

INCORPORATION AND KIKAMBA VERBAL EXTENSIONS*

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1. INTRODUCTION. In this paper, I examine Baker's Incorporation, a theory of grammatical function changing processes, as it applies to the Kamba language, also known as Kikamba, a Bantu language spoken in central Kenya.¹

Kikamba, like many other Bantu languages, displays complex verbal morphosyntactic structure. The verbal element contains subject and object agreements; tense and aspect markers; and affixial extensions that modify the argument structure of the verb root. This language, therefore, provides excellent test cases for Baker's theory of lexical movement. This framework may be considered an extension of the Government Binding (GB) theory. In GB, grammatical function changes are taken to be results of movement of phrasal categories, such as NPs; in Incorporation, they are consequences of Move- α applying to lexical categories such as words and affixes. Specifically, Incorporation deals with complex predicate formation in a number of polysyntactic languages. Within this framework, sentences in a language are analyzed as composed of two syntactic levels: an underlying level, D-structure, where thematic relations among linguistic items are represented directly; and a surface level, S-structure, which is derived from D-structure by successive applications of Move- α , where α is any lexical category from the basic set of lexical categories N(oun), V(erb), A(djective), P(reposition or Postposition), and affixes. So, 'a single, morphologically complex unit on the surface may be derived by combining constituents which are independent at D-structure for principled reasons.' (Baker 1988:51). I interpret the 'principled reasons' to be the various modules of grammar that constrain movement, such as the Empty Category Principle (ECP), the Theta theory, the Case theory, the Projection Principle, and so forth.

Consequently, certain grammatical processes that are traditionally considered to be derivational (taking place in the lexicon) turn out to be syntactic (taking place in the syntax), so that grammatical function changing rules really do not exist independently in natural languages, but are simply the 'side effects' of more general principles of syntactic movement. For example, in Southern Tiwa, a Kiowa-Tanoan language spoken in a Southwest region of the US, a noun may move to become embedded in a verb to form complex verb in the surface structure. This is a well-known process of Noun Incorporation (NI):

- (1) a. *Seuan-ide* *i-mu-ban.*
 Man-NOM.INFL 1SG.AGR-see-PAST
 'I saw the man.'
 b. *Ti-seuan-mu-ban.*
 1SG.AGR-man-see-PAST
 'I saw the man.' (Baker 1988:82)

In 1b, the nominal *seuan* moves to become part of the verb *mu*, thus forming a complex verb in the surface structure. This interpretation makes it possible to characterize another formation involving an affix as to be of the same phenomenon: the antipassive construction, a permutation of grammatical function characterized by the change: object \rightarrow oblique (or null). Consider an example from Chamorro, an Austronesian language spoken in the island of Guam:

- (2) a. *In-li'i* *i gima-migu.*
 1PL.EXCL-see the house-your
 'We saw your house.'
 b. *Man-man-li'i* *i laiahi.*
 PL-APASS-see the males
 'The boys saw something.' (Baker 1988:132)

Here the antipassive verb is interpreted so as to represent both the semantic predicate 'see' and its direct object argument 'something', arising from the D-structure; see Figure 1.

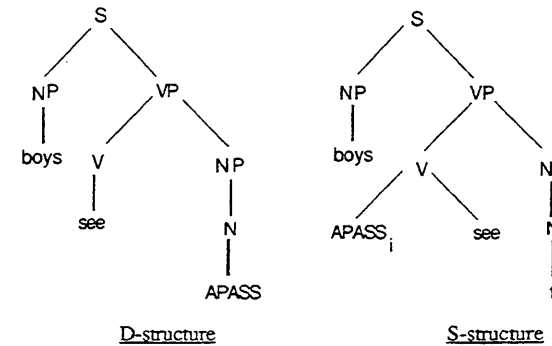


FIGURE 1. The antipassive (APASS) morpheme undergoes movement to yield S-structure.

As a syntactic movement, NI is regulated by constraints on movement (such as the ECP), as well as by categorial features of the moved item (whether it is a full argument or an affix). If it is possible for N to incorporate, then incorporation must also be applicable to V, P, and A.² The existence of such processes is language specific. The (morphological) causative construction in many languages, for example, is interpretable as a result of the movement of a verbal element to adjoin or embed in another verb—a case of V(erb) I(ncorporation); while the applicative construction is attributable to the movement of a preposition into a verb, a case of P(reposition) I(ncorporation).

In this paper, Baker's theory of incorporation will be applied to the analysis of two specific constructions in Kikamba: The (morphological) causative and the applicative. Both of these constructions are very productive in this language. In addition, Kikamba offers both analytic causative and morphological causative, a fortuitous opportunity for comparison between the two types; and while Kikamba applicative constructions display many of the syntactic behaviors predicted by Incorporation, counter examples to these predictions are also found. A close examination of these examples will no doubt lead to a direct, detailed evaluation of the theory; and at the same time provides some insight to the structure of this yet little-known language.

In §2 of the paper, I provide an overview of the Kikamba verbal structure; §3 presents an analysis of the Kamba causatives; §4 deals with the Kamba applicative construction, followed by §5 that contains a summary of findings and general comments.

2. KIKAMBA VERBAL STRUCTURE. Kikamba is a pro-drop language with strict word order.³ The basic word order is SVO. The language also has an extensive system of noun classifiers that determine verbal concordance and agreement on other elements of the sentence. For example:

- (3) a. *kekombe* *cu-uso-ie.*
 7-cup 7SP-fill-PAST
 'The cup filled up.'
 b. *mosiemi* *a-tom-e-ie* *moemi* *ɸalɔa.*
 1-hunter 3SP-send-AP-PAST 1-farmer 14-letter
 'The hunter sent the farmer a letter.'

- c. *Kavoli e-kwat-a keembalutua.*
Kavoli 3SP-catch-PRES 7-butterfly
'Kavoli is catching a butterfly.'
- d. *Kavoli e-kwat-a siembalutua.*
Kavoli 3SP-catch-PRES 8-butterflies
'Kavoli is catching butterflies.'
- e. *siembalutua sia-kwat-w-a ne Kavoli.*
8-butterflies 8SP-catch-PASS-PRES by Kavoli
'The butterflies are caught by Kavoli.'

In the examples 3a-e, it is not always easy to see the concordance between subject prefix (SP) and class marker (a numeral from 1-18), e.g. comparing 3b and 3c where different morphemes represent the same subject agreement. Also, singular and plural numbers of the same noun class are classified with different classifier (note 3c and 3d for example). In addition, phonological rules sometimes obscure the form of the prefixes as well. For these reasons, the classifiers and verbal concordance will not be glossed in detail in all examples used in this paper, except when it is necessary to do so. Kikamba is also a tone language, but for the sake of simplicity, tonal features will not be recorded, as the tones do not appear to affect syntactic processes (except for the marking of tense and aspect in some cases).

