# The Morphosyntax of Tagalog Verbs: The Inflectional System and Its Interaction with Derivational Morphology\*

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#### **Abstract**

Verbal inflection is assumed to play a large role in Case assignment in Tagalog sentences. Given recent developments in the syntax of Tagalog (Guilfoyle, Hung & Travis 1992), the relationship between verbal inflection and Case can be considered in detail. There are two major inflectional morpheme types: Aspect markers, which are responsible for Case assignment to the Agent argument, and Topic markers which are analyzed as Case absorbers. In addition, the *pag-* morpheme, a controversial one in the literature, is considered to be inflectional and to be involved in accusative Case assignment. Causative constructions in this language exhibit interesting surface Case marking. A Verb Incorporation theory of causatives (Baker 1988) is adapted for Tagalog and the Case related morpheme functions proposed for standard sentences are found to be valid in causatives analyzed this way. Finally, some related Tagalog data which raise the problem of derivation appearing outside inflection are presented with some speculative explanations.

This paper examines the inflectional system of Tagalog verbs in light of recent work, presenting an analysis of the principal inflectional morphemes, and suggesting the function of each of them. The claim to be made here is that inflectional morphology has a direct effect on syntactic relations, and in particular, that Topic markers in Tagalog are Caseabsorbing, and Aspect markers are Case-assigning morphemes. A related claim is that a verb may not assign accusative Case unless a transitivizing morpheme pag- is present. The proposal for the function of pag- (a morpheme which has been subject to several different analyses in the past) will be supported by data from within verbal paradigms as well as across verb types. Case-assignment and Case-absorption mechanisms are determined on the basis of verbal morphology and Case marking in canonical sentences. Non-canonical sentences involving grammatical function changes often display unexpected surface Case marking; these constructions can serve as a test for the proposals about the Case system. In this paper, the causative construction will be considered. A Verb Incorporation (VI) analysis of causatives (Baker 1988), adapted for Tagalog, will give support to the proposed Case-assignment and Case-absorption morpheme functions. Finally, a residual problem for this account of inflectional morphology, that of inflection appearing outside derivation, will be explained in terms of the causative analysis proposed.

## 1. The Inflectional System

# 1.1. The Morphology

Consider the inflectional paradigm for the verb meaning 'to buy' (whose root is *bili*), given in table 1. The two major inflectional markers are Aspect markers<sup>1</sup> and Topic markers. Following DeGuzman (1978), we might consider these three forms and the aspectless form

<sup>\*</sup> This paper originated as a term paper for Mark Baker's Spring 1989 seminar in morphology. Its writing has been supported by SSHRCC grants 410-87-1071 and 410-90-0308, and FCAR grant 88-EQ-3630 to Lisa Travis and Lydia White, as well as by a SSHRCC fellowship. Thanks to my Tagalog informants Christina and Anna Mejia.

<sup>&</sup>lt;sup>1</sup> In the tables below, the terms *perfective*, *imperfective* and *contemplated* used to characterize the Tagalog Aspectual system are from Schachter & Otanes (1972).

to be the result of an interaction of features. They can, in fact, be captured using two features such that only the positive value of a feature corresponds to a morpheme.<sup>2</sup> Let these features be [st] and [inc], for started and incomplete action, respectively. Then the feature [+ st] occurs as the infix -in-<sup>3</sup> and [+ inc] occurs as CV reduplication (henceforth RED). Notice that if neither feature is positive, the result is an aspectless form. If both features are positive, then both markers appear, and the action is started but incomplete (i.e., the action is in progress, or "imperfective", in the terminology of Schachter & Otanes 1972).

Table 1

Paradigm Table	Agent	Theme	Locative	Benefactive
Aspectless	bumili	bilhin	bilhan	?ibili
Perfective	bumili	binili	binilhan	?ibinili
Imperfective	bumibili	binibili	binibilhan	?ibinibili
Contemplated	bibili	bibilhin	bibilhan	?ibibili

Since the morphemes are fused and appear on either side of the verb root in this language, it is difficult to pick out the individual morphemes by looking at the words. Therefore, with the aim of simplifying exposition by allowing a parallel comparison, the Aspect markers have been tabulated separately in table 2.a above the paradigm (repeated from table 1), and the distribution of Topic markers is given below the fully inflected verb forms in table 2.c.<sup>4</sup>

Table 2

a.

Aspect markers	Agent	Theme	Locative	Benefactive	
[-st], [-inc]	*,*	*,*	*,*	*,*	
[+st], [-inc]	Ø, *	-in-, *	-in-, *	-in-, *	
[+st], [+inc]	Ø, red	-in-, red	-in-, red	-in-, red	
[-st], [+inc]	*, red	*, red	*, red	*, red	

<sup>&</sup>lt;sup>2</sup> The nonpositive value of a feature has been called negative (-) here, as in DeGuzman (1978). However, the features can perhaps best be viewed in terms of underspecification (where the negative value of a feature is considered the unspecified value), since a verb unspecified for the feature [st], for example, is not necessarily started or unstarted.

 $<sup>^3</sup>$  In other environments, this morpheme takes on different shapes. I propose that underlyingly the morpheme is the prefix n-. The n- undergoes metathesis with the initial consonant of the word to which it attaches, but this metathesis is optional when the initial consonant is a liquid or a nasal. Epenthetic /i/ is then added to produce the infix -in- (or optionally the prefix ni- before liquids or nasals). Thus:

<sup>4\*</sup> indicates that no morphology appears and Ø indicates that some morpheme is expected but does not appear (i.e. where a null morpheme is posited). Most analyses do not postulate null morphemes in this manner. Instead, the um- morpheme, for example, is said to encode both perfective Aspect and Agent Topic. However, given that Aspectless forms retain Topic markers and the Agent Topic aspectless form retains um-, the [+ st] feature is justifiably Ø in the Agent Topic forms.

b.

Paradigm Table	Agent	Theme	Locative	Benefactive
Aspectless	bumili	bilhin	bilhan	?ibili
Perfective	bumili	binili	binilhan	?ibinili
Imperfective	bumibili	binibili	binibilhan	?ibinibili
Contemplated	bibili	bibilhin	bibilhan	?ibibili

C.

