

OBSERVATIONS ON THE IMMEDIATE DOMINANCE CONSTRAINT,
TOPICALIZATION, AND RELATIVIZATION¹

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1. Introduction

In two recent syntactic studies, Tai [1969], and Sanders and Tai [1972], a non-universal Immediate Dominance Constraint (hereafter IDC) on identity deletion is proposed to account for the systematic differences that obtain in the patterns of coordination reduction, topicalization, dislocation and relativization between languages like Chinese and languages like English. These studies in effect subcategorize the languages of the world into two types: (1) immediate dominance languages, and (2) non-immediate dominance languages. Chinese is claimed to be a language of the former type, and English is of the latter type. Sanders and Tai [1972] claim that by assuming that the IDC holds for languages of the Chinese-type, but not for those of the English-type, they can account for "the well-formed coordinations of all languages by means of a single universal principle of coordination reduction," and that they can derive the well-formed topicalizations, dislocations, and relative clause constructions of "all languages by means of the same set of universal principles of Copying, Deletion, and Pronominalization."

The point of this paper is to present a counter-example to the IDC. In particular, it will be shown here that the generalized IDC proposed in Sanders and Tai [1972] makes the wrong prediction about Dzamba and other related Bantu languages. It will then be argued that while the IDC seems to be necessary for an explanation of the systematic differences in the

¹I am indebted to Talmy Givón, Roger Higgins, and Andreas Koutsoudas for having read and made invaluable comments on earlier drafts of this paper. An abbreviated version of this paper was presented at the Third Conference on African Linguistics held at Indiana University, Bloomington, Indiana, April 1972, under the title: "Immediate Dominance, Topicalization, and Relativization."

patterns of coordination between languages of the Chinese-type and those of the English-type, it is not sufficient for an explanation of their respective patterns of topicalization, dislocation, and relativization.

2. IDC and Coordination Reduction

Ross [1967a,b] proposed two reduction rules to account for the derivation of sentences like b from sentences like a in (1) through (4):

- (1) a. Wang drank beer, and Lee drank vodka.
 b. Wang drank beer, and Lee vodka.
- (2) a. Wang caught the fish, and Lee sold the fish.
 b. Wang caught and Lee sold the fish.
- (3) a. Wang hit the boy, and Wang kicked the girl.
 b. Wang hit the boy and kicked the girl.
- (4) a. Wang enjoyed the fish, and Lee enjoyed the fish.
 b. Wang and Lee enjoyed the fish.

Ross called the rule that derives verb-reduced coordinations like (1b) Gapping [1967a], and that which derives object, subject and predicate-reduced coordinations like (2b)-(4b) Conjunction Reduction [1967b].² To account for these systematic reductions, Ross [1967a:843] proposed the

²For Ross [1967a], Gapping is a rule that reduces coordinate sentences by deleting identical occurrences of verbs, whereas Conjunction Reduction [Ross 1967b] deletes identical occurrences of noun phrases. Ross differentiates these two rules in that Conjunction Reduction involves regrouping of constituents, while Gapping does not. Tai [1969] and Koutsoudas [1971] have independently argued that this distinction is not necessary for the two rules obey the same directionality principle. Further, Koutsoudas [1971] has shown that (1) if a language has verb-reduced coordinations it must also have object-reduced coordinations, that is, a language will have either both reductions or it will have none; and (2) that given this fact and the lack of cases where rule ordering forces a separation of Gapping from Conjunction Reduction, these two rules must be considered as special cases of the same general rule: Coordinate Deletion. A similar argument is made in Sanders [1970]. Tai [1969] and Koutsoudas's [1971] analyses of these rules are not crucial for this paper. Thus, unless otherwise specified, Gapping and Conjunction Reduction will be understood here in Ross's [1967a] sense.

following directionality principle:

- (5) The order in which Gapping operates depends on the order of the elements at the time that the rule applies; if the identical elements are on left branches, Gapping operates forward; if they are on right branches, it operates backwards.

In applying this analysis to languages of the Mandarin-Chinese type, Tai [1969] found that while Conjunction Reduction is allowed under well-defined conditions, Gapping is not allowed at all. Specifically, Tai shows that Mandarin-Chinese allows only subject NP-reduced and VP-reduced coordinations (cf. 7b, 9b), but not verb and object-reduced coordinations as can be seen from the ill-formedness of (8b) and (10b):

- (6) a. Wang hit the boy, and Wang kicked the girl.
 b. Wang dále nánháizi, Wang tīle nǚháizi.
- (7) a. Wang hit the boy and kicked the girl.
 b. Wang dále nánháizi, tīle nǚháizi.
- (8) a. Wang hit and Lee kicked the boy.
 b. *Wang dále, Lee tīle nánháizi.
- (9) a. Wang and Lee hit the boy.
 b. Wang gen Lee dále nánháizi.
- (10) a. Wang hit the boy, and Lee, the girl.
 b. *Wang dále nánháizi, Lee nǚháizi.