The Kikamba verbal element consists of (preverb) + prefix(es) + root + extension(s) + final vowel(s), where the elements are defined as follows:

- (a) Preverb=*/ne/*, or its modified forms, used perhaps as a focus marker (FM), to focus on the event described by the verb itself; this morpheme often appears when the verb is used intransitively.⁴
- (b) Prefixes=subject agreement prefix (SP)+ object agreement prefix (OP), optional if the object is a full noun or noun phrase + tense marker (TNS), for some tenses.⁵
- (c) Extensions=applicative */e/*, causative */i/*, passive */w/*, stative or potential */k/* ... all of these have allomorphs.
- (d) Final vowel(s)=*/a/*, */ia/*, */e/*, */ie/*. These vowels also carry tense and aspect (TNS/ASP) marking.

The following examples illustrate how the positions of different components of the verb constitute the Kikamba verbal structure:

- (4) a. *n-on-ie ngali.*
SP-see-PAST car
'I saw a car.'
- b. *n-on-is-ie Mosia ngali.*
SP-see-CAUS-PAST mosia car
'I showed Mosia (a) car.'
- c. *ne-mi-on-is-ie Mosia.*
SP-OP-see-CAUS-PAST Mosia
'I showed it to Mosia.'
- d. *Mosia a-kwat-ie keembalutua.*
Mosia SP-catch-PAST butterfly
'Mosia caught a butterfly.'
- e. *Mosia a-kwat-g-ie Kavoli keembalutua.*
Mosia SP-catch-AP-PAST Kavoli butterfly
'Mosia caught a butterfly for Kavoli.'
- f. *Mosia a-mo-kwat-e-ie keembalutua.*
Mosia SP-OP-catch-AP-PAST butterfly
'Mosia caught a butterfly for her/him.'

Notice that the structures of 4c and 4f are similar in that the object agreement marker slot is filled, but by different argument types: in 4c it is filled by a pronoun representing the patient as direct object, whereas in 4f it is filled by a benefactive as the direct object. Since there is only one OP slot, only one 'object' in the sentence can be pronominalized. Thus, sentences such as 'Mosia caught it for her,' 'I showed it to him ...' are impossible sentences in Kikamba; that is, they cannot be elicited.

3. VERB INCORPORATION (VI) AND KIKAMBA MORPHOLOGICAL CAUSATIVES.

3.1. A TYPOLOGY OF MORPHOLOGICAL CAUSATIVES. Baker's theory of incorporation posits that the D-structure of a morphological causative sentence is biclausal: there is a matrix clause and an embedded complement clause.

The simplified structures may be represented as in Table 1.

	D-structure	S-structure
embedded clause is intrans.	NP Vm [NP ₁ Ve]	NP Vm+Ve NP ₁
embedded clause is trans.	NP Vm [NP ₁ Ve NP ₂]	NP Vm+Ve NP ₁ NP ₂
where Vm, Ve represents the matrix verb and the embedded verb respectively.		

TABLE 1.

Cross-linguistically, the subject of the embedded intransitive clause (NP₁), the causee, acts like the direct object of the surface clause. Languages differ, however, with respect to causativization when the embedded clause is transitive, that is the behavior of NP₁ and NP₂ differ from language to language. Two major language types may be identified:

Language with causative type-1:

embedded subject → surface oblique (NP₁ → surface OBL)
embedded dir. obj. → surface dir. obj. (NP₂ → surface DO)

Language with causative type-2:

embedded subject → surface dir. obj. (NP₁ → surface DO₁)
embedded dir. obj. → surface 2nd dir. obj. (NP₂ → surface DO₂)

An example of a type-1 language is a dialect of Chichewa (a Bantu language spoken in Malawi), referred to by Baker as Chichewa-A (Baker 1988:189). In this language, the direct object immediately follows the verb, is unmarked by a preposition, can trigger object agreement, and can become subject of a passive sentence. Consider:

- (5) a. *anyani a-na-meny-ets-a ana kwa buluzi.*
baboons SP-PAST-hit-CAUS-ASP children to lizard
'The baboons made the lizard hit the children.'
- b. *anyani a-na-wa-meny-ets-a ana kwa buluzi.*
baboons SP-PAST-OP-hit-CAUS-ASP children to lizard
'The baboons made the lizard hit the children.'
- c. *ana a-na-meny-ets-edw-a kwa buluzi (ndi anyani).*
children SP-PAST-hit-CAUS-PASS-ASP to lizard (by baboons)
'The children were made to be hit by the lizard (by the baboons).'

Here the embedded (lower) object has the typical Bantu direct object status, i.e., it appears immediately after the verb, it is unmarked by a preposition, it triggers object agreement and can become subject of a passive sentence. The embedded subject, the causee, however, does not display the same behavior.

- (5) d. *ana a-na-zi-meny-ets-a ana kwa mbuzi.
baboons SP-PAST-QP-hit-CAUS-ASP children to goats
'The baboons made the goats hit the children.'
- e. *buluzi a-na-meny-ets-edw-a ana (ndi anyani).
lizard SP-PAST-hit-CAUS-PASS-ASP children (by baboons).
'The lizard was made to hit the children (by the baboons).'

Exx. 5d and 5e show that the embedded subject cannot trigger object agreement, and cannot become subject of a passivized sentence.

Kikamba, on the other hand, appears to be a type-2 language with respect to morphological causativization. In Kikamba, the direct object also immediately follows the verb, is unmarked by a preposition, and can become subject of a passivized paraphrase. For example:

- (6) a. kaana ka-na-keδ-ie mbemba.
child SP-PAST-harvest-ASP corn
'The child harvested the corn.'
- b. Kavoli a-na-keδ-eδ-is-ie kaana mbemba.⁶
Kavoli SP-PAST-harvest-δ-CAUS-ASP child corn
'Kavoli made the child harvest the corn.'

Here, the embedded subject (causee) behaves like surface direct object—it is unmarked by a preposition, appears directly after the verb as in 6b, and can become subject in a passivized paraphrase as shown in 6c:

- (6) c. kaana ka-na-keδ-eδ-is-w-e mbemba (ne Kavoli).
child SP-PAST-harvest-δ-CAUS-PASS-ASP corn (by Kavoli)
'The child was made to harvest the corn (by Kavoli).'

But the lower (embedded) object cannot be passivized, as shown in 6d:

- (6) d. *mbemba e-na-keδ-eδ-is-w-e kaana (ne Kavoli).
corn SP-PAST-harvest-δ-CAUS-PASS-ASP child (by Kavoli)
'The corn was made to be harvested by the child (by Kavoli).'

The difference in the syntactic behavior between the two language types, such as Chichewa and Kikamba, is explained in terms of syntactic movement of the embedded verb to be incorporated in the matrix verb, which is the causative morpheme.