Topic markers	Agent	Theme	Locative	Benefactive
Aspectless	-um-	-in	-an	₹i-
Perfective	-um-	Ø	-an	۶į-
Imperfective	-um-	Ø	-an	₹i-
Contemplated	Ø	-in	-an	?i-

The Topic markers, as they are generally called in the Malayo-Polynesian literature, can be thought of as either agreement or voice marking. In a sense, they agree with the theta-role of a particular noun phrase (hence the names of the columns). Sentence (1) in English can be expressed in four different ways in Tagalog, depending on which Topic marker is used — or rather which NP is agreed with:<sup>5</sup>

'The child bought cloth at the market for mother.'

[NPThe child] bought [NP cloth] at [NP the market] for [NP mother]

Agent Theme Locative Benefactive

	TM + ST + buy	child	cloth	OBL market	for OBL mother <sup>6</sup>
a.	B-um-ili	ang bata	ng tela	sa palenke	para sa nanay
b.	Binili-Ø	ng bata	ang tela	sa palenke	para sa nanay
c.	Binilh-an	ng bata	ng tela	ang palenk	e para sa nanay
d.	?i-binili	ng bata	ng tela	sa palenke	ang nanay

Alternatively, this set of morphemes can be thought of as marking voice if the *ang*-marked NP is considered to be the subject of each sentence. Thus (1a) is an active sentence with Agent as subject; and sentence (1b) is like a passive where Theme is the subject (but note that the original Agent is not Obliquely marked — i.e., not in a *by*-phrase). The last two sentences do not have true analogues in English but have Locative and Benefactive subjects, respectively. It will be assumed that the Topic markers act as voice markers in this way; the concomitant syntactic assumptions will be discussed in the next section.

The order of affixation, though not immediately obvious, can be determined as follows. Consider the perfective Benefactive form: *ibinili* (?i-n-bili: BT-ST-buy); it appears

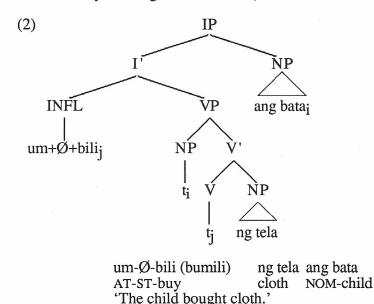
<sup>&</sup>lt;sup>5</sup> There are two ways in which this agreement can be viewed. Either the agreement is with a focussed NP (or a topic NP, hence the name Topic Marker) as Schachter & Otanes (1972) would hold, or the agreement can be considered subject agreement if the *ang*-marked NP is considered a subject.

<sup>&</sup>lt;sup>6</sup> The abbreviations to be used in this paper are: OBL: oblique Case, NOM: Nominative Case, TM: Topic Marker, TT: Theme Topic, AT: Agent Topic, BT: Benefactive Topic, CAUS: causative marker, ST: [+ st], INC: [+ inc], RED: CV reduplication, TRANS: transitive.

that the Aspect morpheme is added before the Topic marker, since if the order were reversed, the result would be: \*?inibili (n-?i-bili: ST-BT-buy).<sup>7</sup>

## 1.2. Syntactic Overview

The structure of Tagalog has recently been the focus some attention in the GB literature (Guilfoyle, Hung & Travis 1992; Hoekstra 1986). These accounts suggest that verb movement occurs in all Tagalog sentences, thus explaining the verb-initial word order of the language. The NPs occurring after the verb are freely ordered, although some pragmatic factors (such as the length of words and discourse context of the sentence) can come into play. The structure of a standard sentence is assumed to be as follows (for motivation of this structure see Guilfoyle, Hung & Travis 1992):



The SPEC of IP is filled at S-Structure by NP movement motivated by Case. This position receives nominative Case through SPEC-head agreement with INFL (showing up as ang or, for proper names, si). The object is Case-marked by the (trace of the) verb; the accusative marker is ng (or ni for proper names). Prepositions transmit oblique Case (sa for common nouns, and kay for proper names) to their NPs. Lastly, the NP in SPEC of VP receives Case from INFL (this Case, like the accusative, also surfaces as ng or ni). By this Case assigning scheme, there are one too many Cases assigned in the sentence. That is, since each NP receives Case in its underlying position, nothing will raise to the SPEC of IP and nominative Case cannot be realized. For example, in sentence (2) above, bata will

<sup>&</sup>lt;sup>7</sup> One can ask if the order of affixation is predicted by such principles as those of Bybee (1985). The Tagalog finding does not appear to corroborate Bybee's ordering since she would expect voice categories to be closer to the verb root than Aspect categories. The order does, however, follow from Bybee's iconicity claim in a more general sense. While the Aspect morpheme is relevant to the verb alone, the Topic marker refers to some noun phrase in the sentence. Thus the ordering of these two morphemes reflects the relative "scope" of the morphemes. This implies that the Topic marker would be correctly predicted to appear further from the verb root than the Aspect marker.

<sup>&</sup>lt;sup>8</sup> Since this Case is perhaps the least marked, it will not be glossed in the examples.

<sup>&</sup>lt;sup>9</sup> Most of these prepositions, such as *patungo*, *magmula* and *na nasa* are optionally realized, and are used primarily to disambiguate (see Cena 1971 for discussion). The preposition *para*, however, is a preposition that is not optional.

receive Case in SPEC of VP; therefore, there is no reason for it to move to the SPEC of IP. and its nominative marking is unexplained. A more detailed analysis of the two markers in INFL will alleviate this. Let the Aspect markers (either or both) assign Case to SPEC of VP. Let the Topic marker absorb one Case, as proposed by Hoekstra (1986), and consistent with the earlier suggestion that these morphemes mark voice. In English, it is thought that passive morphology absorbs accusative Case, forcing the object to raise to SPEC of IP. The same will be true of the Tagalog morpheme -in, namely, that it absorbs accusative Case and that the Theme will be nominatively marked in SPEC of IP. The other morphemes will involve absorption of other Cases: m- will absorb the Case assigned by Aspect and ?i- and -an will absorb the Case assigned by prepositions. Therefore, standard sentences have a Topic-marked verb, and one NP that cannot get Case in its base-generated position and hence must move to SPEC of IP. There are two constructions that differ from the standard sentences under discussion, but which support the claims made here. First, aspectless verbs found in embedded clauses generally have no agents. This follows from the proposal since if there is no Aspect, an agent cannot receive Case. An example of this is the embedded clause in (3):

(3) Nais ng bata [bili-in (bilhin) ang tela] wanted a child buy-TT NOM-cloth 'A child wanted to buy cloth.'

