Saxon had only anaphoric pronominalization, and while English went on to develop relative pronominalization, Bambara did not.

The next case is taken from Hebrew. Like Bambara, Hebrew has no relative pronouns per se, but only a general subordinating particle, the prefixal she-. In relativization, one may use only she-, in which case one may say that zero-relative-pronominalization took place, as in:

- (53) haʔish she-raʔiti etmol
 the-man that-I saw yesterday
 'The man (that) I saw yesterday...'

As a stylistic variant one may use either (54) or (55) below, both using she- plus the anaphoric object pronoun(oto), with (54) considered somewhat 'sub-standard' (that is, spoken by lower-class speakers or children):

- (54) haʔish she-raʔiti oto etmol
 the-man that-I saw him yesterday
 'The man whom I saw yesterday...'
- (55) haʔish she-oto raʔiti etmol...
 the-man that-him I saw yesterday
 'The man whom I saw yesterday...'

Next, Amharic has a rather similar situation, except that the 'resumptive' pronoun must appear obligatorily in relative clauses. This pronoun is akin to the regular anaphoric (object) pronoun. The relativizer-particle in Amharic is an invariant yE- :

- (56) wāmbār sābbār-ku
 chair (I) broke
 'I broke a chair'
- (57) sābbār-ku-†
 (I) broke-it
- (58) yā-sābbār-ku-† wāmbār
that (I) broke-it chair
 'The chair that I broke...'

Finally, in some (again 'sub-standard') dialects of Spanish, such as lower-class Andalusian, one finds the use of the anaphoric object pronoun in addition to the invariant subordinator que:

- (59) (yo) he visto al muchacho
 '(I) have seen the boy'
- (60) (yo) lo he visto
 (I) him have seen
 'I've seen him'
- (61) el muchacho que lo he visto
 the boy that him (I) have seen
 'The boy that I've seen...'

Sentences (61) and (60) are admittedly sub-standard in educated Spanish. However, (62) and (63), showing virtually the same phenomenon (except that the object-pronoun remains in the prepositional case) may be more acceptable:

- (62) (yo) he visto a el ayer
 (I) have seen him yesterday
 'I have seen him yesterday'
- (63) el muchacho que (yo) he visto a el ayer
 the boy that (I) have seen him yesterday
 'The boy that I saw yesterday...'

To sum up then, the appearance of anaphoric pronouns in relativization is

widely attested. Anglo-Saxon, Hebrew, Amharic, Bambara and Bantu show them quite regularly. 'Sub-standard' Spanish (and even children-English, as in the not uncommon: 'The boy that he beat me yesterday...' or 'The girl that I beat her yesterday...') shows it. One may well divide languages synchronically into the following groups:

- (a) Languages which have only a subordinating particle for relativization, but may use either a zero or an anaphoric pronoun as well (Hebrew, Amharic, Anglo-Saxon, non-standard Spanish, Bambara);
- (b) Languages which developed a relative pronoun, probably by merging the subordinating particle with an erstwhile anaphoric pronoun (Modern English, most Bantu languages with respect to subject and direct-object relative pronouns);
- (c) Languages which exhibit double pronominalization proper (Bantu, in most prepositional-object rel. pronouns);

One may well argue that the discussion above involved diachronic phenomena and is therefore irrelevant to judging between three alternative synchronic descriptions. This author happens to doubt that such a sharp division may be, or should be, drawn. The Bantu phenomenon of double-pronominalization nevertheless presents a challenge to any synchronic theory of pronominalization. Since we have already found "I" and "T-1" inadequate, and since the phenomenon of double-pronominalization (particularly if one accepts the assumption that one of the pronouns is anaphoric) presents the same difficulties to either theory, I will concentrate only on pursuing its implications with respect to "T-2".

There are essentially three ways by which to modify "T-2" so that it accounts for double-pronominalization in Bantu.

1. One may adopt in part the deletion provision of "T-1", so that deletion will be broken into two steps: first deletion, to leave a pronoun; then full deletion of that pronoun. Copying will then proceed as before. In some languages then both deletion and deletion take place in relativization; while in some environment in Bantu, only deletion but not full deletion occurs, to yield two pronouns, one arising from copying, the other from deletion

of the original noun.

2. Alternatively, one may stipulate that under a certain environment for relativization in Bantu double copying occurs, and two pronouns are produced, after which the original noun is deleted.
3. Finally, one may argue that two separate processes of pronominalization occur in Bantu relativization. One of those, anaphoric pronominalization, is universal and occurs in all instances of pronominalization in whatever language. The other, relative, is idiosyncratic to Bantu.