The fully elaborated D-structure of a biclausal sentence and the structure of the two language types may be represented as shown in Figures 2, 3, and 4.⁷ In Fig. 3, the embedded verb phrase (VPe_i) moves to Comp (which is a phrasal slot), then Ve gets incorporated to Vm, the causative morpheme.

In the type-1 languages such as Chichewa-A, we would expect the embedded object (NP₂) to behave more like surface direct object than the embedded subject because NP₂ has now moved to a position immediately following the verb complex. This analysis further predicts that languages of type-1 will not have undervived dative shift (Baker 1988:189), that is, there is no S-structure of the form NP V NP NP. Examples 5a and 5b show that the S-structure of Chichewa causative is of the form NP V NP₂ P NP₁.

The movement of VPe to the Comp node takes along NP₂, leaving NP₁ without case, and Chichewa's 'case assigning' property allows insertion of preposition to provide the stranded NP₁ with case. Note that in GB, the case assignors are Verb, INFL, and Preposition. Noun is also a case assignor, but it can assign genitive case only.

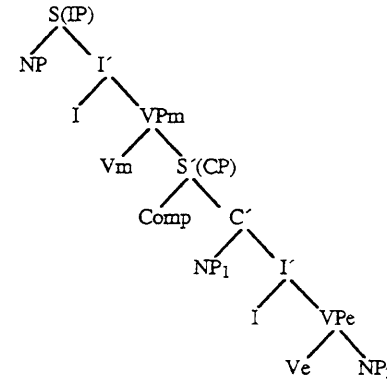


FIGURE 2.

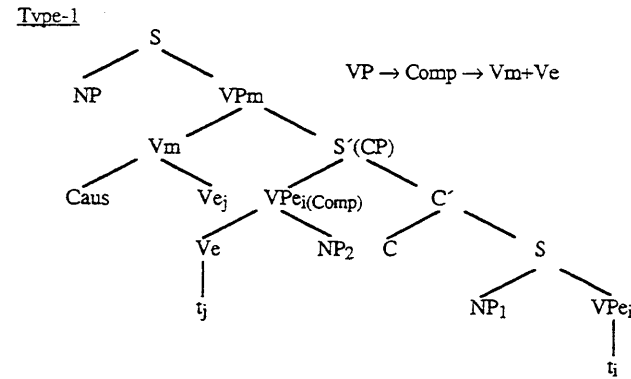


FIGURE 3.

In Fig. 4, the embedded verb (Ve) moves to C (which is a lexical slot), then gets incorporated to the causative morpheme.

In type-2 languages such as Kikamba, the embedded subject (NP₁) will act more like surface direct object than the lower object does for the same reason. In this analysis, the movement of Ve, the embedded verb, to the position of C, and subsequently to adjoin with the matrix verb, allows both embedded NPs to receive case. NP₁ gets structural case from the verb complex, NP₂ gets inherent case from the moved verb. Structural case is assigned at S-structure, and inherent case is assigned at D-structure. The movement results in an S-structure of the form NP V NP₁ NP₂ for the causative construction. Kikamba, therefore, is predicted to have certain types of surface construction similar to the dative shift in English. In the sections that follow, we will examine in some detail the causative in Kikamba to evaluate these predictions.

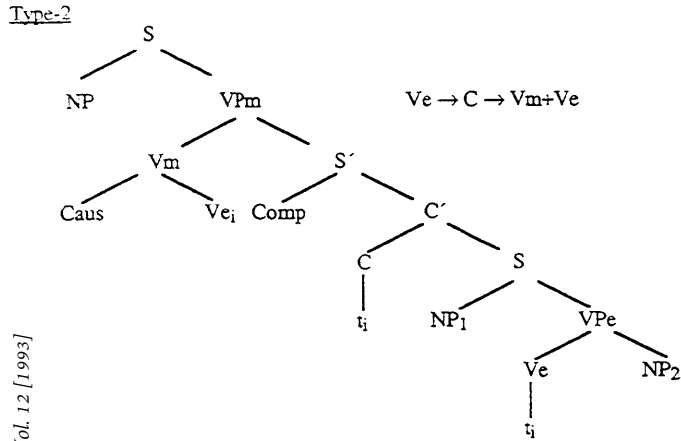


FIGURE 4.

3.2. KIKAMBA MORPHOLOGICAL CAUSATIVES. There are two different causative constructions in Kikamba: phrasal and morphological. Consider the following pair of examples:

- a. *Mosia a-tum-ia evuku ðye-valok-a.*
 Mosia SP-cause-PAST book CL-fall-FV
 'Mosia caused the book to fall.'
- b. *Mosia a-valok-il-ia evuku.*
 Mosia SP-fall-CAUS-PAST book
 'Mosia dropped the book.'

The two causative forms appear to support the biclausal analysis of the morphological causative. There may be shades of meaning difference, but the semantic issue does not concern us here.

Kikamba causatives occurs in a variety of syntactic environments as we shall see in the following examples.

3.2.1. CAUSATIVES WITH EMBEDDED INTRANSITIVE CLAUSE.

- (8) a. *Mosia no-ðok-ie.*
 Mosia FM+SP-*turn*.bad-PAST
 'Mosia became evil (bad).'
- b. *Kavoli no-ðok-is-ie Mosia.*
 Kavoli FM+SP-*turn*.bad-CAUS-PAST Mosia
 'Kavoli corrupted Mosia.'
- c. *Mosia ne-wa-ðok-i-w-e (ne Kavoli).*
 Mosia FM-SP+TNS-*turn*.bad-CAUS-PASS-ASP (by Kavoli)
 'Mosia was corrupted (by Kavoli).'

Ex. 8a is the basic intransitive sentence, 8b is the causative derivation, and 8c is the passive paraphrase of 8b. The result is straightforward here. As predicted, the causee (Mosia) behaves as

a DO: it follows the verb, and can be passivized.

3.2.2. CAUSATIVES WITH TRANSITIVE EMBEDDED CLAUSE.

- (9) a. *mosiemi a-að-ie nganga.*
 hunter SP-shoot-PAST guinea fowl
 'The hunter shot the guinea fowl.'
- b. *moemi a-að-eð-is-ie mosiemi nganga.*
 farmer SP-shoot-d-CAUS-PAST hunter guinea fowl
 'The farmer helped/made the hunter shoot the guinea fowl.'
- c. *mosiemi a-að-eð-is-w-e nganga (ne moemi).*
 hunter SP-shoot-ð-CAUS-PASS-TNS/ASP guinea fowl (by farmer)
 'The hunter was helped/made to shoot the guinea fowl (by the farmer).'
- d. **nganga e-að-eð-is-w-e (ne mosiemi) (ne moemi).*
 guinea fowl SP-shoot-ð-CAUS-PASS-TNS/ASP (by hunter) (by farmer)
 'The guinea fowl was made to be shot (by the hunter) (by the farmer).'
- e. *moemi a-mo-að-eð-is-ie nganga.*
 farmer SP-OP-shoot-ð-CAUS-PAST guinea fowl
 'The farmer helped/made him shoot the guinea fowl.'
- f. **moemi a-ðe-að-eð-is-ie mosiemi.*
 farmer SP-OP-shoot-ð-CAUS-PAST hunter
 'The farmer helped/made the hunter shoot it.'