That subject-reduced and VP-reduced coordinations should be permitted in Chinese is not surprising, for it seems to be the case that all natural languages allow these types of reductions.³

Tai [1969] showed that there is a systematic difference between the grammaticality of sentences such as (7) and (9) in both English and Chinese, and the ungrammaticality of the Chinese sentences (8b) and (10b) in contrast to the English (8a) and (10a). To account for this systematic difference,

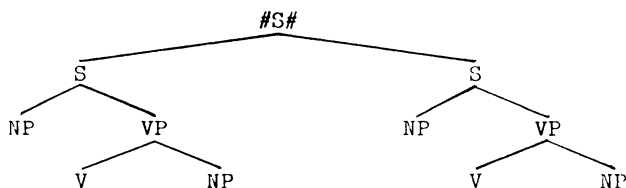
³I am indebted to A. Koutsoudas for this observation. As will be shown below the Bantu languages under discussion here allow these reductions also.

Tai [1969:79] proposed the IDC stated in (11):

- (11) In a coordinate structure, only constituents which are immediately dominated by conjuncts can undergo identity deletion.

What constraint (11) states is that given a P-marker such as (12),

(12)



a language that allows the deletion of the subject NP's and that of the VP's, but never that of the verbs and object NP's, is an immediate dominance language. In contrast, a language that permits the deletion of any of the four constituents, i.e. subject NP, VP, V, and object NP, is a non-immediate dominance language. Accordingly, Chinese is an immediate dominance language, and English is a non-immediate dominance language.

Tai maintains that the IDC is sufficient and necessary for the differentiation of grammatical from ungrammatical coordinations in a language such as Chinese, and that its application is independent of categorial properties of constituents and/or deep structure case properties. Tai presents in this respect evidence of constructions where certain VP-dominated constituents such as adverbs and object NP's become deletable once they are preposed, e.g. via Adverb Preposing and Passive transformations. These reductions are permitted, Tai points out, precisely because the constituents under consideration become superficially dominated by S.

Both Dzamba and Lingala, two Bantu languages spoken in Zaire, allow verb-reduced as well as object-reduced coordinations. To see this consider, first, the following Dzamba sentences:⁴

⁴The unstressed initial vowels on noun phrases such as *i-ziboke* and *i-buki* function as determiners in Dzamba. A similar phenomenon has been observed in Likila and Luganda. For a discussion of this phenomenon in Dzamba, see Bokamba [1971].

- (13) a. oBaba azii i-ziboke, bo oToma azii i-buku.
 (Baba got the package, and Tom got the book.)
- b. oBaba azii i-ziboke, bo oMusa, i-buku.
 (Baba got the package, and Musa, the book.)
- (14) a. oBaba atomi i-ziboke, bo oMusa azii i-ziboke.
 (Baba sent the package, and Musa got the package.)
- b. oBaba atomi bo oMusa azii i-ziboke.
 (Baba sent and Musa got the package.)

These sentences illustrate Gapping (13b) and Conjunction Reduction (14b) à la Ross [1967]. More specifically, the sentences in (13) show that for any well-formed sentential coordination with identical verbs (13a), there is a corresponding verb-reduced paraphrase with coordinate subjects (13b). And (14) shows that for any well-formed sentential coordination with identical objects (14a), there is a corresponding object-reduced paraphrase with coordinate subjects (14b).

Now consider in the same respect the following Lingala sentences:

- (15) a. Kato alambi lɔsɔ, mpe Lulu alambi nyama.
 (Kathy cooked rice, and Lulu cooked meat.)
- b. Kato alambi lɔsɔ, mpe Lulu, nyama.
 (Kathy cooked rice, and Lulu, meat.)
- (16) a. Kato asombi lɔsɔ, mpe Lulu alambi lɔsɔ.
 (Kathy bought rice, and Lulu cooked rice.)
- b. Kato asombi mpe Lulu alambi lɔsɔ.
 (Kathy bought and Lulu cooked rice.)

Just like in Dzamba, these sentences illustrate Gapping (15b) and Conjunction Reduction (16) à la Ross. The sentences in (15) show that for any grammatical sentential coordination with identical verbs in Lingala (15a), there is a corresponding verb-reduced paraphrase with coordinate subjects (15b). Similarly, for any grammatical sentential coordination with identical objects (16a), there is a corresponding object-reduced paraphrase with coordinate subjects (16b).