Second, in a construction called the "recent past", there is Aspect but no Topic marker, and thus no Case to be absorbed, nor any NP to raise to SPEC of IP. Correspondingly, no NP bears the nominative marker *ang* or *si*. An example of this is given in (4):

(4) ka+red-bili (Kabibili) lang ng bata ng tela RECENT PAST-buy just child cloth 'A child just bought cloth.'

#### 1.3. The pag- Morpheme

The inflectional system described so far is the standard Tagalog system. However, there is a set of verbs that inflect somewhat differently. These, which have been subjected to various analyses, 10 involve the pag- morpheme (as in the form ipaglinis, the paradigm of which is presented in table 3 below). Some analyses do not separate pag- from other morphemes, positing, for example, mag-, ipag-, pinag-, and even discontinuous morphemes like mag-...-an. One example of this is found in Ramos (1971), which posits ten classes of verbs defined in terms of possible Topic markers. (Other linguists have different criteria for dividing the verb classes.) More specifically, Ramos' verb classes include the iverb class, of which ibibili is a member, and the class of ipag-verbs such as ipaglilinis. In her theory there is one class for -in verbs, such as bibilhin and lilinisin, but separate classes for um-verbs, such as bumili, and mag-verbs, such as maglilinis. A single verb like bili, then, is in three verb classes: the um-, the -in and the i- class. Ramos suggests that there are two distinct Agent Topic markers (um- and mag-), and two distinct Benefactive Topic markers (?i- and ?ipag-). This seems redundant. DeGuzman (1978) collapses the last two of these into a single Benefactive morpheme 7i- and a derivational morpheme pag-. Further, she considers the morpheme mag- to be the combination of Agent Topic m- and derivational pag-. Although DeGuzman proposes that um- and m- are different morphemes, they may well be considered allomorphs, since under the present analysis they perform the same function, the former occurring on verb roots, and the latter appearing if there is an interven-

<sup>10</sup> See DeGuzman (1978: 150ff.) for a survey of analyses of pag- verbs in the literature.

ing non-root morpheme (such as pag-). For the purposes of this paper, the allomorphy of the two forms is not relevant.

Thus there are crucial differences between the "Ramos"-style analysis and the "DeGuzman"-style. In the former, where pag- is assumed to be inflectional, the function of this morpheme need not be determined (since it is considered part of a Topic marker) and its occurrence need not be predictable. This is a view shared by Lieber (1981), who claims (drawing on the work of Carrier-Duncan) that all the Topic markers occurring with a particular verb root are listed in the lexical entry of that verb. Whether a verb takes maginstead of -um- is therefore not predictable, in Lieber's view. DeGuzman, on the other hand, supposes that one type of verb is systematically derived from another by the addition of pag- and hence that its distribution is predictable. The present proposal will share characteristics of both of these types of analyses. In particular, it is assumed here, following DeGuzman, that pag- is a separate morpheme with a separate function and predictable distribution but, following Ramos and many others (Schachter & Otanes 1972; Bowen 1965; Bloomfield 1917), that the pag- morpheme is part of the inflectional system.

Consider the Tagalog words in table 3b, the paradigm for the verb *linis* 'to clean'. Once again, the way in which these words are segmented into morphemes is tabulated above and below the actual paradigm. Note, however, that in addition to the morphemes for Aspect and Topic, the *pag*- morpheme appears between the root and the other affixes on some forms:<sup>11</sup>

Table 3

Aspect markers Theme Benefactive Agent [-st], [-inc] -in-, \* [+st], [-inc] ni-. n-. [+st], [+inc] n-, red ni-, red -in-, red \*, red \*, red \*, red [-st], [+inc]

b.

Paradigm Table	Agent	Theme	Benefactive
Aspectless	maglinis	linisin	?ipaglinis
Perfective	naglinis	nilinis	?ipinaglinis
Imperfective	naglilinis	nililinis	?ipinaglilinis
Contemplated	maglilinis	lilinisin	?ipaglilinis

c.

· .				
Topic markers	Agent	Theme	Benefactive	
Aspectless	m-	-in	₹i-	
Perfective	Ø	Ø	?i₋	
Imperfective	Ø	Ø	₹i-	
Contemplated	m-	-in	?i-	

<sup>11</sup> An interesting observation, which will not be discussed further here, concerns the distribution of null morphemes in the two paradigms (cf. tables 2 and 3). Benefactive forms never involve null morphemes, whereas the more common Agent and Theme forms do. Further, the null morphemes in the Theme forms remain the same in both tables, while in the Agent columns, the null morphemes are distributed completely differently in tables 2 and 3.

The most obvious pattern is the lack of pag- on all the Theme Topic forms. Since pag- is missing from an entire column and is present in the others, its distribution is explainable. Suppose that the morpheme -in does not absorb Case, and that pag- allows the verb to assign structural Case. The following situation arises: in the Agent Topic and Benefactive Topic sentences, the object gets Case from the verb as permitted by pag-; in a Theme Topic sentence, the object must not receive Case from the verb since it raises to SPEC of IP, where it is Case-marked. This change in the function of the Theme Topic morpheme will affect the analysis in section 1.2 of verbs without pag- in their paradigm, like bili. In order to address this issue, an examination of um- versus pag- verb forms (i.e., the AT forms) across verbs is required, and will be presented in the next section. From this examination will come the motivation for the proposed function of pag-.

## 1.3.1. The Function of pag-

The function of the morpheme pag- to be proposed here is that it marks transitivity or that it forces the verb to appear in a transitive structure. More specifically, it allows the verb to assign accusative Case. Evidence for this proposal comes from comparing verb forms where pag- appears. Generally, transitive verbs take pag- and intransitive verbs do not; verbs that are optionally transitive optionally take pag-. Each of these possibilities will be supported by examples. One of the verbs will be used in a sentence, then several inflected verbs (in Agent Topic form) will be listed, and lastly, some possible exceptions will be supplied in each case.  $^{12}$ 

I. Transitive Verbs (pag- and not -um-):

(i) Sentence: Ø-n-pag-luto? (Nagluto) ng pagkain ang babae AT-ST-TRANS-cook food NOM-woman 'The woman cooked food.'

(ii) Other examples:

'Y collected X' nagtuklap Y removed X' nagtipon 'Y carried X' naggiba 'Y destroyed X' nagdala nagrayos 'Y arranged X' nagtunaw 'Y dissolved X', 'Y melted X' 'Y took account of X' 'Y cut X with a scythe' nagtuos naggapas 'Y cooked X' 'Y stretched X' nagluto nagbanat

(iii) Exceptions: These three verbs are exceptional in taking *pag*-but having no objects: nagtungo 'X went' nagduda 'X was skeptical'

nagdasul 'X prayed'

II. Intransitive Verbs (-um- and not pag-):

(i) Sentence: um-Ø-kaway (Kumaway) siya sa akin AT-ST-wave NOM-he OBL-me

'He waved at me.'

