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TOPIC, PRONOUN, AND AGREEMENT IN CHICHEWA

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This study offers a theory of agreement within the framework of lexical-functional grammar. In this theory, verbal affixes may mark either grammatical or anaphoric agreement. In grammatical agreement, a NP bears an argument relation to the verb, while the verbal affix expresses redundantly the person, number, and gender class of the NP. In anaphoric agreement, the verbal affix is an incorporated pronominal argument of the verb, and the coreferential NP has a non-argument function—either as an adjunct of the pronominal argument, or as a topic or focus of the clause or discourse structure. Grammatical topics have syntactic properties deriving from a theory of discourse functions. The minimal difference between an incorporated pronoun and a grammatical agreement marker is the presence or absence of a semantic attribute in the lexical content of the affix. Likewise, the minimal difference between a SUBJECT NP and a TOPIC NP is the function, rather than the phrase structure attributes of dominance, precedence, and category. This theory offers an explanation for the close relation between grammatical and anaphoric agreement, as well as clear criteria for distinguishing anaphoric and grammatical agreement by their discourse, syntactic, and even phonological effects. The Chichewa language (Bantu) has both grammatical agreement with the subject and anaphoric agreement with the object, and related languages show various distributions of these two agreement types.*

According to typologists, grammatical agreement systems evolve historically from the morphological incorporation of pronouns into verbs or nominal heads.¹ Thus Givón 1976 proposed that, in the historical development of Bantu, subject and object pronouns used for reference to topics ('The man, he came') became cliticized, and then morphologically bound to their verbs ('The man he-came'). The resulting grammatical agreement between a verb and its subject or object, Givón claimed, cannot be distinguished either diachronically or synchronically from the anaphoric relation between a morphologically bound pronoun and a discourse topic. Our study strongly supports Givón's basic proposal. However, his claim that agreement and pronominalization are 'fundamentally one and the same phenomenon', and cannot be separated into two distinct processes,

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¹ See Greenberg 1977, 1978, Givón 1976, Wald 1979—and, for qualifications and criticism, Chafe 1977, Moravcsik 1978, Russell 1984.

is false: we will show that both grammatical and anaphoric agreement can be found in the same language, and can be distinguished by interrelated effects in discourse, syntax, and phonology. Moreover, certain variations among Bantu languages in word order, optionality, questionability, relativization etc. can be explained clearly in terms of our theory of the differences between grammatical and anaphoric agreement.

The idea that agreement affixes are incorporated pronouns appeared very early in descriptions of American Indian languages. DuPonceau (1819:xxxi cited by Mithun 1987), described 'the general character of the Indian languages' in this way: 'Another striking trait which may be generally observed in their construction ... is the transitive form of the verb, which combines in the same word the ideas of the governing pronoun and that which is governed.' Similarly, Boas (1911:646) observed of Chinook that 'Every verbal form contains incorporated pronominal representatives of the subject, and of the direct and indirect objects when these occur ... The nominal subject and the object are treated as appositions, without any organic connection with the sentence.' Bloomfield 1927, 1933, 1962 used the term 'cross-reference' for the same idea; as he wrote (1933:193), 'the sub-classes [of agreeing forms] contain an actual mention of the forms with which they are joined. This mention is in the shape of a substitute-form, resembling our pronouns.' However, as we will show, the same verbal form classes are used in Chicheŵa for both anaphoric and grammatical agreement; so accounts of the phenomenon in terms of the typology of form-class variation are inadequate.

Some more recent accounts have attempted to explain anaphoric agreement in terms of the typology of structural variation at the sentence level—specifically, the configurational/non-configurational parameter of variation. (A non-configurational language is one in which the subject and object functions are not distinctively encoded by phrase structure.) Thus Jelinek 1984 proposes that the subject and object auxiliary agreement markers in the Warlpiri language of Australia are pronominal arguments both governed by the verb; that the NP's with which they agree in person and number are adjuncts (non-arguments associated with the true, pronominal arguments by linking rules); and that this is the non-configurationality parameter sought by Hale 1981, 1983 to explain typological properties of Warlpiri.² Saxon 1986, on the contrary, argues for a

² Jelinek's analysis of Warlpiri is itself problematic. Simpson 1983, in a careful and detailed study of the language, considers a similar analysis of the auxiliary; but she rejects it as failing to provide a uniform account of null anaphora in finite and non-finite clauses. Jelinek's analysis is limited to evidence from finite clauses, and it fails to provide a general account of case-marking uniformities in finite and non-finite clauses as well. On her account, the subject and object pronominals in the auxiliary are assigned nominative and accusative case by the verb; but the 'adjunct' nominals show case-marking that varies with the lexical case-frames of verb classes. She attributes these verbally determined case-marking patterns of NP's not to government by the verb (as in Hale 1983, Simpson 1983), but to the adjunct/auxiliary linking rules. The non-finite clauses lack auxiliaries altogether; nevertheless, NP's in non-finite clauses show the same lexically-determined case patterns as in finite clauses (allowing for the case contributions of certain complementizers as shown by Simpson 1983, Simpson & Bresnan 1983). On Jelinek's account, the uniformities in case-marking across finite and non-finite clauses are accidental.

configurational analysis for Dogrib, an Athabaskan language which exhibits pronominal agreement markers. Chichewa happens to be a configurational language, but the key to explaining its agreement properties lies elsewhere. We will show that, in simple sentences, exactly the same structural form is used both for anaphoric agreement with a topic and for grammatical subject agreement, so that the difference cannot be attributed to the structural typology of sentence forms.

Indeed, the sameness in structural form of the subject and the topic constructions is the key to understanding a deeper question: WHY are grammatical and anaphoric agreement so closely related? We have observed elsewhere (Bresnan & Mchombo 1986) that, although many current syntactic frameworks could account for differences between grammatical and anaphoric agreement (because entirely different mechanisms are postulated in these frameworks for grammatical agreement and pronominal incorporation or cliticization), few can explain the similarities. In our formal framework of L[exical]-F[unctional] G[rammar], these crucially depend on two distinctive properties: the functional ambiguity of structural form and the principle of functional uniqueness.

This study differs from our earlier work (Bresnan & Mchombo 1986) in presenting evidence for the crucial role of the discourse functions of TOP[IC] and FOC[US] in understanding the agreement system of Chichewa, and in deriving consequences of the pronominal incorporation hypothesis for the typology of head-marking and dependent-marking languages (Nichols 1986). Our work is closely related to earlier studies of Fassi-Fehri 1981b, 1984 on Arabic, and to the independent work of Lambrecht 1981, 1986 on spoken French. Some differences between our theory and Lambrecht's are resolved by Hanson 1987. The idea that the Chichewa object marker is an incorporated pronoun comes from Mchombo 1984. The pronominal status of object markers has been previously observed for other Bantu languages with postverbal object agreement (Byarushengo, Hyman & Tenenbaum 1976; Byarushengo & Tenenbaum 1976; Wald 1979).

THE OBJECT MARKER AS AN INCORPORATED PRONOUN

1. Chichewa,³ like other Bantu languages, shows both subject and object agreement in its verbal morphology. In finite verb forms, the S[ubject] M[arker] is obligatory, while the single O[bject] M[arker] is optional:⁴

³ Chichewa is a Bantu language spoken in East Central Africa—particularly in Malawi and its neighboring countries Mozambique, Zambia, and Zimbabwe, where it is also known as Chinyanja. In Guthrie's 1967–71 classification, Chichewa belongs to zone N in the single unit N31, which comprises Chinyanja, Chimang'anja, and Chichewa. Publication on the language include Frantz 1984, Missionários 1964, Price 1946, Trithart 1976, 1979, and Watkins 1937.

⁴ All of our examples are given in Chichewa orthography, with the addition of tone markings. The five vowels are represented orthographically as *i e a o u*. In the orthography, *p t k* stand for voiceless unaspirated stops, while *ph th kh* are digraphs representing the corresponding voiceless aspirated stops. Orthographic *ch* represents a voiceless palatal affricate; *tch* represents its aspirated counterpart, and *j* is the voiced palatal affricate. The digraphs *ts* and *dz* correspond respectively to voiceless and voiced alveolar affricates. The trigraph *ng'* stands for the velar nasal /ŋ/, while the digraph *ng* represents the sequence /ŋg/. Orthographic *l*, an alveolar lateral, and *r*, an alveolar

- (1) *Njũchi zi-ná-lúm-a alenje.*
 bees SM-PAST-bite-INDIC hunters
 'The bees bit the hunters.'
- (2) *Njũchi zi-ná-wá-lum-a alenje.*
 bees SM-PAST-OM-bite-INDIC hunters
 'The bees bit them, the hunters.'

The SM and OM show person, number, and gender of the subject and object, respectively. The gender classes for 3rd person verb agreement are illustrated with their numbering (Orr & Scotton 1980) in Table 1. Note that the OM has the same segmental form as the SM in every class but 1 and 2.⁵

CLASS	EXAMPLE	GLOSS	SM	OM
1, 1A	<i>mjenje</i>	hunter	<i>a, u</i>	<i>mú</i>
2	<i>alenje</i>	hunters	<i>a</i>	<i>wá</i>
3	<i>mkāngo</i>	lion	<i>u</i>	<i>ú</i>
4	<i>mikāngo</i>	lions	<i>i</i>	<i>í</i>
5	<i>phiri</i>	mountain	<i>li</i>	<i>lí</i>
6	<i>mapiri</i>	mountains	<i>a</i>	<i>á</i>
7	<i>chipēwa</i>	hat	<i>chi</i>	<i>chí</i>
8	<i>zipēwa</i>	hats	<i>zi</i>	<i>zí</i>
9	<i>njũchi</i>	bee	<i>i</i>	<i>í</i>
10	<i>njũchi</i>	bees	<i>zi</i>	<i>zí</i>
12	<i>kamwāna</i>	small child	<i>ka</i>	<i>ká</i>
13	<i>tiāna</i>	small children	<i>ti</i>	<i>tí</i>
14	<i>ulalo</i>	bridge	<i>u</i>	<i>ú</i>
(6)	<i>maulalo</i>	bridges	<i>a</i>	<i>á</i>
15	<i>kuimba</i>	to sing, singing	<i>ku</i>	<i>kú</i>
16	<i>pamsika</i>	at the market	<i>pa</i>	<i>pá</i>
17	<i>kumudzi</i>	to the village	<i>ku</i>	<i>kú</i>
18	<i>m'nyũmba</i>	in the house	<i>mu</i>	<i>mú</i>

TABLE 1. Gender classes for verb agreement.

Word order in Chicheŵa interacts with verb morphology in an interesting way. In simple transitive sentences, when there is no OM on the verb, the O[bject] immediately follows the V[erb], while the Su[bject] may be re-ordered:

- (3) a. SuVO: *Njũchi zi-ná-lúm-a alenje.*
 bees SM-PAST-bite-INDIC hunters
 'The bees bit the hunters.'
- b. VOSu: *Zináluma alenje njũchi.*

roll, are allophonically related. Orthographic *ŵ* is a voiced bilabial fricative. Nasal syllabicity is not represented in the orthography, but regularly occurs in the initial nasal prefix of noun classes 1 and 3. Also not indicated by the orthography are the implosive allophones of *b d g* before *u* and *o*. In phrase-final position, the penultimate syllable of a word is regularly lengthened, although this is not indicated in the orthography. Finally, the orthography does not represent tones. High tones are designated here by ' , rising tones by ^ , falling tones by ^ , and downsteps by †. Low tones are not marked. Rising and falling tones appear to be restricted to long syllables. Another regularity not transcribed is the downstepping of a high tone following a high plus one or more low tones. For an analysis of tone in the Chicheŵa verb, see Mtenje 1986, Kanerva 1987.

⁵ The class 1 and 1A SM variant *u-* is used before the present perfect tense marker.

- c. OVSu: **Alenje zináluma njûchi.*
- d. VSuO: **Zináluma njûchi alenje.*
- e. SuOV: **Njûchi alenje zináluma.*
- f. OSuV: **Alenje njûchi zináluma.*

But when the OM is present, all the above orders are possible:

- (4) a. SuVO: *Njûchi zi-ná-wá-lum-a alenje.*
 bees SM-PAST-OM-bite-INDIC hunters
 ‘The bees bit them, the hunters.’
- b. VOSu: *Zináwáluma alenje njûchi.*
- c. OVSu: *Alenje zináwáluma njûchi.*
- d. VSuO: *Zináwáluma njûchi alenje.*
- e. SuOV: *Njûchi alenje zináwáluma.*
- f. OSuV: *Alenje njûchi zináwáluma.*

These facts can be explained as follows:

(a) The SM is ambiguously used for grammatical and anaphoric agreement.⁶ From the uniqueness and completeness conditions of LFG, it follows that the 3rd person pronominal interpretation of SM will arise when and only when there is no subject NP in the phrase structure. If we omit the subject NP's from all of the grammatical examples in 3–4, a pronominal subject interpretation in fact occurs.