The sentences 9c-f show that the causee (embedded subject) can indeed become subject of a passive paraphrase (9c), and be pronominalized (9e), while the embedded object cannot; though on the surface neither post-verbal NPs are marked by a preposition. The resulting structure looks like that of a dative shift in English as mentioned before: NP V NP₁ NP₂.

A prediction base on this result would be that Kikamba should have underived dative shift, which is indeed the case:

- (10) a. *mosiemi a-neng-ie moemi evuku.*
 hunter SP-give-PAST farmer book
 'The hunter gave the farmer a book.'
- b. *moemi a-neng-iw-e evuku (ne mosiemi).*
 farmer SP-give-PASS-ASP book (by hunter)
 'The farmer was given a book (by the hunter).'
- c. *evuku ðe-neng-iw-e moemi (ne mosiemi).*
 book SP-give-PASS-ASP farmer (by hunter)
 'A book was given to the farmer (by the hunter).'

On comparing the examples 6b, 6c, 6d to 10a, 10b and 10c, we note that superficially, 6b and 10a, as well as 6c and 10b, show similar structure; but while 10c is grammatical, 6d is not. This, according to Baker, is due to the biclausal (or opacity) effect, originated from the difference in D-structure of the two constructions; see Figures 5-6.

In Fig. 5, both NP₁ and NP₂ receive case from the verbal complex, but only NP₁ is within the governing matrix clause and so can move to the matrix subject position; NP₂ is outside the governing category so its movement is blocked by the Specified Subject Condition, a consequence of the Binding theory (Baker 1988:210). By contrast, in Fig. 6, both post-verbal NPs are within the domain of the governing category of the matrix clause, and so either can move to the matrix subject position and become subject of a passive paraphrase.

There are, however, counter-examples to this biclausal effect. On examining exx. 11a-e, we find that both surface post-verbal NPs can become subject of a passive paraphrase, a result refuted by the opacity effect.

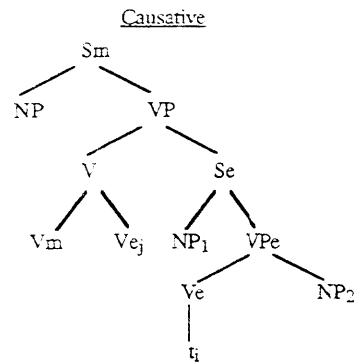


FIGURE 5. Structure of 6b.

- (11) a. *Kavoli e-kund-a kevu.*
Kavoli SP-sip-ASF water
'Kavoli is sipping water.'
- b. *kevu ke-kund-w-a (ne Kavoli).*
water SP-sip-PASS-ASP (by Kavoli)
'Water is being sipped (by Kavoli).'
- c. *Kavoli e-kund-eδ-i-a Mosia kevu.*
Kavoli SP-sip-δ-CAUS-ASP Mosia water
'Kavoli is giving/making Mosia sip water.'
- d. *Mosia e-kund-eδ-u-w-a kevu (ne Kavoli).*
Mosia SP-sip-δ-CAUS-PASS-ASP water (by Kavoli)
'Mosia is being made/given water to sip (by Kavoli).'
- e. *kevu ke-kund-eδ-u-w-a Mosia (ne Kavoli).*
water SP-sip-δ-CAUS-PASS-ASP Mosia (by Kavoli)
'Water is being given to Mosia to sip (by Kavoli).'

There are two possible explanations for this apparent contradiction. One is that in Kikamba, some verb can assign more than one structural case so that typologically, with respect to causativization, Kikamba falls into the same category as Kinyarwanda, a true double object language (Baker 1988:180). The other is the possibility of reanalysis (abstract incorporation or incorporation at LF) occurring to the embedded object in Kikamba for some verbs. That is, in 11a-e, *kevu* 'water' somehow becomes an indispensable part of *kokunda* 'to sip', forming a two-part verb. In other words, the formation is idiomatic.

There seems to be evidence in favor of the second explanation. First, if indeed some Kikamba verbs can assign more than one structural case in the causativizing process, then there should be no difference in the syntactic behavior of the two NPs. This turns out not to be the case because when the word order of the causee and the lower object in 11c is reversed, the sentence is ungrammatical:

- (11) f. **Kavoli e-kund-eδ-i-a kevu Mosia.*
Kavoli SP-sip-δ-CAUS-ASP water Mosia
'Kavoli is making Mosia sip water.'

So, even though both the causee and the lower object display DO status with respect to

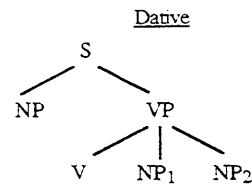


FIGURE 6. Structure of 10a.

passivization, they are "asymmetrical" with respect to word order (adjacency to the verb), in favor of the causee. Second, if the lower object is reanalyzed when causativization occurs, then it should not be possible for it to be marked by an object pronominal. This is indeed observed:

- (11) g. *Kavoli e-kund-a kevu.*
Kavoli SP-sip-ASP water
'Kavoli is sipping water.'
- h. **Kavoli e-ke-kund-a.*
Kavoli SP-OP-sip-ASP
'Kavoli is sipping it.'

Further evidence of reanalysis is provided by a set of data on possessor raising in Kikamba, related in particular to inalienable possessions such as body parts. Compare 12a-c with 13a-d:

- (12) a. *ne-vev-is-ie naama.*
SP-burn-CAUS-PAST meat
'I roasted the meat.'
- b. *ne-vev-is-ie Mosia chaa.*
SP-burn-CAUS-PAST Mosia finger
'I burned Mosia's finger.'
- c. **ne-vev-is-ie chaa cha Mosia.*
SP-burn-CAUS-PAST finger of Mosia
'I burned Mosia's finger.'
- (13) a. *ne-kwat-ie Kavoli choongo.*
SP-touch-PAST Kavoli head
'I touched Kavoli's head.'
- b. *ne-mo-kwat-ie choongo.*
SP-OP-touch-PAST head
'I touched her (on the) head.'
- c. **ne-mo-kwat-ie.*
SP-OP-touch-PAST
'I touched her.'
- d. **ne-kwat-ie Kavoli.*
SP-touch-PAST Kavoli
'I touched Kavoli.'

