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# VERB STEM CLASSES IN NORTHERN KANKANAY

DONNA HETTICK CHANDLER

1. Agent oriented
2. Experiencer oriented
3. Patient oriented
4. Argument incorporation
5. Proposition consolidation

## INTRODUCTION

In this paper I classify the verb stems of Northern Kankanay<sup>1</sup> on the basis of their underlying case structures. Others have realised the necessity of some kind of verb classification in Philippine languages if one is to generate well formed sentences. Miller (1964) based her classification strictly on their occurrence or non-occurrence with focus affixes.

Reid (1966) and Barnard and Forster (1968) posited a situational hierarchy and based their classifications of verb stems on co-occurrence restrictions in the situational string and in the clause level grammatical string. Reid also used transformational potential of the clause string as one of the criteria for establishing his classes.

Fillmore (1968) and Langendoen (1969) have developed a theory of case grammar in which they posit a limited number of case relationships which seem to be applicable to a wide range of languages. This paper is an attempt to apply these case relationships to a Philippine language.

The validity of this method of classifying verbs is shown in the consistency in which the classes based on case frames map onto the surface

structure, with only minor exceptions as noted in the body of the paper. It also shows why a particular case relationship matches differently in the surface structure with different classes. For example, Patient matches accessory with conveyance verbs (1.3), whereas with acquisition verbs (1.4) Patient matches object. The difference in the surface form is required, because there is a difference in the direction in which the Patient moves. Further, this method reveals the meaning underlying the different stem classes.

Understanding the underlying meaning of stem classes also allows one to recognise with what sense a word has been borrowed into the language and to predict how it will function. It is not possible, however, to predict how a word will be borrowed. Taip '*type*', for example, has become a Kankanay conveyance verb. An Agent-Source conveys a Patient, what is typed, toward a Goal, a piece of paper. Bik '*bake*' is a change of state verb. An Agent performs an action which changes the state of a Patient, the bread, with an Instrument, the oven.

Likewise, understanding the underlying meanings of stem classes allows one to recognise the kind of predicate<sup>2</sup> into which a noun has been incorporated. It is not possible, however, to predict how a given noun may be incorporated into a predicate. For example, since obi '*sweet potato*', kaiw '*wood/tree*', and sakati '*hay*' can be incorporated into predicates meaning to fetch the things mentioned, one might expect that danom '*water*' would also be incorporated in this way. But this is not the case, probably because there is a verb, sakdo, which means '*to fetch water*'. Danom '*water*' can be incorporated into a distribution verb, as in danomak nan sibo (*water-Rf-1st-sing topic viand*) '*I add water to the viand*', which has essentially the same meaning as tapiyak nan sibo is danom (*add-Rf-1st-sing topic viand nontopic water*) '*I add water to the viand*', but with a greater economy of words, which seems to be a virtue to the Kankanay.

Nouns are similarly incorporated in English as in *busing the children*, which has essentially the same meaning as *transporting the children by bus*. The noun *bus* has replaced the verb *transport* and the Instrument has been incorporated into the predicate. Although a speaker of English has little difficulty understanding *bus* used in this sense, it would be difficult to predict before the fact that this is how *bus* would come to be used.

The case relationships (whose labels are capitalised) that are valid for Northern Kankanay are Agent, Patient, Experiencer, Goal, Source, Range, Noninstigative cause, Factitive, and Essive. Benefactive, cause, instrument, developmental, and certain aspect and modal elements are considered abstract predicates, since they are not a part of the

essential meaning of the stem but are added to it as outside elements.

The problems I encountered in applying this method were mainly centered in becoming accustomed to the theory. I began by taking the case relationships posited by Fillmore (1968), Langendoen (1969), and Frantz (1971) and checking the Northern Kankanay data to see if they were valid for this language. It was difficult not to be influenced by previous studies which were based on surface structure correlations, which made me want to assume that anything that matched object, for example, had to be a Patient. It also took some practice to grasp some of the distinctions clearly enough in my own mind to be able to use them correctly. Examples of these distinctions are the differences between Goal and Range, or Agent and Source, or Agent and Experiencer.

Although surface structure forms were not the starting point of classification, they were not ignored. I assumed that there would be pattern and consistency in how the deep structure case relationships matched onto the surface structure, since without this kind of consistency there could be no communication between speakers of the language.

## 1. AGENT ORIENTED

Several verb stem classes are Agent oriented. That is, although these classes have different combinations of other arguments with which they occur, the argument of Agent, the performer of the action, is common to all of them.

1.1 *BODY POSITION* verbs are Agent oriented; they refer to the body position of the Agent. Motion is not inherent in the meaning of the verbs of this class, but with accessory focus<sup>3</sup> the Agent is asserted to move to or to assume the position given by the verb. The case frame for this class is Agent and Goal. Some members of this class are tokdo 'sit', takdeg 'stand', podan 'lie down', posnok 'sit on floor with knees up', daksay 'sit on floor with legs straight out', likging 'lie on side', lokbob 'lie on stomach'.

The Agent matches the grammatical subject in the surface structure of the clause. With accessory focus, Agent still matches the grammatical nontopic subject. Goal, the place where the action ends, matches the referent.

Tomakdeg nan in-ina isnan agdan (Sf-stand topic woman nontopic stairs)  
'the woman stands on the stairs'.

Itakdegyo no songgep nan Padi (Af-stand-2nd-pl when enter the Priest)  
'you stand when the Priest enters'.

Takdegan nan in-ina nan agdan (*stand-Rf nontopic-subject woman topic stairs*) '*the woman stands on the stairs*'.

1.2 *MOTION* verbs assert that the Agent moves. With these verbs the Agent is viewed as moving along a trajectory. Gieser (1972) describes how these motion verbs are used to establish setting. The case frame for this class, besides Agent, includes Range and Goal: someone moves somewhere on something. Range matches the grammatical object and Goal the oblique in the surface structure. Some members of this class are layaw '*run away*', saa '*return home*', lokso '*work in the fields*', tikid '*climb up*', layog '*descend*', tagtag '*run*', tayaw '*fly*'. Lomayog nan babalo isnan dap-ay (*Sf-descend topic young-man nontopic men's-house*) '*the young man descends to the men's house*'. Layogen nan babalo nan paytokan (*descend-Of nontopic-subject young-man topic stone-steps*) '*the young man descends the stone steps*'.

Any verb in this class also has the additional case frame Agent-Source, Patient, and Goal. The Agent, the one who performs the action, is now also the Source, the one away from whose initial location the action is directed. He moves along with the Patient toward the Goal. As with conveyance verbs (1.3), the Patient matches the grammatical accessory. Ilayog Ina nan obi isnan ili (*Af-descend Mother topic sweet-potato nontopic village*) '*Mother descends with (takes) the sweet potato down to the village.*'

Rather than describe this as an additional case frame of this class, one could say that Patient is an optional argument of the class. For the present, however, I prefer to make this a separate case frame, so that it will be comparable to conveyance verbs.

1.3 *CONVEYANCE* verbs assert that the Patient moves away from the initial location of the Agent, who is therefore also Source, toward a Goal.

Since I am describing stem classes according to their underlying case frames and not merely according to their surface structure focus possibilities, it is possible to assign Goal as an argument, even though the Goal cannot be topic of the clause but rather matches the oblique. Patient matches accessory.

The case frame of conveyance verbs is identical to the second case frame of motion verbs. Both assert that the Patient moves, and in some instances that the Agent-Source moves with it. The motion class, however, describes basically the motion of the Agent, and the Patient is optional with it. The conveyance class is concerned mainly with the motion of the Patient and the motion or non-motion of the Agent is incidental. Some members of this class are wasit '*discard*', gayang



'throw'<sup>4</sup>, dowa 'give', dogos 'push', bowa 'spit out', dolin 'put away'.  
 lwasit lna nan okis isnan tabbak (Af-discard Mother topic peeling non-  
 topic pigpen) 'Mother discards the peeling in the pigpen'.

Distribution verbs are a subclass of conveyance verbs. These verbs not only imply motion away from the Agent-Source, but also that the action is distributed over a group or a field. The case frame is the same as for conveyance verbs, but Goal matches the grammatical referent, rather than the oblique. Some members of this class are walas 'distribute', sebseb 'put out a fire by throwing something on it', megmeg 'feed something to chickens'. Imegmeg lna nan bagas isnan manok (Af-feed-chickens Mother topic rice nontopic chicken) 'Mother feeds the rice to the chickens'. Goal matches the grammatical referent in the example Megmegan lna nan manok is bagas (feed-chickens-Rf Mother topic chicken nontopic rice) 'Mother feeds the chickens rice'.

1.4 ACQUISITION verbs assert that a Patient moves toward the Agent, who is therefore also Goal. Patient matches the grammatical object, Source the oblique. Some members of this class are ala 'get', sikipaw 'catch', ani 'harvest', kan 'eat', inom 'drink', awit 'carry'<sup>5</sup>. Alaen lna nan bagas isnan kamowan (get-Of Mother topic rice nontopic basket) 'Mother gets the rice from the basket'.

Separation verbs are a subclass of acquisition verbs which parallels the distribution subclass of conveyance verbs. As in the previous class of distribution verbs in which the meaning of conveyance or motion away from the Agent-Source is further defined by saying that the Patient is moved to a Goal which extends over a field or group, likewise separation verbs further define the meaning of acquisition by saying that the Source from which a Patient is moved extends over a group or field. The case frame is the same as for acquisition verbs, but Source matches the grammatical referent rather than the oblique. Some members of this class are bolas 'gather fruit or vegetables', dalos 'clean', koskos 'remove the bark of a tree', konot 'scratch', bodas 'clean food for cooking by removing the inedible parts', and daos 'weed'. Bodasan lna nan bagas (clean-Rf Mother topic rice) 'Mother cleans the rice'. Bodasen lna nan eta isnan bagas (clean-Of Mother topic unpounded-grains-of-rice nontopic rice) 'Mother cleans the unpounded grains from the rice'.

A few stems have multiple conveyance-acquisition case frames. With one case frame Agent is the Source and with the other Agent is Goal. For example, in ilakon lna nan baat ken Indi (Af-transact Mother topic

*bananas nontopic-person Indi*) 'Mother sells bananas to Indi', 'Mother' is both the Agent and Source, while 'Indi' is Goal. The Patient, 'bananas', moves away from the Agent-Source. However, in *lakowan Indi nan baat ken Ina* (*transact-Rf Indi topic bananas nontopic-person Mother*) 'Indi buys bananas from Mother', 'Indi' is now the Agent, although her role as Goal has not changed, and 'Mother' remains the Source but not the Agent. The Patient, 'bananas', moves toward the Agent-Goal.