<sup>&</sup>lt;sup>12</sup> Most of the examples of verbs in this section are taken from English (1986), but two other Tagalog dictionaries, Panganiban (1969) and Ramos (1971), and my informants, Anna and Christina Mejia, were also helpful.

(ii) Other examples:		
tumawa	'X laughed'	su
lumutang	'X floated'	du
tumulo	'X dripped'	gu
umulan	'it rained'	lu

'X glanced'

'X wandered'

sumulyap

gumala

sumumpa
dumating
gumalaw
'X swore'
'X arrived'
gumalaw
'X moved'
lumangoy
'X swam'
tumira
'X dwelt'
'X moaned', 'X complained'

(iii) Exceptions: In each of these instances, X appears to be Accusatively marked.

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kumita 'Y earned X'
tumugtog 'Y played X (music or an instrument)'
kumuha 'Y obtained X'
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III. Optionally Transitive Verbs (used transitively: pag-, used intransitively: -um-):

(i) Sentences: Ø-n-pag-sali (Nagsali) si Fe ng bata sa laro AT-ST-TRANS-join NOM-Fe child OBL-game 'Fe included a child in the game.' 13

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um-Ø-sali (Sumali) ang bata sa laro
AT-ST-join NOM-child OBL-game
'The child joined in the game.'
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3

(ii) Other examples:

tumumba	'X fell down'	nagtumba	'Y knocked X down'
sumabog	'X exploded'	nagsabog	'Y scattered X'
lumuwas	'X went into the city'	nagluwas	'Y took X into the city'
sumabit	'X was suspended'	nagsabit	'Y hung X'
umakay	'X hung on (to Z)'	nagakay	'Y lead X by the hand'
tumiwalag	'X resigned'	nagtiwalag	'Y expelled X'
bumalik	'X returned (to Z)'	nagbalik	'Y returned X (e.g. a book)'
humagis	'X was thrown'	naghagis	'Y threw X'
umabot	'X reached out (for Z)'	nagabot	'Y handed X (to Z)'

(iii) Exceptions:

a. Sometimes verbs conjugated with *nag*- are synonymous with their *um*- counterparts: kumayod 'Y scraped X' nagkayod 'Y scraped X'

b. Some verbs are exceptional in that the *um*- form is transitive, although the two forms have a different, related meaning:

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umakyat 'Y climbed X' nagakyat 'Z carried Y up (X)' bumili 'Y bought X' nagbili 'Z sold X (to Y)'
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c. Finally, there is a verb that seems to completely oppose the pattern. That is, the verb with *pag*- is intransitive while the same verb without *pag*- is transitive: gumamot 'Y cured X' naggamot 'X treated himself'

Thus the idea that pag- marks transitivity is well supported by examples; however, counterexamples exist, and these are a problem, for several reasons. Because it was suggested that pag- involves Case marking, there should not be exceptional instances where verbs without pag- can Case-mark, or where pag-marked verbs cannot. The Case Filter

<sup>13</sup> Notice that the gloss of the verb changes depending on transitivity; TRANS-join: 'include'.

cannot be applied in a haphazard way; thus these verbs must be idiosyncratic. Notice further that the exceptions cut across verb types. For example, the intransitive *pag*-marked verbs include unaccusative, unergative and stative verbs. There can be no explanation for the unexpected morphology based on the properties of these verb classes. Lastly, this situation presents a learnability problem. If the transitivity marker is left off the occasional verb, and worse still, if it sometimes has the opposite effect, then learning to use the morpheme will be difficult. <sup>14</sup> The analysis proposed here will be maintained despite these problems, which are not unusual in the realm of morphology.

## 1.3.2. Derivational or Inflectional?

The next question to answer is whether the morpheme pag- is inflectional or derivational. One can think of pag- as a derivational morpheme that creates a transitive verb stem like pagbalik 'to return something' from a verb root like balik 'to return'. One fact that might support the view that pag- is derivational is that it is apparently used to derive nouns from verbs. Below are several examples of pag- nouns, with the verb roots from which they are derived.

Derived Nou	ın	Verb Root	t
pagsubog	'test'	subog	'test'
pagkain	'food'	kain	'eat'
pagusap	'conversation'	usap	'talk with'
pagbago	'alteration'	bago	'change'
pagdabog	'stamping of feet'	dabog	'stamp one's feet'
paglaki	'swelling', 'progress'	laki	'grow big'

This use of pag-, however, may be completely unrelated to the pag- under discussion. The pag- in the tumumba/nagtumba-type alternation involves a meaning change from 'knock down' to 'fall down', or more precisely a change in the number of arguments taken, while the pag- in the subog/pagsubog pair above involves only a change in category (V to N). This dual usage of pag- is common to other inflectional (but not derivational) morphemes. Consider this list of derived nouns and related verb roots, where the morpheme on the noun is a Topic marker (-in or -an) or several markers together (m-, pag- and RED):

	Verb Root	
'things to be soaped'	sabon	'rub with soap'
'something to cook'	luto	'cook'
'wash-basin'	hugas	'wash'
'place to eat'	kain	'eat'
	'things to be soaped' 'something to cook' 'wash-basin'	'things to be soaped' sabon 'something to cook' luto 'wash-basin' hugas

Another problem for the analysis is presented by verbs taking the Locative Topic marker, which often do not take *pag*- when they are predicted to do so. An example of such a verb is *linis* itself. Thus the following sentence is grammatical:

in-linis-an (lininisan)	ni Fe	ng pagkain	ang lamesa
ST-clean-LT	Fe	food	NOM-table
'Fe cleared (cleaned) the	e table o	f food.'	