(b) The OM is unambiguously used for anaphoric agreement. In other words, it is not a grammatical agreement marker at all, but an incorporated object pronoun.⁷ From the uniqueness condition, it follows that an object NP can occur in the phrase structure only when OM is lacking. This implies that what we have labeled O in 4 is in fact something else.

(c) All object NP's in Chichewa are generated in a fixed postverbal position in a VP constituent:

$$(5) VP \rightarrow V (\quad NP \quad) (\quad NP \quad) \quad PP^* \\ (\uparrow OBJ) = \downarrow \quad (\uparrow OBJ2) = \downarrow \quad (\uparrow OBL) = \downarrow$$

Thus a postverbal object can appear in the VP only if there is no OM on the verb.

(d) S[entence] consists of an optional subject NP, a VP, and an optional topic NP, all unordered with respect to each other. To express the fact that these constituents are unordered, we separate them by commas in the following rule (cf. Gazdar & Pullum 1981, Falk 1983):

⁶ In terms of the formal representation of Kaplan & Bresnan 1982, the semantic (\uparrow PRED) = ‘PRO’ attribute is optional for the subject marker. The functional uniqueness condition of this theory requires that, regardless of where it may be expressed in the word and phrase structure, information about the same function must be consistent—and, in the case of meaning, unique. Hence the use of the SM is inconsistent with the co-occurrence of a subject NP argument. The completeness condition requires that every argument which is lexically required must be present. If a subject NP is absent, the pronominal option must be taken for the subject marker (see also Andrews 1984, Ishikawa 1985, Simpson 1983, Wager 1983).

⁷ In other words, the semantic (\uparrow PRED) = ‘PRO’ attribute is obligatory for the OM.

$$(6) S \rightarrow (\quad \text{NP} \quad), \quad \text{VP} \quad , (\quad \text{NP} \quad)$$

$$(\uparrow \text{SUBJ}) = \downarrow \quad \uparrow = \downarrow \quad (\uparrow \text{TOP}) = \downarrow$$

Thus the rule allows six different orders of the subject NP, the VP, and the topic NP.

(e) The grammaticized discourse functions *FOC* and *TOP* must universally satisfy an *EXTENDED COHERENCE CONDITION*. This demands that they be linked to the semantic predicate argument structure of the sentence in which they occur, either by functionally or anaphorically binding an argument.⁸ The apparent co-occurrence of *OM* with an object NP is thus explained as the anaphoric binding of an object pronoun, incorporated in the verb, to a topic NP in S.

The topic designates what is under discussion, whether previously mentioned or assumed in discourse (cf. Chafe 1976, Givón 1976, Wald 1979). We assume that grammaticized topics—constituents that bear the *TOP* function—designate discourse topics (for evidence, see §4, below); but not all discourse topics are grammatically marked, and we assume the same for focus. A focus expresses *CONTRAST* in the sense of Chafe 1976; it designates something that is *NOT* presupposed (relative to some context). These characterizations are not meant as definitions, but they serve to motivate the necessary properties of topics and focuses which we postulate below.

The differences between 3 and 4 follow from (a)–(e). In 3, we have a transitive verb but no *OM*. The verb's subcategorization for object can be satisfied by the postverbal NP generated by the VP rule in (c). This object has a fixed position in the VP. The subject NP generated by the S rule in (d) can be re-ordered before or after the VP, but not inside it. If a topic NP were also generated by the S rule, the *Extended Coherence Condition* (e) would require that it be linked to the semantic predicate argument structure. This can be done in Chicheŵa by generating an incorporated anaphoric object in the verb (the *OM*), which the topic NP anaphorically binds. The *OM* prevents the use of an object NP in the VP, by functional uniqueness. Thus the free-floating NP linked to the *OM* in 4 is not really an object, but a topic, as hinted in our translations. As such, it is freely orderable with respect to the subject and the VP. We replace 4 with this more accurate description:

- (7) a. Su [_{VP}V] TOP: *Njûchi zi-ná-wá-lum-a* *alenje.*
 bees SM-PAST-OM-bite-INDIC hunters
 'The bees bit them, the hunters.'

⁸ The extension of the coherence condition to discourse functions was proposed by Zaenen 1980 and Fassi-Fehri 1984. Our version of this condition can be formulated more precisely as follows. The extended coherence condition requires that all functions in f-structure be *BOUND*. An argument function (i.e. a subcategorizable function like *SUBJ*, *OBJ*, *OBL*) is bound if it is the argument of a predicator (*PRED*). An adjunct is bound if it occurs in a f[unctional]-structure which contains a *PRED*. Finally, a topic or focus is bound whenever it is functionally identified with, or anaphorically binds, a bound function.

- b. [_{VP}V] TOP Su: *Zináwáluma alenje njúchi.*
 c. TOP [_{VP}V] Su: *Alenje zináwáluma njúchi.*
 d. [_{VP}V] Su TOP: *Zináwáluma njúchi alenje.*
 e. Su TOP [_{VP}V]: *Njúchi alenje zináwáluma.*
 f. TOP Su [_{VP}V]: *Alenje njúchi zináwáluma.*

Although we have seen how the word-order differences between 3 and 4 follow from (a)–(e), we have yet to explain the central similarity: Why does the anaphoric linking of topics to the argument structure look like agreement in Chichewa? More generally, why should pronominal anaphora so closely resemble agreement in some languages? There are two questions here: First, why is gender class agreement required between the topic NP and the incorporated object pronoun? and second, why must the topic NP be anaphorically linked to an INCORPORATED pronoun, which suspiciously resembles an agreement marker, rather than to an independent pronoun in the object NP position (as in the English example *I love him dearly, my father*)?

As to the agreement in gender class between the OM and the topic NP, the answer is straightforward: person, number, and gender are precisely the pronominal categories which universally show agreement in anaphoric relations.⁹ As we have remarked, typologists have long maintained that grammatical agreement systems evolve historically from incorporated deictic and anaphoric pronominal systems; this explains the fact that the categories of grammatical agreement are pronominal in nature (see fn. 1). Chichewa clearly shows gender class agreement in both discourse anaphora and deixis. Consider first the following:

- (8) *Fisi anagúlá chipéwá ku San Franciscó dzulo. Madzũlo*
 hyena bought hat(7) in S.F. yesterday evening
anapítá ku San Jose kuméné á-ná-ká-chí-gulítsá kw'á
 he-went to S.J. where he-PAST-go-it(7)-sell to
mlóndá wá á mēya.
 guard of hon. mayor

'The hyena bought a hat in San Francisco yesterday. In the evening he went to San Jose, where he went to sell it to the mayor's guard.'

⁹ This point is made by Givón 1976, Lehmann 1982, 1984. While the categories of grammatical and anaphoric agreement coincide in Chichewa, in some languages they partially clash. In Kiswahili, for example, animacy is a category of verb agreement that overrides the gender class categories of nominal concord (Bokamba 1981). Lyons 1968 points out that the categories of verb agreement in Kiswahili correspond to those of pronominal agreement rather than nominal concord; this supports our analysis. However, more problematic cases exist of clash between sentence-internal and cross-sentence agreement (e.g. Goldsmith 1981). These do not affect our analysis of Chichewa; however, they might detract from the universality of our assumption that grammatical agreement within sentences inherits its properties from pronominal agreement in discourse. Some discourse-specific principles might exist, as John Goldsmith and Annie Zaenen have pointed out to us.

- (9) *Físi anagúlá chipéwá ku San Franciscó dzulo. *Madzũlo*
 hyena bought hat(7) in S.F. yesterday evening
anapítá ku San Jose kuméné á-ná-ká-wá-gulítsá kw'á
 he-went to S.J. where he-PAST-go-it(2)-sell to
mlóndá wá á mēya.
 guard of hon. mayor

'The hyena bought a hat in San Francisco yesterday. In the evening he went to San Jose, where he went to sell it to the mayor's guard.'

The incorporated pronoun in 8 must agree in gender class with the antecedent *chipéwa* 'hat' in a previous sentence in the discourse; 9 shows that the Class 2 OM *-wá-*, which disagrees with the Class 7 antecedent, cannot be used to establish the anaphoric relation. Observe that this anaphoric relation crosses sentence boundaries in a discourse, and hence could not be analysed as grammatical agreement between a verb and its argument.

Consider now these examples:

- (10) (Pointing to a lion lying on the ground) *Uwu.*
 this (Class 3)
 (11) (Pointing to a lion lying on the ground) **Ichi.*
 this (Class 7)

The word for lion, *mkāngo*, belongs to gender Class 3. Deixis to a lion requires the Class 3 deictic pronominal form; the Class 7 form shown in 11 would be used for deixis to a hat or some other thing whose corresponding noun belongs to Class 7. Again, these phenomena could not be analysed as syntactic agreement. Thus the choice of agreement features of person, number, and gender in the anaphoric use of pronominals is independently motivated; and it need not—indeed, should not—be accounted for by a sentence-internal mechanism of syntactic agreement.

The second question is how to explain the use of incorporated pronouns to anaphorically link the topic NP's to the predicate argument structure. It would seem more natural (to the English speaker, at least) to use an independent pronoun in the object NP position (as in the English example *I love him dearly, my father*), establishing a clearly anaphoric relation which no one would take for verb/object agreement. Naturalness apart, however, we need to explain the hypothesized anaphoric function of OM when a topic NP is present. The explanation lies in a fundamental typological difference between languages like Chicheŵa and those like English. In Chicheŵa, independent object pronouns are used only for introducing new topics or for contrast:¹⁰

- (12) *Físi anadyá chímanga. Á-tá-chí-dya, anapítá ku*
 hyena ate corn(7) he-SER-it(7)-eat he-went to
San Francíscó.
 S.F.

'The hyena ate the corn. Having eaten it, he went to San Francisco.'

¹⁰ These independent pronouns are morphologically distinct from the series of demonstrative pronouns in Chicheŵa. On this use of independent pronouns in general, see Givón 1983.

- (13) *Fisi anadyá chímbanga. Á-tá-dyá icho, anapítá ku*
 hyena ate corn(7) he-SER-eat(7) it he-went to
San Francíscó.
 S.F.

‘The hyena ate the corn. Having eaten it (something other than corn), he went to San Francisco.’

- (14) *Fisi anadyá mkângo. Á-tá-ú-dya, anapítá ku*
 hyena ate lion(3) he-SER-it(3)-eat he-went to
San Francíscó.
 S.F.

‘The hyena ate the lion. Having eaten it, he went to San Francisco.’

- (15) *Fisi anadyá mkângo. Á-tá-dyá íwo, anapítá ku*
 hyena ate lion(3) he-SER-eat it(3) he-went to
San Francíscó.
 S.F.

‘The hyena ate the lion. Having eaten it (something other than the lion), he went to San Francisco.’

While the discourses in 12 and 14 are natural, those in 13 and 15 are bizarre. The independent pronouns are interpreted as referring to topics not mentioned in the previous sentence—even though they agree with the objects of the previous sentences in person, number, and gender class. Note from the translations of 12 and 14 that this is not at all a property of the English pronominal system.

Within a sentence, the floating topic must be anaphorically bound to an argument in order to satisfy the extended coherence condition. Because of their contrastive discourse function, the independent pronoun objects of Chicheŵa cannot be used topic-anaphorically to satisfy this condition. As a result, sentences like the following are ungrammatical (although similar examples with independent pronouns in English are acceptable):

- (16) a. **?Mkángó uwu físi a-na-dy-á íwo.*
 lion(3) this hyena SM-REC.PAST-eat-INDIC it(3)
 ‘This lion, the hyena ate it.’
 b. **Físi a-na-dy-á íwo mkángó uwu.*
 hyena SM-REC.PAST-eat-INDIC it(3) lion(3) this
 ‘The hyena ate it, this lion.’

It appears that non-contrastive anaphora to the topic, a communicative function that is borne by independent syntactic pronouns in languages like English, is carried by the incorporated object pronouns of languages like Chicheŵa.

There is evidence from an entirely different source in support of our hypothesis that the OM is an incorporated pronoun. In phrase-final position, tonal changes are correlated with lengthening of the penultimate syllable. In particular, final high tones retract to a low-toned penultimate syllable, yielding a rising tone. For example, subjunctive *-é* has high tone when it is followed by an object of the subjunctive verb; but when the same verb is spoken in isolation, or followed only by material (such as a postposed subject NP) that lies OUTSIDE the verb phrase, *-é* takes on a low tone, and the preceding syllable has a high

or rising tone. The following three examples illustrate this phenomenon. In 17, we have a subjunctive complement of the form Su [V O], and there is no tonal change on V (the brackets correspond to the VP boundaries):

- (17) *Ndikufúná kutí áná ánga [a-pitiriz-é phúnziro.]*
 I-want that children my SM-continue-SUBJN lesson
 'I want my children to continue the lesson.'