Further, both Dzamba and Lingala, just like many other natural languages of the world, allow subject-reduced as well as VP-reduced coordinations as can be seen from the Dzamba examples (17b) and (18b), and the Lingala (19b) and (20b):

- (17) a. oMama a-nyamol-áki i-nswe, bo oMama aomb-áki ma-mako.
(Mother sold the fish, and mother bought the plantains.)
- b. oMama a-nyamol-áki i-nswe bo a-omb-áki ma-mako.
(Mother sold the fish and bought the plantains.)
- (18) a. oMusa a-ke-éki o motei, bo oPɔsɔ a-ke-éki o motei.
(Musa went to the market, and Pɔsɔ went to the market.)
- b. oMusa n' oPɔsɔ ba-ke-éki o motei.
(Musa and Pɔsɔ went to the market.)
- (19) a. Kato a-tɛkis-áki mafuta, mpe Kato a-somb-áki mbisi.
(Kathy sold the oil, and Kathy bought the fish.)
- b. Kato a-tɛkis-áki mafuta mpe a-somb-áki mbisi.
(Kathy sold the oil and bought the fish.)
- (20) a. Kato a-mon-áki Musa lɛlɔ, mpe Lulu a-mon-áki Musa lɛlɔ.
(Kathy saw Musa today, and Lulu saw Musa today.)
- b. Kato mpe Lulu ba-mon-áki Musa lɛlɔ.
(Kathy and Lulu (they) saw Musa today.)

Clearly, on the basis of the facts given in (13) through (16), Dzamba and Lingala cannot be immediate dominance languages, for immediate dominance languages do not allow verb-reduced nor object-reduced coordinations. Accordingly, Tai's IDC (cf. 11) would, up to this point, correctly group Dzamba and Lingala with English as non-immediate dominance languages.⁵ If this is correct, we should expect the patterns of Dislocation and Relativization in Dzamba and Lingala to correlate with those of the

⁵Other Bantu languages not discussed in this paper such as Likila, Lomongo, and Libinza would also be grouped accordingly, because they allow these reductions.

English-type of languages (i.e. non-immediate dominance). But as it will be shown momentarily, this is not the case.

3. IDC and Copying Rules

Given this systematic correlation between the deletability of verbs and objects in sentential coordinations in non-immediate dominance languages and the non-deletability of the same constituents in immediate dominance languages, Sanders and Tai [1972:169] claim that by extending the IDC from the case of

- (21) ... immediate dominance by a conjunct sentence to that of immediate dominance by any sentence which is not the highest sentence of any structure

they can explain a number of additional correlations that seem to obtain between natural languages. Specifically, Sanders and Tai [1972] propose to analyze movement rules as consisting of the set of the following three ordered universal rules:⁶

- (22) a. Copying (optional)

$$_S[X NP Y] \text{ ---> } _S[NP \#_S[X NP Y] \#]$$

- b. Deletion (optional)

$$_Z[NP \#_S[X NP Y] \#] \text{ ---> } _Z[NP _S[X Y]]$$

- c. Pronominalization (obligatory)

$$_Z[NP \#_S[X NP Y] \#] \text{ ---> } _Z[NP _S[X \overset{NP}{\text{Pro}} Y]]$$

Sanders and Tai claim that by assuming the non-universal IDC on identity deletion and the extrinsically ordered set of universal rules in (22), they can predict the occurrence and co-occurrence of reduced coordinated, topicalized, dislocated and relative clause constructions in all languages. That is, they predict that immediate dominance languages like Chinese and Lebanese, and non-immediate dominance languages like English, will

⁶We will argue below that this extrinsic ordering restriction is unnecessary. I am indebted to Talmy Givón for this observation.

behave exactly as in Table I.

Table I

R U L E S	Immediate Domi-	Non-Immediate
	nance languages	Dominance lang.
	Chinese/Lebanese	English
Gapping: V, O	-	+
Conj. Reduction ⁷	+	+
Topicalization ⁸	-	+
Dislocation	+	+
Pronom. reflex in Rel. Cl.	+	-

In other words, Sanders and Tai [1972] maintain that by assuming the rules of (22), the IDC will enable them to predict that (1) Chinese or Lebanese will not have Gapping and Topicalization, but will have Conjunction Reduction, Dislocation, and a pronominal reflex in its relative clauses. And (2) that Deletion (22b) will be blocked by the IDC from applying in the embedded clauses to delete either the subject NP or the object NP. Pronominalization, however, will apply obligatorily and the resulting sentences in Chinese or Lebanese will contain pronominal reflexes in their embedded relative clauses. This, Sanders and Tai argue, explains why relative pronoun reflexes are always found in the embedded clauses of languages such as Chinese and Lebanese as exemplified in (23a) and (24), respectively:

- (23) a. *Wó bei ta dale de nèige nánhǎizi lái le.*
 *(The boy that I was hit by him came.)
 b. **Wó bei dale de nèige nánhǎizi lái le.*
 (The boy that I was hit by came.)