Somehow ng pagkain must get Case-marked without pag- on the verb. This may be attributable to some other property of Locatives, or of the -an morpheme itself. Unfortunately, generalizations will be hard to make given that this is not true of all Locatives. For example, the verb meaning 'to cook', luto', does take pag- in the Locative Topic form: paglutoan. For some verbs, pag- is optionally used with -an, as in pinabigyan and pinapagbigyan, both meaning 'X made Y give Z to W', where W is nominative. The Locative Topic verbs are a subject for future research.

magsasaka	'farmer'	saka	'farm', 'cultivate'
maglalako	'peddler'	lako	'peddle', 'hawk'

One could thus say that the inflectional morphemes (-in, -an, m-, RED and pag-) have derivational counterparts of identical shape (-in, -an, m-, RED and pag-), which are used to derive nouns. It would be more effective, however, to posit a null morpheme that derives all these nouns from the verbs. In conclusion, the fact that pag- appears to be acting derivationally in some instances does not support the view that pag- is derivational; rather, it supports the opposite view that pag- is inflectional like -in, -an, m-, and RED.

The assumption that pag- is inflectional is tied to the proposal for its function made earlier. That is, pag- operates in close connection with the other morphemes of the inflectional system to determine Case assignment in a sentence. That pag- is inflectional is also supported by the fact that there are a large number of verbs that take pag- but not -um-. If the pag- verbs were derived, one would expect their underived counterparts to exist. Furthermore, consider the position of pag- with respect to other verbal morphemes seen in this paper. The marker closest to the verb root is the [+ inc] Aspect marker, followed by pag-, and then by the other Aspect [+ st]. The Topic marker is added last (this can be seen only when the Topic marker is a prefix). A form that shows this is: ipinaglilinis (7i-n-pag-RED-linis: BT-ST-TRANS-INC-clean). This consistent order of morpheme addition reflects the templatic nature of inflection.

To summarize the above discussion, it has been suggested that *pag*-marks transitivity and is inflectional. It fits into the inflectional template as follows:

TM-ST-TRANS-INC-ROOT: TM-n-pag-RED-V

## 2. The Interaction of the Inflectional System with the Causative

The causative morpheme pa- is yet another verbal prefix. Case assignment in a standard sentence differs from that of its causativized counterpart. An extra argument is added, namely a causer, which requires Case. Case-related functions for various inflectional morphemes were proposed in the previous sections based on standard sentences. These functions can be verified in causative sentences. First, however, it is necessary to assume an analysis for causatives.

# 2.1. The Verb Incorporation Analysis

Baker (1988) proposes a typology of languages having causative affixes. He argues that the causative affix is a verb heading its own verb phrase and that the principal verb is incorporated into the causative verb to form one verb complex. Tagalog falls into one of Baker's proposed types, namely the Chichewa<sup>15</sup> type, as will be demonstrated presently.

First, note the Cases received by NPs in the sentences in (5) and (6). The standard constructions are the (a) examples and their causativized counterparts the (b) examples:

- (5) a. Ø-n-pag-linis (Naglinis) si Fe ng bahay AT-ST-TRANS-clean NOM-Fe house 'Fe cleaned the house.'
  - b. Ø-n-pag-pa-linis (Nagpalinis) si Juan kay Fe ng bahay AT-ST-TRANS-CAUS-clean NOM-Juan OBL-Fe house 'Juan made Fe clean the house.'

<sup>&</sup>lt;sup>15</sup> For those readers familiar with Baker (1988), the Chichewa dialect referred to here is Baker's Chichewa-A dialect, not what he calls Chichewa-B.

- (6) a. um-Ø-sali (Sumali) ang bata sa laro AT-ST-join NOM-child OBL-game 'The child joined in the game.'16
  - b. Ø-n-pag-pa-sali (Nagpasali) si Fe ng bata sa laro AT-ST-TRANS-CAUS-join NOM-Fe child OBL-game 'Fe made a child join in the game.'

Observe that the Agent of a transitive verb is obliquely marked in the causative construction in (5b), and that the object bahay retains the same Case marking. With the intransitive verb sumali, given in (6a), the Agent, bata, behaves like an object when a causer, Fe, is added, as in (6b). Since the object marker ng is morphologically identical to the marker found on Agents in SPEC of VP (as can be seen in (1b-d)), it is not clear whether ng bata is actually an object in (6b). One would normally test the the objecthood of the NP by trying to make it into the subject of a passivized sentence. However, in Tagalog there are many voices, as discussed in section 2, hence any NP can become the subject of a "passive". In this language, therefore, it is necessary to look at the verbal morphology in a sentence where the causee, ng bata, is in the nominative Case. If the causee is originally object-like, then the TT marker should appear; while if the causee originates as an agent in SPEC of VP, the AT marker is expected. As (7) shows, it is the TT Marker -in that occurs: 17

(7) red-pa-sali-in (Papasalihin) ni Fe ang bata sa laro INC-CAUS-join-TT Fe NOM-child OBL-game 'Fe will make the child join in the game.'

Intransitive causatives, then, have direct object causees, while transitive causatives have oblique causees.

Given the analysis of Baker (1988), there is a correlation between Case assignment properties of a language and the type of causative construction which that language can exhibit. Thus a language in which a causee becomes oblique (as in (5b), and as in Chichewa), is one which allows preposition insertion. The verbs in such languages may assign only one structural Case and no inherent Cases; therefore triadic verbs in these languages require the insertion of a preposition for one of the arguments. As a result, these languages do not allow Dative shift. In Tagalog, Dative shift is impossible:

- (8) Ø-n-pag-bigay (Nagbigay) si Pedro ng bulaklak kay Fe AT-ST-TRANS-give NOM-P. flower OBL-Fe 'Pedro gave a flower to Fe.'
- (9) \* Ø-n-pag-bigay (Nagbigay) si Pedro ng bulaklak ni Fe<sup>19</sup>
  AT-ST-TRANS-give NOM-P. flower Fe
  'Pedro gave Fe a flower.'

With preposition insertion as an available Case-assigning mechanism, and the Case marking of NPs as described above, a particular Verb Incorporation analysis is expected.

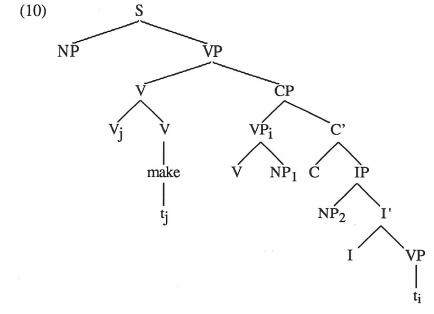
<sup>&</sup>lt;sup>16</sup> This is considered intransitive in spite of *pag*-, because it has the intransitive meaning 'join' instead of the transitive meaning 'include'. The appearance of *pag*- here will be explained in section 2.2.

<sup>17</sup> The Aspect used here is the imperfective because -in is not realized on a perfective verb.