In 18, we have a subjunctive complement of the form Su [V Adjunct], and again there is no tonal change on V:

- (18) *Ndikufúná kutí áná ánga [a-pitiriz-é pang'ónó]*
 I-want that children my SM-continue-SUBJN a.little
pang'óno.]
 a.little
 'I want my children to continue slowly.'

Here the subordinate clause adjunct *pang'ónó pang'óno* 'slowly' cannot be ordered before or after the subject NP *áná ánga* 'my children', because it is a constituent of the VP node. Finally, in 19, we have a subjunctive complement of the form [V] Su, where the subject has been postposed to Su-final position, and now tonal retraction has applied to V:

- (19) *Ndikufúná kutí [a-pitiriz-e] áná ánga.*
 I-want that SM-continue-SUBJN children my
 'I want my children to continue.'

Thus a postverbal constituent inside the verb phrase prevents the tonal retraction, but those outside the VP do not.

According to our theory, an 'object' NP that agrees with the OM on the verb is really a topic NP outside the VP; it is anaphorically bound to the OM, a pronoun object incorporated in the verb. We expect, therefore, that a subjunctive verb containing an OM, and followed by the NP with which it agrees, should show the same tonal effects as a VP-final verb. And so it does: the high tone retracts to the preceding vowel, which is lengthened. Thus the subjunctive complement in 20 is of the form Su [o-V] 'O', where 'O' designates an apparent object which is really a topic anaphorically bound to the OM prefix in [o-V]. Because the verb falls in VP-final position in this structure, it undergoes the tonal retraction to the penultimate syllable, with lengthening:

- (20) *Ndikufúná kutí áná ánga [a-li-pítirize] phunziro.*
 I-want that children my SM-OM-continue-SUBJN lesson
 'I want my children to continue it, the lesson.'

Thus 20 provides a direct contrast to 17—in which no OM appears on the verb, and *phunziro* 'lesson' is in the object position in the VP. In 20, the high tones on the first two syllables of the verb stem are caused by the presence of the OM (cf. Mtenje 1986, Kanerva 1987). Note, however, that the subjunctive suffix has low tone, and a rise occurs on the penultimate syllable.

Could all the tonal changes in 20 be induced by the presence of the OM marker itself? We can see that the answer is no, simply by inserting a phrase into the VP following the verb. The verb will now be in non-phrase-final position, high tone will reappear on the final *-é*, and the penultimate syllable will

be short. This shows that the OM is not the cause of the low tone on the final syllable of the subjunctive verb in 20:

- (21) *Ndikufúná kutí áná ánga [a-li-pítirizé ndí inu]*
 I-want that children my SM-OM-continue-SUBJN with you
phunziro.
 lesson
 'I want my children to continue it with you, the lesson.'

Similarly, if we insert the same prepositional phrase into 19, the tone retraction and lengthening effects fail to occur:

- (22) *Ndikufúná kutí [a-pitiriz-é ndí inu] aná ánga.*
 I-want that SM-continue-SUBJN with you children my
 'I want my children to continue with you.'

Consider a double-object verb in a subjunctive complement of the form [V O O2]:

- (23) *Ndikufúná kutí [mu-pats-é alenje mphátso.]*
 I-want that you-give-SUBJN hunters gift
 'I want you to give the hunters a gift.'

Adding an OM to the verb causes the first object to shift outside the VP; but the second object remains, yielding a structure of the form [o-V O2] 'O':

- (24) *Ndikufúná kutí [mu-wa-páts-é mphátso] alenje.*
 I-want that you-OM-give-SUBJN hunters gift
 'I want you to give them a gift, the hunters.'

Since V is not in phrase-final position, there is no tonal retraction.¹¹ Note that reversing the order of the objects in 24 yields an unacceptable example, as our analysis predicts:¹²

- (25) *??Ndikufúná kutí [mu-wa-páts-é alenje] mphátso.*
 I-want that you-OM-give-SUBJN gift hunters
 'I want you to give them a gift, the hunters.'

Just as we hypothesized, the OM displaces the VP object by functional uniqueness. The floating constituent which agrees with the OM is simply a topic, anaphorically bound to the incorporated object pronoun.¹³

We conclude that the OM, which at first glance looks like an object agreement marker, is actually an incorporated object pronoun which may be anaphorically linked to a floating topic NP in the sentence. Our evidence is from the interactions of word order with verbal agreement morphology, and from the inter-

¹¹ Again the high tone on the verb stem *-pats-* is caused by the OM.

¹² The word order possibilities with some double-object verbs are more complex. We hope to discuss them in a subsequent work.

¹³ Byarushengo et al. 1976, in their detailed study of tone in Kihaya, discovered a similar phenomenon; they concluded that the object markers are incorporated pronouns, related to the higher NP as in left or right dislocation (see also Byarushengo & Tenenbaum 1976). A rather different tonal phenomenon which suggests a phonological bond between a verb and its object occurs in Bantu languages such as Tonga (Goldsmith 1984) and Luganda (Hyman 1982). The evidence given above shows that the Chichewa phenomenon is sensitive to the boundary of the syntactic verb phrase, and is not restricted to VO.

actions of tone with phrase structure.¹⁴ Research on typology and discourse helps us understand why pronominal anaphora to the topic should so closely resemble agreement. First, discourse-anaphoric relations, and even deixis, universally show agreement in the referentially classificatory categories of person, number, and gender class; these are also the categories of grammatical agreement between a verb and its arguments, reflecting the historical derivation of many agreement systems from pronominal systems. Second, the independent object pronouns of Chicheŵa have a contrastive discourse use that makes them incompatible with anaphora to the topic, within either sentences or discourses. Hence the incorporated pronouns are the only pronominal objects that can serve to link topic NP's to predicate argument structure.

These conclusions raise the theoretical question of how to distinguish agreement from incorporated pronominal anaphora IN PRINCIPLE. We analysed the SM differently from the OM, assuming that the former only sometimes functions as a pronoun. But we could have analysed the SM simply as an incorporated pronoun, like the OM. What is the principled basis for choosing between these alternatives? The answer lies in the theory of argument functions and discourse functions.

GRAMMATICAL VERSUS ANAPHORIC AGREEMENT

2.1. LOCALITY. Our theory tells us that grammatical agreement relations with non-controlled arguments can be distinguished from anaphoric agreement relations by locality: only the anaphoric agreement relations can be non-local to the agreeing predicator. 'Locality' here refers to the proximity of the agreeing elements within the clause structure; a local agreement relation is one which holds between elements of the same simple clause, while a non-local agreement relation is one which may hold between elements of different clauses. The following reasoning supports this conclusion. First, only the argument functions, SUBJ, OBJ etc., can be directly governed by predicators.¹⁵ To satisfy the completeness and coherence conditions, such argument functions must be expressed syntactically within the phrasal structures headed by the predicators, or expressed morphologically on the head itself, or else remain unexpressed (i.e. anaphorically or functionally controlled by non-local structures). Hence the government relation between a verb and its non-controlled arguments must be structurally local to the verb. But verbs can agree grammatically only with their governable arguments. Therefore grammatical agreement between a verb and any of its non-controlled arguments must be structurally local to the verb.

In contrast, an incorporated pronoun is a referential argument itself governed by the verb. By functional uniqueness, an external referential NP cannot also serve as that argument. Hence such an external NP cannot be related to that argument position of the verb by government, but only by anaphora with the agreeing incorporated pronoun. But anaphoric relations between (non-reflex-

¹⁴ There is further evidence for this conclusion in the morphology, syntax, and semantics of the incorporated reflexive pronoun. See Sells et al. 1987, Bresnan & Mchombo 1987.

¹⁵ See Bresnan 1982b for the theory of governable functions assumed here.

ive) pronouns and their antecedents are in general non-local to sentence structure, since their primary functions belong to discourse.

Because only the anaphoric agreement relations can be non-local to the agreeing predicator, we expect that the relation between the OM in Chicheŵa and the floating NP with which it agrees can be non-local, if this is indeed anaphoric agreement. The prediction is correct:

- (26) *Chigawéngá ichi asilikáli á gânyu a-na-úz-á*
 terrorist(7) this soldiers of temporary.work SM-REC.PAST-tell-INDIC
mtsogoleri wâthu kutí s-a-ngath-é ku-chí-gwír-a.
 leader our that not-SM-can-SUBJN INF-OM(7)-catch-INDIC
 ‘This terrorist, the mercenaries told our leader they cannot catch him.’

In 26, the Class 7 noun *chigawénga* ‘terrorist’ is a floating topic NP, three levels of verbal embedding above the Class 7 OM *chi-* which agrees with it. If we remove that OM, the sentence becomes ungrammatical:

- (27) **Chigawéngá ichi asilikáli á gânyu a-na-úz-á*
 terrorist(7) this mercenaries SM-REC.PAST-tell-INDIC
mtsogoleri wâthu kutí s-a-ngath-é ku-gwír-a.
 leader our that not-SM-can-SUBJN INF-catch-INDIC
 ‘This terrorist the mercenaries told our leader they cannot catch.’

The ungrammaticality follows from the extended coherence condition, which requires the topic NP to be bound to a lexical predicate argument structure—and from the fact of Chicheŵa grammar that topicalizations are constructed by anaphoric binding, not by functional binding.¹⁶

Not only can the floating topic NP be non-local from the OM to which it is linked, but the non-local topic shows the same ordering possibilities within its higher clause that we found when it occurred in a monoclausal sentence with the OM.¹⁷ Thus, the topic NP in 26 can also appear sentence-finally, as in 28a, and after the highest subject, as in 28b, but NOT after the main verb inside the VP, as in 28c—exactly as our analysis in §1(a–e) predicts:

¹⁶ In contrast, English allows both constructions, as we see from the grammaticality of the translations in 26–27. Bantu languages vary in this respect. For example, Northern Sotho has both a preposed topic NP, with anaphoric binding to the object prefix, and a preposed focus NP with no object prefix (Louwrens 1982); Kihung’an, spoken in southwestern Congo (Kinshasa), has a preposed focus NP construction with no object prefix (Takizala 1973); and Dzamba, spoken in the Equator province of Zaire, has a preposed topic NP construction with no object prefix, as well as a left-dislocated construction with OM (Bokamba 1981). For Dzamba, T. Givón has pointed out to us that the non-pronoun-inducing left-movement is CONTRASTIVE, consistent with its interpretation as a grammatical focus construction. Louwrens’ 1982 examples from Northern Sotho point to a similar interpretation for the non-pronoun-inducing case.

¹⁷ When two or more topics occur in the same sentence, there appear to be some constraints on their anaphoric relations. Although we have not yet investigated these in Chicheŵa, nesting constraints on multiple anaphoric binding of topics have been found in Arabic. These were first observed by Fassi-Fehri 1981a,b, and have subsequently been discussed by Aoun 1979 and Abd-Rabbo 1984.

- (28) a. *Asilikáli á gânyu a-na-úz-á* *mtsogoleri wâthu*
 mercenaries SM-REC.PAST-tell-INDIC leader our
kutí s-a-ngath-é ku-chí-gwír-a
 that not-SM-can-SUBJN INF-OM(7)-catch-INDIC
chigawéngá ichi.
 terrorist(7) this
 'The mercenaries told our leader that they cannot catch him,
 this terrorist.'
- b. *Asilikáli á gânyu chigawéngá ichi a-na-úz-á*
 mercenaries terrorist(7) this SM-REC.PAST-tell-INDIC
mtsogoleri wâthu kutí s-a-ngath-é
 leader our that not-SM-can-SUBJN
ku-chí-gwír-a.
 INF-OM(7)-catch-INDIC
- c. **?Asilikáli á gânyu a-na-úz-á* *chigawéngá ichi*
 mercenaries SM-REC.PAST-tell-INDIC terrorist(7) this
mtsogoleri wâthu kutí s-a-ngath-é
 leader our that not-SM-can-SUBJN
ku-chí-gwír-a.
 INF-OM(7)-catch-INDIC

The floating topic NP can also be generated in an intermediate sentential clause, between the main clause and the embedded complement verb bearing the OM:

- (29) *Asilikáli á gânyu a-na-úz-á* *mtsogoleri wâthu kutí*
 mercenaries SM-REC.PAST-tell-INDIC leader our that
chigawéngá ichi s-a-ngath-é ku-chí-gwír-a.
 terrorist(7) this not-SM-can-SUBJN INF-OM(7)-catch-INDIC
 'The mercenaries told our leader that this terrorist, they cannot
 catch him.'