⁷Just for ease of presentation, Gapping is being used here as a rule that reduces both verbs and objects in coordination, and Conjunction Reduction is restricted to subject-reduced coordinations.

⁸Topicalization is being used here as defined by Ross [1967b] as distinct from Dislocation. According to Ross, the former rule is subject to the CNPC, CSC, and SSC, while the latter is not.

- (24) a. il walad illi John darab-u izza.
*(The boy that John hit him came.)
- b. *il walad illi John darab izza.
(The boy that John hit came.)

As can be seen from the ill-formedness of the Chinese (23b) and that of Lebanese (24b), the retention of the pronominal reflex in the embedded clauses of these languages is required.

Languages of the English-type, however, will have all five rules as shown in Table I, but no pronominal reflex will be retained in the embedded relative clauses of such languages. The ill-formedness of (23a) and (24a) attests to the correctness of this claim thus far. Sanders and Tai [1972] argue that the non-occurrence of pronominal reflexes in the embedded clauses of non-immediate languages like English can be explained by assuming that Deletion (22b) applies obligatorily. Thus in English (23b) and (24b) Deletion has applied obligatorily to delete the second identical occurrence of the boy. Clearly, given that English is a non-immediate dominance language, Deletion (22b) cannot be blocked from deleting the subject of the embedded clause as it was the case in Chinese (23a) and Lebanese (24a). And since Deletion cannot be blocked by the IDC in non-immediate dominance languages like English, it will always be the case, if Sanders and Tai's prediction is correct, that pronominal reflexes of objects will always be absent in the embedded relative clauses of such languages.

It was established in section 2 that Dzamba and Lingala are non-immediate dominance languages. If the predictions summarized in Table I are correct for a non-immediate dominance language like English, and if the IDC is to be maintained in its generalized version (cf. 21), the same predictions should hold for other non-immediate languages such as Dzamba and Lingala. But as the facts summarized in Table II show, this is not the case here.

According to Sanders and Tai (cf. Table I), there should not be any language such as Dzamba which is non-immediate dominance and yet (1) lacks Topicalization à la Ross [1967b] (as defined in footnote 8), and (2) retains pronominal reflexes in objects in its relative clauses. Specifically Sanders and Tai [1972:181] claim that

- (25) ... any language which permits verb and object deletion in sentence coordinations will be a language which also requires the non-occurrence of anaphoric pronominal reflexes of identical objects in its well-formed relative clauses. Conversely, any language which has pronominal reflexes of objects in relatives will be a language which has no well-formed verb or object reductions of sentence coordinations. [Emphasis added, E.B.]

But as Table II shows, however, there are at least two natural languages

Table II

R U L E S	Immediate Domi-	Non-Immediate Domi-
	nance languages	nance languages
	Chinese	Dzamba/Lingala
Gapping: V, O	-	+
Conj. Reduction	+	+
Topicalization	-	-
Dislocation	+	+
Pronom. Reflex in Rel. Cl.	+	+

that violate the IDC. A number of Bantu languages such as Dzamba require a pronominal reflex of objects in the embedded relative clauses for all well-formed relative clause constructions. Consider in this respect, first, the following Dzamba sentences:

- (26) a. oMoto ó-lo-tomé-áki i-buku okéi a-yei.
*(The man who sent the book to us he came.)
b. oMoto ó-lo-tomé-áki i-buku a-yei.
(The man who sent the book to us came.)
- (27) a. Ba-bana ba-kàì i-buku í-bu-zw-áki bé.
*(The children tore up the book that they found it.)
b. *Ba-bana ba-kàì i-buku í-zw-áki bé.
(The children tore up the book that they found.)
- (28) a. oPóso a-zw-áki i-mu-nkanda í-mu-tom-áki Musa.
*(Póso received the letter that Musa sent it.)
b. *oPóso a-zw-áki i-mu-nkanda í-tom-áki Musa.
(Póso received the letter that Musa sent.)

These sentences show that the differentiation of the well-formed relative clauses from the ill-formed ones in Dzamba depends on the retention of the anaphoric object pronoun in the embedded clause. More specifically, the pair of sentences in (26) show that the occurrence of a subject anaphoric pronoun in subject relativization in Dzamba is optional. The sentences

of (27) and (28) show, as attested by the ill-formedness of (27b) and (28b), that the occurrence of an object anaphoric pronoun in object relativization in Dzamba is obligatory.