<sup>&</sup>lt;sup>18</sup>A language of this type is French. Languages like English allow triadic verbs to assign one structural and one inherent Case, and thus allow Dative shift. For further details on the relation between triadic verb typology and Causative typology, see Baker (1988: 171–196).

<sup>&</sup>lt;sup>19</sup> Note that this is not ruled out because of word order (which changes in English Dative shift), since no permutation of the NPs in (9) yields a grammatical sentence.

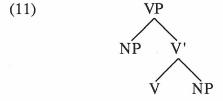
The analysis for a transitive verb is represented in the following tree (from Baker 1988: 188):



The verb phrase containing the principal verb moves to SPEC of CP; from there, the principal verb,  $V_j$ , can incorporate into the causative verb, 'make'.  $NP_1$ , the object of the lower verb, is Case-marked by the adjacent verbal complex.  $NP_2$ , the causee, is not in a position to receive Case; thus, in order for this noun phrase to pass the Case Filter, preposition insertion is required, resulting in an oblique causee. For the intransitive causative,  $NP_1$  is absent and objective Case from the verb complex is assigned to  $NP_2$ ; the result is a causee that acts like a direct object. This analysis explains the NP Case marking in the causatives of both transitive and intransitive verbs in languages like Chichewa, and is referred to as VP-to-Comp incorporation. Problems arise in applying this analysis to Tagalog because of the syntactic assumptions about the language made in this paper. These problems will be resolved in the next section, so that an incorporation analysis can be used.

#### 2.2. Applying the Theory to Tagalog Causatives

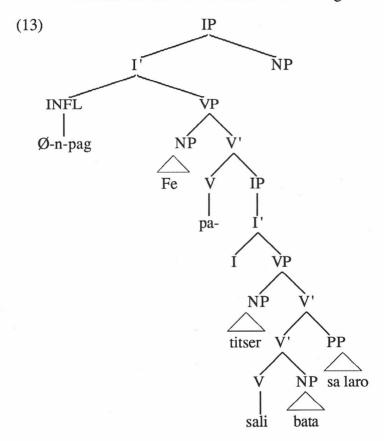
In Incorporation Theory, the trace of a verb is not permitted to Case-mark an object since strict Case Adjacency is observed. For Tagalog, however, the assumption of section 1.2 was that all direct objects receive Case via a verbal trace. In addition, recall that in the syntactic analysis assumed, the VP is of the form given in (11):



Here the NP in SPEC of VP is an Agent argument. If this VP were used in the Verb Incorporation structure in (10), then Case assignment would work in a completely undesirable fashion. The causee would receive structural Case from the verbal complex (hence would not be oblique), and the object of the lower verb would be Caseless.

Although Tagalog shares crucial properties with Chichewa-type languages, different structures must be used to derive the causative in the two language types. The assumptions that (i) traces can Case-mark and (ii) Agents are generated internal to VP can be maintained while employing Incorporation Theory in the following way. Let the lower VP stay in its generated position, but let the lower verb incorporate head-to-head, leaving a trace. This incorporation process resembles that which operates in Kinyirwanda and Chimwini as described by Baker. However, because the derivation of the causatives is affected by the two syntactic assumptions, the surface Case marking in Tagalog causatives resembles neither that of Kinyirwanda nor that of Chimwini, but instead looks like Chichewa. To see how this derivation works, first consider the D-Structure representation in (13) of the causative-transitive sentence in (12).

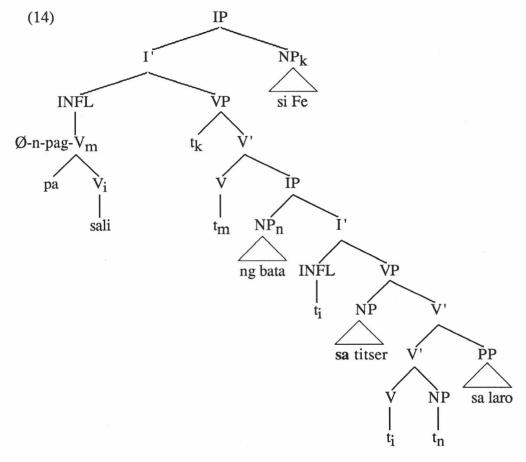
(12) Ø-n-pag-pa-sali (Nagpasali) si Fe ng bata sa laro sa titser AT-ST-T-CAUS-join NOM-Fe child OBL-game OBL-teacher 'Fe made the teacher include a child in the game.'



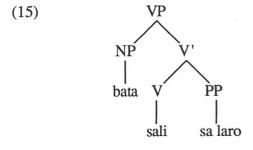
Case assignment in conjunction with Incorporation will work in the following way. Looking first at the matrix clause, we see that the causer Fe can get Case from INFL, but that the AT morpheme absorbs this Case, and thus that Fe will raise to SPEC of IP (this and the other movements described here are represented in (14)). Furthermore, pag- appears in INFL, allowing the causative verb pa- to assign structural Case. Since pa- has no direct object, this Case can be assigned to an NP in SPEC of IP of the lower clause as Exceptional Case Marking. On Sider next the embedded clause. The INFL is empty; thus no Case is

 $<sup>^{20}</sup>$  I assume that there is no CP node in the embedded clause — either because of deletion (along the lines of S' deletion) or because of its failure to be projected — and that this permits Exceptional Case Marking to take place.

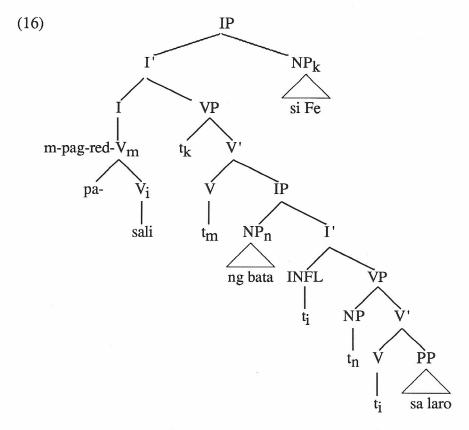
assigned to SPEC of IP or to SPEC of VP, no Topic marker absorbs a Case, and there is no pag- to allow the verb sali to assign Case to bata. Therefore, two NPs are without Case (a situation which would not arise in a standard sentence). However, two Case mechanisms in the language will enable this sentence to pass the Case filter. The Exceptional Case Marking mentioned above will provide Case for an NP in SPEC of IP, and preposition insertion can be used to Case-mark another NP. The NP that raises to SPEC of IP for Case is bata, and that which undergoes preposition insertion is titser (in bold in (14)). The incorporation proceeds head-to-head, and the verb complex finally moves into the matrix INFL. The S-structure tree is shown in (14).