But the topic NP CANNOT appear between the second verb down and its infinitival complement:

- (30) **?Asilikáli á gânyu a-na-úz-á* *mtsogoleri wâthu kutí*
 mercenaries SM-REC.PAST-tell-INDIC leader our that
s-a-ngath-é chigawéngá ichi ku-chí-gwír-a.
 not-SM-can-SUBJN terrorist(7) this INF-OM(7)-catch-INDIC
 '*The mercenaries told our leader that they cannot, this terrorist,
 catch him.'

If we assume that the infinitive is a direct VP complement to *s-a-ngath-é* 'cannot', not immediately dominated by an S node (as argued by Mchombo & Mtenje 1983), our analysis predicts this result. The reason is that topic NP's are generated under S, not under VP.

The following examples show that OM agreement has another typical property of pronominal relations, occurring in configurations (such as 'islands') which are prohibited to unbounded syntactic dependencies:

- (31) a. *Chigawéngá ichi ndi-ku-fúná ku-dzíwá ngati asilikáli ám'éné*
 terrorist(7) this I-PRES-want INF-know whether soldiers who
á-kú-bá nkúkú zâthu á-nga-fúné.
 SM-PRES-steal chickens our SM-may-want
ku-chí-gwír-'íts-á ntchîto.
 INF-OM(7)-grab-cause-INDIC work
 'This terrorist, I want to know whether the soldiers who are
 stealing our chickens may want to make use of him.'
- b. *Chigawéngá ichi alenje a-a-tí-tsimikizira kutí*
 terrorist this hunters SM-PERF-us-assure that
maganizo wóti asilikáli awa s-a-ngathé ku-chí-gwíra
 belief that soldiers these not-SM- INF-OM(7)-catch
s-á-ku-wá-pátsá mantha.
 not-SM-PRES-OM-give fear
 'This terrorist, the hunters have assured us that the belief that
 the soldiers cannot catch him does not give them any worries.'
- c. *Amáyí á mwáná uyu á-ma-mu-zúnza.*
 mother of child this SM-habit-OM-mistreat
 'The mother of this child mistreats him.'

In contrast to the OM, which is always an incorporated pronoun and never a non-referential marker of grammatical agreement, the SM on our analysis is indeed such a marker; it also has a referential use, under appropriate conditions, as an incorporated pronoun. This implies that all simple SuV sentences are functionally ambiguous: the apparent subject NP could either be a true subject with which the verb shows grammatical agreement, as in Figure 1; or it could be a topic NP related by anaphoric agreement to the subject pronominal in the verb, as in Figure 2. These figures give the syntactic representation of a simple SuV sentence in LFG. This consists of a pair of structures: a c[onstituent]-structure paired with a f[unctional]-structure. The c-structure represents the surface form that determines word order, word structure, postlexical phonological interpretation etc.; the f-structure represents the grammatical relations that determine case government, agreement, anaphoric binding, thematic relations etc. Note that c-structures in Figs. 1–2 have the same form;

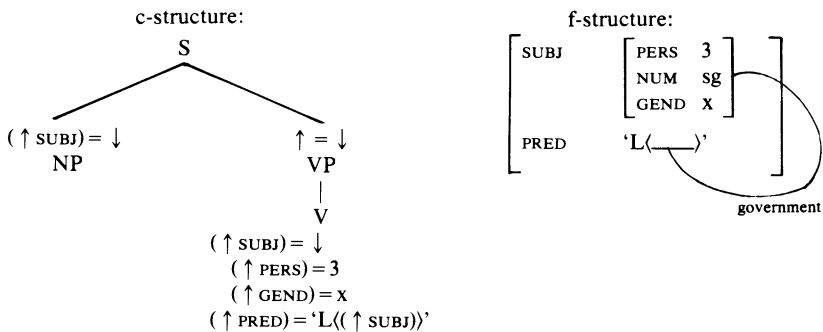


FIGURE 1.

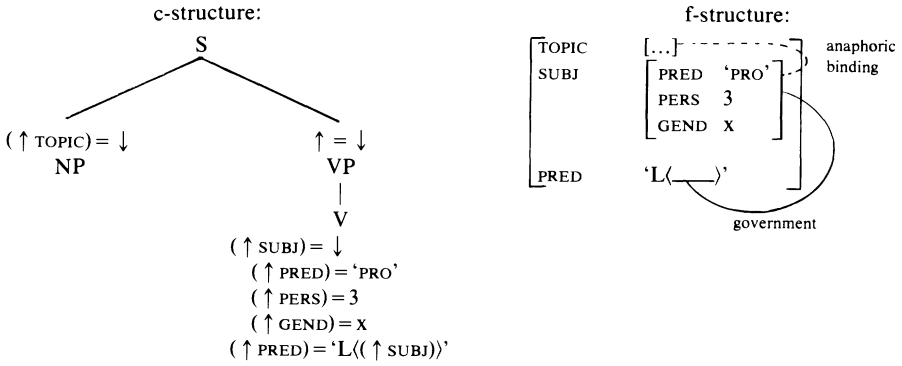


FIGURE 2.

but they give rise to two distinct f-structures, by reason of the functional ambiguity of the NP dominated by S and by the SM prefix on the verb. Elsewhere we have argued that this kind of functional ambiguity, together with the Functional Uniqueness Principle, provides the mechanism by which anaphoric agreement can evolve into grammatical agreement (Bresnan & Mchombo 1986).

In Fig. 1, the subject NP must be local to the verb; but in Fig. 2, the floating topic NP may be non-local to the verb. Hence we expect to find non-local subject agreement as well as non-local object agreement in Chicheŵa, and we do. In 32, the topic *mkángó uwu* 'this lion' appears three levels of embedding above its verb—in sentence-initial position in 32a, following the highest subject in 32b, and in sentence-final position in 32c:

- (32) a. *Mkángó uwu, alenje a-ku-gáníza kutí ú-ma-fúná*
lion(3) this hunters SM-PRES-think that SM(3)-HAB-want
ku-gúmúla nyumbá yá mfúmu.
INF-pull.down house of chief
'This lion, the hunters think that it wants to pull down the chief's house.'
- b. *Alenje mkángó uwu a-ku-gáníza kutí ú-ma-fúná*
hunters lion(3) this SM-PRES-think that SM(3)-HAB-want
ku-gúmúla nyumbá yá mfúmu.
INF-pull.down house of chief
- c. *Alenje a-ku-gáníza kutí ú-ma-fúná*
hunters SM-PRES-think that SM(3)-HAB-want
ku-gúmúla nyumbá yá mfúmu mkángó uwu.
INF-pull.down house of chief lion(3) this

In sum, we see that the SM can be used like the OM for non-local anaphora to the topic. However, on our analysis, the SM is ambiguous: besides being an incorporated pronominal, it can also be used as a true grammatical agreement marker, unlike the OM. Hence we should expect asymmetries to arise between the patterns of subject agreement and object agreement. We take these up next.

2.2. SUBJECT VERSUS TOPIC. When the SM is used as a grammatical agreement marker, it agrees with a nominal that has the SUBJ function; when the SM is used for anaphoric binding, its antecedent within the sentence has the TOP function. Thus the theory of functions should provide a basis for predicting and explaining certain syntactic differences between grammatical and anaphoric agreement.

Grammatical functions in our theory can be partitioned into ARGUMENT FUNCTIONS, like SUBJ, OBJ, and OBL(LIQUE), vs. NON-ARGUMENT FUNCTIONS, like TOP, FOC, and ADJUNCT. Argument functions are directly mapped onto semantic or thematic roles in lexical predicate-argument structures. They provide a uniform way of designating the participants in the events, actions, and situations which are depicted by various subclasses of lexical predicators (Simpson 1983). In contrast, non-argument functions, by the extended coherence condition, must be linked to other grammatical functions (or, in the case of adjuncts, must co-occur with a PRED attribute); hence non-argument functions are only indirectly associated with predicate-argument structure. They serve to structure the information content of an utterance so as to facilitate communication between the speaker and the hearer. Argument functions must be unique in their clauses, while non-argument functions may admit of multiple instances.¹⁸

We will adopt three principles about the role of the TOP and FOC functions in the grammars of natural language. First, in RELATIVE CLAUSES, the relative pronoun or relativized constituent universally bears the TOP function.¹⁹ Thus, in 33, *which* is the topic of the clause *which you don't want*:

- (33) *The car [which you don't want ____] is a Renault.*
- TOPIC
OBJ

The extended coherence condition requires that, like the floating topic NP, the relative topic be linked to the lexical predicate-argument structure by either functional or anaphoric binding. The former mode is subject to well-known extraction constraints.²⁰ Second, in INTERROGATIVE CLAUSES, the interrogative

¹⁸ Multiple instances are expressed in the formal language of LFG by the membership connective \in (Kaplan & Bresnan 1982). Note that some multiple topics come from stacked S structures of the form $S \rightarrow NP, S$, where NP has the TOP function, and S is an ADJUNCT (Fassi-Fehri 1984). These structures maintain the uniqueness of topics. Languages in which multiple grammatical focuses occur in clusters of preposed interrogative phrases are discussed by Wachowicz 1974 and Ackerman 1981. (See Bresnan 1982a on the non-uniqueness of adjuncts.)

¹⁹ A similar proposal is made by Kuno 1976, who uses the concept of 'theme'. Our terminology is consistent with that of Chafe 1976, Givón 1976. This analysis is adopted for Zulu relative clauses by Poulos 1981.

²⁰ See Saiki 1985 for an exposition of new work on long-distance functional binding in LFG, with an extremely interesting application to relativization in Japanese. She also shows that relativization is subject to different constraints from topicalization (thematization) in coordinate constructions, in apparent conflict with Kuno's hypothesis. However, her evidence is consistent with the hypothesis that the relativized element is the topic (or theme, in Kuno's terminology)—if we assume that, in Japanese, the mode of linkage of topics differs in topicalizations and relative clauses, as in fact it does in Chichewa. While Chichewa employs only anaphoric binding of the floating topic, it employs both anaphoric binding and functional binding of relative topics.

pronoun or questioned constituent universally bears the FOC function.²¹ Thus, in 34, *what* is the focus of the clause *what you want*:

- (34) *I know [what you want ____].*
 FOCUS OBJ
 └────────────────────────────────┘

Third, the same constituent cannot be both focus and topic of the same level of (functional) clause structure. Thus, in CLEFT CONSTRUCTIONS, the same phrase is interpreted as both a focus and a topic—but at different levels of embedding. In 35, *my car* is the focus of the main clause, and the relativized object is the topic of the embedded complement clause *that you don't want*:

- (35) [*It is my car [that you don't want ____]*].
 FOCUS TOPIC OBJ
 └───┘ └──────────────────────────┘

A slightly more general formulation of this assumption, suggested to us by Mark Gawron, is that a TOP and a FOC cannot be functionally identified.

These three principles ultimately derive from the theory of the role and interpretation of these functions in discourse. For example, because the topic designates what is under discussion (whether previously mentioned or assumed in discourse), it is presupposed. The interrogative focus designates what is NOT presupposed as known, and is contrasted with presupposed material. Hence, allowing the same constituent to be both topic and focus of the same clause leads to inconsistent presuppositions.²² However, until we have more explicit theories of the interpretation of these functions in discourse, we will adopt the strategy of simply postulating properties of the grammaticized discourse functions in order to derive explicit predictions. We can then explain the contrasts between 36a–b and between 37a–b:²³

- (36) a. (*Mary asked*) *what it was that Fred cooked.*
 b. ??(*Mary ate*) *what it was that Fred cooked.*
 (37) a. (*I asked*) *who it was that Marilyn suspected.*
 b. ??(*I met*) *the person who it was that Marilyn suspected.*

Exx. 36a and 37a contain interrogative clauses based on cleft constructions, while 36b and 37b contain relative clauses (respectively headless and headed) based on cleft constructions. These examples show that although it is perfectly natural to question the clefted NP in a cleft construction, it is much less so to relativize it. To see in detail why this is so, consider 38, which schematically displays the analysis of 37a. In 38a, we display the cleft construction on which the interrogative is based; in 38b, the cleft NP is questioned:

²¹ For arguments that support this postulate, see Dik 1978. See also Myers 1971 for evidence of a right-focus position in Kikuyu both for emphatic (or contrastive) phrases and for interrogative phrases.

²² Takizala 1973 makes this point explicitly.

²³ The observation of such contrasts in English derives from Baker 1970. See also Chiba 1973.

- (38) a. [*it was who [that Marilyn suspected ____]*]
 FOCUS TOPIC OBJ
 b. [*who it was ____ [that Marilyn suspected ____]*]
 FOCUS FOCUS TOPIC OBJ

Since the cleft NP and the questioned phrase both have FOC functions, there is no violation of our postulates. But now consider 39, which schematically illustrates the analysis of 37b. In 39a, we again display the cleft construction on which the relative clause is based; in 39b, the cleft NP is relativized:

- (39) a. [*it was who [that Marilyn suspected ____]*]
 FOCUS TOPIC OBJ
 b. *the person* [*who it was ____ [that Marilyn suspected ____]*]
 TOPIC FOCUS TOPIC OBJ
 *

Since the cleft NP has the FOC function, and the relative pronoun the TOP function, and since these conflicting discourse functions occur in the same level of functional clause structure, the result is ill-formed.