The optional occurrence of a subject anaphoric pronoun in subject relativization, and the obligatory occurrence of an object anaphoric pronoun in object relativization in Dzamba can be explained naturally on both syntactic and semantic grounds if we accept the assumptions that (a) all grammatical agreements are transformationally derived; and (b) that in Dzamba, just like in all other Bantu languages, every verb must agree in class-gender and number with its subject noun phrase. If we accept these assumptions, it would follow that there are no headless relative clauses in Dzamba. Specifically, let us assume that the sentences of (26), for example, are derived from an intermediate structure such as

- (29) S_2 (omoto S_1 (omoto a-lo-tomei-áki i-buku) S_1 a-yei) S_2
 'the man the man he-us-sent-to the book he-came'

via relativization of the NP omoto 'man/person' under identity. Relativization can yield another intermediate structure such as

- (30) S_2 (omoto S_1 (omoto ó-lo-tomei-áki f-buku) S_1 a-yei) S_2

to which either Deletion (22b) or Pronominalization (22c) may apply. If Deletion applies, sentence (26b) results; but since Deletion is an optional rule, we may choose not to apply it. If we do so, Pronominalization will obligatorily apply to yield sentence (26a) after the normal embedded subject NP postposing in the embedded clause.⁹ Semantically, the deletion of the embedded subject noun in (26b) and the replacement of the regular subject agreement prefix a- for third person singular (human) by the relative pronoun marker ó- involves neither loss of information nor creates ambiguity, because the agreement on the verb of the matrix sentence, viz. a-yei, which refers to omoto takes care of that. Also, the relative marker on the verb of the embedded S refers to the same NP.

⁹For a discussion of subject postposing phenomena in some Bantu languages see Givón [1972].

The situation is quite different, however, for object relativization for two main reasons. First, Dzamba, unlike Kiswahili and its dialects, disallows resumptive pronouns in the verb for unpreposed object noun phrases. That is, one does not find sentences like (31a) in Dzamba, whereas they are perfectly acceptable in Swahili:

- (31) a. *oPɔsɔ a-mu-tom-áki i-mu-nkanda.
 *(Pɔsɔ sent it the book.)
 b. I-mu-nkanda, oPɔsɔ a-mu-tom-áki.
 (The book, Pɔsɔ sent it.)

This being the case, there is no way to identify *i-buku* 'book' or *mu-nkanda* 'letter' in the embedded clauses of (27) and (28) as arguments of the predicates *lo-zwa* 'to find' and *lo-toma* 'to send' if the appropriate anaphoric object pronouns are not incorporated in those verbs. Second, since object, but not subject, relativization in Dzamba necessarily involves the postposing of the subject of the embedded clause to a position after its verb (cf. Givón [1972]), as well as loss of regular grammatical agreement between the verb and its subject, the obligatory deletion of the object anaphoric pronoun in accordance to Sanders and Tai's [1972] analysis results in ungrammaticality. That is, the verb of the embedded S as in (27b) and (28b) does not exhibit regular agreement with either its superficial subject (i.e. the preceding NP) or its deep subject, the noun immediately following the verb. This anomalously results in a loss of information.

The phenomena of lack of regular agreement between the verb of the embedded clause and its subject, and the obligatory postposing of the embedded subject after the verb in object relativization apply only to two of the languages under consideration here, viz. Dzamba and (Standard) Lingala. Swahili, which does not require such operations, still requires the occurrence of object anaphoric pronouns in its embedded clauses as can be seen below:

- (32) a. Ki-tabu amba-cho Bakari a-li-ki-ona ki-po hapa.
 *(The book which Bakari saw it is here.)
 b. Ki-tabu amba-cho a-li-ki-ona Bakari ki-po hapa.
 *(The book which Bakari saw it is here.)

- c. *Ki-tabu amba-cho Bakari a-li-ona ki-po hapa.
(The book which Bakari saw is here.)
- (33) a. Ki-tabu a-li-cho-ki-ona Bakari ki-po hapa.
*(The book which Bakari saw it is here.)
- b. *Ki-tabu a-li-cho-ona Bakari ki-po hapa.
(The book which Bakari saw is here.)

As attested by the ungrammaticality of (32c-d) and (33b), these sentences show clearly that in Swahili, whether the embedded subject is postposed or not, the occurrence of the anaphoric object pronoun is required. These facts clearly disconfirm Sanders and Tai's first claim.

The second claim made by Sanders and Tai (cf. Table I) is that a language which requires the occurrence of anaphoric object pronouns in its embedded clauses will also be a language that has no rule of Topicalization; such a language will instead have a rule of Dislocation. This claim is predicated on the assumption that Ross's [1967b:208-44] characterization of Topicalization and Dislocation is correct. In particular, Ross formally differentiates Topicalization from Left Dislocation in that the former is a chopping rule but the latter is not. Chopping rules, according to Ross [1967b], obey the Complex NP Constraint, the Coordinate Structure Constraint, and the Sentential Subject Constraint; whereas feature changing (or non-chopping) rules do not obey these constraints. As long as we assume with the authors the correctness of Ross's characterization of these rules, it will always be the case that languages which require anaphoric object pronouns for their embedded clauses will also be languages with no Topicalization.