The causative of an intransitive verb is derived in a similar fashion. The D-Structure differs from that in (13) only in that the lower VP has the following structure instead:



Intransitive causative constructions are then analyzed as in (16):



Since the intransitive construction contains one fewer NP, preposition insertion is not required. The NP *bata* moves from SPEC of VP to SPEC of IP, where it is Exceptionally Case-marked by the verb in the matrix clause, as before. This Case assignment is permitted by virtue of the *pag*-morpheme appearing in the matrix INFL; the "transitive" marker thus shows up systematically on intransitive verbs in the causative construction. Again the verb incorporates, moving head-to-head. The result of this process is given in (17):

(17) m-pag-red-pa-sali (Magpapasali) si Fe ng bata sa laro AT-TRANS-INC-CAUS-join NOM-Fe child OBL-game 'Fe will make a child join in the game.'

Incorporation Theory and the morpheme functions proposed in this paper thus allow for a straightforward analysis of Tagalog causatives, which also explains the unusual surface case found in this construction, and the unexpected appearance of the transitive pag-marker when an intransitive verb is causativized. This examination of Tagalog causatives, then, has not only lent support to the morpheme function proposals which were based on standard sentences, but also motivated an analysis of the causatives themselves.

#### 3. Derivation Outside Inflection

One major hypothesis about where morphology "takes place" is the Split Morphology Hypothesis (see, e.g., Perlmutter 1988), according to which inflectional morphology is added in the syntax while derivational morphology is added in the lexicon. Another, the Lexical Morphology Hypothesis, states that all morphemes are added in the lexicon. Under this hypothesis, derivational morphology is added at an earlier stage than inflectional morphology, but both processes are governed by rules applying at the lexical level. (This

paper has been assuming the former in its claim that inflectional morphemes are added in the syntax when a verb moves into the INFL node.) A significant generalization captured by both hypotheses is that derivational morphology appears inside inflectional morphology. However, some counterexamples to this generalization have been reported and taken to support the latter hypothesis. The argument is that such counterexamples can be handled more easily by an hypothesis in which rules governing both inflection and derivation apply at the lexical level, than by one which has the two types of morphology added at separate levels. (Such an argument is given, for example, in de Bleser & Bayer 1988). This section will be a discussion of possible counterexamples from Tagalog to the generalization that derivation occurs inside inflection. While some of these will remain unexplained, at least one type can be accounted for, while keeping the Split Morphology view intact.

The causative morpheme is usually considered derivational. If it is derivational and pag- is indeed inflectional then the verb in the following Tagalog sentence is a counter-

example to the generalization:

(18) n-pa-pag-sali (Pinapagsali) ni Fe ng bata sa laro ang titser ST-CAUS-TRANS-join Fe child OBL-game NOM-teacher 'The teacher was made to include a child in the game by Fe.'

The verb in (18) has derivational pa- outside inflectional pag-. One way to eliminate this as a counterexample is to suppose that pag- is derivational instead of inflectional, contrary to the claim of section 1.3.2. Now, the order of pag- with respect to pa- makes sense: if derivational pag- is added to the verb sali in the lexicon, then the pag-sali complex assigns accusative Case; if the pag- is added to the verb pa-, as in examples (12) and (17), then that verb, pag-pa-, assigns accusative Case. However, a problem arises for the assumption that pag- is derivational: namely it will lead to other counterexamples to the generalization. For example, one of the Aspect markers, which is unquestionably inflectional, intervenes between pag- and the root, as seen in examples like (19) from table 2:

(19) ?ipaglilinis (Contemplated Benefactive topic)
?i-pag-red-linis
BT-TRANS-INC-clean

Counterexamples like these are suspicious because the contentious inflectional morpheme is reduplicative. Perhaps an insertion rule for reduplication could be posited to explain the fact that it appears directly to the left of the verb root, inside the derivational *pag*-. The rule would be something like:

(R) Reduplicate the first CV pair of the verb root disregarding derivational morphemes.

This kind of rule would serve to explain other counterexamples where the causative morpheme appears outside reduplication. These examples are causative constructions where NPs other than the causer are subjects (i.e. are nominatively marked):

- (20) a. pa-red-sali (Pasasali) ni Fe sa titser ang bata sa laro CAUS-INC-join Fe OBL-teacher NOM-child OBL-game 'Fe will make the teacher include a child in the game.'
  - b. 'i-pa-red-sali (Ipasasali) ni Fe sa bata ang laro
    BT-CAUS-INC-join Fe OBL-child NOM-game
    'Fe will make the game be joined in by the children.' (approximate)

c. pa-red-sali-in (Pasasalihin) ni Fe ang bata sa laro CAUS-INC-join-TT Fe NOM-child OBL-game 'The child will be made to join in the game by Fe.'

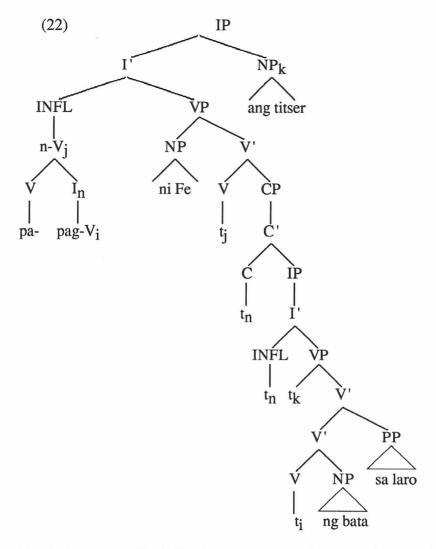
Rule (R) would actually have to be considerably more complicated, since its application is not consistent. In the above examples, the reduplication can appear beside the root, as shown, or it can appear outside of *pa*-, without changing the meaning of the verbal complex. Thus, interchangeable with *pasasali* (pa-RED-sali) is *papasali* (RED-pa-sali) in (20a). Similarly, in (20b) *ipa-pasali* (?i-RED-pa-sali) can be used instead of *ipasasali* (?i-pa-RED-sali); and *papasalihin* (RED-pa-sali-in) can be used in the same context, and with the same meaning, as the verb in (20c), *pasasalihin* (pa-RED-sali-in). While rule (R) is optional in examples like (20), it applies obligatorily in those like (19); and there are those like (21) (from (17) above) where rule (R) must not apply. (Notice that some rule other than (R) would have to have applied to insert reduplication between *pag*- and *pa*-.)