The ungrammaticality of 12c, 13c and 13d strongly suggests that possessor raising in these cases is obligatory, and in such cases, it is suggested that the possessees undergo reanalysis, that is they acquire case without visible movement. By contrast, possessor raising is not permitted for alienable possessions as shown in the following:

- (14) a. *ne-kwat-ie ngali δya Mosia.*
SP-touch-PAST car of Mosia
'I touched Mosia's car.'
- b. **ne-kwat-ie Mosia ngali.*
SP-touch-PAST Mosia car
'I touched Mosia's car.'

This result seems to suggest that even though Kikamba does not allow surface Noun Incorporation, it does, however, require abstract incorporation of nominal arguments in some cases. Furthermore, this reanalysis appears to be sanctioned by semantic and pragmatic considerations, a result not fully explored in the framework.

The analysis of Kikamba causatives thus reveals another language type with respect to VI. Baker observes that though Chimwiini, another Bantu language, has similar surface structure to

Kinyarwanda, it does not allow lower objects to be passivized. The difference is accounted for by the fact that some Kinyarwanda verbs can assign more than one structural cases, while some Chimwiini verbs can assign one structural case and one inherent case (Baker, 180-81). Kikamba is somewhere between the double-accusative-object languages, such as Kinyarwanda, and partial-double-object languages, such as Chimwiini: In Kikamba, some verbs require or allow reanalysis of the lower object and not inherent case assignment in order for the object to pass the Case Filter.

The weakness in Baker's framework is not in the failure to account for reanalysis as a possible mechanism for the NPs affected by VI to pass the Case Filter, but in the failure to provide coherent explanations for how case assignment at LF is related to what happens at D-structure and at S-structure. If the thematic roles are determined at D-structure, what motivates abstract incorporation at LF? There are no feasible solutions to this issue except to attribute the 'deviant cases', which are found in the language, to the morphological idiosyncrasies of the language itself, or to appeal to the semantics of the particular lexical items.

4. KIKAMBA APPLICATIVES. The applicative construction is another productive morphosyntactic process in Kikamba. The construction is characterized by Baker as the incorporation of a pre/postposition into a verb. The process is known as PI.

4.1. INCORPORATION AND MARANTZ' GENERALIZATION. The analysis of PI is based principally on Government theory and the Empty Category Principle (ECP), guided by Marantz' generalization (Baker, 246-51). This generalization states that the applied object, that is the argument left behind by the incorporated preposition, will behave more like the surface DO than the basic object does.

Figures 7-8 show the D-structure and the S-structure for the applicative process. Theoretically, the applied object receives structural case at S-structure, and the basic object undergoes reanalysis so that it can be PF-identified and pass the Case Filter.⁸

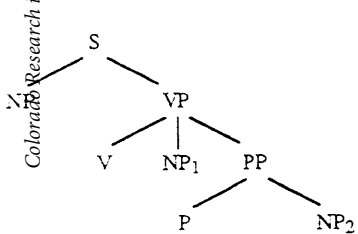


FIGURE 7. D-structure

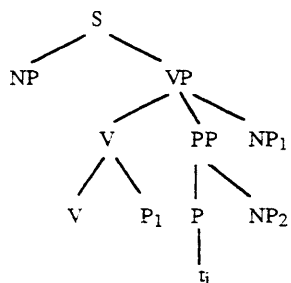


FIGURE 8. S-structure

Case Assignment is strictly under government, as shown in Figure 9 (see next page). This figure shows that only P₂ can be incorporated as it is within the domain of the governor, V(erb); P₁ (subjective preposition) and P₃ (adjunctive preposition), being outside of V's domain, cannot be.

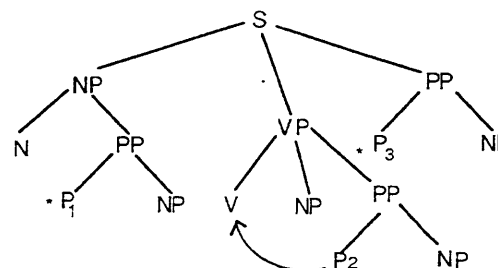


FIGURE 9.

4.2. KIKAMBA APPLICATIVE CONSTRUCTION. In Kikamba, the applicative construction is marked by the morpheme /e/, or its variations. As we have previously mentioned, the construction is a result of movement of P into a verb, and hence the applicative is also referred to as preposition incorporation or PI. The construction involves different types of obliques as shown below.

4.2.1. BENEFACTIVE INCORPORATION WITH TRANSITIVE STRUCTURE.⁹

- (15) a. *Mosia a-kwat-ie keembaluuua.*
Mosia SP-catch-PAST butterfly
'Mosia caught a butterfly.'
- b. *Mosia a-kwat-e-ie Kavoli keembaluuua.*
Mosia SP-catch-AP-PAST Kavoli butterfly
'Mosia caught a butterfly for Kavoli.'
- c. *Mosia a-mo-kwat-e-ie keembaluuua.*
Mosia SP-OP-catch-AP-PAST butterfly
'Mosia caught a butterfly for her.'
- d. *Mosia a-ke-kwat-e-ie Kavoli.*
Mosia SP-OP-catch-AP-PAST Kavoli
'Mosia caught it for Kavoli.'
- e. **Mosia a-kwat-e-ie keembaluuua Kavoli.*
Mosia SP-catch-AP-PAST butterfly Kavoli
'Mosia caught a butterfly for Kavoli.'

Ex. 15a is the basic sentence, 15b is the applicative construction showing the addition of the applied object, 15c and 15d reveal that both the applied object and the basic object behave similarly with respect to verb marking, i.e. triggering object agreement on the verb. Sentence 15e is a paraphrase of 15b, with the order of the applied object and basic object reversed. The ungrammaticality of 15e shows that the applied benefactive object is indeed more DO—like than the basic object, with respect to adjacency to the verb. Thus, the behavior of the benefactive complement is well predicted by the theory.

The incorporation involving locatives, however, presents a different picture.

4.2.2. LOCATIVE INCORPORATION WITH TRANSITIVE STRUCTURE. In the following examples, 16a is the simplex structure, 16b₁-b₃ show the formation of the applicative and its permutations, 16c to f are different permutations of the passivized paraphrases.

- (16) a. *ne-vev-is-ie maato*.¹⁰
 SP-burn-CAUS-PAST leaves
 'I burned the leaves.'
- b₁. *ne-vev-e-is-ie maato motito-ne*.
 SP-burn-AP-CAUS-PAST leaves forest-LOC
 'I burned the leaves in the forest.'
- b₂. *ne-vev-is-ie maato motito-ne*.
 SP-burn-CAUS-PAST leaves forest-LOC
 'I burned the leaves in the forest.'
- b₃. **ne-vev-e-is-ie motito-ne maato*.
 SP-burn-AP-CAUS-PAST forest-LOC leaves
 'I burned the leaves in the forest.'
- c. *motito-ne ja-vev-e-i-w-e maato*.
 forest-LOC SP-burn-AP-CAUS-PASS-ASP leaves
 'In the forest were burned the leaves.'
- d. *maato ma-vev-e-i-w-e motito-ne*.
 leaves SP-burn-AP-CAUS-PASS-ASP forest-LOC
 'The leaves were burned in the forest.'
- e. **motito-ne ja-vev-i-w-e maato*.
 forest-LOC SP-burn-CAUS-PASS-ASP leaves
 'In the forest were burned the leaves.'
- f. **maato ma-vev-i-w-e motito-ne*.
 leaves SP-burn-CAUS-PASS-ASP forest-LOC
 'The leaves were burned in the forest.'