But Sanders and Tai's [1972] claims do not stop here. Their third claim, which is related to the above, is that the "set of languages with Topicalization is precisely identical to the set of languages which do not observe the Immediate Dominance Condition," and that this correlation can be explained by the IDC itself (cf. 1972:171). We would like to show in this section that even if we grant Sanders and Tai the basic assumptions they wish to make, their analysis cannot account for the facts of the Bantu languages under consideration here. In particular, given that Dzamba and Lingala are non-immediate dominance languages (cf. section 2),

and assuming the three extrinsically ordered universal rules of Copying (22a), Deletion (22b), and Pronominalization (22c), Sanders and Tai predict that these languages will have both Topicalization and Dislocation à la Ross. That this prediction is incorrect is demonstrated by the ill-formedness of Dzamba (34b) and Lingala (35b):

- (34) a. oPɔsɔ a-tom-áki i-mu-nkanda lɔme.
(Pɔsɔ sent the letter today.)
- b. *I-mu-nkanda, oPɔsɔ a-tom-áki lɔme.
(The letter, Pɔsɔ sent today.)
- c. I-mu-nkanda, oPɔsɔ a-mu-tom-áki lɔme.
(The letter, Pɔsɔ sent it today.)
- (35) a. Pɔsɔ a-tind-áki mu-nkanda lɛlɔ.
(Pɔsɔ sent the letter today.)
- b. *Mu-nkanda, Pɔsɔ a-tind-áki lɛlɔ.
(The letter, Pɔsɔ sent today.)
- c. Mu-nkanda, Pɔsɔ a-mu-tind-áki lɛlɔ.
(The letter, Pɔsɔ sent it today.)

These sentences show that in both Dzamba and Lingala Left Dislocation, but not Topicalization à la Ross, is allowed. According to Sanders and Tai's predictions summarized in Table I, we expect to get both constructions. The derivation for these constructions in Dzamba, for instance, would proceed as follows: Copying (and Raising) would apply to (34a) to yield an intermediate structure such as (36a) to which Deletion would apply to yield (36b):

- (36) a. $S(imunkanda S(oPɔsɔ atomáki imunkanda lɔme)S)S$
- b. $S(imunkanda S(oPɔsɔ atomáki lɔme)S)S$

Once Deletion (22b) has applied to yield (36b), Pronominalization can no longer apply because its structural description (SD) is no longer met at this point in the derivation. Thus the application of Deletion before Pronominalization as extrinsically ordered by Sanders and Tai [1972:171-72] will always bleed the latter rule, and will also yield ungrammatical sentences in Dzamba as well as in Lingala. Clearly, given that these languages are non-immediate dominance, the IDC cannot be invoked to prevent the

derivation of ungrammatical sentences such as (34b) and (35b) above. Similarly, as long as the rules of (22) are assumed to be extrinsically ordered, there is no way to guarantee the derivation of dislocated sentences like (34c) and (35c) in these languages.

Note that in order to prevent the derivation of ill-formed sentences such as (34b) and (35b), Deletion must be blocked from applying after Copying has applied. There are two possible alternatives for accomplishing this. The first way is to still maintain the extrinsic ordering restriction but invert the order of Deletion (22b) and Pronominalization (22c) so that the latter follows Copying and precedes Deletion as in (37):

(37) a. Copying (optional):

$$S[X NP Y] \rightarrow S[NP \#_S [X NP Y] \#]$$

b. Pronominalization (obligatory):

$$Z[NP \#_S [X NP Y] \#] \rightarrow Z[NP \#_S [X \overset{NP}{Pro} Y]]$$

c. Deletion (optional):

$$Z[NP \#_S [X NP Y] \#] \rightarrow Z[NP \#_S [X Y]]$$

This formulation of the rules has at least two important advantages over that of Sanders and Tai. The first advantage is that Deletion will no longer bleed Pronominalization, and therefore the derivation of dislocated constructions discussed above will always be guaranteed. The only apparent problem the formulation in (37) creates is that Pronominalization will bleed Deletion, and therefore prevents the derivation of topicalized constructions à la Ross. This difficulty, however, can be avoided by allowing Deletion to apply to either an original NP or its anaphoric pronoun; that is, the rule will have to be reformulated as follows:

(38) Revised Deletion Rule (optional):

$$Z[NP \#_S [X \left\{ \begin{array}{c} NP \\ Pro \end{array} \right\} Y] \#] \rightarrow Z[NP \#_S [X Y]]$$