Motion verbs also have this kind of a converse relationship. When a Patient matches accessory the action is directed away from the initial location of the Agent-Source as in *ikaab Moting nan sokit* (*Af-climb Moting topic stick-used-to-remove-fruit-from-trees*) 'Moting climbs up with the stick'. When a Patient matches object the direction of the action is toward the Agent-Goal as in *kaaben Moting nan ollaw* (*climb-Of Moting topic kite*) 'Moting climbs up for the kite'.<sup>6</sup>

1.5 EXTENDED ACTION verbs assert that an action is performed on the surface of a Range. These verbs are similar to separation and distribution verbs in that the action extends over a field, but they differ in that they do not assert that a Patient is directed toward or away from the field. Range matches the grammatical referent. Some members of this class are *saba* 'cultivate', *lampaso* 'scrub the floor with a coconut husk', *laba* 'launder clothes', *owas* 'wash something such as dishes', and *denas* 'wash the feet'. *Sabaan Ina nan om-a* (*cultivate-Rf Mother topic field*) 'Mother cultivates the field'.

1.6 CHANGE OF STATE Agent oriented verbs have the Agent performing an action on a Patient which changes the Patient. Patient matches the grammatical object. Some members of this class are *betbet* 'cut with a chopping motion', *palti* 'butcher', *disig* 'chop fire wood', *dopla* 'smoke tobacco', *langen* 'singe hair off a butchered animal', and *poyo* 'cut down trees'.

An instrument is usually implicit with change of state verbs. Following Langendoen (1969), I have handled instrument as an abstract predicate (5.4). The instrument is not normally expressed in the surface structure unless it is other than the expected instrument.

Change of state verbs can be inflected for referent focus. Under these circumstances Patient is no longer an explicit argument of the predicate, but Range. The action, instead of changing the state of a Patient, is rather localised to a specific Range. For example, *betbeten Moting nan kaiw* (*chop-Of Moting topic wood*) 'Moting chops the wood' asserts that Moting is changing the state of the Patient, 'wood', from

one large piece to smaller usable pieces. However, in the example, *betbetan Moting nan kaiw (chop-Rf Moting topic wood) 'Moting chops the wood'*, the meaning appears to be the same as the first example, but the informant clarifies the meaning as *'Moting chops the end off of the wood'*. 'Wood' now indicates the Range where the action takes place.

1.7 SPEECH verbs are distinguished from other Agent oriented classes in that the action is identified as a speech event and its Patient is a quotation. Both subclasses have the same case frame but are separated into subclasses by the kind of action involved.

Speech categorising verbs classify the kind of discourse which the Agent, who is the speaker, uses to communicate a message, the Patient, to a Goal to whom the message is directed. The Patient matches the grammatical object, and the Goal, the oblique. Some members of this class are *kali 'speak'*, *soot 'ask'*, *sodok 'relate stories'*, *sappit 'relate stories with a moral'*, *toya 'discuss'*, *banag 'conduct a trial'*, and *damag 'tell news'*. *Sodoken Ama nan inommat id kasin isnan ongong-a (relate-stories-Of Father topic happened nontopic before nontopic children) 'Ama relates what happened long ago to the children'*. ('What happened long ago' represents a particular story.)

In speech conveying verbs the action of speaking is asserted to be directed away from the Agent, who is also Source, as with conveyance verbs. The Patient, or message, matches the grammatical accessory, and the Goal, the grammatical referent. Members of this class include *bodaw 'shout'*, *ayag 'invite'*, *baga 'tell'*, *songbat 'answer'*, *oog 'agree'*, and *lowalo 'pray'*. *Ayagan Ama nan agida (invite-Rf Father topic relative-3rd-pl) 'Father invites their relatives'*; *iyayag Ama nan solat isnan agida (Af-invite Father topic letter nontopic relative-3rd-pl) 'Father sends a letter to invite their relatives'*.

It could well be argued that speech conveying verbs could be included in the class of conveyance verbs. Perhaps all Agent-Source verbs should be included in one class. At this point, however, the similarities that these classes have with other classes is better illustrated by keeping them separated, that is, grouping speech conveying verbs with speech categorising verbs.

1.8 With all Agent oriented classes in which Agent is not Source, that is, acquisition, separation, extended action, change of state, and speech categorising, the Patient, or Range in the case of extended action verbs, may match the grammatical accessory. Generally these forms carry the meaning of doing the action in the manner of the stem rather

than in some other way. I am not prepared to describe this fully, but I would like to suggest, as a result of these studies, that perhaps accessory focus implies conveyance. The phenomenon described in Section 2.1.1 of accessory focus occurring with perception verbs to add the meaning of intention seems also to be a kind of conveyance. An example of accessory focus with an acquisition verb is *bilalayena nan awitna danat iyagto* (*carry-in-the-hand-Of-3rd-sing topic load-3rd-sing then-3rd-sing-immediately Af-carry-on-the-head*) '*she carries the load in her hand then she carries it on her head*'. This could be paraphrased '*she picks up the load (acquisition) and carries it in her hand and then she moves it (conveyance) and carries it on her head*'. An example of accessory focus with a change of state verb is *ay isangag tako nan mani onno ipenpen tako* (*question Af-roast 1st-pl topic peanuts or Af-boil 1st-pl*) '*shall we roast the peanuts or shall we boil them?*'. Both *sangag* 'roast' and *penpen* 'boil' are change of state verbs, which generally focus on the Patient with object focus. This example might be paraphrased '*where shall we convey these peanuts: to the skillet to be roasted or to the pot to be boiled?*'. An example of accessory focus with extended action verbs is *ilabam od nan badom adim aped ibabadeng* (*Af-laundry-2nd-sing please topic clothes-2nd-sing negative-2nd-sing just Af-place*) '*please laundry your clothes; don't just lay them down*'. *Laba* 'laundry' is an extended action verb which generally focuses on the Range with referent focus. This example might be paraphrased '*take these clothes and laundry them instead of leaving them lying around*'.

1.9 With the exception of motion verbs, when no Patient occurs, and body position verbs, which take no Patient distinct from the Agent, all the Agent oriented classes can occur with no Agent expressed, but with none of their other case relationships changed. The Agent may be unexpressed to indicate either that it is highly predictable or that the action is unintentional. The nonagentive prefix *ma-* occurs alone with object focus, as *mai-* with accessory focus, as *ma- ... -an* with referent focus, and as *mai- ... -an* with benefactive focus.

## 2. EXPERIENCER ORIENTED

Experiencer oriented verbs differ from Agent oriented verbs in that the subject is asserted to perceive or feel the predication.

2.1 In *PERCEPTION* verbs the Experiencer, who may also be Agent, is asserted to perceive a Patient. The action may or may not be instigated by the Experiencer-Agent. In the main subclass of this class Patient

matches object. Members of this subclass include *ila* 'see', *denge* 'hear', *songsong* 'smell', *likna* 'feel', *getek* 'know', *layad* 'like/love', *nemnem* 'think/remember', *iitaw* 'dream', *ganas* 'enjoy', and *sakit* in its extended meaning of 'feel offence', not its literal meaning of 'feel pain'. *Dengngen lna nan kanta* (hear-Of Mother topic song) 'Mother hears the song'.

2.1.1 A subclass of perception verbs are intentional action perception verbs. Patient matches accessory. Some perception verbs are also members of this subclass. The difference between this subclass and other perception verbs parallels the difference described in Section 1.7, when the Patient matches the accessory instead of the object as expected. I do not fully understand the extent of the meaning of verbs as they occur in this subclass, but I have illustrated them here as best I can: *idngena nan kanan nan mistalana* (Af-hear-3rd-sing topic say possessive teacher-3rd-sing) 'he actively hears (obeys) what his teacher says'; *isongsong nan maliton nan lipolyo* (Af-smell nontopic-subject pregnant topic cabbage) 'the pregnant one rejects the smell of cabbage', *igtekna nan binasana* (Af-know-3rd-sing topic Of-completive-read-3rd-sing) 'He applies what he has read'. Other verbs that behave this way are *sakit* 'feel offence', *nemnem* 'think', *likna* 'feel', and *ganas* 'enjoy'.

Some intentional perception verb stems, which are not also members of the main subclass of perception verbs, are *nengneng* 'look carefully at something', *sin-eng* 'look through a small opening at something', and *naag* 'listen carefully/eavesdrop'. *Inengneng Ama nan lilos* (Af-look-carefully Father topic clock) 'Father looks carefully at the clock'.

2.2 In SENSATION verbs the Experiencer who does not initiate any action is asserted to sense by seeing, hearing, tasting, smelling, feeling, or what the Kankanay consider the sixth sense, knowing. The Experiencer matches the grammatical referent of a nonagentive clause. What is sensed in this class is a Noninstigative cause rather than a Patient, and it matches the oblique when the Experiencer matches the grammatical referent. Noninstigative cause matches subject when these verbs occur with another case frame as described in 3.1. Some perception verbs also occur with the case frame of sensation verbs. Members of this class include *denge* 'hear', *songsong* 'smell', *getek* 'know', *bango* 'fragrant', *aged* 'sour', *dagsen* 'heavy', *peteg* 'bad odour', and *ngenge* 'buzz'. *Nasongsongan si lna isnan bawang* (nonagentive-smell-Rf topic Mother nontopic onions) 'Mother senses the smell of onions'. This can also be paraphrased as 'Mother is adversely affected by the smell of onions'.

### 3. PATIENT ORIENTED

Several classes of verbs are Patient oriented, that is, a Patient is affected in some way by the predication. All Patient oriented clauses may be dominated by an abstract developmental predicate which is described in Section 5 on proposition consolidation.

3.1 *SENSATION STATIVES* describe a Patient in a way which can be perceived by an Experiencer. Patient matches the grammatical subject. Members of this class describe smells, both pleasant and unpleasant, tastes, and also things which can be felt, such as textures and the sharpness of a knife. These stems also have the case frame of sensation experiencer verbs. Subject focus *-om-* with this class indicates developmental; the Patient develops into or becomes the state specified in the verb (Section 5.3).

Members of this class include aged *'sour'*, tamnay *'tasteless'*, sampet *'rough'*, leteg *'straight'*, bango *'fragrant'*, dagsen *'heavy'*, yap-ew *'light weight'*, akoo *'smell of something dead'*, angseg *'smell of rotten plants'*, angilit *'smell of singed hair or feathers'*, amay *'nice'*, ngenge *'buzz'*, and kiking *'jingle'*. Men-aged nan lolokison (Sf-*sour* topic orange) *'the orange is sour'*.

3.2 Another class describes the *INHERENT STATE* of a Patient. The Patient matches the object of a nonagentive clause when the verb is inflected with the completive affix *na-*. These verbs cannot be affixed with the incompletive *ma-*, and they cannot take an Experiencer. Subject focus *-om-* indicates developmental; the Patient takes on the characteristic of the stem. Members of this class include dalos *'inherently clean'*, toled *'brave'*, gaget *'industrious'*, anos *'patient'*, imot *'selfish'*, pigsa *'strength'*, ngina *'expensive'*, and sokil *'naughty'*. Natoled nan soldado (nonagentive-Of-*brave* topic soldiers) *'Soldiers are brave'*.

3.3 *ACQUIRED STATE* verbs are Patient oriented. Patient matches the grammatical object, and Noninstigative cause, the subject. Verbs of this class may be affixed with either the incompletive *ma-* or completive *na-* forms of the nonagentive object focus affix. It is the distinction between not yet and already acquired that allows this class to be inflected with both forms of the affix. The incompletive implies that the Patient is in the process of acquiring the state of the verb, for example, maseyepka (nonagentive-incompletive-Of-*sleep*-topic-2nd-sing) *'You go to sleep'*. With the *na-*, completive form, as illustrated by

Naseyep si Ina (nonagentive-Of-completive-sleep topic Mother) 'Mother is asleep', the Patient has acquired the state. This contrasts with inherent statives in that in the inherent state the Patient is taken as being in the state of the verb, but not as acquiring it. Naanoska (nonagentive-completive-patient-topic-2nd-sing) 'you are patient'.