- magpapasali m-pag-RED-pa-sali (m-RED+pag-pa-sali, with partial insertion of RED)
  AT-TRANS-INC-CAUS-join
  - \* magpasasali AT-TRANS-CAUS-INC-join

Accounting for this behaviour would require a detailed phonological analysis beyond the scope of the present paper. It seems, however, that an alternative explanation of examples like (18) is available which does not assume that *pag*- is derivational, and thereby avoids counterexamples like (19).

Consider for a moment the status of pa- in the incorporation analysis. This causative morpheme is considered to be a verb that combines with another in the syntax. Therefore affixation via incorporation operates at the same level as inflectional affixation, namely at the syntactic level. The intuitive scopal explanation that applied when pa- and pag- were assumed to be added in the lexicon is applicable under the assumption that both morphemes are added in the syntax. That is, pag- added to the verbs pa- and sali enables these verbs to assign Case; since there are two VP and two IP nodes posited under the incorporation analysis, this intuition can be realized structurally. Thus in an example like (18), pag- is generated in the lower INFL and is picked up in head-to-head movement, resulting in the observed order. This derivation is illustrated in (22). The causer, Fe, remains in situ and is Casemarked by Aspect in the upper INFL; the caus-ee, titser, raises to SPEC of IP; and finally the direct object of sali receives accusative Case from sali, as permitted by pag- in the lower INFL.

The incorporation analysis of causatives allows for this kind of "counterexample". It does so by recasting some traditionally derivational morphology as syntactic morphology. However, the generalization based on the traditional derivational designation for such morphemes must be considered. Given that the incorporation analysis provides a structural position, which permits counterexamples to be generated, it is in danger of overgenerating inflectional morphemes inside morphemes like the causative, contrary to what is observed in most languages of the world. In the languages explored in Baker (1988), the lower INFL is never filled. One factor that rules out overgeneration is that in languages with VP-to-Comp incorporation, the lower INFL is skipped and there is no possibility of morphemes being picked up by passing through the INFL node. This predicts that a large class of languages cannot have inflection inside the causative. For languages that undergo head-to-head incorporation, the ability of inflectional morphology to appear in the lower INFL will depend on another limiting factor: the morpheme's function. It is rare to find inflection in



the lower INFL (hence rare for inflection to appear inside causative morphology) because inflectional morphemes rarely function in such a way as to make sense when added to the embedded verb in causative constructions. This can be illustrated in Tagalog, where pag- is unusual in being able to appear on both the matrix and embedded verbs. Other morphemes cannot. The reduplicative morpheme can appear inside pa- as in (20), but this cannot be explained by placing reduplication in the lower INFL, because no Case or meaning changes result. It is not possible to offer a scopal explanation for an Aspect marker appearing on the lower verb but not on the matrix verb. This shows that the analysis is restricted. Whether it is restricted enough remains to be verified in other languages.

The incorporation analysis has allowed a counterexample to the generalization to be generated without calling pag- derivational or abandoning a Split Morphology view. The ordering where pag- is closer to the verb root than pa- is possible not because both morphemes are derivational, but because both are added in the syntax. Although the counterexamples in (20) remain to be explained (possibly on phonological grounds), those as in (18) and (19) have been accounted for.

#### 4. Conclusion

According to the proposals made here, the role of inflectional morphemes on the Tagalog verb is best explained in terms of Case theory: Aspect markers have been argued to assign

Case and Topic markers to absorb it (hence their categorization as voice markers). The verb (or rather its trace) has been argued to assign structural Case, but only if it is marked by a special inflectional prefix *pag*-, which accordingly has been called a transitive affix. Conclusions reached about the inflectional morphemes in this paper are summarized in this table:

#### Summary of Inflectional Morphemes

Morpheme	Position	Function
(i) Aspect reduplication <i>n</i> -	[ _ V ] [ _ V ]	adds feature [+ inc] adds feature [+ st]
(ii) Voice		
-in	[V_]	none (perhaps historical)
$\gamma_{i-}$	[V]	absorbs prepositional Case
m-,-um-	[_V]	absorbs Case assigned to SPEC of VP
(iii) Transitive		
pag-	[V]	allows verb to assign Case

An analysis of causative constructions with *pa*- was suggested, which confirmed the proposed functions of the inflectional morphemes.<sup>21</sup> In the process of examining Case relations, an analysis of Tagalog causative constructions was offered, based on the incorporation analysis of Baker (1988); this served to explain the difference between transitive and intransitive causatives.

Many of the morphemes discussed are prefixes, and their relative ordering is of some interest to the issue of the placement of derivational morphology with respect to inflectional morphology. There are many examples in Tagalog where the generalization that inflection always occurs further from the root than derivation appears to be violated. Of course, whether the violation is a real one depends on the classification of the morphemes in question as inflectional or derivational (as, for example, with *pag-*); and on the availability of analyses which may assimilate these exceptions to more standard cases. One type of analysis argued to fulfil this function was the Incorporation analysis of Baker (1988).

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<sup>&</sup>lt;sup>21</sup> Further confirmation for the proposed functions of these morphemes could be derived from an examination of other such constructions where surface Case differs from that in standard constructions.

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#### Résumé

Nous avons proposé que l'inflection verbale joue un role important dans le marquage de Cas en Tagalog. A partir de deux oevres récentes, Guilfoyle, Hung et Travis (1992) et Hoekstra (1986), nous avons analysé le comportement de deux morphèmes inflectionels importants: le marqueur d'Aspect, responsable de la transmission du Cas à l'agent; et le marqueur de topique, que nous avons analysé comme un "absorbeur" de Cas. De plus, nous avons démontré que le statut controversé du morphème pag- peut être élucidé s'il est associé à la fois à l'inflection et au marquage du Cas accusatif. Nous avons vu que les constructions causatives sont impliquées dans plusieurs phénomènes reliés au Cas. La théorie de l'incorporation proposée par Baker (1988) a été utilisé pour l'analyse du Cas dans les structures causatives. Les fonctions des morphèmes proposées ici sont verifiées par la construction causative analysée de cette façon. Enfin, nous avons offert quelques explications préliminaires de certaines données du Tagalog où l'ordre relatif de la morphologie inflectionelle et de la morphologie derivationelle sur le verbe est inattendu.