Solution 1. above explains in a seemingly natural way the magical number two. However, it takes no account of the fact that the second pronoun (and in fact most varying 'true' pronouns in languages which have only one relative pronoun) is the normal anaphoric pronoun. Further, it adds complicated machinery of another type to the already existing machinery of copying.

Solution 2. and 3. are almost identical, except that 2. does not take account of the fact that the second of the two pronouns is the normal anaphoric one.

The double-copying mechanism also appears in solution 3. Much like in 2., this mechanism cannot, by itself, account for the magical number two, since what is to constrain the copying procedure from repeating more than twice? One may argue, however, that for most languages only one copying occurs, the anaphoric one, which also shows up in relative pronominalization in quite a few languages. The second, relative copying, is much more limited in its distribution. But one may have to accept its presence as real, and allow for its occurrence in the grammars of the few languages which have already developed it. Constraining it will not present a grave problem, since it may apply once (perhaps following the more universal anaphoric copying) only in relative embedded construction.

There is another advantage in viewing the two pronouns as arising from two separate processes. Relative embedding is a cyclic phenomenon. Anaphoric pronominalization is not necessarily so. Although the deletion of the original noun is shared by both processes and must follow them,

and although both copying processes may occur at the same point (as suggested in [Givón 1969:part 2.]), the two processes may differ in some of their properties, so that eventually solution 3. may gain further, independent, motivation.

4. The 'Coexistence' phenomenon in other languages

So far I have shown that some of the phenomena underlying double pronominalization in relative clauses are not limited to Bantu languages. More relevant to our attempting to judge between the three alternative theories of pronominalization is the fact that 'optional co-existence' of pronouns with nouns, in non-iterative, non-topicalized construction, is also a fairly widespread phenomenon.

Going back again to 'less-standard' dialects of Spanish, one finds:

- (64) he visto al muchacho
'I saw the boy'
- (65) lo he visto
'I saw him'
- (66) lo he visto al muchacho (sub-standard)
'I saw him the boy'
- (67) lo he visto a este muchacho (much more acceptable)
'I saw him this boy'
- (68) lo he visto ayer a este muchacho (more acceptable yet)
'I saw him yesterday this boy'

The fact that (67) is more 'natural' than (66) may hint that factors similar to those shown in Swahili control the variation between the 'straight' pronominalization and pronominalization plus coexistence of the noun. The greater acceptability of (68) may suggest that performance factors, such as length of intervening 'chunk' between the pronoun and noun and perhaps memory limitations, may play a role in controlling the acceptability of the output. That (66), (67), (68) are not topicalized patterns is suggested from the existence of regular topicalization in Spanish, with an obligatory intonation break and obligatory pronominalization:

- (69) este muchacho, lo he visto
'(As to) this boy, I saw him'
- (70) *este muchacho, he visto
- (71) *este muchacho, lo he visto al muchacho

Finally, a baffling but seemingly acceptable topicalized pattern, at least in Andalusian Spanish, is:

- (72) este muchacho, lo he visto a el
this boy , him I saw him
'(as to) This boy, I saw him'

What seems to be involved here is double-pronominalization in a non-relative environment, with both pronouns being of the anaphoric type (though one of them in the regular noun position, while the other in the 'clitic' position). This data may hint that solution 2., or even 1. rather than 3. may better account for double pronominalization. It is also possible that the double-pronouns in Bantu, although appearing only in Relative clauses, arise from double anaphoric pronominalization, with zero subordinator and zero rel. pronoun. This would certainly bring the Bantu data closer in line with the other languages discussed. At the moment, though, I see no compelling empirical grounds on which to base a firm decision.

Modern Israeli Hebrew also exhibits, at least in 'lower class' or children dialects, the co-existence phenomenon:

- (73) ra?iti et ha?ish
'I saw the man'
- (74) ra?iti oto
'I saw him'
- (75) ra?iti oto et ha?ish (less standard)
'I saw him the man'
- (76) ra?iti oto et ha?ish haze (more standard)
'I saw him this man'

- (77) raʔiti oto etm ol et haʔish haze (more standard yet)
 'I saw him yesterday this man'
- (78) raʔita oto et haʔish haze? (more standard yet)
 'Did you see him this man?'