Acquired statives include bisil 'wealthy', togo 'crazy', bosog 'full from eating', toweng 'deaf', seyep 'asleep', gido 'awake', kao 'thin', beáy 'tired', owat 'hungry', tago 'alive', and siken 'mature'.

3.4 RELATIONAL STATIVES describe the Patient in a way which can be compared: long in relation to short, or small in relation to large. The verb is uninflected for any focus, but the Patient is always topic. Verbs of this class have the additional case frame of change of state Agentive oriented verbs. See Bierwisch (1969) and Chafe (1970) for a fuller description of relational predicates.

Members of this class include ando 'long', aptik 'short', teeteen 'small', dakel 'large', atik 'few', ado 'many', gawis 'good', ngawi 'bad', adaem 'deep', atapew 'shallow', and atakdag 'high'. Teeteen nan baeymi (small topic house-1st-pl) 'our house is small'.

#### 4. ARGUMENT INCORPORATION

Verbs and nouns can be distinguished in most Philippine languages by strictly surface structure criteria, though the description may be rather complicated. The description is further complicated since verbs may function as nouns and nouns as verbs. An oversimplification of the distinction between nouns and verbs in Northern Kankana'y is that verbs can be inflected for focus and complete versus incomplete aspect. Nouns can occur with pluralising or counting affixes and possessive pronouns. However, verbs according to the above description may occur as the noun of a noun phrase, e.g. isgepmo nan binilag (Af-enter-2nd-sing topic Of-completive-dry) 'Bring in what-has-been-put-out-to-dry' or in simple English 'bring in the clothes'. A verb like inom 'drink' may occur with both counting affixes and possessive pronouns, e.g. sinkainomko na (unit-drink-1st-sing this) 'this is my one-unit-of-drink' or 'this is enough for me'.

Nouns, stems which identify a person, place, or thing, may also occur with focus affixes and be inflected for completive aspect. For example, abistong 'jew's harp', abistongen 'play on the jew's harp'; agas 'medicine', agasan 'apply medicine to'; and benge 'hair beads', menbenge 'wear hair beads'.

Frantz (1971) calls nouns, adjectives, and verbs contentives and shows how they can all be treated as predicates with arguments in the underlying structure. Nouns are predicates that have the argument Essive, but they can also be incorporated into a predicate that has the case arguments of verbs. When this happens, however, the noun brings with it the case arguments of its nominal form and adds them to the ones the predicate already has. Hall (1969) has described this phenomenon in terms of a dummy verb. He says that the dummy verbs indicate that some action is performed using the verb stem.

In the examples cited above, the Patient is incorporated into the predicate in place of whatever less specific predicate might be assumed there. Examples of Instruments being incorporated into change of state verbs are *balbeg 'spear'*, *balbegen 'kill with a spear'*; and *igad 'grater'*, *igaden 'shred with a grater'*.

In Northern Kankanay the Factitive (result) is also expressed by argument incorporation: *katlowen Ama nan tali* (non-cardinal-three-Of Father topic rope) '*Father thirds the rope*'. Object focus here implies that '*three*' has the change of state semantics of '*cut*', so the gloss for this example could be '*Father cuts the rope into three pieces*'.

Under incorporation these noun roots fit into regular verb stem classes when they are verbalised, according to their meaning. I have not explored the full extent of argument incorporation in this study. The above examples suggest the possibilities.

## 5. PROPOSITION CONSOLIDATION

Langendoen (1969) has shown how assuming abstract predicates in the deep structure can help explain the relationship between predicates and their arguments for English predicates like *shake*, which can have one argument, as in *the tree shook*, and two arguments, as in *the boy shook the tree*. He points out that *the boy shook the tree* and *the boy caused the tree to shake* have virtually the same meaning. By establishing a deep structure predicate, causative, which has an Agent as one of its arguments, in this case *the boy*, and another proposition as another argument, this similarity in meaning is captured. The second proposition is a predicate, *shake*, with one argument, *the tree*. By a transformational rule the predicate *shake* is substituted for the abstract predicate causative to give the surface structure *the boy shook the tree*. This description enables him to say that "*shake* is a single lexical item which occurs in the deep structure with just one argument". He also shows how by the same principle an abstract instrumental predicate and an abstract inchoative predicate can be established.



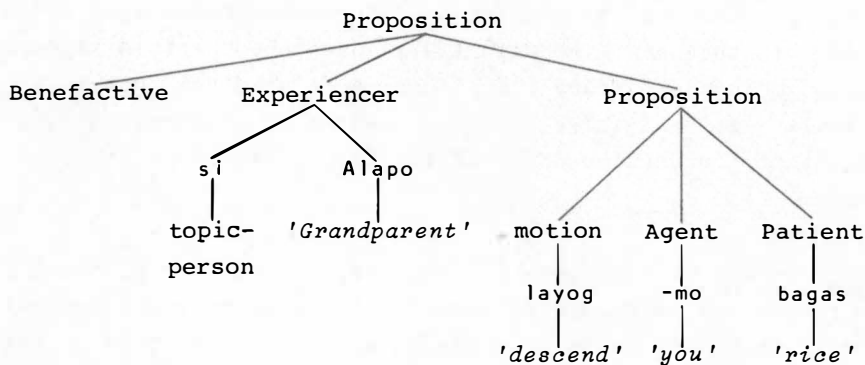
Following this same principle, I have found it useful to assume abstract instrumental, benefactive, causative, and developmental (Langendoen's inchoative) predicates. Perhaps nonagentives could also be handled in this way. Hohulin (1971) describes certain aspects, modes, and manners in Keley-i Kallahan, a related Philippine language, in a similar way, and she calls them complex predicates. She finds, however, that nonagentive does not fit the system as an abstract predicate.

5.1 Benefactive is indicated in the surface structure by the affix *i-* ... *-an*, which is a combination of the accessory focus and referent focus affixes. This could be interpreted as a combination of two semantic elements in a metaphorical sense, that is, one could consider Goal, which frequently underlies referent focus, and motion away from the Agent, which is indicated by accessory focus, as together underlying benefactive. On the other hand, whether one defines benefactive as a simple relation or a composite one does not make a significant difference at this point. For that reason, and since it has been traditionally referred to as one of the focus categories, I have continued so to refer to it in this paper.

The *benefactive* predicate, as opposed to the grammatical benefactive, has Experiencer as one of its arguments. This follows Frantz's (1971) usage. In Northern Kankanay, benefactive indicates that the action is done on behalf of the Experiencer. The Experiencer may or may not be the Goal of the action. The following examples illustrate Experiencer as Goal. *Ilayogan Moting si Alapo is pagey (Bf-descend Moting topic Grandparent nontopic rice) 'Moting takes the rice down for (and to) Grandparent'*. The Agent '*Moting*' is doing the work for Grandparent, but implicit in the statement is that Grandparent will also receive the rice. Benefactive is not necessarily the Goal of the action, however, as in the example *itagtagan Moting si Songado (Bf-run Moting topic-person Songado) 'Moting runs for Songado'* in a baseball game when Songado can still bat, but his sprained ankle won't let him run. Figure 1 (overleaf) illustrates how the abstract benefactive predicate is consolidated with a basic predicate.

5.2 Causative is indicated in the surface structure by the affix *pa-*. The *causative* predicate has an Agent as one of its arguments as well as an Experiencer, which must have the same referent as the Agent of the basic predicate with which causative is consolidated. With motion verbs and some acquisition verbs, causative can be layered on causative. An ordering rule is needed to indicate which arguments map on which

FIGURE 1

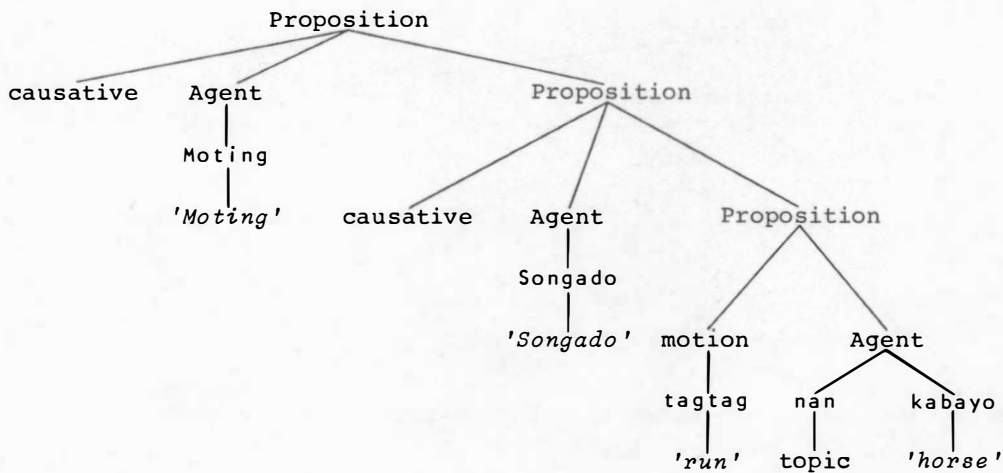


ilayogam si Alapo is bagas (Bf-descend-2nd-sing topic-person Grandparent nontopic rice) 'you take the rice down for Grandparent'.

grammatical category in the surface structure, but this and other mapping rules have not yet been worked out fully. See Frantz (1971) for his description of mapping rules for a similar kind of proposition consolidation in Blackfoot. Double causative is seen in the example *papainomenyo si Aket ken Ikit* (cause-cause-drink-Of-2nd-pl topic-person Baby nontopic Aunt) 'you have Aunt give Baby a drink'. With motion verbs double causative is indicated in the surface structure by the choice of the grammatical category which matches the Agent of the basic predicate. In the simple causative *patagtagen Moting nan kabayo* (cause-run-Of Moting topic horse) 'Moting makes the horse run', 'horse' matches the object even though it is the horse that does the running. However, in the double causative *paitagtag Moting nan kabayo ken Songado* (cause-Af-run Moting topic horse oblique-person Songado) 'Moting has Songado make the horse run', 'horse', though still the Agent of the basic predicate, matches the accessory slot and still another causative predicate is consolidated with the basic predicate. Abstract causative predicates can be illustrated as in Figure 2, on page 15.

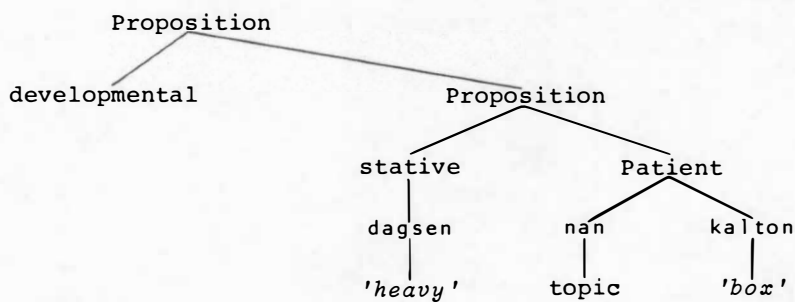
5.3 The *developmental* predicate has no argument other than the embedded proposition. Developmental is indicated in the surface structure by the -om- infix with Patient oriented verbs, except for the class of acquired statives: *domagsen nan kalton* (Sf(-om-)-heavy topic box) 'the box becomes heavy', which can be illustrated as in Figure 3, on page 15.