This theory leads us to the following five predictions about Chichewa:

PREDICTION I. Questions are formed with the question word in place, in a within-clause position. In simple (non-cleft) interrogative clauses, there should therefore be agreement asymmetry between subjects and objects: it should be possible to question the subject with SM, but not the object with OM. The reason is that the OM is an incorporated object pronoun; so an object question word in the same clause must be interpreted as a floating topic NP, anaphorically linked to the OM. But then the question word will be both FOC and TOP of the same clause, violating our hypothesis (c) about discourse functions. In contrast, the SM is a non-referential agreement marker for grammatical subjects, with an alternative referential use as an incorporated pronoun. Thus the interrogative constituent can simply be the subject of the verb, without also being interpreted as TOP. These predictions are correct:²⁴

- (40) (*Kodí*) *mu-ku-fún-á chiyâni?*
 Q YOU-PRES-want-INDIC what
 ‘What do you want?’
 [*Kodí [mu-kufúná chiyâni]*]
 Q SUBJ FOCUS
 OBJ

²⁴ A similar asymmetry appears in Kihaya. Bennett 1977 observes in passing that a question word cannot be used with the object pronoun prefixes, but it does appear with the subject prefix. This is particularly interesting in the light of the tonal evidence for the pronominal status of the object prefixes in Kihaya (note 13).

- (41) ??(*Kodí*) *mu-ku-chí-fún-á* *chíyâni?*
 Q you-PRES-OM(7)-want-INDIC what(7)
 'What do you want (*it)?'
 [*Kodí* [*mu-ku-chí-fúná*] *chíyâni*]
 Q SUBJ OBJ FOCUS
 TOPIC ← function clash
 anaphoric binding

- (42) (*Kodí*) *chíyâni chí-ná-ónek-a?*
 Q what(7) SM(7)-PAST-happen-INDIC
 'What happened?'
 [*Kodí chíyâni chí-náóneka*]
 Q SUBJ SM
 grammatical agreement

In 42, the SM is interpreted as a grammatical agreement marker. The interpretation of the SM as an incorporated subject pronominal anaphorically linked to a topic NP is ruled out by the same function clash that appears in 41—namely, a single constituent is both a focus and a topic of the same clause:

- (43) [*Kodí chíyâni* [*chí-náóneka*]]
 Q FOCUS SUBJ
 TOPIC
 function clash → anaphoric binding

The functional ambiguity of subject/verb agreement saves the example by providing the structure in 42. This is striking evidence for the difference between grammatical agreement, shown by the SM, and incorporated pronominal anaphora, shown by the OM. It also shows that the SUBJ function is grammatically distinguishable from the TOP function.

One might wonder whether the restriction on OM with interrogatives reflects a more general restriction against using OM with indefinite or non-specific objects. Some Bantu languages are said to have a contrast of definiteness or specificity, associated with the OM.²⁵ Consider the following examples from a popular Kiswahili textbook (Perrott 1983:38):

- (44) a. *U-me-let-a* *kitabu?*
 you-PERF-brought-INDIC book
 'Have you brought a book?'
 b. *U-me-ki-let-a* *kitabu?*
 you-PERF-OM-brought-INDIC book
 'Have you brought the book (the particular one I wanted)?'

²⁵ Givón 1976 finds this in Kiswahili, Bokamba 1971 in Dzamba, Wald 1979 in Zulu (though not in Mombasa Kiswahili), and Takizala 1973 in Kihung'an.

However, this is not true of Chichewa:

- (45) a. *Mw-a-bwerets-a bûku?*
 you-PERF-bring-INDIC book
 'Have you brought a book?' or 'Have you brought the book?'
- b. *Mw-a-lí-bwérets-a bûku?*
 you-PERF-OM-bring-INDIC book
 'Have you brought it, the book?' or 'Have you brought one, a book?'

Out of context, as in 45b, the definite interpretation is favored; but in an appropriate discourse context, an indefinite and non-specific interpretation is natural:

- (46) A: *Katenje wa-ndí-úza kutí a-na-gúlá mabúkú ámbiri*
 K. SM.PERF-me-tell that he-REC.PAST-buy books many
ndiyé nd-a-mú-úza kutí a-ti-bwérets'ére límòdzi.
 so I-PERF-him-tell that he-us-bring one.
 'Katenje has told me that he bought a lot of books, so I have told him to bring us one.'
- B: *Koma wa-bwera, ali panjâpo.*
 But he.PERF-arrive, he.be outside
 'But he's arrived, he's outside.'
- A: *Chábwino, ndi-ká-mú-funsa. Katenje, mw-a-lí-bwéretsa bûku?*
 fine I-go-him-ask. K. you-PERF-OM-bring book
 'Okay, I'll go ask him. Katenje, have you brought us one, a book?'

Note that the interlocutors have no particular, definite, or specific book in mind. The topic construction is used here because Katenje was to bring back one book from the many that he bought, and that is what has been under discussion. The topic NP is used for information previously mentioned in the discourse, whether or not it is something specific or definite.

PREDICTION II. Recalling the non-locality property of anaphoric agreement discussed above, we can derive a further prediction from our theory: in contrast to local subjects, the non-local subjects described above should not allow questioning in place. For example, in contrast with 47a, 47b should be ill-formed:

- (47) a. *(Kodí) mu-ku-fún-á kutí chíyâni chí-oněk-e?*
 Q you-PRES-want-INDIC that what SM-happen-SUBJN
 'You want what to happen?'
- b. *??(Kodí) chíyâni mu-ku-fún-á kutí chí-oněk-e?*
 Q what you-PRES-want-INDIC that SM-happen-SUBJN
 'What do you want to happen?'

In 47a, *chíyâni* 'what' is a subject questioned in place, and the sentence is grammatical for the same reason that 42 is. In 47b, however, it is a floating topic, anaphorically bound to the pronominal SM on the embedded verb. The TOP function is incompatible with an interrogative FOC function, so the example

is ill-formed.²⁶ Only subjects locally governed by the verb can be questioned in non-cleft constructions.

PREDICTION III. In the examples above, the question is formed with *chiyâni* 'what?' in place. There is an alternative construction for questions in Chicheŵa, in which the question word is clefted and the content of the question is expressed within a relative clause. The relative clause may contain an OM to which the relative pronoun is anaphorically bound. Because clefting splits the FOC and TOP functions into two different clauses, our theory predicts that the subject/object asymmetry should disappear in these constructions, with both SM and OM possible within the embedded clause.²⁷ This prediction is correct:

(48) *Kodí ndí chiyâni chi-méné mú-kú-chí-fún-a?*²⁸

Q COP what(7) 7-REL YOU-PRES-OM(7)-want-INDIC
'What is it that you want?'

[*Kodí ndí chiyâni [chi-méné mú-kú-chí-fúna]*]

Q COP FOCUS [TOPIC OBJ]

(49) *Kodí ndí chiyâni chi-méné chí-ná-ónek-a?*

Q COP what(7) 7-REL SM(7)-PAST-happen-INDIC
'What is it that happened?'

[*Kodí ndí chiyâni [chi-méné chí-ná-óneka]*]

Q COP FOCUS [TOPIC SUBJ]

(50) (*Kodí ndí chiyâni chi-méné mú-kú-fún-á*

Q COP what(7) 7-REL YOU-PRES-want-INDIC
kutí chi-oněk-e?

that SM(7)-happen-SUBJN

'What do you want to happen?'

Kodí ndí chiyâni [chi-méné mú-kú-fúná [kutí chi-oněk-e]]

Q COP FOCUS TOPIC [SUBJ]

PREDICTION IV. It is a further consequence of our theory that the subject/object agreement asymmetry found in simple questions should not appear in relative clauses (see fn. 27). While the question word is a focus, and hence could not also be a topic in the same level of clause structure, the relative

²⁶ The presence of the complementizer adjacent to the subject gap is irrelevant to the ill-formedness of this example, as one can see from the grammaticality of 50.

²⁷ As noted in fn. 20, Chicheŵa employs two relativization strategies: anaphoric binding and functional binding. Only with the former will the asymmetry disappear. Since the OM is an incorporated pronoun, the principle of functional uniqueness would preclude functional binding of the OM to an object relative pronoun in a cleft (or relative) construction. It follows that, if a language has an incorporated pronoun OM, and if it employs only the functional binding strategy for relativization (at least within the domain permitted by island constraints—cf. Clements 1984), then no OM will appear in a cleft interrogative construction questioning the object. Kihung'an appears to be such a language (cf. Takizala).

²⁸ Relative verbs in Chicheŵa show an initial high tone; see Mtenje 1986.

pronoun is a topic, and hence consistent with anaphoric binding of both OM and SM. This prediction is correct:

- (51) *munthu a-méné ndí-ná-mú-yéndëra*
 person(1) 1-REL I-PAST-OM(1)-visit
 'the person that I visited'
munthu [améné ndí-ná-mú-yéndëra]
 TOPIC OBJ

- (52) *munthu a-méné á-ná-ndí-yéndëra*
 person(1) 1-REL SM(1)-PAST-me-visit
 'the person that visited me'
munthu [améné á-ná-ndí-yéndëra]
 TOPIC SUBJ

Thus 51–52 contrast with the examples with both SM and OM, given under the heading of Prediction I above.

PREDICTION V. Both definite and indefinite NP's can be used to represent information previously mentioned in the discourse, and so can be linked anaphorically to the OM or SM as topics; but idiomatic objects and cognate objects are usually not used in this way, perhaps because they merely elaborate on the meaning of the verb. These NP's are therefore difficult to topicalize. In 53a, *bôndo* 'knee' is an idiomatic object of the verb *-nong'oneza* 'whisper to', yielding the meaning 'to feel remorse'.²⁹ The presence of OM produces a bad result, as in 53b. Yet the object can undergo passivization, and the result is a passive verb with a SM referring to 'knee', as in 53c—showing that the SM, unlike the OM, serves as a grammatical agreement marker:

- (53) a. *Chifukwá chá mwáno wâke Mavútó tsópáno*
 because of rudeness his Mavuto now
a-ku-nóng'onez-a bôndo.
 SM-PRES-whisper.to-INDIC knee
 'Because of his rudeness, Mavuto is now whispering to his knee (that is, feeling remorse).'
- b. ??*Chifukwá chá mwáno wâke Mavútó tsópáno*
 because of rudeness his Mavuto now
a-ku-lí-nóng'onéz-a bôndo.
 SM-PRES-OM(5)-whisper.to-INDIC knee(5)
 'Because of his rudeness Mavuto is now whispering to it, his knee.'
- c. *Bôndo li-ná-nóng'onez-édw-a.*
 knee(5) SM(5)-PAST-whisper.to-PASS-INDIC
 'The knee was whispered to (that is, remorse was felt).'

Similarly, in 54a, the verb *-lota* 'dream' has the cognate object *malôto*

²⁹ This meaning is evoked by the image of a person sitting doubled up, hugging his knees with his head bowed, and whispering.

'dreams'. Again the presence of the OM produces a bad result, as in 54b. And again, passivization of the cognate object is possible, as in 54c, showing that the SM, unlike the OM, functions as a grammatical agreement marker:

- (54) a. *Mlenje a-na-lót-á malótó ówôpsya usíku.*
 hunter SM-REC.PAST-dream-INDIC dreams frightening night
 'The hunter dreamed frightening dreams last night.'
- b. ??*Mlenje a-na-wá-lót-á málótó ówôpsya*
 hunter SM-REC.PAST-OM-dream-INDIC dreams frightening
usíku.
 night
 'The hunter dreamed them last night, frightening dreams.'
- c. *Malótó ówôpsya a-na-lót-édw-á ndí mlenje*
 dreams frightening SM-REC.PAST-dream-PAST-INDIC by hunter
usíku.
 night

'Frightening dreams were dreamed by the hunter last night.'

The cognate object can be topicalized in certain circumstances—as in 55, where the recurrence of the same dream is referred to:

- (55) *Malótó awa mlenje a-na-wá-lót-á kásanu.*
 dreams these hunter SM-REC.PAST-OM-dream-INDIC five-times
 'These dreams, the hunter dreamed them five times.'