In this set of data, 16a-f, we observe that: (a) the grammaticality of both 16b₁ and 16b₂ show that Kikamba locatives can be used either as locative complement or locative adjunct,¹¹ (b) the ungrammaticality of 16b₃ shows that the applied locative object is not acting as a canonical object with respect to adjacency to the verb, contrary to Marantz's generalization; (c) the ungrammatical sentence 16e shows that passivization of a locative complement can only occur after incorporation has taken place; and (d) the ungrammatical sentence 16f as compared to 16d shows that if the locative element is the only argument immediately following the verb, then it is a marked argument and this must be marked on the verb with the applicative morpheme.

Point (b) shows that benefactive and locative applicatives behave differently, a fact not fully accounted for in the theory; point (c) seems to supply evidence for Baker's prediction that 'it is impossible to form an applicative construction based on a passive verb' (Baker 1988:253). This result is, however, a consequence of a more general statement about the case-assigning property of verbs, and how this property interacts with the construction under consideration, 'a grammatical applicative construction can only occur when the derived verb assigns the accusative case to the NP that was stranded by the movement of the preposition ...' and 'if the verb that hosts the P-incorporation is not a case assigner, then the applicative construction should not be possible' (Baker 1988:252). The non case-assigning verbs include passive verbs, antipassive verbs ... These share the property of intransitivity.

Kikamba offers some counter examples to this general prediction, as illustrated in the following examples.

4.2.3. LOCATIVE INCORPORATION WITH INTRANSITIVE STRUCTURE.

- (17) a. *mosongo a-tol-ile kebanga*.
 white-man SP-break-PAST/ASP machete
 'The white man broke the machete.'

- b. *kebanga ke-tol-ik-ie*.¹²
 machete SP-break-K-PAST
 'The machete broke.'
- c. *kebanga ke-tol-ik-e-ile motito-ne*.
 machete SP-break-K-AP-TNS/ASP forest-LOC
 'The machete broke in the forest.'
- d. *kebanga ke-tol-il-w-e*.
 machete SP-break-CAUS-PASS-TNS/ASP
 'The machete was broken.'

Ex. 17a is a transitive structure, 17b is an example of a stativizing verbal extension, and 24c is an applicative construction with locative complement. These sentences provide evidence of a stativizing verbal extension being applied prior to the applicative process: the stativizing morpheme /k/ is closer to the verb root than the applicative morpheme /e/. This is contrary to Baker's general prediction (cf. Baker's mirror principle, p.13). Compare also 17b and 17d, both structures are intransitive, and yet only one of them behaves in a manner predicted by Baker's account. The difference in the syntactic behavior again cannot be adequately explained by the syntax of movement.

Consider also the following:

- (18) a. *Kavoli no-ðok-ie*.
 Kavoli NE+SP-turn.bad-PAST
 'Kavoli became bad/evil.'
- b. *Kavoli a-ðok-ie tene*.
 Kavoli SP-turn.bad-PAST long ago
 'Kavoli turned evil long ago.'
- c. *Kavoli a-ðok-e-ie ilovi*.
 Kavoli SP-turn.bad-AP-PAST Nairobi
 'Kavoli became bad in Nairobi.'

Ex. 18a shows an intransitive structure, which can take a temporal complement in 18b and a locative complement in 18c. But only the locative complement is marked on the verb with the applicative extension.¹³ This is partially predicted by Baker. A three-way comparison between 17b, 18a and 18b, however, presents a gap in his account: the grammaticality of 18a is due to the presence of the preverbal element /ne/, which has been identified as a focus marker, in the intransitive environment. Specifically, this element turns up whenever a verb is used intransitively, regardless of the transitivity of the basic (pre-incorporation) verb.¹⁴ The 'true' intransitive structure appears to be that of 17b and 17d, where both NE and object are absent. Note also that in 18c, *ilovi* 'Nairobi' is not postmarked with the locative marker *-ne* even though the verb is marked with /e/. One has to wonder if, for a child who does not know that *ilovi* is the name of a place, 18c would be interpreted as to mean 'Kavoli became bad for Ilovi'?

Consider another construction in Kikamba that is problematic for Baker's account.

4.2.4. PURPOSIVE APPLICATIVE.

- (19) a. *mozikale a-kwar-ie Mosia*.
 officer SP-catch-PAST Mosia
 'The police officer caught Mosia.'
- b. *mozikale a-kwar-ie Mosiaj a-cho-ðya*.
 officer SP-catch-PAST Mosia SP-TNS+steal-ASP
 'The police officer caught Mosia stealing.'

- c. *mozikaie a-kwat-e-ie Mosia ko-ɔya.*
 officer SP-catch-AP-PAST Mosia INF-steal
 'The police officer caught Mosia for stealing.'
- d. *Mosia a-kwat-e-iw-e ko-ɔya.*
 Mosia SP-catch-AP-PASS-ASP INF-steal
 'Mosia was caught for stealing.'

Exx. 19c and 19d should not be possible, if, as Baker says, 'benefactive and instrumental are arguments of their verbs and their heads can incorporate; whereas manner and reason PPs are adjuncts and cannot participate in PI' (Baker 1988:261).

The problem stems from the fact that it is often difficult to make the complement/adjunct distinction. In Kikamba at least, the applicative marking only expresses the fact that an applied object (or complement) has been introduced into the sentence, it tells us neither anything about the transitivity of the basic verb, nor about the nature of the prepositional argument.

Thus neither the transitivity of the basic verb nor the nature of the prepositional argument can form a solid basis for the analysis of applicative constructions.

4.3. THE LIMITS OF INCORPORATION. The Kikamba applicatives considered thus far raise the following issues:

(a) 're-characterization' of transitivity is needed. It seems that all Kamba verbs can be used intransitively on the surface. Furthermore, we need more data to discover what verbal structures/roots cannot/need not be used with *ne*. For example, verbs with K forms appear to be the only true intransitive, monadic verbs, whereas verbs which take a patient or experienter subject must appear with preverbal NE in the absence complement:

- (20) a. *kaana ka Mosia ne-ka-kw-ie.*
 child of Mosia FM-SP-die-PAST
 'Mosia's child died.'
- b. **kaana ka-ka-kw-a.*
 child SP-TNS-die-ASP
 'The child will die.'
- c. *kaana ka-ka-kw-a one.*
 child SP-TNS-die-ASP tomorrow
 'The child will die tomorrow.'