FIGURE 2



paitagtag Moting nan kabayo ken Songado (cause-Af-run Moting topic horse oblique-person Songado) 'Moting has Songado make the horse run'

FIGURE 3

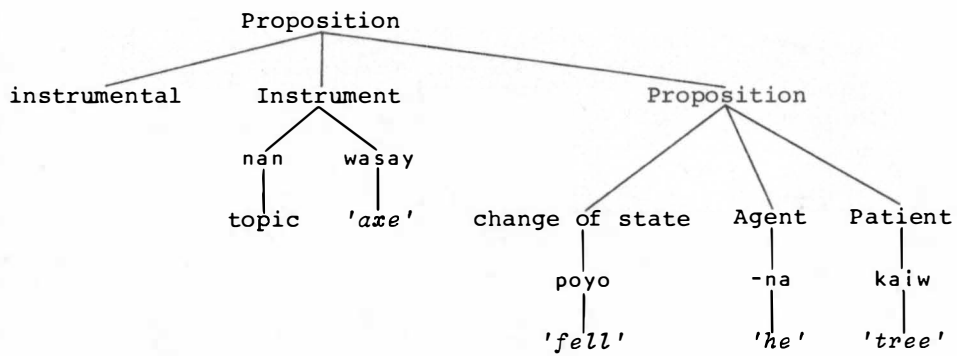


domagsen nan kalton (Sf-heavy topic box) 'the box becomes heavy'

5.4 The *instrumental* predicate has an Instrument as one of its arguments. Instrument matches the accessory in the surface structure: ipoyona nan wasay isnan kaiw (Af-fell-3rd-sing topic axe nontopic tree) 'He fells the tree with an axe'.

See Figure 4, overleaf.

FIGURE 4



ipoyona nan wasay isnan kaiw (Af-fell-3rd-sing topic axe nontopic tree)  
*'he fells the tree with the axe'*

## NOTES

1. Material for this paper was gathered in Balugan, a barrio of the Sagada municipality of Mountain Province (formerly Bontoc Sub-Province), Philippines. Sagada lies on the northernmost edge of the Northern Kankanay language area. According to Dyen (1965), Sagada is one of the languages of the Igorot subfamily of the Philippine branch of Malayo-Polynesian languages. The language spoken in Sagada, according to Scott (1957), is representative of that spoken in the municipalities of Sagada and Besao, which, according to the 1970 census, include over 22,000 speakers. This language is also understood in the municipalities of Kayan, Bauko, and Sabangan, which represent a population of about 25,000. Scott and others have suggested that Sagada is the northernmost extension of Kankanay of the Lepanto area. The Sagada language and culture have been referred to as Northern Kankanay and Northern Kankanai, and Scott has used the term Sagada Igorot. The people refer to themselves and their language as Igolot; however, by this term they include all the ethnic and linguistic groups of the whole former Mountain Province complex. Reid refers to the Sagada language as Western Bontoc in a footnote (1964).

The author has been engaged in field work in Northern Kankanay under the auspices of the Summer Institute of Linguistics since 1963. This study was made during a three-month workshop conducted by Joseph E. Grimes of SIL and Cornell University in 1971 at the Philippine Branch of SIL's southern center at Nasuli, Malaybalay, Bukidnon. Dr Grimes' presence in the Philippines and the workshop he conducted were both partially supported by Grant GS-3180 of the National Science Foundation. Appreciation is expressed for Dr Grimes' guidance during the workshop both in doing the research for and in the writing of this paper. I also gratefully acknowledge the kind assistance Miss Edith Abeya, a native speaker of Northern Kankanay, gave me during the workshop.

Finally, it is acknowledged that the research for this paper was greatly facilitated by the concordance of Northern Kankanay texts, a

concordance made on the IBM 1410 computer at the University of Oklahoma as part of the Linguistic Information Retrieval Project of the Summer Institute of Linguistics and the University of Oklahoma Research Institute, which was partially sponsored by Grant GS-270 of the National Science Foundation.

The phonemes for Northern Kankanay consist of fifteen consonants b, d, g, k, l, m, n, ŋ, p, s, t, w, y, a voiced velar fricative, and glottal stop; and four vowels a, ɨ, i, and o. All examples are given in the practical orthography. The velar fricative which only occurs medially in the vowel sequences ea, aa, ae is symbolised by acute accent on the stressed vowel. Glottal stop is symbolised by hyphen when it occurs in a consonant cluster, and is not symbolised between vowels and word initially. The velar nasal ŋ is symbolised by ng; a hyphen between n and g indicates that this is to be read as a sequence of n and g, not as the velar nasal. The high central vowel ɨ is symbolised by e. Stress, although phonemic, is not written.

2. The terms predicate and argument are used exclusively in their logical sense.

3. Focus is a relationship between certain verbal affixes and a topic noun phrase in the clause. The focuses distinguished in Northern Kankanay are subject (Sf), object (Of), accessory (Af), referent (Rf), and benefactive (Bf). Unlike Ivatan (Reid 1966, 8-11), noun phrases in Northern Kankanay do not contain an explicit identifier of their grammatical roles in the sentence. The focus morpheme which co-occurs with the topic identifies the grammatical role of the topic. There are noun phrases which are never topic; therefore, their grammatical role cannot be identified. I call the grammatical roles of these noun phrases oblique throughout this paper.

4. Some stems have multiple case frames. For example, *gayang* 'throw' also has the case frame of change of state verbs. With this case frame it has the meaning 'injure by stoning'. Although I have indicated when an entire stem class has multiple case frames, I have not indicated it for isolated stems. This will have to be shown, however, in the dictionary.

5. One verb stem *bolig* 'carry on the shoulder' occurs with referent focus rather than object focus; otherwise it functions the same as other verbs meaning to carry in various ways. I believe that this is an exception and does not constitute a reason for handling it differently

from other carry verbs.

6. It is ambiguous from the surface structure as to whether the object here matches Patient or Range. An example of Range is *kaaben Moting nan kaiw* (*climb-Of Moting topic tree*) '*Moting climbs the tree*'. A similar problem in English occurs with *follow that man* and *follow that trail*.

7. A special mapping rule is needed for some verbs when Patient and Agent have the same referent as in *men-emeska* (*Sf-bathe-topic-2nd-sing*) '*you bathe (yourself)*' in contrast to *emsem nan onga* (*bathe-Of-2nd-sing topic child*) '*you bathe the child*'.

I have not included symmetric verbs, such as *asawa* '*marry*' and *sape* '*fight*', and verbs with group Patients, such as *iso* '*compare*', but I believe that they can be included in the class of change of state, or perhaps acquisition verbs, and that mapping rules can also handle the referents for these verbs. Langendoen (1970) has discussed symmetric predicates. Wolff (1970) in his classification of Cebuano verbs has called symmetric verbs a separate class.

#### REFERENCES

- Barnard, Myra L. and Jannette Forster  
1968 "A classification of Dibabawon active verbs". *Lingua*  
4:9.265-78.
- Bierwisch, Manfred  
1969 "On certain problems of semantic representations". *Foundations of Language* 5:2.153-84.
- Chafe, Wallace L.  
1970 *Meaning and the structure of language*. Chicago: University of Chicago Press.
- Dyen, Isidore  
1965 "A lexicostatistical classification of the Austronesian languages". *Indiana University Monograph Series Memoir* 19. *International Journal of American Linguistics* 31, part 2.
- Fillmore, Charles J.  
1968 "The case for case". *Universals in linguistic theory*, ed. by E. Bach and R. Harms, 1-88. New York: Holt, Rinehart and Winston.
- Frantz, Donald G.  
1971 *Toward a generative grammar of Blackfoot*. *Summer Institute of Linguistics publications in linguistics and related fields*, 34. Norman, Oklahoma: Summer Institute of Linguistics of the University of Oklahoma.
- Gieser, C.R.  
1972 "Kalinga sequential discourse". *Philippine Journal of Linguistics* 3:1.15-33.



Hall, William C.

- 1969 "A classification of Siocon Subanon verbs". *Anthropological Linguistics* 11:7.209-15.

Hohulin, Lou

- 1971 "Complex predicates in Keley-i Kallahan". *Pacific Linguistics*, Series A32, 19-30.

Langendoen, D. Terrence

- 1969 *The study of syntax*. New York: Holt, Rinehart and Winston.  
1970 *Essentials of English grammar*. New York: Holt, Rinehart and Winston.

Miller, Jeanne

- 1964 "The role of verb stems in the Mamanwa kernel verbal clauses". *Oceanic Linguistics* 3:1.87-100.

Reid, Lawrence A.

- 1964 "A matrix analysis of Bontoc case marking particles". *Oceanic Linguistics* 3:1.116-37.  
1966 "An Ivatan syntax". *Oceanic Linguistics Special Publication* No.2.

Scott, William H.

- 1957 *A vocabulary of the Sagada Igorot dialect (Philippine Studies Program Transcript No.6)*. University of Chicago.

Wolff, John U.

- 1970 "The classification of Cebuano verbs". *Philippine Journal of Linguistics* 1:1.12-24.



# ROLE COMBINATIONS AND VERB STEM CLASSES IN KALAMIAN TAGBANWA<sup>1</sup>

EDWARD RUCH

0. Introduction
1. Stem classes based on affixation potential
2. Stem classes based on participant roles
3. Stem classes in detail
4. Meanings of affixes
5. Methodology
6. Multiple role combinations
7. Conclusion

## 0. INTRODUCTION

In Philippine languages the diversity of behaviour among verb stems calls for classification. Attempts have been made to classify verb stems by affixation potential (Wolff 1970), affix meaning (Ballard 1973), clause structure (Reid 1966), and participant roles encoded by nonpredicate tagmemes (Forster and Barnard 1968; Chandler 1974).

It seems that none of these criteria alone yields a satisfactory generative classification. Yet, to combine all of them in a systematic way would be a massive research project. Nevertheless, a first step has been made toward such a classification for the Kalamian Tagbanwa language, and what follows is a description of that step.

First, the method of classifying according to affixation potential is discussed briefly. Then, the method of arriving at classes based on

correlation of affixation with role combinations, or arguments, to use Langendoen's (1970) term, is explained, and the classes discovered are presented. Finally, some of the methods and problems of the second classification are discussed.

## 1. STEM CLASSES BASED ON AFFIXATION POTENTIAL

Sixty action<sup>2</sup> verbs are classified according to their co-occurrence possibilities with the following six affixes: ag-, aN-,<sup>3</sup> -um-, -en, -an, and i-. The first three signal subject focus; -en signals object focus; -an, referent focus; and i-, accessory focus. This operation yields eleven classes, as listed below.