Likewise the verb *-vina* 'dance', usually intransitive, can take the name of a dance as an object, as in 56a. This object resists topicalization and consequently the OM, as 56b shows. But it does passivize, allowing the SM, as 56c reveals:

- (56) a. *Mfûmu i-ná-vín-a chiwôda.*
 chief SM-PAST-dance-INDIC Ch.dance
 'The chief danced the Chiwoda dance.'
- b. ??*Mfûmu i-ná-chí-vín-a chiwôda.*
 chief SM-PAST-OM(7)-dance-INDIC Ch.dance(7)
 'The chief danced it, the Chiwoda dance.'
- c. *Chiwôda chí-ná-vín-idw-á ndí mf'ûmu.*
 Ch.dance(7) SM(7)-PAST-dance-PASS-INDIC by chief
 'The Chiwoda dance was danced by the chief.'

Thus, if we assume that SM is an agreement marker as well as an incorporated pronoun, while OM is only an incorporated pronoun, then our theory of argument functions and discourse functions predicts a number of actually occurring symmetries in subject/object patterns and asymmetries in agreement patterns.

TYPOLGY

3. In addition to the locality property and the five predictions that we have just confirmed, our theory also suggests a basis for certain properties that appear to distinguish incorporated anaphora from grammatical agreement typologically. We have seen that Chicheŵa has two series of anaphoric pronouns: the OM's, used for anaphora to a topic, and the independent object pronouns,

used to introduce new topics or for contrast of arguments. Kameyama 1985 has observed that all languages have two kinds of pronominals that can be used anaphorically: those used for reference recoverable in discourse, and those used for 'contrast, emphasis, or focus'. The former have less phonetic content than the latter.³⁰ For example, English has unstressed vs. stressed independent pronouns; Latin has the bound pronominal use of the verbal subject inflections vs. independent pronouns; and Japanese has zero pronominals vs. independent pronouns. Since incorporated pronominal arguments generally have less phonetic content than independent pronouns, perhaps the fundamental typological property which distinguishes the uses of independent pronouns in Chicheŵa from those in English is simply that Chicheŵa employs the morphological incorporation of referential pronominal arguments into the lexical categories that govern them. Let us call this the P[RONOMINAL] I[NCORPORATION] property.

An immediate consequence of the principle of functional uniqueness is that languages which have PI must show 'PRO-drop' (Perlmutter 1971)—i.e. ellipsis of nominal arguments, with consequent pronominal interpretation.³¹ Incorporated pronominal arguments are incompatible with the corresponding syntactic NP arguments, by functional uniqueness; so they may be employed only when the latter can be omitted. We have seen that Chicheŵa has both subject and object PRO-drop, in the sense that the SM sometimes, and the OM always, is an incorporated pronoun.

From the principle of functional uniqueness it also follows that, in languages with PI, a verb or other head cannot govern the case of any referential nominals with which its incorporated pronouns agree. If the incorporated pronoun is a referential argument, itself governed by the verb, then by functional uniqueness an external referential NP cannot also serve as that argument. Hence such an external NP cannot be related to that argument position of the verb by government, but only by anaphora with the agreeing incorporated pronoun. However, the categories of agreement in these anaphoric relations are universally the referentially classificatory properties—person, number, and gender (or animacy), but NOT grammatical case.³² For example, in *She knows I admire her* and *She enjoys herself*, accusative *her* and *herself* show person, number, and gender agreement with their nominative antecedents *she*, but differ from it in grammatical case. Fassi-Fehri 1984 argues that, in Arabic, invariant case is

³⁰ Kameyama notes that her two anaphoric pronominal functions are subsumed, from a typological perspective, by Givón's 1983 proposed universal scale of referring expressions.

³¹ Given our theory of pronominal incorporation, the term 'PRO-drop' is a misnomer. The prefix is itself the pronoun, and no pronoun has been 'dropped' in the derivation of the sentences. However, we retain the term because of its widespread use by some linguists to refer to a cluster of phenomena.

³² See Lehmann 1982, 1984. In Warlpiri, nominal adjuncts show case concord with the arguments they modify; but these nominal adjuncts are non-referential, and are used to attribute properties to the arguments with which they concord (Simpson 1983:252 et passim, Jelinek 1984). Case, not person agreement, is claimed by Lehmann to be a general property of nominal adjunct agreement. As pointed out to us by D. Perlmutter, this generalization is inconsistent with Davies' 1981 analysis of Choctaw agreement. Further research is needed to resolve the issue.

associated with topic NP's that anaphorically bind the incorporated pronominal main arguments of verbs, while case government is associated with argument NP's that grammatically agree with the verb. His work strikingly confirms the prediction that verbally governed case on the full nominal is inconsistent with the anaphoric linking of the nominal to an incorporated pronoun.

Chicheŵa, of course, lacks grammatical case-marking of dependent nominals; thus the independent pronouns are invariant in form whether occurring as subjects, objects, or prepositional objects. We are therefore unable to test directly the prediction that verbal case government is inconsistent with pronominal incorporation in Chicheŵa. However, Chicheŵa is *TYPOLOGICALLY* consistent with our prediction. Nichols 1986 proposes a typological opposition of head-marking languages, in which the relation of arguments to predicators is registered on the predicator, vs. dependent-marking languages, in which it is registered on the arguments (Nichols 1986, Van Valin 1985). Chicheŵa clearly exemplifies the head-marking type. The reason that head-marking languages do not show case government of dependent nominal arguments may simply be that head-marking is a reflection of the pronominal incorporation property.³³

Evidence that the pronominal incorporation property may indeed be typologically significant in predicting the discourse role of independent pronouns, the presence of *PRO-drop*, and the absence of grammatical case-marking on nominals is provided by Coleman's work on Kunparlang, spoken in Northern Australia. She observes (1985a):

'No morphological marking occurs on Subject or Object nominals; moreover, word order is largely unconstrained. Verbs govern their Subjects and Objects by means of cross-reference prefixes. Historically, these prefixes are incorporated pronouns; synchronically they also function as anaphoric pronouns in discourse, where heavy ellipsis of nominal arguments of predicates occurs. (Analytic pronouns may not be used anaphorically in discourse except to introduce new topics and to provide deictic contrast between arguments.)'

Elsewhere, in a discussion of topic, pronominalization, and grammatical agreement, Coleman 1985b notes that the subject prefix (SA) in Kunparlang is obligatory, while the object prefix (OA) is optional, used under complex conditions of discourse salience—including the following:

'... when both Subject and Object arguments are people, the presence of the Object agreement affix indicates that the Object argument is sentential Topic:

/nga-pun-pum/
 1sgSubj-3sgObj-hit Pst Real
 "I hit him."
 /ngirra nga-pun-pum/
 (1) that 1sgSubj-3sgObj-hit Pst Real
 "That (male one), I hit him."

She then makes this striking observation:

³³ Nichols 1986 notes the existence of 'double-marking' languages, which have both head-marking and dependent-marking morphology. Our theory is consistent with double-marking as a historical development, but strongly constrains the synchronic analysis of such languages: e.g., verbally governed grammatical case-marking on a given nominal argument is completely inconsistent with the analysis of that nominal as an anaphorically linked topic. Fassi-Fehri's 1984 work on Arabic provides a striking illustration in support of this consequence.

'In Kunparlang, it is possible to question either Subject or Object argument. When the Object argument is questioned, the Topic-marking OA affix may NOT occur; this is predicted by the definitions given above for the pragmatic notions of Topic and Focus. When the Subject argument is questioned, however, the Subject affix always occurs; this suggests that the SA affix does not necessarily function to mark the subject as a Topic. For example:

Questioning the Subject argument:

/na-gaypi ka-ngun-pum/
 (1)-who 3sgSubj-2sgObj-hit Pst Real
 "Who hit you?"

Questioning the Object argument:

/na-gaypi ki-pum/
 (1)-who 2sgSubj-hit Pst Real
 "Who did you hit?"
 */na-gaypi ki-pun-pum/
 (1)-who 2sgSubj-3sgObj-hit Pst Real
 "Who did you hit him?"

These remarkable parallels between Chichewa and Kunparlang suggest that the morphological incorporation of pronouns into predicators represents a fundamental typological property, from which a theory of grammatical structure and discourse functions can derive a variety of deeper characteristics.

Another clue that the pronominal incorporation property may indeed be typologically significant is provided by an observation of Chafe (1976:37–8) about Iroquoian:

'In some languages, where the role of given nouns is captured primarily through agreement in the verb, independent pronouns appear to be used mainly to express a focus of contrast. In Seneca, for example, and in the Iroquois languages generally, a first person referent is normally expressed only through a verbal prefix. There is, however, a separate Seneca pronoun *i'* "I" which appears typically in sentences like:

i' ononō'tá' kyéthwas.
 I potatoes I-plant
 "I plant potatoes."

The context might be, "Other people may plant other things, but ..." This is clearly a contrastive function. The independent pronouns for other persons and genders are typically used in the same way.'

The same clustering of properties has been observed to occur in other languages that have PI, such as Cree (Algonquian, Dahlstrom 1986) and Lakhota (Siouan, Van Valin 1985; see also Mithun 1986).

Finally, evidence from Aghem, a Grasslands Bantu language of Cameroon, may also be significant for our typological hypothesis. From Hyman 1979 we see that Aghem is clearly an isolating language, lacking PI. Its pronouns are independent, being conjoinable and separable from the verb by direct objects. There are no pronominal prefixes on the verb. Texts show that (independent) pronouns, of both subject and object, allow anaphora to topic, and that PRO-drop is rarely if ever used. Moreover, different morphological forms exist for subject and non-subject pronouns, suggesting case-like differentiation. Thus, although Aghem is a Bantu language, it is typologically different in all three of the properties implied by the pronominal incorporation property: the contras-

tive use of independent pronouns, the presence of PRO-drop, and the absence of verbally governed case-marking.

In sum, our theory implies that pronominal incorporation can be distinguished typologically from grammatical agreement by a cluster of at least three properties: the contrastive discourse role of the independent pronouns, the presence of PRO-drop, and the lack of verbally governed grammatical case-marking on the nominal that is anaphorically linked to the incorporated pronoun. These are all typological properties of Chichewa and Kunparlang; but they all appear to be lacking in a non-incorporative Grasslands Bantu language, Aghem. Where both case-marking and pronominal incorporation are found, as in Arabic, our theory correctly predicts a complementarity in their distribution, as found by Fassi-Fehri 1984.

SENTENCE AND DISCOURSE TOPICS

4. We have now seen that clear syntactic differences exist between grammatical and anaphoric agreement; these are predicted by our theory of the properties of SUBJ and TOP functions. But what evidence do we have that the TOP function, as we have identified it in the grammatical structures of sentences, is indeed a grammaticized discourse function? What tells us that the TOP function derives its properties from discourse topics? To answer, let us recall that Chichewa has two series of anaphoric pronouns: the OM's, used for anaphora to a topic, and the independent object pronouns, used to introduce new topics or to contrast arguments. These two series differ in discourse uses: we have showed that only the incorporated pronouns, and not the independent ones, could be used to pick up reference to discourse topics. Thus we have contrasts like the following:

(57) a. *Fisi anadyá mkângo. Á-tá-ú-dya, anapítá ku*
 hyena ate lion(3) he-SER-it(3)-eat he-went to
San Francíscó.
 S.F.

'The hyena ate the lion. Having eaten it, he went to San Francisco.'

b. *Fisi anadyá mkângo. Á-tá-dyá íwo, anapítá ku*
 hyena ate lion(3) he-SER-eat (3)it he-went to
San Francíscó.
 S.F.

'The hyena ate the lion. Having eaten it (something other than the lion), he went to San Francisco.'

While example 57a is natural, 57b is bizarre. We have ascribed this contrast to the Givón/Kameyama generalization, that all languages have two kinds of pronominals that can be used anaphorically—those used for reference recoverable in discourse, and those used for 'contrast, emphasis, or focus'. The former have less phonetic content than the latter.

If we are correct in relating the discourse topic to the grammatically encoded topics internal to sentence constructions, we would predict a similar contrast

between the use of the two pronominals in sentence-internal topic constructions. This is just what we find. The same contrast appears in the floating topic construction:

- (58) a. *Mkángó uwu físi a-ná-ú-dy-a.*
 lion(3) this hyena SM-PAST-OM(3)-eat-INDIC
 'This lion, the hyena ate it.'
- b. **?Mkángó uwu físi a-ná-dy-á íwo.*
 lion(3) this hyena SM-PAST-eat-INDIC it(3)
 'This lion, the hyena ate it.'

It appears in the relative clause construction:

- (59) a. *Ndi-ku-lír-ír-a mkángó u-méné físi*
 I-PRES-cry-APPL-INDIC lion(3) 3-REL hyena
á-ná-ú-dy-a.
 SM-PAST-OM(3)-eat-INDIC
 'I'm crying for the lion that the hyena ate.'
- b. **?Ndi-ku-lír-ír-a mkángó u-méné físi*
 I-PRES-cry-APPL-INDIC lion(3) 3-REL hyena
á-ná-dy-á íwo.
 SM-PAST-eat-INDIC it(3)
 'I'm crying for the lion that the hyena ate.'