Hebrew also possesses the topicalized pattern, as in:

- (79) haʔish haze, raʔiti oto etm ol
 '(as to) this man, I saw him yesterday'
- (80) *haʔish haze, raʔiti etm ol
- (81) *haʔish haze, raʔiti oto etm ol et haʔish haze

Finally, in Amharic there exists the phenomenon of 'resumptive pronouns', which, so far as I have been able to ascertain, is identical to our co-existence phenomenon. Amharic shows a S-O-V syntactic order, and 'resumptive' object pronouns appear as suffixes to the verb -- both in the case of topicalized and non-topicalized object nouns. For many prepositional objects, further, this 'resumption' is obligatory, while for others it may be 'optional' (for further data and discussion of this subject, see Hetzron [1970], in this issue, and Getatchew [1970]) As a fairly typical example, consider:

- (82) bəqlo shumu-n rəggəʔə-ew
 mule the official kicked-him
 'a mule kicked the official'
- (83) dannya lə-ləba-w fərrədə-ll-əʔ
 judge for-thief judged-for-him
 'A judge decided in favor of the thief'

The topicalized pattern for (82) and (83) above is, respectively:

- (84) shumu, bəqlo rəggəʔə-ew
official, mule kicked-him
 '(as to) the official, a mule kicked him'

- (85) leba-w, dannya fãrrãdã-||-ãt
the-thief, a judge judged-for-him
 '(as to) the thief, a judge decided in his favor'

5. Some reflections on zero pronominalization

I have suggested earlier that zero pronominalization, either anaphoric or relative, may be a fairly common phenomenon. Zero pronouns are reported to be the rule in Japanese [McCawley, in private conversation]. In sub-standard American English it is not uncommon to hear:

- (86) The man came here yesterday...
 'The man who came here yesterday...'

In Hebrew, zero anaphoric pronominalization of direct object nouns under certain circumstances is quite common:

- (87) ra?iti et ha?ish
 '(I) saw the man'
- (88) ra?ita oto? ken, ra?iti
 'Did you see him? Yes, I saw'

Any theory of pronominalization must be able to account for zero pronouns. Within the framework of our theory "T-2", this may be done in one of the following ways:

- (a) By assuming that the copying step fails to apply in cases of zero pronouns, though the deletion (under identity) did then apply;
- (b) By assuming that both copying and deletion applied, but that copying does not involve morphemes (i.e., 'phonologically-spelled' morphemes), but pertains only to abstract agreement and [PRO] features, and that zero pronouns result from failure of spelling in the second lexicon.

I have elsewhere [Givón 1969:part 2.] given several arguments, supported by empirical data, to substantiate the position that the copying process occurring in both agreement and pronominalization involves only abstract features, and that the copied features receive their 'spelling' post-cyclically in the second lexicon. The 'failure of spelling' solution (b) is probably a notational variant of Gruber's idea [1967a] of 'incorporation'. It is not at all clear to me how an interpretative

theory of pronominalization may account for zero pronouns. Jackendoff [in private communication] has suggested to me that perhaps this could be done by generating empty nodes, that is, by not lexicalizing NP nodes. At the moment I cannot see the merits of this solution.

6. Conclusion.

The force of the magical number two as upper bounds on the number of co-referential nominal elements in a (non-topicalized) construction seems rather compelling to me. It seems that only a theory of pronominalization which provides for both copying (a process common to both pronominalization and grammatical agreement) and subsequent deletion can account for both co-existence and double-pronominalization in a natural way. It is still likely, though, that a copying-cum-deletion format may have to accommodate a 'depletion' feature in order to account for double pronouns. The fact that the copying-cum-deletion format for pronominalization has received independent support from the study of grammatical agreement and its interaction with pronominalization [Givón 1969:part 2.], tends to reinforce my belief in its general validity.

A deeper relation between copying-cum-deletion (in pronominalization) and copying without deletion (in grammatical agreement) is also suggested by Gruber [1967b], derived from his study of children's language. Briefly, Gruber seems to suggest that the normal (non-topicalizing) pattern of children sentences is a 'copying' one, as in:

(89) the man he ran

and that the pronoun he in (89) is the product of agreement. This blurs considerably the distinction between the two processes, and it may very well be that the deep relation between the two, as suggested in Givón [1969], is not a spurious phenomenon of Bantu languages. It has been widely observed that languages which impose full and obligatory subject agreement on predicates, as Spanish, Hebrew or Bantu, tend to allow zero-pronominalization of the subject NP, as in:

- (90) Hebrew: raʔiti et ha ish
'(I) saw the man'
- (91) Spanish: has visto a el?
'have (you) seen him?'
- (92) Swahili: a-li-kuja
'(he) came'

The strong person/number/gender inflection on the verb makes the deletion here not only possible but often obligatory once a (third-person) noun has been mentioned in previous discourse, and just about obligatory for the first and second persons, where the referentiality of the subject is never in question. In particular in Bantu, where the basic CV- elements in all pronouns are the very same ones involved in grammatical agreement, it seems quite likely that the vast inventory of pronouns has developed historically as an offshoot of the agreement morphemes. The fact that in all languages having both agreement and pronominalization, the very same abstract features are involved in both, may strongly hint at the universal common origin of these two processes.

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