CLASS A1 stems take: ag-, aN-, -um-, -en, -an, and i-.

laksu?	'run'
ulik	'return, repair'
deep	'catch, apprehend'
sagep	'catch with the hands'
bitbit	'carry by the fingers'
ali?	'dig up'
liway	'clear off'
upak	'remove bark'
kanit	'remove hide'
keget	'bite'
ilamun	'weed'
takwal	'climb up'
digu?	'bathe'
geret	'cut up transversely'
laglag	'butcher'
seyak	'split up wood'
sarab	'singe'
pelad	'cut down'
pukis	'cut in two'
barik	'break'
kalaw	'snatch away'

CLASS A2 stems take: ag-, aN-, -um-, -an, and i-.

tukuk	'duck, bow head down'
taluk	'hide'
luak	'plant'
lampasu?	'scrub with water'
bunak	'wash clothes'

ugas	<i>'wash dishes, hands'</i>
damus	<i>'wash face'</i>
bukbuk	<i>'dump out, pour out'</i>

CLASS B1 stems take: ag-, aN-, -en, -an, and i-.

wasak	<i>'spread out'</i>
pangan	<i>'eat'</i>
ganut	<i>'dig up camote by rolling up leaves'</i>
pesek	<i>'smash'</i>

CLASS B2 stems take: ag-, aN-, -an, and i-.

pelek	<i>'throw, throw away'</i>
pakdul	<i>'give'</i>
wislik	<i>'shake off'</i>
tagtag	<i>'distribute'</i>

CLASS C1 stems take: ag-, -um-, -en, -an, and i-.

layug	<i>'fly'</i>
angay	<i>'go'</i>

CLASS C2 stems take: ag-, -um-, -an, and i-.

karung	<i>'sit'</i>
kereng	<i>'stand'</i>
lubug	<i>'lie down'</i>
bayuktut	<i>'curl up'</i>
layas	<i>'run far away'</i>
tulud	<i>'push'</i>

CLASS D1 stems take: aN-, -um-, -en, -an, and i-.

tungul	<i>'ascend a mountain'</i>
danek	<i>'descend'</i>
pisik	<i>'pick up'</i>
dawat	<i>'request, extend to'</i>
panak	<i>'spear'</i>
karus	<i>'scratch'</i>
alang	<i>'buy'</i>
gawad	<i>'redeem'</i>

CLASS D2 stems take: aN-, -um-, -an, and i-.

bula?	<i>'spit out'</i>
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CLASS E stems take: ag-, -en, -an, and i-.

papaan	<i>'feed a person'</i>
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CLASS F1 stems take: aN-, -en, -an, and i-.

ayeg	'harvest rice'
inem	'drink'
dulung	'fetch'

CLASS F2 stems take: ag-, -an, and i-.

ated	'take, deliver'
buug	'feed animals'

## 2. STEM CLASSES BASED ON PARTICIPANT ROLES

The verbs are also classified according to participant roles. For reasons discussed in section 5, only affixes -en, -an, and i- are considered in this classification. Also, for the most part, only those roles that can be mapped onto a surface topic tagmeme are taken into account. These roles,<sup>4</sup> along with their abbreviations and definitions, are the following:

- A Agent, the animate participant who performs the action denoted by the verb.
- P Patient, the participant, animate or inanimate, that is affected or changed by the action.
- G-P Goal-Patient, a Patient that is simultaneously the participant toward which the Agent moves.
- L Location, the place where the action takes place.
- G Goal, the participant or place that is the target, or destination, towards which the action is directed.
- S Source, the participant or place away from which the action moves. Often it is the original location of the Patient.
- G-S Goal-Source, a Source that is simultaneously the participant toward which the Agent moves in carrying out the action.
- B Beneficiary, the participant for whose benefit the action is performed.
- I Instrument, the inanimate entity utilised in some way by the Agent to accomplish the action.
- Q Quantity, the inanimate entity that is gathered into a measurable state. Lexically, it is normally the same entity as the Patient, but it is encoded by a different

surface tagmeme.

- C Concomitant, the entity, animate or inanimate, that the Agent involves, or implicates, in performing the action; it accompanies the Agent during the action, but in a passive or inert manner.
- A-S Agent-Source, the participant who not only performs the action, but also is the original location of the Patient.
- X-POSR Possessor, the role, most often encoded on the phrase level, that specifies that role X has an obligatory possessor.

Other conventions employed in this paper are:

- V An action encoded by a verb stem plus affixation.
- $X_t$  indicates that role X is encoded by a topicalised tagmeme.
- $\sim$  indicates a mutually exclusive relationship. When, for example, it is used between two affix-role correlations, it means that certain verbs in the class involved take one correlation, while other verbs take the other; but no verbs take both. If there is no notation with a verb, it is to be understood that it takes the first of the two correlations.

Two other roles were investigated: Stimulus-Reason (S-R) and Time (T). As far as can be determined, these roles can occur with any verb. For this reason, they are used in this paper neither in setting up role combinations nor in classification. Both are topicalised with the verbal prefix *i-* and encoded by the Accessory tagmeme.

Stimulus-Reason is the entity to which the Agent responds by performing the action denoted by the verb. Speaking in another way, one may say that this role expresses the motivation or reason for the action. It appears to be similar to Beneficiary. The latter, however, is usually animate, while Stimulus-Reason has to do with emotions or perceptions.

- 2.1 yang linawa na (yay idinawat na tung yeen ta anen).<sup>5</sup>  
 S-R<sub>t</sub>: *breath his that requested he from me rice*  
 'His hunger, that is what made him request food from me.'

- 2.2 (ilimbug u) yang siit yang kulu u.

*lie down I S-R<sub>t</sub>: pain of head my*

*'My headache is what made me lie down.'*

Stimulus-Reason may also occur unfocused in a subject focus clause. In this case, however, phonologically there is a slight pause (symbolised by a comma) preceding the tagmeme, which is always encoded by a yang phrase.

- 2.3 (nagtukaw ra tung yamen ang minulik,) yang kapupungawen na.

*preceded now to us-ex. returned S-R: homesickness his*

*'He returned home ahead of us due to his homesickness.'*

Time is the period, or the moment, when the action of the verb is carried out. The affix combinations i-pag- and i-paN- are typically used to signal that the role of Time is in focus.

- 2.4 (ag)ipam(anak na ta ian) yang alas sais ang timpranu.

*spear he fish T<sub>t</sub>: six morning*

*'He spears fish at six o'clock in the morning.'*

- 2.5 (ag)ipag(panaw ta lain ang tau) yang panabi u.

*walk bad person T<sub>t</sub>: pain signal my*

*'When I get a pain signal is the time when a bad person is coming.'*

(A certain pain in the body is said to predict a future event.)

Time may also be encoded by an unfocused tagmeme in a clause other than accessory focus. It can be encoded by either a ta phrase (indefinite) or a tung phrase (definite).

- 2.6 (purki agatakaw) ta labii (yang ukban).

*because get stolen T: night oranges*

*'Because the oranges get stolen at night.'*

- 2.7 (yay pagpaiwaniwan) tung labiig kaldaw.

*that is who cares for T: night and day*

*'She is the one who cares for (me) night and day.'*

The encoding of each role cited above, as one or more surface structure tagmemes, is shown in table 1, on next page. Roles are shown on the left and topicalised tagmemes on the right; and the relevant verbal affix in each case is indicated on the line joining role and tagmeme.



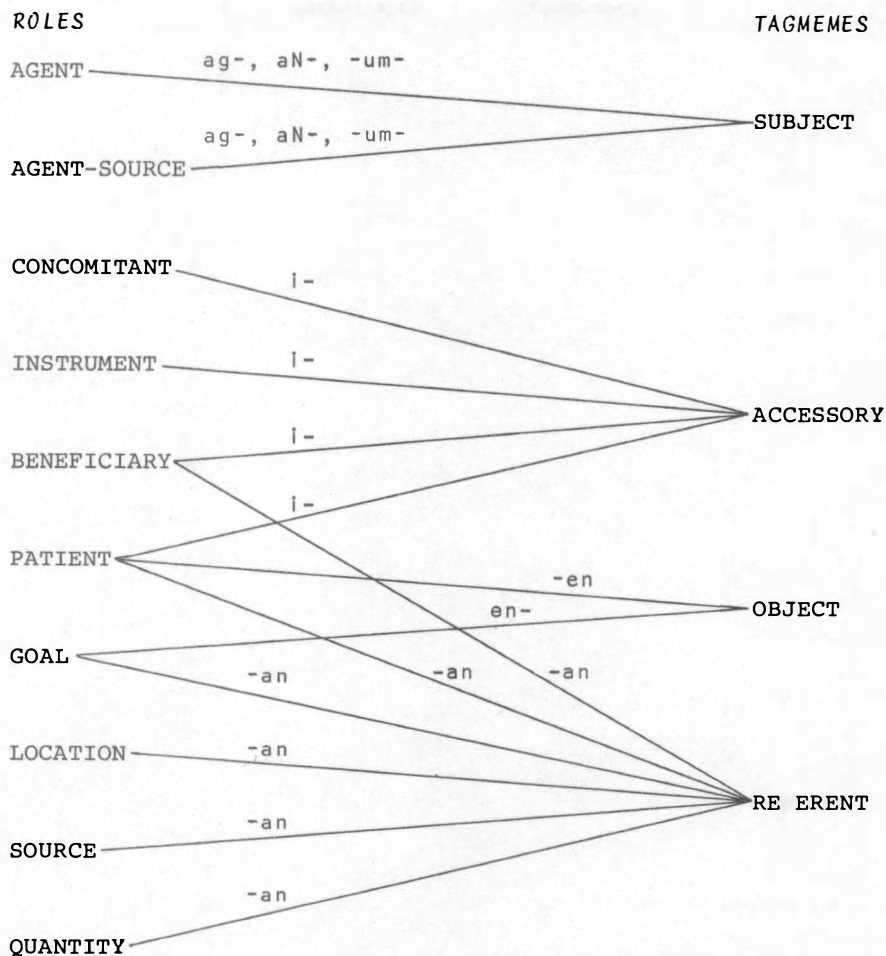


Table 1. Participant roles and their clause level tagmeme encodings.

A total of 32 role combinations are posited for these verbs. When these role combinations are counted in their occurrences with the three affixes stated above, 37 affix-role correlations are found to be useful. Each of these correlations is weighted equally in the classification.

The 37 correlations of affix with role combination are displayed in table 2 overleaf. The order of the symbols in the representation of any given combination of roles is arbitrary and does not represent the linear ordering of the tagmemes that encode the roles. An example of how the symbolisations are to be read is as follows: /APS<sub>t</sub>/-an represents a clause whose predicate is affixed by -an and which may express

the roles of Agent, Patient, and Source, the latter being topicalised.