And it appears in the subordinate clause of the cleft construction:

- (60) a. *Sí mkángó uwu u-méné físi á-ná-ú-dy-a.*
 NEG.COP lion(3) this 3-REL hyena SM-PAST-OM(3)-eat-INDIC
 'It's not this lion that the hyena ate.'
- b. **?Sí mkángó uwu u-méné físi á-ná-dy-á íwo.*
 NEG.COP lion(3) this 3-REL hyena SM-PAST-eat-INDIC it(3)
 'It's not this lion that the hyena ate.'

In general, we predict that, wherever a contrast exists between the topic-anaphoric and contrastive series of pronominals in discourse, it will reappear within sentences in the constructions enumerated above, which all involve anaphoric binding to grammaticalized topics. This prediction is borne out elsewhere in Chichewa as well.

The same contrast in discourse function that we found with the OM and independent pronoun objects also appears in the use of pronominal prepositional objects. Chichewa has a contracted form of the preposition *ndí* 'with, by', namely *na-*; this occurs with bound pronominals which are reduced forms of the independent pronouns. Thus *náye* corresponds to *ndí íye* 'with her or him (Class 1)', while *náwo* corresponds to *ndí íwo* 'with it (Class 3)'. These contracted forms may be considered synthetic prepositional phrases, in which the pronominal object is incorporated into the preposition. Unlike the analytic forms, these incorporated prepositional objects are used for anaphora to the topic. Thus 61–62 differ only in replacing *náwo* 'with it(3)' by *ndí íwo* 'with it(3)'. The first discourse is perfectly well-formed and natural (the prepositional forms are emphasized for clarity):

- (61) *Mkángó 'úwú alenje a-na-ú-pez-á* *m'nkhalāngo.*
 lion(3) this(3) hunters SM-REC.PAST-OM-find-INDIC in-forest.

Paméné á-ná-ú-péza, a-na-chéz-á
 When SM-PAST-OM(3)-find SM-REC.PAST-chat-INDIC
Náwo kwa ntháwí yáítáli, ndipó a-na-gáníz-a
 with-it(3) for time long then SM-REC.PAST-think
zóbwérá NAWÓ kuno ku mudzi kutí ifénso
 of-come with-it(3) here to village so-that we-too
ti-chéz-é NÁWO.
 SM-chat-SUBJN with-it(3)

'This lion, the hunters found it in the forest. When they found it, they chatted with it for a long time; then they thought of coming with it here to the village so that we too would chat with it.'

But the second discourse, given in 62, is bizarre. The pronoun *íwo* 'it' (Class 3) in 61 cannot refer back to *mkāngo* 'lion', even though it agrees in gender class, because it lacks the topic-anaphoric function of the incorporated pronouns (again the prepositional phrases are emphasized for clarity):

- (62) *Mkángó uwu alenje a-na-ú-pez-á*
 lion(3) this(3) hunters SM-REC.PAST-OM(3)-find-INDIC
m'nkhalāngo. Paméné á-ná-ú-péza,
 in-forest. When SM-PAST-OM(3)-find
a-na-chéz-á NDÍ ÍWO kwa ntháwí yáítáli, ndipó
 SM-REC.PAST-chat-INDIC with it(3) for time long then
a-na-gáníz-a zóbwérá NDÍ ÍWO kuno ku mudzi
 SM-REC.PAST-think of-come with it(3) here to village
kutí ifénso ti-chéz-é NDÍ ÍWO.
 so-that we-too SM-chat-SUBJN with it(3).

'This lion, the hunters found it in the forest. When they found it, they chatted with it (something other than the lion) for a long time; then they thought of coming with it (something other than the lion) here to the village so that we too would chat with it (something other than the lion).'

The same contrast in discourse function that we have just seen reappears in sentence-internal topic constructions. First we observe the use of the contracted prepositional pronoun in the floating topic construction:

- (63) a. *Mkángó uwu ndi-na-pít-á NAWÓ ku msika.*
 lion(3) this I-REC.PAST-go-INDIC with-it(3) to market
 'This lion, I went with it to market.'
 b. *Ndi-na-pít-á NAWÓ ku msika, mkángó uwu.*
 I-REC.PAST-go-INDIC with-it(3) to market lion(3) this
 'I went with it to market, this lion.'

We observe that the independent prepositional pronoun object CANNOT be used in the same construction:

- (64) a. *?Mkángó 'úwú ndi-na-pít-á NDÍ íwó ku msika.
lion(3) this I-REC.PAST-go-INDIC with it(3) to market
'This lion, I went with it to market.'
- b. *Ndi-na-pít-á NDÍ íwó ku msika, mkángó uwu.
I-REC.PAST-go-INDIC with it(3) to market lion(3) this
'I went with it to market, this lion.'

Because (*ndí*) *íwo* '(with) it' lacks the topic-anaphoric function, it cannot be used to bind the floating topic NP within a sentence. If no other topic-anaphoric element exists to which the topic can be bound, the sentence will be ungrammatical, by the extended coherence condition. This explains the ungrammaticality of 64a–b.

Let us now verify that anaphoric binding of the topic NP to an incorporated prepositional object pronoun occurs under the same syntactic conditions as does that between the topic NP and the OM. Observe that, with an NP subject and NP topic, all six orders of subject, VP, and topic are grammatical, exactly as predicted by hypotheses (c–d) in §1:

- (65) a. Su [VP V PP PP] TOP: *Fisi a-na-pít-á nawó ku msika mkángó uwu.*
hyena SM-REC.PAST-go-INDIC with-it(3) to market lion(3) this
'The hyena went with it to market, this lion.'
- b. [VP V PP PP] TOP Su: *A-na-pít-á nawó ku msika mkángó uwu fisi.*
- c. TOP [VP V PP PP] Su: *Mkángó uwu a-na-pít-á nawó ku msika fisi.*
- d. [VP V PP PP] Su TOP: *A-na-pít-á nawó ku msika fisi mkángó uwu.*
- e. Su TOP [VP V PP PP]: *Fisi mkángó 'úwú a-na-pít-á nawó ku msika.*
- f. TOP Su [VP V PP PP]: *Mkángó 'úwú fisi a-na-pít-á nawó ku msika.*

Moreover, if the synthetic PP *náwo* is generated as a constituent of VP, with the oblique functions—rather than as a constituent of S, with the adjuncts—then we predict that neither the topic nor the subject can separate it from the verb. This prediction is correct:

- (66) a. Su [VP V TOP PP PP]: **Fisi a-na-pít-á mkángó uwu ku msika*
hyena SM-REC.PAST-go-INDIC lion(3) this to market
náwo.
with-it(3)
- b. TOP [VP V Su PP PP]: **Mkángó uwu a-na-pít-á fisi ku msika*
lion(3) this SM-REC-PAST-go-INDIC hyena to market
náwo.
with-it(3)

The same contrast that we see in the floating topic construction also appears in the cleft and relative clauses, just as we expect. Exx. 67a–b show the contrast in cleft clauses, and 68a–b show them in relative clauses:

- (67) a. *Ndi mkángó uwu u-méné ndí-ná-pít-á NAWÓ kú*
COP lion(3) this 3-REL I-REC.PAST-go-INDIC with-it(3) to
msika.
market
'It's this lion that I went with to the market.'

- b. **Ndi mkángó uwu u-méné ndí-ná-pít-á* *NDÍ íwó kú*
 COP lion(3) this 3-REL I-REC.PAST-go-INDIC with it(3) to
msika.
 market
 ‘It’s this lion that I went with to the market.’
- (68) a. *Ndi-ku-gúlítsa mkángó u-méné ndí-kú-pítá* *NAWÓ kú msika.*
 I-PRES-sell lion(3) 3-REL I-PRES-go with-it(3) to market
 ‘I am selling the lion that I am going with to market.’
- b. **Ndi-ku-gúlítsa mkángó u-méné ndí-kú-pítá* *NDÍ íwó kú msika.*
 I-PRES-sell lion(3) 3-REL I-PRES-go with it(3) to market
 ‘I am selling the lion that I am going with to market.’

This pervasive parallelism in the use of the two series of anaphoric pronouns supports our theory that the sentence-internal topics are grammaticized discourse topics.

Where the language LACKS different pronominal forms for the two discourse uses, the same segmental pronominal form may acquire both communicative functions—as in the case of the English pronouns, where the differing communicative functions are indicated only by intonation. (Andrews 1984 provides a means of expressing this kind of generalization within our framework.) Thus the prepositions of Chicheŵa which LACK contracted forms allow topic-anaphoric uses of their independent pronominal objects. There is no contraction **kwăyo* corresponding to *kwá íyo* ‘to him’ (Class 3), and here the independent pronoun can be used to bind the topic:

- (69) *Mfúmú iyi ndi-ká-kú-neněz-a kwá íyo.*
 chief(3) this I-go-you-tell.on-INDIC to him(3)
 ‘This chief, I’m going to tell on you to him.’

Similarly, there are no contracted forms **mwăcho*, **păcho* corresponding to *mwá ícho* and *pá ícho* in 70a–b, and these independent pronouns can be used to bind the topics:

- (70) a. *Chigawéngá ichi akazitâpe a-na-íká nsabwe m’mutú*
 terrorist(7) this spies SM-REC.PAST-put lice in-head
mwá ícho.
 of him(7)
 ‘This terrorist, the spies put lice on his head’
- b. *Chigawéngá ichi akazitâpe a-na-íká nsabwe pa mutú*
 terrorist(7) this spies SM-REC.PAST-put lice on head
pá ícho.
 of him(7)
 ‘This terrorist, the spies put lice on his head.’

Here we see, perhaps most clearly, that the agreement relation which we have studied is indeed an ANAPHORIC relation to the topic. Again, just as we expect, these independent pronouns can be used topic-anaphorically in discourses:

- (71) *Ndikufúná kuónána ndí mkángó wănu; mu-nga-ndí-téngere*
 I-want to-meet with lion your you-could-me-take
kwá ĩwo?
 to it

‘I want to meet your lion; could you take me to it?’

We are now in a position to make a final observation about the asymmetry in Chichewa between the SM, a true agreement marker, and the OM, an incorporated pronoun. Recall that the SM is functionally ambiguous. As an incorporated pronoun, it should behave just like the OM with respect to its topic-anaphoric uses. But in its use as a grammatical agreement marker, without pronominal function, the SM fails to provide a topic-anaphoric counterpart to the independent subject pronoun. Here too, then, we would expect the independent pronoun to take on both communicative functions. In fact, the independent pronoun, WHEN IT IS A SUBJECT, can indeed be used for anaphora to the topic:³⁴

- (72) *Mkángo u-na-gúmúla khólá lá mbûzi koma ĩwo*
 lion(3) SM-REC.PAST-pull.down corral of goats but it(3)
u-ma-fúná ku-gúmúla nyumbá yá mfûmu.
 SM-PAST.HAB-want INF-pull.down house of chief
 ‘The lion pulled down the goats’ corral, but it really wanted to pull down the chief’s house.’

- (73) *Mkángó uwu, ndi-ku-gáníza kutí ĩwó u-ma-fúná*
 lion(3) this I-PRES-think that it(3) SM-PAST.HAB-want
ku-gúmúla nyumbá yá mfûmu.
 INF-pull.down house of chief

‘This lion, I think that it wanted to pull down the house of the chief.’

Observe the clear contrast in 72–73, involving the independent pronoun *ĩwo* in subject position, vs. the following, where *ĩwo* appears in object position:

- (74) *?*Mfûmu i-na-kwápúla mkángó uwu chifukwá chóyésá*
 chief SM-REC.PAST-whip lion(3) this because of-trying
ku-gúmúla nyumbá yáke; ndipó i-na-thámángitsa ĩwó
 INF-pull.down house his then SM-REC.PAST-chase it(3)
pa mudzi.
 from village

‘The chief whipped this lion for trying to pull down his house; then he chased it out of the village.’

- (75) *?*Mkángó uwu, ndi-ku-gáníza kutí mfûmu i-na-thámángitsa ĩwó*
 lion(3) this I-PRES-think that chief SM-REC.PAST-chase it(3)
pa mudzi.
 from village

‘This lion, I think that the chief chased it out of the village.’

³⁴ Sandra Chung has pointed out to us that these examples provide crucial evidence for our claim that the SM is functionally ambiguous. It is exactly these examples that could not be accounted for if one were to claim that the SM were always a grammatical agreement marker, and that subjects—unlike objects—take the form of null pronouns when anaphoric to the topic.

These examples remain bad even if an OM is inserted into the verbs, forcing the independent pronoun *íwo* 'it(3)' to be interpreted as a floating topic:

- (76) **Mfûmu i-na-kwápûla mkángó uwu chifukwá chóyésá*
 chief SM-REC.PAST-whip lion(3) this because of-trying
ku-gúmûla nyumbá yáke; ndipó i-na-ú-thámangitsá
 INF-pull.down house his then SM-REC.PAST-OM(3)-chase
íwó pa mudzi.
 it(3) from village

'The chief whipped this lion for trying to pull down his house; then he chased it out of the village.'