The second advantage of the formulation in (37) is that it accounts for the obligatory retention of anaphoric object pronouns in the embedded clauses of non-immediate dominance languages such as Dzamba and Lingala. Further, the ordering in (37) seems to be more explanatory than that of

(22) in that it strongly suggests a formal relationship between Dislocation and Topicalization. The relationship suggested here is that the derivation of dislocated sentences in all languages involves the universal rules of Copying (optional) and Pronominalization (obligatory); whereas that of Topicalized sentences involves all three rules: Copying, Pronominalization, and Deletion (optional). The implication here is that topicalized sentences are simply variants, optional ones, of dislocated sentences. This formal relationship is also reflected on the semantic level as we shall argue below.

The other alternative for blocking the application of Deletion before Pronominalization is to assume a theory which allows no extrinsic ordering restrictions such as the one proposed by Koutsoudas, Sanders, and Noll [1974]. Given the Unordered Rules Theory, the application precedence of the three rules of (22) will be determined by universal principles rather than language specific restrictions. For a detailed discussion of this theory the reader should consult the works by Koutsoudas and Sanders cited in the bibliography. But for the purpose of this paper, the principle that is needed to obviate many of the difficulties inherent in the Sanders and Tai formulation is the Obligatory-Optional Precedence:

- (39) If on any cycle, the structural descriptions of both an obligatory and an optional rule are met by a given representation, the obligatory rule must apply to this representation.

Given this principle, once Copying (22a) has applied to yield a P-marker that meets the SD of both Deletion (optional) and Pronominalization (obligatory), it will always be the case that the latter rule will have applicational precedence over the former. This mode of application, just like the first alternative suggested above, will guarantee the derivation of dislocated sentences in immediate dominance as well as non-immediate dominance languages. The only change that would be needed here in order to account for all the constructions discussed in this paper is the replacement of Sanders and Tai's original formulation of Deletion (22b) by our rule (38) above.

To summarize, we have shown in this section that Sanders and Tai's formulation of the three rules of Copying, Deletion, and Pronominalization lead to certain internal contradictions, and fail to account for the facts of Dzamba, Lingala, and Swahili. We have suggested two alternative solutions that avoid many of the difficulties inherent in their analysis. These solutions, however, just like Sanders and Tai's proposed set of universal rules (cf. 22), have one weakness to which we see no possible remedy; and that is, there is no principled way to prevent the application of the reformulated Deletion rule (38) after Pronominalization to yield ungrammatical topicalized sentences in Dzamba and Lingala. But since it is not our purpose here to propose a solution to the problem raised by Sanders and Tai's [1972] analysis, we leave this matter to future research.

Up to this point we have assumed with Sanders and Tai that Ross's [1967b] formal characterization of Topicalization as a chopping rule and that of Dislocation as a non-chopping rule is correct. We have assumed further that such a distinction is applicable to the Bantu languages under consideration here. But this latter assumption seems to be unfounded for simply the reason that there is no way to make a meaningful comparison between Topicalization à la Ross and Dislocation in Dzamba, Lingala, and Swahili as long as these languages seem to have only the latter rule, viz. Dislocation. Furthermore, many speakers of the English dialect that allows both of these constructions with whom I have talked feel that topicalized and dislocated sentences are almost synonymous. If this information is correct, we would like to propose that Topicalization with (i.e. Dislocation) and Topicalization without pronominal reflex are instances of the same general rule: Topicalization.

This proposal can be supported on both formal, syntactic, and semantic levels. Dislocated sentences can be formally analyzed in terms of Copying (37a) and Pronominalization (37b); and Topicalization can be analyzed in terms of Copying, Pronominalization, and Deletion (37c). If, however, equivalence or meaning or function must characterize constructions that are said to be derived from each other, then there are grounds for suggesting that neither could dislocated structures be derived via topicalized intermediates, nor could the latter be derived via the former. The

discourse context--and function--of both is strikingly different. To begin with, neither could appear where a topic (NP) is mentioned directly preceding and without other topics involved:

- (40) Mary wrote a letter yesterday, and
- a. She sent it today (Pronoun)
 - b. *The letter she sent today (Topicalization)
 - c. *As to the letter, she sent it today (Dislocation)

In a context where a topic is mentioned across a large gap in discourse, and then other topics are discussed, and then the speaker wants to alert the hearer to his resuming the old topic, dislocation alone is appropriate:

- (41) Mary wrote a letter yesterday and meant to send it right away. But then she went out, went to the market, did most of her monthly shopping and bought bread, butter, fish and cabbage. On the way home she saw a bus crash into a motorbike.
- a. *She sent it today (Pronoun)
 - b. *The letter she sent today (Topicalization)
 - c. Now as to the letter, she sent it today (Dislocation)

The context in which Topicalization is used is highly specific again. A group is established as a topic, and members of that group are to be contrasted. Under these conditions, optionally for the first member of the contrasting set but much more felicitously for the second, topicalization is used:

- (42) Mary bought presents for her parents. She bought a knife for her father.
- a. For her mother she bought a purse.
 - b. *She bought her a purse.
 - c. ?As for her mother, she bought her a purse.