The verb 'die' appears in intransitive form in English, but requires either a temporal complement or preverbal /ne/ in Kikamba. The verb 'touch', which we have met in previous examples, also provides example where the division transitive/intransitive is not too clear. Consider:

- (21) a. *ne-mo-kwat-ie choongo.*
 SP-OP-touch-PAST head
 'I touched her/him (on the) head.'
- b. **ne-kwat-ie Kavoli.*
 SP-touch-PAST Kavoli
 'I touched Kavoli.'
- c. *ne-ne-kwat-ie Kavoli.*
 FM-SP-touch-PAST Kavoli
 'I touched Kavoli.'
- d. *ne-ne-ko-kwat-ie.*
 FM-SP-OP-touch-PAST
 'I touched it [the hand].'

- e. **ne-ne-ko-kwat-ie Kavoli.*
 FM-SP-OP-touch-PAST Kavoli
 'I touched (it - hand) Kavoli.'

Notice that, in 21b, even though the complement is present, the phrase is still ungrammatical. In §3, we mentioned that this verb requires a structural object as well as a reanalyzed object.

(b) A different characterization of the distinction between complement and adjunct is needed for Kikamba. Again, it seems that adjuncts are marked structures (marked with preposition), while complements (including locative, purposive, ...) are unmarked structures that can be incorporated. Some illustrative examples follow.

- (22) a. *Kavoli a-seemb-ie moito-ne.*
 Kavoli SP-run-PAST forest-LOC
 'Kavoli ran (around) in the forest.'
- b. *Kavoli a-seemb-ie mili emwe.*
 Kavoli SP-run-PAST mile one
 'Kavoli ran (for) one mile.'
- c. *Kavoli a-seemb-e-ie Mosia.*
 Kavoli SP-run-AP-PAST Mosia
 'Kavoli ran for Mosia.'
- d. *Kavoli a-seemb-e-il-e moito-ne.¹⁵*
 Kavoli SP-run-AP-L-PAST forest-LOC
 'Kavoli ran through the forest.'
- e. *Kavoli a-seemb-e-ie Mosia maili emwe.*
 Kavoli SP-run-AP-PAST Mosia mile one
 'Kavoli ran a mile for Mosia.'
- f. *Kavoli a-seemb-ie ngina moito-ne.*
 Kavoli SP-run-PAST to forest-LOC
 'Kavoli ran to the forest.'

Exx. 22a and 22b have the same structure revealing that locative and distance objects are syntactically the same for Kikamba. Exx. 22c and 22d show that locative and benefactive complements are similarly marked on the verb. Ex. 22f shows that the prepositional complement (adjunct) is being marked by preposition and not on the verb.

(c) Asymmetry exists between benefactive and other complements, i.e., benefactive is more DO-like than other complements (word order evidence). Division among non-benefactive complements is not feasible for Kikamba as we have seen. This is especially difficult for verbs that require additional (locative or reason ...) complement in addition to a direct object:

- (23) a. *mosumbe e-eɔ-e-ie Mosia a-e-kwat-a keembaɭuu.*
 chief SP-find-AP?-PAST Mosia SP-TNS-catch-PRES butterfly
 'The chief found (came upon) Mosia catching a butterfly.'
- b. *Mosia e-eɔ-e-ie keembaɭuu keaso-ne.*
 Mosia SP-find-AP?-PAST butterfly shoe-LOC
 'Mosia found a butterfly in a shoe.'
- c. **Mosia e-eɔ-e-ie keembaɭuu.*
 Mosia SP-find-AP?-PAST butterfly
 'Mosia found a butterfly.'

The ungrammaticality of 23c is explained by the consultant thus: you have to find someone SOMEWHERE or doing SOMETHING, not just find (come upon) someone.

5. CONCLUSION. We have seen that the Kikamba data presented here provide a valuable test for incorporation theory. In the Causative, Incorporation predicts accurately the syntactic behavior of the causee. The theory also provides a feasible account of the biclausality of Kikamba causative sentences at D-structure. In the Applicative, the syntactic behavior of the benefactive is well supported within the incorporative framework.

But many questions remain unanswered: Kikamba Causative of transitive sentences requires a more coherent account of how abstract incorporation tie in with the general modules of grammar, which work quite well at D-structure and S-structure levels. There do not seem to be independent syntactic principles to account for the 'deviant' cases that abound in Kikamba. Almost always we need to appeal to the semantics, or to the particular characteristics of the language. How does such appeal tie in with learnability, for example?

The applicative construction in Kikamba shows up even more problems. Except for the very basic case of benefactive applicative, the theory fails to predict the incorporability of many types of obliques in the language. The main problem here seems to rest on the presumptions that transitivity can form a solid basis for analysis, and on the unclear demarcation of complement/adjunct distinction.

It is in these very failures in its prediction that Incorporation allows us to gain some insight to the Kamba morphosyntactic structure. The most valuable contribution that Incorporation offers to this inquiry is to be found in its tightly organized system of principles: To apply the theory in the analysis of real linguistic data, it is important that all the principles and modules be satisfied. Where the data do not 'fit', something else needs to be taken into account. One important result from the analysis of Kikamba seems to be that concepts long taken to be syntactic may well turn out to be semantic or even discourse driven in character. For Kamba, they are clearly the concept of intransitivity, and that of prepositional complement.

NOTES

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I wish to thank Arlea Anschutz, Immanuel Barshii, Lorraine Karen, and Maria Thomas-Ruzic for their generous offer to share their data and analyses of Kikamba. Working with them has been a most stimulating experience for me.

And finally, I must thank Paul Muli for allowing me endless interruptions of his dinners so that I could ask "just one more question". His patience and keen sensitivity to our linguistic needs are above and beyond our expectation.

Abbreviations are as follows:

A	=	adjective	OBL	=	oblique
ABS	=	absolutive	OP	=	object prefix
ADJ	=	adjunct	P	=	pre/postposition
ADV	=	adverb	PASS	=	passive
AGR	=	agreement	PAST	=	past tense
AP	=	applicative	PL	=	plural
APASS	=	antipassive	POS	=	possessor
ASP	=	aspect	PP	=	prepositional phrase

C	=	Complementizer	PRES	=	present tense
CAUS	=	causative	REFL	=	reflexive
CL	=	class marker	SG	=	singular
Comp	=	Specifier of C	SP	=	subject prefix
CP	=	Complementizer phrase	SUFFIX	=	suffix
DAT	=	dative	TNS	=	tense
DO	=	direct object			
ECM	=	Exceptional Case Marking	<u>Incorporation terms:</u>		
ECP	=	Empty Category Principle	NI	=	noun incorporation
ERG	=	ergative	AI	=	adjective incorporation
EXCL	=	exclusice	PI	=	pre/postposition incorp.
EXPL	=	expletive	VI	=	verb incorporation
FM	=	focus marker			
FUT	=	future tense	<u>GB terms:</u>		
FV	=	final vowel	LF	=	logical form
INF	=	infinitive	PF	=	phonetic form
INFL	=	inflectional			
INSTR	=	instrument/ instrumental			
INTRANS	=	intransitive			
IO	=	indirect object			
LOC	=	locative/location			

¹ The data used in this analysis were part of a corpus of data collected with the assistance of my consultant Paul Muli, who is a native speaker of a variety of KiKamba. Muli's dialect is mutually intelligible with KiKuyu, another Bantu language more widely described than KiKamba itself. Muli's home town is located approximately 20 miles northeast of Nairobi, on the Tana river. The data are a part of a corpus collected for a seminar course in field method; and during the time of data collection, Muli was enrolled at the University of Colorado at Boulder as a graduate student in engineering.