-en	-an	i-
AP <sub>t</sub>	AL <sub>t</sub>	ALC <sub>t</sub>
AP <sub>t</sub> -POSR	AL <sub>t</sub> -POSR	ALI <sub>t</sub>
AG <sub>t</sub>	AG <sub>t</sub>	AGC <sub>t</sub>
AP <sub>t</sub> L	APL <sub>t</sub>	
AP <sub>t</sub> S	APS <sub>t</sub>	
AP <sub>t</sub> G		
AP <sub>t</sub> I	AP <sub>t</sub> I	API <sub>t</sub>
	APB <sub>t</sub>	AG-PB <sub>t</sub>
	AB <sub>t</sub> C	ABC <sub>t</sub>
	AS <sub>t</sub>	ASC <sub>t</sub>
	ASB <sub>t</sub>	AG-SB <sub>t</sub>
	AS <sub>t</sub> I	ASI <sub>t</sub>
	AQ <sub>t</sub>	
	AP <sub>t</sub>	
	AP <sub>t</sub> L	
	A-SGL <sub>t</sub>	
A-SPG <sub>t</sub>	A-SPG <sub>t</sub>	A-SP <sub>t</sub> G
	A-SPB <sub>t</sub>	A-SG-PB <sub>t</sub>
	A-SPS <sub>t</sub>	

Table 2. Role combinations with co-occurring affix.

### 3. STEM CLASSES IN DETAIL

Each stem class is defined by which of these 37 affix-role correlations the members of the class share. Because verb stems may occur with more than one role combination, often stems that are placed in the same class differ from one another by role combinations they do not share. As a consequence of multiple role combinations, 17 of the 60 verb stems were found to belong simultaneously to two or more stem classes each.

Such multiple class membership is indicated by cross-reference at the end of the entry following the verb stem. Also, immediately following each stem its classification by affix potential is indicated (see section 1). An example of how entries are made and how they are to be understood follows.

*Class 1.1:*

taluk (A2) 'hide' (cf. class 15)

This is to be read thus: In the role combination classification, taluk 'hide' belongs not only to class 1.1 but also to class 15; in the affixation potential classification taluk belongs to class A2.

3.1 CLASS 1 STEM CLASSES

*Class 1.1:* /A-SPG<sub>t</sub>/-an ~ /A-SPG<sub>t</sub>/-en,  
/A-SP<sub>t</sub>G/i-, /A-SPB<sub>t</sub>/-an, and /A-SG-PB<sub>t</sub>/i-.

tagtag (B2) 'distribute'  
taluk (A2) 'hide' (cf. class 15)  
bukbuk (A2) 'dump out'

*Class 1.2:* All the above except /A-SPB<sub>t</sub>/-an.

luak (A2) 'plant'  
tulud (C2) 'push'

*Class 1.3:* All except /A-SPB<sub>t</sub>/-an and /A-SG-PB<sub>t</sub>/i-.

pelek (B2) 'throw, throw away' (cf. class 15)  
ulik (A1) 'return (something)' (cf. classes 6, 11)  
pakdul (B2) 'give'  
ated (F2) 'deliver'  
buug (F2) 'feed animals' (cf. class 16)  
bula? (D2) 'spit out'  
wislik (B2) 'shake off'  
papaan (E) 'feed a person' /A-SPG<sub>t</sub>/-en (cf. class 16)

*Class 1.4:* /A-SP<sub>t</sub>G/i- only.

dawat (D1) 'extend to' (cf. class 2)  
wasak (B1) 'spread out' (cf. class 3)

ILLUSTRATIONS, CLASS 1:

3.1.1 /A-SPG<sub>t</sub>/-an

akd(an) mu ti paulu ta anen na.

V:deliver A-S:you G<sub>t</sub>: Paulo P: rice his

'Deliver to Paulo his rice.'

3.1.2 /A-SP<sub>t</sub>G/i-

(i)ated mu tung ni paulu yang anen na.  
 V:deliver A-S:you G:to Paulo P<sub>t</sub>: rice his  
 'Deliver his rice to Paulo.'

3.1.3 /A-SPG<sub>t</sub>/-en

papaan(en) mu (kanay) ti amey mu ta beteng.  
 V:feed A-S:you please G<sub>t</sub>:uncle your P: young coconut  
 'Please feed your uncle some young coconut.'

3.1.4 /A-SPB<sub>t</sub>/-an

t(in)aluk(an) aw anya yang geer u.  
 V:hid B<sub>t</sub>:for me A-S:he P: bolo my  
 'He hid my bolo for me.' (Cf. 3.15.2.)

3.1.5 /A-SG-PB<sub>t</sub>/i-

(i)t(in)agtag aw (ra) ni wan ta sabur u.  
 V:distributed B<sub>t</sub>:for me now A-S:John G-P: seedling my  
 'John went over to the seedlings and distributed them for me.'

## 3.2 CLASS 2 STEM CLASSES

Class 2.1: /AP<sub>t</sub>S/-en, /APS<sub>t</sub>/-an, /AQ<sub>t</sub>/-an, /APB<sub>t</sub>/-an,  
 /AG-PB<sub>t</sub>/i-, and /API<sub>t</sub>/i-.

pisik	(D1)	'pick up'	
ali?	(A1)	'dig up'	
ganut	(B1)	'dig up camote by rolling up leaves'	
upak	(A1)	'remove bark'	(cf. class 9)
seyak	(A1)	'split up wood'	(cf. class 3)
pelad	(A1)	'out down'	(cf. class 3)
pukis	(A1)	'cut in two'	
panak	(D1)	'spear'	

Class 2.2: All except /AQ<sub>t</sub>/-an.

kanit	(A1)	'remove hide'	(cf. class 9)
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Class 2.3: /AP<sub>t</sub>-POSR/-en or /AP<sub>t</sub>/-en instead of /AP<sub>t</sub>S/-en;  
 /AS<sub>t</sub>I/-an instead of /APS<sub>t</sub>/-an; all the rest are the same.

sarab	(A1)	'singe'	
kalaw	(A1)	'snatch away'	

Class 2.4: shares only /AP<sub>t</sub>S/-en, /APS<sub>t</sub>/-an, and /AG-PB<sub>t</sub>/i-.

dawat (D1) 'request, extend to' (cf. class 1)

Class 2.5: shares only /AP<sub>t</sub>S/-en and /APS<sub>t</sub>/-an.

dulung (F1) 'fetch' (cf. class 3)

#### ILLUSTRATIONS, CLASS 2:

##### 3.2.1 /AP<sub>t</sub>S/-en

(pinag)ali ni nulay yang kapari tung kaluakan ta.

V:dug up A: Nulay P<sub>t</sub>: kapari root S:from garden our  
'Nulay dug up the kapari root from our garden.'

##### 3.2.2 /APS<sub>t</sub>/-an

(pinang)ali(an) ni nulay yang kaluakan ta ta kapari.

V:dug up A: Nulay S<sub>t</sub>: garden our P: kapari root  
'Nulay dug up some kapari root from our garden.'

##### 3.2.3 /AQ<sub>t</sub>/-an

(in)ali(an) ni nulay yang kaparing atia.

V:dug up A: Nulay Q<sub>t</sub>: kapari root that  
'Nulay dug up that much kapari root.'

##### 3.2.4 /APB<sub>t</sub>/-an

(in)ali(an) aw ni nulay ta kapari.

V:dug up B<sub>t</sub>:for me A: Nulay P: kapari root  
'Nulay dug up some kapari root for me.'

##### 3.2.5 /AG-PB<sub>t</sub>/i-

(in)ali aw ni nulay ta kapari.

V:dug up B<sub>t</sub>:for me A: Nulay P: kapari root  
'Nulay went out and dug up some kapari root for me.'

##### 3.2.6 /API<sub>t</sub>/i-

(ipinang)ali ni nulay ta kapari yang sukan u.

V:dug up A: Nulay P: kapari root I<sub>t</sub>: digging tool my  
'Nulay dug up some kapari root with my digging tool.'

##### 3.2.7 /AP<sub>t</sub>-POSR/-en

s(in)arab na yang bulbul na.

V:singed A:he P<sub>t</sub>: feathers-POSR:its  
'He singed its feathers.'

3.2.8 /AP<sub>t</sub>/-en

s(in)arab na yang paray.

V:singed A:he P<sub>t</sub>: unhusked rice  
'He singed the rice.'

3.2.9 /AS<sub>t</sub>I/-an

s(in)arab(an) na yang babuy ta lukay.

V:singed A:he S<sub>t</sub>: pig I: torch  
'He singed the pig with a torch.'

## 3.3 CLASS 3 STEM CLASSES

Class 3.1: /AP<sub>t</sub>L/-en, /APL<sub>t</sub>/-an, /AQ<sub>t</sub>/-an, /APB<sub>t</sub>/-an,  
/AG-PB<sub>t</sub>/i-, and /API<sub>t</sub>/i-.

ayeg	(F1)	'harvest rice'	
geret	(A1)	'cut up transversely'	
laglag	(A1)	'butcher'	
pelad	(A1)	'cut down'	(cf. class 2)
pesek	(B1)	'smash'	

Class 3.2: lacks /AQ<sub>t</sub>/-an.

wasak	(B1)	'spread out'	(cf. class 1)
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Class 3.3: lacks /APL<sub>t</sub>/-an.

seyak	(A1)	'split up wood'	(cf. class 2)
barik	(A1)	'break'	

Class 3.4: lacks /AP<sub>t</sub>L/-en and /AQ<sub>t</sub>/-an.

bitbit	(A1)	'carry by the fingers'	
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Class 3.5: shares only /APL<sub>t</sub>/-an.

dulung	(F1)	'fetch'	(cf. class 2)
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## ILLUSTRATIONS, CLASS 3:

3.3.1 /AP<sub>t</sub>L/-en

(in)ayeg na yang wagwag tung taraneman ang atii.

V:harvested A:he P<sub>t</sub>: variety of rice L:in paddy that  
'He harvested the wagwag rice in that paddy over there.'

3.3.2 /APL<sub>t</sub>/-an

(pinang)ayeg(an) na ta wagwag yang taraneman ang atii.  
 V:harvested A:he P: variety of rice L<sub>t</sub>: paddy that  
 'He harvested the wagwag rice in that paddy over there.'

3.3.3 /AQ<sub>t</sub>/-an

(in)ayeg(an) na yang duruang sakung paray.  
 V:harvested A:he Q<sub>t</sub>: two sack rice  
 'He harvested the amount of two sacks of rice.'

3.3.4 /APB<sub>t</sub>/-an

(in)ayeg(an) na ti nanay na ta ebas.  
 V:harvested A:he B<sub>t</sub>:mother his P: immature rice  
 'He harvested some immature rice for his mother.'

3.3.5 /AG-PB<sub>t</sub>/i-

(in)ayeg aw anya ta ebas.  
 V:harvested B<sub>t</sub>:for me A:he P: immature rice  
 'He went out and harvested some immature rice for me.'

3.3.6 /API<sub>t</sub>/i-

(ipinang)ayeg na ta paray yang kaayeg u.  
 V:harvested A:he P: rice I<sub>t</sub>: harvesting instrument my  
 'He harvested some rice with my harvesting instrument.'

## 3.4 CLASS 4 STEMS

Class 4: /AL<sub>t</sub>/-an and /ALC<sub>t</sub>/i-.

karung	(C2)	'sit'	
kereng	(C2)	'stand'	
lubug	(C2)	'lie down'	
bayuktut	(C2)	'curl up'	
takwal	(A1)	'climb up'	(cf. class 5)
digu?	(A1)	'bathe'	(cf. class 10)

## ILLUSTRATIONS, CLASS 4:

3.4.1 /AL<sub>t</sub>/-an

t(in)akwal(an) na yang balagen.  
 V:climbed up A:he L<sub>t</sub>: vine  
 'He climbed up on the vine.'