- (77) **Mkángó uwu, ndi-ku-gáníza kutí mfûmu*
 lion(3) this I-PRES-think that chief
i-na-ú-thámangitsá íwó pa mudzi.
 SM-REC.PAST-OM(3)-chase it(3) from village

'This lion, I think that the chief chased it out of the village.'

But nothing prevents the independent pronoun from co-occurring with OM, if it can be interpreted contrastively rather than topic-anaphorically:

- (78) *Ndi-ku-mú-fúná íye.*
 I-PRES-OM(1)-want him/her(1)

'HIM, I want him'; 'HER, I want her.'

Similarly, the independent pronoun in subject position can also be interpreted contrastively. For example, the following sentence could be used in the context 'Others may want to eat other things, but ...':

- (79) *Íyé a-ku-fúná ku-dyá míchirá yá mbewa.*
 he/she(1) SM-PRES-want INF-eat tails of mice
 'He/she wants to eat mouse tails.'

It appears, then, that the communicative function of the anaphoric pronominal system in discourse is systematically related to the role of the subject and object prefixes as grammatical agreement markers or incorporated pronouns. With a true agreement marker, such as the Chicheŵa SM, the corresponding independent pronoun will be topic-anaphoric, both in discourse and in grammaticalized topic constructions. But with a true incorporated pronoun, such as the Chicheŵa OM, the corresponding independent pronoun will be non-topic-anaphoric. If it is true that subject/verb agreement has evolved from incorporated pronominal anaphora to the topic (as proposed by Li & Thompson 1976, Givón 1976), then there appears to have been a corresponding evolution in the anaphoric function of the independent subject pronoun (as claimed by Givón 1976).

This systematic patterning of the anaphoric system within and across sentences supports our assumption that the TOP function derives its properties from discourse topics. We conclude that our grammatical TOP must have as its referent a discourse topic; but of course sentences can have discourse topics without necessarily marking them as such. In other words, not all discourse topics are grammaticalized and bear the TOP function in f-structure. Further

research into the role and interpretation of topic and focus in discourse structures will be needed to extend our theory.

SOURCES OF VARIATION

5. Our analysis of Chichewa by principle (d), in §1, assumes that subject and topic NP's appear at the same level of structure in the S, with exactly the same ordering possibilities. An alternative hypothesis is that the structural position of the subject is fixed in Chichewa as [NP VP], and that the post-VP subject is really a postposed (right-dislocated) topic, anaphorically linked to the subject agreement marker—which is sometimes pronominal, as we have seen.³⁵ The latter analysis would predict that the subject in VP-final position cannot be questioned in place—since, in that position, the apparent subject is actually a postposed topic, and hence incompatible with the question word's FOC function. But the question word CAN follow the VP:

- (80) (*Kodí*) *chi-na-ónék-a* *chiyâni?*
 Q SM(7)-REC.PAST-happen-INDIC what(7)
 'What happened?'

This confirms that the subject NP is unordered with respect to the VP.

Another alternative analysis is that both the subject and topic NP's are post-posable, but that the topic lies outside of the subject structure at a higher level of S (or S'):

- (81) S → NP , S
 (↑ TOPIC) = ↓
 S → NP , VP
 (↑ SUBJ) = ↓

Because of the independence of structure and function in our theory, grammatical functions need not be represented by distinctive PS configurations in this way: the choice of the flat-structure topic analysis of 6 vs. the hierarchical analysis of 81 is thus an empirical issue. If the topic NP is generated either initially or finally, at a higher S level than the subject NP, then the subject must always be adjacent to the VP. On this analysis, the [V TOP SUBJ] order could be generated only by analysing the final S as an APPARENT subject.³⁶ The apparent subject would actually be another topic NP, generated at the topmost level of S structure and anaphorically linked to the SM—which can be an incorporated pronoun, as we have seen:

- (82) [_S [_S [_S SM OM-V] TOP] TOP]
-

³⁵ Such an analysis has been suggested for Kihaya by Byarushengo & Tenenbaum.

³⁶ Our theory disallows all structural transformations such as movement or 'scrambling' rules. The effects of movement follow from the interaction of structural regularities, language-particular or typological, with general conditions of functional uniqueness, completeness, and coherence (Grimshaw 1982, Bresnan 1982c, Bresnan et al. 1982). A less constrained theory could generate the [V TOP SUBJ] order by means of some movement rule which mapped one PS level into another.

Since interrogative words cannot be topics, such a hypothesis predicts that, in non-cleft questions, questioning the subject should be possible only when the subject is adjacent to the VP. Our analysis, in contrast, predicts that questioning the subject should be possible even when the subject is separated from the VP by a topic NP. Observe now that the question-word subject can be separated from the VP by a topic NP linked anaphorically to the OM:

- (83) a. (*Kodí*) *chi-ku-í-fún-á* *míchírá yá mbewa chiyâni*.
 Q SM-PRES-OM-want-INDIC tails of mice what
 ‘What wants them, mouse tails?’ [V TOP Su]
 b. (*Kodí*) *chiyâni michírá yá mbewa chi-ku-í-fún-a*.
 Q what tails of mice SM-PRES-OM-want-INDIC
 ‘What wants them, mouse tails?’ [Su TOP V]

This confirms that the subject NP is at the same level as the topic NP, as in our analysis by principle (d).

We see, then, that there is good evidence for 6, in which the SUBJ and TOP NP's occur unordered at the same level of S structure. The SUBJ function is grammatically distinguishable from the TOP function in Chicheŵa, as we have seen; but the subject NP is indistinguishable from the topic NP in its PHRASE STRUCTURE properties.³⁷

On our theory, phrase structures, like word structures, vary across languages. These are the grammatical patterns which give external expression to abstract functional structure; they are the phonologically interpreted structures. Therefore, we expect other languages to fix properties of the phrasal structure that encodes the TOP function in different ways. Indeed, many Bantu languages differ from Chicheŵa in fixing the topic in sentence-initial position.³⁸ In such languages, the OM will be in obvious complementary distribution with the object NP in the VP. The postposable topic construction which we find in Chicheŵa (and also in Kihaya, fn. 13) masks the pronominal status of the OM by giving the appearance of an agreement marker, co-occurring with an object NP.

In our theory, the minimal difference between an incorporated object pronoun and a grammatical object agreement marker is the presence or absence of a semantic attribute in the lexical content of the affix. When an incorporated pronoun (such as an SM or OM) loses its pronominal reference (represented by the semantic PRED attribute), it no longer blocks the co-occurrence of an NP subject or object. Its remaining grammatical features of person, number, and gender must—by functional uniqueness—be consistent with those carried by the subject or object NP. In other words, the features of the subject or object marker must merge with those of the subject or object NP. Grammatical agreement follows immediately upon the loss of pronominal reference, with no

³⁷ In our theory, the PS properties are dominance, precedence, and structural category—as determined by word order, word structure, postlexical phonological interpretation of phrasing, and the like. Case government, agreement, and anaphoric binding are determined at f-structure.

³⁸ Examples include Dzamba (Bokamba 1975), Kikuyu (Bergvall 1987), and Kichaga (Lioba Moshi, p.c.) According to Wald 1979, this construction is the most widespread, and represents the older Bantu pattern.

other change in the grammar. This theory predicts the existence of true grammatical object agreement, parallel to true grammatical subject agreement.

In fact, some Bantu languages are now undergoing grammaticization of the pronominal OM into an object agreement marker, parallel to the hypothesized earlier evolution of the SM (Givón 1976, Wald 1979). In our theory, what must happen in this process is simply the loss by the pronominal OM of its PRED feature. Once that is lost, functional uniqueness will no longer prevent the co-occurrence of the OM with an object NP within the verb phrase. The uniqueness condition will require only that all the remaining pronominal features—number, gender class, and person—must be consistent with the features of the NP object.³⁹

Such a development has happened in Makua (Stucky 1981, 1983), and appears to be underway in Kiswahili (Wald 1979). In the Imithupi dialect of Makua studied by Stucky, the OM is obligatory with the human classes:⁴⁰

- (84) a. *Aráárima á-hó-ń-líh-a mwaáná.*
 A. SM-T/A-OM-feed-T/A child
 'Araarima fed a child.'
 b. **Aráárima á-hó-líh-a mwaáná.*
 A. SM-T/A-feed-T/A child

Given the context of 84a, one can ask the question in 85a. Ex. 85b shows that the OM is obligatory with the interrogative object as well:

- (85) a. *Aráárima a-n-líh-íre mpání?*
 A. SM-OM-feed-T/A who
 'Who did Araarima feed?'
 b. **Aráárima a-líh-íre mpání?*
 A. SM-feed-T/A who

In standard Kiswahili, according to Bokamba 1981, the occurrence of the object prefix is optional when the object is inanimate, but obligatory WHEN IT IS ANIMATE. In 86, the OM agrees with 'children', not with 'knife':

- (86) a. *Maryamu a-li-wa-onyesha watoto kisu.*
 M. SM-PAST-OM-show children knife
 'Maryamu showed the children a/the knife.'
 b. **Maryamu a-li-onyesha watoto kisu.*
 M. SM-PAST-show children knife

In another context, Bokamba shows that the animate object can be questioned in place in Kiswahili, and co-occurs with the OM:

- (87) a. *Bakari a-na-wa-som-e-a watoto hadithi maktaba-ni.*
 B. SM-PRES-OM-read-APPL-INDIC children stories library-LOC
 'Bakari is reading stories to/for the children in/at the library.'

³⁹ The reason for this is that the values of semantic attributes are unique with each instantiation, while the values of grammatical attributes are not (Kaplan & Bresnan 1982).

⁴⁰ We are grateful to Stucky for providing us the following examples from her unpublished data on Makua. 'T/A' designates a tense/aspect marker.

- b. *Bakari a-na-wa-som-read-e-a nani hadithi maktaba-ni?*
 B. SM-PRES-OM-APPL-INDIC who stories library-LOC
 'To/for whom is Bakari reading stories in/at the library?'

If these are true cases of grammatical object agreement, then our theory predicts a range of correlated phenomena, which future research must test.

Finally, in some Bantu languages, an interrogative pattern occurs which seems at variance with that of Chicheŵa, in that the subject CANNOT be questioned in place. Thus, in Dzamba, it is possible to question all VP constituents in place, but subjects cannot be questioned in the initial subject position (Bokamba 1981). To question a subject, it is necessary to use a different construction altogether, based on a headed or headless relative clause:

- (88) a. *ó-Nebo a-imol-aki ó-Biko e-kondo lɔɔ mé.*
 'Nebo told Biko a story/tale today.'
 b. *ó-Nebo a-imol-aki nzányí e-kondo lɔɔ mé?*
 'Nebo told who a story today?'
 c. **Nzányí ó-wimol-aki ó-Biko e-kondo lɔɔ mé?*
 'Who told Biko a story/tale today?'
 d. *ó-Moto ó-wimol-aki ó-Biko e-kondo lɔɔ mé nzányí?*
 'The person who told Biko a story/tale today is who?'

What could be the explanation for this pattern, on our theory? Observe that precisely this result would follow if, in such languages, the sentence-initial position for the SUBJ function also had the TOP function. Then the subject NP's would also necessarily be grammaticized topics, and could never be questioned in place. Now Dzamba, unlike Chicheŵa, has nominal pre-prefixes; Bokamba 1981 has shown that these are used to definitize NP's. They are obligatory on topicalized NP's, and—in line with the hypothesis that subject NP's are grammaticized topics—they are also obligatory on subjects.⁴¹

In this way, our theory of argument and discourse functions may illuminate a range of variation. If we looked only at the structural aspects of agreement, the real generalizations would never emerge, because at that level the facts conflict: object agreement occurs with interrogatives in Makua and Kiswahili, but not in Chicheŵa and Dzamba; subjects can be questioned in place in Chicheŵa but not in Dzamba; and so forth. At this level, the facts are chaotic. But once we see that each language encodes the same functions in slightly differing ways, the results appear totally predictable.

At the same time, our study indicates that important parameters of change and variation lie in surface form: the external, phonologically interpreted, morphological and phrasal structures. The pronominal incorporation property is such a parameter. Together with our postulates about grammatical theory and discourse function, it appears to explain, on the one hand, fundamental differences between syntactic structures organized by grammatical agreement with governed functions, and, on the other hand, those organized by anaphoric agreement with discourse functions.

⁴¹ It would be simplistic, however, to identify the pre-prefixes solely as topic markers. For discussion of semantic complexities in their use in Chibemba, see Givón 1972. Recent work leading to a similar conclusion for Setswana and Sesotho is Demuth 1986, Demuth & Johnson 1987.

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