² Examples of AI appear quite rare, and not considered here. Perhaps the complex verb 'white-wash' in English may be considered a case of AI?

³ By pro-drop, I mean that lexical pronouns do not surface, but are recoverable owing to subject markers on the verb.

⁴ In addition to my own data, the data of Anschutz 1990 also provide a number of test cases where *ne* is used intransitively.

⁵ Since noun class markers are not indicated, the subject prefix (SP) and object prefix (OP) may be confusing at times. For example, SP may stand for *a, ke, de...* to represent different nominal classes.

⁶ The morpheme δ (or its variations) seems to serve as a marker of a double-semantic-role function for some arguments. For example, in 6b and 6c, *kaana* is both the patient of the causative complex and the agent of the embedded clause.

⁷ Adopting the X-bar notation and : IF = infl, inflection or auxiliary node, IP = Infl phrase or 'reduced' clause (= S), C = complementizer, Comp = specifier of C, CP = complementizer phrase (= S'), m = matrix, e = embedded. (Cf. Baker, Appendix A, p. 443).

⁸ PF-identification refers to the case-indexing mechanism in general. According to Baker, there are several such mechanisms: verbal agreement, adjacency, morphological case marking and incorporation. See Baker (1988:116-19).

⁹ The term 'benefactive' is used loosely here to include also 'malefactive' applicative, e.g.

Mosia a-kw-e-iw-e ne kaana.

Mosia SP-die-AP-PASS-TNS/ASP by child

'Mosia was died on by (his) child (Mosia's child died on him).'

There is a semantic constraint for this construction: both NPs must be humans.

¹⁰ *nevevisie* is considered a causative form here because of the existence of the basic verb *vea* meaning 'to be on fire', e.g. *motito novea* 'The forest burns/is on fire.'

¹¹ Complement is defined structurally as a sister node with the verb, adjunct is a sister node with the verb phrase. Muli, our consultant, said that 16b₁ is used to answer the question "Where did the action take place?", and 16b₂ answers the question "What took place?". It appears that the speaker's intention decides what category the prepositional phrase should be!

¹² The extension /k/ has been identified in the literature as a stativizing, or potential, marker. It occurs in intransitive sentences. It is different from the /w/ construction in that it describes an instantaneous event/process and/or potentiality. The following forms illustrate this function: *kona* 'to see', *konaka* 'to be visible'; *kosoma* 'to read', *kosomeka* 'to be legible'; *Kavoli atomea savone* 'Kavoli uses soap', *savone otomeka na metoke* 'The soap uses up fast' (the soap is used up fast).

¹³ Alternatively, we can suppose that temporal complement is zero-marked, because there is absence of *ne*, which is usually a sign of intransitive use of a verb.

¹⁴ This fact is even more evident in **Mosia aadia* 'Mosia shot' and *Mosia newadia* 'Mosia shot'. The grammaticality of the second form is accounted for by the presence of *ne*. In English, so, transitivity is sometimes by-passed in context. Take for example: 'He raised the rifle and shot'. Though 'shot' is transitive, the sentence is grammatical.

¹⁵ The morpheme *li*, or *il*, *el* ... appears to be marking pathway in sentences where the English translation would require 'through', 'around', 'along', ... In some way then, manner adjuncts are also incorporable!

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VERBAL AFFIXATION AND GRAMMATICAL RELATIONS IN MODERN STANDARD INDONESIAN*

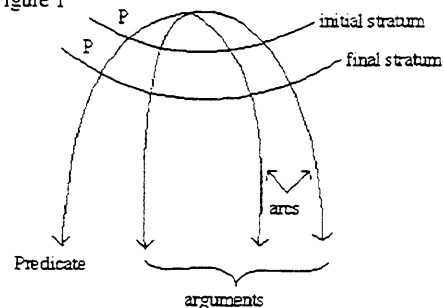
ERIN SHAY

1. INTRODUCTION. The theory of Relational Grammar (RG), developed chiefly by Perlmutter and Postal in the early 1970s, posits that syntactic phenomena across languages can be accounted for in terms of a small set of universal grammatical relations. The set of relations recognized in RG consists of the following undefined primitives: Subject, Direct Object, Indirect Object (collectively called terms) and an open set of Oblique relations that includes Benefactive, Locative, Instrumental, Recipient and others. Terms are assigned the following hierarchy:

(1) Subject	Direct Object	Indirect Object	Obliques
1	2	3	

Every basic clause contains a Predicate (P), usually a verb, which 'governs' the nominals in the clause. Predicates assign grammatical relations to their dependent nominals in a fairly straightforward way on the basis of semantic roles such as Agent, Patient, Recipient, Benefactive and Locative. Clauses are represented by 'stratal diagrams' that depict only the predicate and its terms, ignoring phrasal substructure and linear order.

Figure 1



Revaluations, which in RG replace transformations as the means of showing relationships (though not necessarily ordered relationships) between related pairs of utterances, are read from the top (initial) stratum to the bottom (final) stratum. Through revaluation, for example, an initial 2 (i.e. a nominal assigned to the Direct Object slot in the initial stratum) might 'advance' (become a 1) or 'retreat' (become a 3 or an Oblique) in some stratum below the initial stratum. A nominal that is a term (1, 2 or 3) in an early stratum and later loses its term status is called a 'chômeur' (or is said to have been put 'en chômage') and is marked with a circumflex. A chômeur lacks some of the grammatical properties of the corresponding term: it fails to control agreement on the verb and it occupies a peripheral, optional position in the clause (Blake 1990). The kinds of revaluations that may occur across languages and the restrictions on these revaluations are termed 'relational laws'.

Because stratal diagrams ignore linear order and subphrasal structure, RG analysis provides an uncluttered view of the fundamental relationships between predicates and their arguments. This view is useful for both intralinguistic and cross-linguistic analysis of certain syntactic phenomena. The purpose of this paper is to show that RG analysis can provide a principled account of the behavior of certain predicates in Modern Standard Indonesian. This paper does not claim