3.4.2 /ALC<sub>t</sub>/i-

(i)t(in)akwal aw ni paulu tung ayu?.

V:climbed up C<sub>t</sub>:with me A: Paulo L: tree

'Paulo climbed up into the tree with me (on his back).'

## 3.5 CLASS 5 STEM CLASSES

Class 5.1: /AP<sub>t</sub>G/-en, /AG<sub>t</sub>/-en, /AL<sub>t</sub>/-an, /APB<sub>t</sub>/-an,  
/AB<sub>t</sub>C/-an, /ABC<sub>t</sub>/i-, and /AG-PB<sub>t</sub>/i-.

tungul (D1) 'ascend a mountain'

danek (D1) 'descend'

Class 5.2: shares all of the above except /AG<sub>t</sub>/-en and /APB<sub>t</sub>/-an.

takwal (A1) 'climb up' (cf. class 4)

Class 5.3: shares only /AB<sub>t</sub>C/-an, /ABC<sub>t</sub>/i-, and /AG<sub>t</sub>/-en.

laksu? (A1) 'run' (cf. class 6)

## ILLUSTRATIONS, CLASS 5:

3.5.1 /AP<sub>t</sub>G/-en

tungul(un) mu (kanay) yang saleng tung ni tatay mu.

V:ascend mountain A:you please P<sub>t</sub>: pitch G: father your

'Please ascend the mountain (to get) the pitch at your father's.'

3.5.2 /AG<sub>t</sub>/-en

tungul(un) mu yang bukid yang dibulalu?.

V:ascend mountain A:you G<sub>t</sub>: mountain of Dibulalu

'Climb up Dibulalu Mountain.' (Punctiliar action, i.e. the agent climbs just for the sake of climbing and then comes down again.)

3.5.3 /AL<sub>t</sub>/-an

t(in)ungul(an) ni tinuy yang bukid yang dibulalu?.

V:ascended mountain A: Tinuy L<sub>t</sub>: mountain of Dibulalu

'Tinuy climbed Dibulalu Mountain.' (Durative action, i.e. the agent stayed on the mountain a while.)

3.5.4 /APB<sub>t</sub>/-an

t(in)ungul(an) aw ni tinuy ta saleng.

V:ascended mountain B<sub>t</sub>:for me A: Tinuy P: pitch

'Tinuy ascended the mountain (to get) the pitch for me.'



3.5.5 /AB<sub>t</sub>C/-an

tungul(an) mu ti tatay mung gesye ta kalabasa?.

V:ascend mountain A:you B<sub>t</sub>: father your small C: squash

'Take some squash up the mountain for your little father (a particular uncle).'

3.5.6 /ABC<sub>t</sub>/i-

(i)t(in)ungul na yang kalabasa tung ni tatay nang gesye?.

V:ascended mountain A:he C<sub>t</sub>: squash B: father his small

'He took some squash up the mountain for his little father (a particular uncle).'

3.5.7 /AG-PB<sub>t</sub>/i-

(i)t(in)ungul aw ni tinuy ta kasuy.

V:ascended mountain B<sub>t</sub>:for me A: Tinuy G-P: cashew nuts

'Tinuy ascended the mountain (to get) some cashew nuts for me.'

## 3.6 CLASS 6 STEM CLASSES

Class 6.1: /AG<sub>t</sub>/-en, /AG<sub>t</sub>/-an, /AS<sub>t</sub>/-an, /AGC<sub>t</sub>/i-, and /ASC<sub>t</sub>/i-.

laksu?	(A1)	'run'	(cf. class 5)
layug	(C1)	'fly'	/AG <sub>t</sub> /-an
layas	(C2)	'run away'	/AG <sub>t</sub> /-an

Class 6.2: /AG<sub>t</sub>/-en only.

ulik	(A1)	'return to (someone)'	(cf. classes 1, 11)
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## ILLUSTRATIONS, CLASS 6:

3.6.1 /AG<sub>t</sub>/-en

l(in)aksu na yang kasawa na.

V:ran A:she G<sub>t</sub>: spouse her

'She ran towards her husband.'

3.6.2 /AG<sub>t</sub>/-an

(pinan)layas(an) ni tampulanu yang mindanaw.

V:ran far away A: Tampulanu G<sub>t</sub>: Mindanao

'Tampulanu ran far away to Mindanao.'

3.6.3 /AS<sub>t</sub>/-an

l(in)ayas(an) ni tampulanu yang mga putul na.

V:ran far away A: Tampulanu S<sub>t</sub>: plural sibling his

'Tampulanu ran far away from his siblings.'

3.6.4 /AS<sub>t</sub>/-an

(pinan)laksu(an) na yang kasawa na.

V:ran A:she S<sub>t</sub>: spouse her

'She ran from her husband.'

3.6.5 /AGC<sub>t</sub>/i-

(i)l(in)aksu na yang kasawa na tung balay.

V:ran A:he C<sub>t</sub>: spouse his G: house

'He ran with his wife over to the house (to get her out of danger).'

3.6.6 /ASC<sub>t</sub>/i-

(i)l(in)ayug yang kanug yang ana na tung bayay.

V:flew A: eagle C<sub>t</sub>: child its S:from nest

'The eagle flew with its child from the nest.'

## 3.7 CLASS 7 STEMS

Class 7: /AP<sub>t</sub>L/-an, /AP<sub>t</sub>/-an, /AG-PB<sub>t</sub>/i-, and /API<sub>t</sub>/i-.

lampasu?	(A2)	'scrub with water'	/AP <sub>t</sub> /-an
bunak	(A2)	'wash clothes'	
ugas	(A2)	'wash dishes'	

## ILLUSTRATIONS, CLASS 7:

3.7.1 /AP<sub>t</sub>L/-an

(in)ugas(an) ni angì yang mga pinggan tung palanggana?.

V:washed A: Angì P<sub>t</sub>: plural dish L:in basin

'Angì washed the dishes in the basin.'

3.7.2 /AG-PB<sub>t</sub>/i-

(in)ugas aw anya yang pinggan ang atia.

V:washed B<sub>t</sub>:for me A:she G-P: dish that

'She went and washed that dish for me.'

3.7.3 /API<sub>t</sub>/i-

(ipinang)ugas ni angì yang waing malabab tung mga pinggan.

V:washed A: Angì I<sub>t</sub>: water lukewarm P: plural dish

'Angì washed the dishes with lukewarm water.'

3.7.4 /AP<sub>t</sub>/-an

(pinag)lampasu(an) na yang balay.

V:scrubbed with water A:he P<sub>t</sub>: house

*'He scrubbed the whole house with water.'*

### 3.8 CLASS 8 STEMS

Class 8: /AP<sub>t</sub>L/-en, /APS<sub>t</sub>/-an, and /AG-PB<sub>t</sub>/i-.

pangan	(B1)	'eat'
inem	(F1)	'drink'

ILLUSTRATIONS, CLASS 8:

#### 3.8.1 /AP<sub>t</sub>L/-en

(in)inem na yang teba tung balay ang atii.  
 V:drank A:he P<sub>t</sub>: kind of fermented drink L:in house that  
*'He drank the tuba in that house over there.'*

#### 3.8.2 /APS<sub>t</sub>/-an

(pinang)inem(an) na yang ungut ang dakulu ta teba?.  
 V:drank A:he S<sub>t</sub>: coconut shell big P:kind of fermented drink  
*'He drank tuba from the large coconut shell.'*

#### 3.8.3 /AG-PB<sub>t</sub>/i-

(in)inem na yang tian na ta teba?.  
 V:drank A:he B<sub>t</sub>: stomach his G-P: kind of fermented drink  
*'He drank some tuba for his stomach's sake.'*

### 3.9 CLASS 9 STEMS

Class 9: /AP<sub>t</sub>-POSR/-en, /ASB<sub>t</sub>/-an, /AG-SB<sub>t</sub>/i-, and /ASI<sub>t</sub>/i-.

upak	(A1)	'remove bark'	(cf. class 2)
kanit	(A1)	'remove hide'	(cf. class 2)

ILLUSTRATIONS, CLASS 9:

#### 3.9.1 /AP<sub>t</sub>-POSR/-en

(in)upak na yang ulit yang ayu?.  
 V:removed A:he P<sub>t</sub>: bark-POSR: tree  
*'He removed the bark of the tree.'*

#### 3.9.2 /ASB<sub>t</sub>/-an

(in)upak(an) aw anya yang mga ayung atia.  
 V:removed B<sub>t</sub>:for me A:he S: plural tree that  
*'He removed the bark from those trees for me.'*

3.9.3 /AG-SB<sub>t</sub>/i-

(in)upak aw anya yang mga ayung atia.

V:removed B<sub>t</sub>:for me A:he G-S: plural tree that

'He went and removed the bark from those trees for me.'

3.9.4 /ASI<sub>t</sub>/i-

(ipinag)upak na yang geer u tung mga ayung atia.

V:removed A:he I<sub>t</sub>: bolo my S: plural tree that

'He removed the bark from those trees with my bolo.'

## 3.10 CLASS 10 STEMS

Class 10: /AP<sub>t</sub>/-an, /AP<sub>t</sub>L/-en, /APL<sub>t</sub>/-an, /API<sub>t</sub>/i-, and /AL<sub>t</sub>/-an.

digu?	(A1)	'bathe'	/AP <sub>t</sub> L/-en	(cf. class 4)
damus	(A2)	'wash face'		

## ILLUSTRATIONS, CLASS 10:

3.10.1 /AP<sub>t</sub>/-an

d(in)amus(an) aw ni marki.

V:wash face P<sub>t</sub>:I A: Mark

'Mark washed my face.'

3.10.2 /AL<sub>t</sub>/-an

(pinan)damus(an) na yang ungut ang dakulu?.

V:washed face A:he L<sub>t</sub>: coconut shell large

'He washed his face in the large coconut shell.'

3.10.3 /AP<sub>t</sub>L/-en

d(in)igu na yang ana na tung bawang.

V:bathed A:he P<sub>t</sub>: child her L:in river

'She bathed her child in the river.'

3.10.4 /APL<sub>t</sub>/-an

(pinag)digu(an) na yang bawang ang atia tung ana na.

V:bathed A:she L<sub>t</sub>: river that P: child her

'She bathed her child in that river over there.'

3.10.5 /API<sub>t</sub>/i-

(ipinan)digu na yang waing malabab tung ana na.

V:bathed A:she I<sub>t</sub>: water lukewarm P: child her

'She used the lukewarm water to bathe her child.'

## 3.11 CLASS 11 STEM CLASSES

Class 11.1: /AP<sub>t</sub>/-en ~ /AP<sub>t</sub>L/-en, /AP<sub>t</sub>/-an ~ /APL<sub>t</sub>/-an,  
/API<sub>t</sub>/i-, and /AG-PB<sub>t</sub>/i-.

deep (A1) 'catch, apprehend' /AP<sub>t</sub>L/-en, /APL<sub>t</sub>/-an  
sagep (A1) 'catch with hands'

Class 11.2: /AP<sub>t</sub>/-en only.

ulik (A1) 'repair' (cf. classes 1, 6)

## ILLUSTRATIONS, CLASS 11:

3.11.1 /AP<sub>t</sub>/-en

s(in)agep na yang bula?.