It thus seems that Topicalization has a narrower functional range than Dislocation, which could function either contrastively or non-contrastively.¹⁰ Note, further, that the group need not be topicalized explicitly,

¹⁰In Dzamba, where a Topicalization rule does not exist, Dislocation performs both functions. In Japanese, similarly, the same device (the case marker *-wa*) is used for both recall and contrastive Topicalization (see Kuno [1974]). For further discussion of "recall" and "contrastive" Topicalization, see Givón [1975].

but may also be established as contrastive topic implicitly, by inference from the first member:

- (43) Mary bought a knife for her mother.
 a. *She bought him a vest.
 b. For her father she bought a vest.
 c. ?As to her father, she bought him a vest.

The two topicalization processes, Topicalization and Dislocation, obviously share features in common. For example, the NP under their scope may be definite or generic, but never referential-indefinite:

- (44) a. As to the knife, she gave it to her father.
 b. As to the knives, they're used to cut things with.
 c. *As to a knife, she gave one to her father.
 d. The knife she gave to her father.
 e. Knives she gives him every Christmas.
 f. *A knife she gave to her father.

This restriction suggests that for both constructions some kind of antecedence in discourse is required. That is, they cannot be used for introducing new arguments into discourse. Finally, in languages where objects may be case marked and both Dislocation and Topicalization exist, the first may be easily achieved without preserving the "deep" case marking of the topicalized argument, but the second may not. Thus, consider the following data from Hebrew:¹¹

- (45) a. Ha-sefer, karati oto etmol. (Dislocation, non-contrastive)
 the-book, I-read it yesterday
 (The book, I read it yesterday.)
 b. *Hasefer, karati etmol. (Dislocation, pronoun missing)
 c. *Et-hasefer, karati oto etmol. (Dislocation, ACC case added)
 d. Et-hasefer karati etmol. (Topicalization, contrastive)
 ACC-the-book I-read yesterday.
 (The book I read yesterday.)
 e. *Et-hasefer karati oto etmol. (Topicalization, pronoun added)
 f. *Hasefer karati etmol. (Topicalization, ACC case missing)

¹¹For the data I am indebted to Talmy Givón [personal communication].

This suggests that in some sense Topicalization is much closer to the underlying structure of 'I'll can John tomorrow,' preserving the object case marking and disallowing a pronominal reflex. While Dislocation is a much more severe "operation", harder to justify as derived from either the underlying sentence (45f) or from the "topicalized" (45d).

Whether one type of analysis or another is adopted, one thing must be clear: languages such as Dzamba, Lingala, and Swahili, just like the immediate dominance languages of Chinese and Lebanese, cannot topicalize nor object relativize without leaving a pronominal reflex of the deleted noun.¹² These correlations cannot be purely accidental.

4. Conclusion

Whether the analysis just suggested is correct or not remains to be seen. What is certain, however, is that Sanders and Tai's generalized immediate dominance constraint has been shown to have failed in an important respect: predictability. In particular, Sanders and Tai [1972: 181-82] predict, first, that a language which allows verb and object-reduced coordinations will also be a language that requires the non-occurrence of anaphoric object pronouns in its well-formed relative clauses. We have just shown that Dzamba and Lingala allow all of these coordination reductions but require the occurrence of pronominal reflexes of objects in their well-formed relative clauses. Second, Sanders and Tai predict that non-immediate dominance languages will have both Topicalization with and Topicalization without pronominal reflex, as opposed to immediate dominance languages such as Chinese and Lebanese which will have only Topicalization with pronominal reflex (i.e. Dislocation). We have also shown that this is untenable for Dzamba and Lingala behave like immediate dominance in this respect by disallowing Topicalization without pronominal reflex.

Clearly, since Dzamba, Lingala, and Swahili behave as non-immediate dominance languages with respect to coordination reduction, and as immediate dominance languages with respect to Topicalization and Relativization, they cannot be called either non-immediate dominance or immediate

¹²I am indebted to Talmy Givón for this observation.

dominance languages. It follows from this that they constitute a third group of languages that Sanders and Tai's [1972] analysis fails to predict. This being the case, the explanation for the facts of Topicalization and Relativization discussed here must be sought elsewhere.

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