V: caught A: he P<sub>t</sub>: ball

'He caught the ball.'

3.11.2 /AP<sub>t</sub>L/-en

(pinan)deep na yang mga bakes ang atia tung bukatud ang atii.

V: caught A: he P<sub>t</sub>: plural monkey that L: hillock that

'He caught those monkeys on that hillock over there.'

3.11.3 /AP<sub>t</sub>/-an

s(in)agep(an) na yang bula?.

V: caught A: he P<sub>t</sub>: ball

'He caught the ball.'

3.11.4 /APL<sub>t</sub>/-an

(pinag)deep(an) na ta bakes yang bukatud ang atii.

V: caught A: he P: monkey L<sub>t</sub>: hillock that

'He caught the monkey on that hillock.'

3.11.5 /API<sub>t</sub>/i-

(i)s(in)agep na yang kalima nang wala tung bula?.

V: caught A: he I<sub>t</sub>: hand his left P: ball

'He caught the ball with his left hand.'

3.11.6 /AG-PB<sub>t</sub>/i-

(ipinan)deep na yang mga putul na ta bakes.

V: caught A: he B<sub>t</sub>: plural sibling his G-P: monkey

'He went out and caught monkeys for his siblings.'

## 3.12 CLASS 12 STEMS

Class 12: /AP<sub>t</sub>-POSR/-en, /AL<sub>t</sub>-POSR/-an, /API<sub>t</sub>/i-, /ALI<sub>t</sub>/i-, and /AP<sub>t</sub>L/-en.

karus	(D1)	'scratch'
keget	(A1)	'bite'

## ILLUSTRATIONS, CLASS 12:

3.12.1 /AP<sub>t</sub>L/-en

k(in)eget ni dulu yang mula u tung kakay na.  
 V:bit A: Dulu P<sub>t</sub>: child my L: foot his  
 'Dulu (a dog) bit my child on his foot.'

3.12.2 /AP<sub>t</sub>-POSR/-en

k(in)eget ni dulu yang kakay yang mula u.  
 V:bit A: Dulu P<sub>t</sub>: foot-POSR: child my  
 'Dulu bit the foot of my child.'

3.12.3 /AL<sub>t</sub>-POSR/-an

k(in)eget(an) ni dulu yang kakay yang mula u.  
 V:bit A: Dulu L<sub>t</sub>: foot-POSR: child my  
 'Dulu bit my child's foot.'

3.12.4 /API<sub>t</sub>/i-

(ipinang)eget na yang belkang na tung tubu?.  
 V:bit A:he I<sub>t</sub>: molar his P: sugarcane  
 'He used his molars to bite the sugarcane.'

3.12.5 /ALI<sub>t</sub>/i-

(ipinang)arus na yang ukub nang abwat tung kabala u.  
 V:scratched A:he I<sub>t</sub>: fingernail his long L: arm my  
 'He scratched my arm with his long fingernail.'

## 3.13 CLASS 13 STEMS

Class 13: /AP<sub>t</sub>S/-en, /AS<sub>t</sub>/-an, /ASB<sub>t</sub>/-an ~ /AG-SB<sub>t</sub>/i-, and /ASI<sub>t</sub>/i-.

liway	(A1)	'clear off'	/AG-SB <sub>t</sub> /i-
ilamun	(A1)	'weed'	

## ILLUSTRATIONS, CLASS 13:

3.13.1 /AP<sub>t</sub>S/-en

l(in)iway na yang linget tung dalam.

V:cleared A:he P<sub>t</sub>: weeds S:from path

'He cleared the weeds from the path.'

3.13.2 /AS<sub>t</sub>/-an

l(in)iway(an) na yang dalam.

V:cleared A:he S: path

'He cleared the path.'

3.13.3 /ASB<sub>t</sub>/-an

(in)ilamun(an) ami (ka) nira yang balay yamen.

V:weeded B<sub>t</sub>:for us too A:they S: house our

'They also weeded around our house for us.'

3.13.4 /AG-SB<sub>t</sub>/i-

(i)l(in)iway aw ni tampulanu yang dalam.

V:cleared B<sub>t</sub>:for me A:Tampulanu G-S: path

'Tampulanu went off and cleared the path for me.'

3.13.5 /ASI<sub>t</sub>/i-

(ipinag)liway na yang geer u tung dalam.

V:cleared A:he I<sub>t</sub>: bolo my S: path

'He cleared the path with my bolo.'

### 3.14 CLASS 14 STEMS

Class 14: /AP<sub>t</sub>S/-en, /APS<sub>t</sub>/-an, /AP<sub>t</sub>I/-en ~ /AP<sub>t</sub>I/-an, /API<sub>t</sub>/i-

alang (D1) 'buy'

gawad (D1) 'redeem' /AP<sub>t</sub>I/-an

#### ILLUSTRATIONS, CLASS 14:

3.14.1 /AP<sub>t</sub>S/-en

alang(en) na yang bila na tung tindaan.

V:purchase A:he P<sub>t</sub>: fishhooks his S:from store

'He will purchase his fishhooks from the store.'

3.14.2 /APS<sub>t</sub>/-an

(pinang)gawar(an) na yang sastri yang tarual na.

V:redemed A:he S<sub>t</sub>: tailor P: pants his

'He redeemed his pants from the tailor.'

3.14.3 /AP<sub>t</sub>I/-en

alang(en) u (ilem) ta bainti yang a<sub>bel</sub> ang atia.

V:will buy A:I only I: twenty P<sub>t</sub>: clothing that  
'I'll just purchase that piece of clothing for twenty pesos.'

3.14.4 /AP<sub>t</sub>I/-an

gawar(an) na yang tarual na ta kuaru.

V:redem A:he P<sub>t</sub>: pants his I: four  
'He'll redeem his pants for four pesos.' (Cf. 3.14.5.)

3.14.5 /AP<sub>t</sub>S/-en

gawar(en) na yang tarual na tung sastru.

V:redem A:he P<sub>t</sub>: pants his S:from tailor  
'He will redeem his pants from the tailor.' (Cf. 3.14.4.)

3.14.6 /API<sub>t</sub>/i-

(ipinang)gawad na yang kuaru pisus tung tarual na.

V:redemed A:he I<sub>t</sub>: four pesos P: pants his  
'He redeemed his pants with the four pesos.'

## 3.15 CLASS 15 STEMS

Class 15: /A-SPS<sub>t</sub>/-an

taluk	(A2)	'hide'	(cf. class 1)
pelek	(B2)	'throw, throw away'	(cf. class 1)

## ILLUSTRATIONS, CLASS 15:

3.15.1 /A-SPS<sub>t</sub>/-an

p(in)lek(an) ti tampulanu ni kasawa na ta bila?.

V:threw away S<sub>t</sub>: Tampulanu A-S: spouse his P: fishhooks  
'Tampulanu's wife threw away his fishhooks.'

3.15.2 /A-SPS<sub>t</sub>/-an

t(in)aluk(an) aw anya yang geed na.

V:hid S<sub>t</sub>:I A-S:he P: bolo his  
'He hid his bolo from me.' (Cf. 3.1.4.)

## 3.16 CLASS 16 STEMS

Class 16: /A-SGL<sub>t</sub>/-an

buug	(F2)	'feed animals'	(cf. class 1)
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papaan (E) 'feed a person' (cf. class 1)

ILLUSTRATIONS, CLASS 16:

3.16.1 /A-SGL<sub>t</sub>/-an

(pinag)buug(an) na yang pasungan tung mga manu u.  
 V:fed A-S:he L<sub>t</sub>: trough G: plural chicken my  
 'The trough was where he fed my chickens.'

3.16.2 /A-SGL<sub>t</sub>/-an

(pinag)papaan(an) na yang linu tung aka u.  
 V:fed A-S:he L<sub>t</sub>: winnowing tray G: elder sibling my  
 'The winnowing tray was the place where he fed my elder sibling.'

Two verbs were difficult to classify. These are tukuk 'duck, bow head down' and angay 'go'. Their affix-role correlations are given below with illustrations.

tukuk (A2) 'duck, bow head down': /APG<sub>t</sub>/paN--an, /AP<sub>t</sub>G/i-paN-,  
 /APS<sub>t</sub>/-an, and /AP<sub>t</sub>S/i-.

1. /APG<sub>t</sub>/paN--an

(pina)nukuk(an) na yang ayu yang kulu na.  
 V: bowed down A:he G<sub>t</sub>: tree P: head his  
 'He laid his head down upon the tree branch.'

2. /AP<sub>t</sub>G/i-paN-

(ipina)nukuk na yang kulu na tung ayu?.  
 V: bowed down A:he P<sub>t</sub>: head his G: tree  
 'He laid his head down upon the tree branch.'

3. /APS<sub>t</sub>/-an

t(in)ukuk(an) na yang ayu yang kulu na.  
 V: duck A:he S<sub>t</sub>: tree P: head his  
 'He ducked his head away from the tree branch.'

4. /AP<sub>t</sub>S/i-

(i)t(in)ukuk na yang kulu na tung ayu?.  
 V: ducked A:he P<sub>t</sub>: head his S: tree  
 'He ducked his head away from the tree branch.'

angay (C1) 'go': /AG-P<sub>t</sub>/-en, /APG<sub>t</sub>/-an, /AG<sub>t</sub>/-an, and  
 /AGC<sub>t</sub>/i-.

1. /AG-P<sub>t</sub>/-en

angay(en) mu (unu) yang adi?.

V:go A:you he says G-P<sub>t</sub>:king

'The king says you are to go to him.' (Implies that the Agent will do something when he gets there, namely, obey the king's command.)

2. /AG<sub>t</sub>/-an

angay(an) mu (ra) yang adi?.

V:go A:you now G<sub>t</sub>: king

'You are to go to the king now.' (Nothing is implied about any other action.)

3. /APG<sub>t</sub>/-an

angay(an) u ti rikardu yang geer u.

V:go A:I G<sub>t</sub>: Ricardo P: bolo my

'I'll go to Ricardo (and get) my bolo.' (Implies that the bolo may or may not be ready.)

4. /AGC<sub>t</sub>/i-

(i)angay u taang tabaku tung ni unγκuy.

V:go A:I C<sub>t</sub>:here tobacco G: friend

'I'll go to (my) friend with this tobacco here.'

#### 4. MEANINGS OF AFFIXES

In this study, detailed investigation of hundreds of clauses brought to light many new facets of the meanings of various affixes.

4.1 i- This affix signals that the Agent moves away from his original position in order to carry out the action of the verb. In a real-life situation the existing relationship between the Agent and the Patient is the determining factor, as can be seen in the examples cited below.

4.1.1 i(geret)ay (kanay ta kalamunding.)  
cut up (you for me) please kalamansi fruit  
'Please go and cut up some kalamansi for me.'

The situation reflected in this utterance is that the Patient (the kalamansi fruit) is some distance away from the Agent (the hearer, understood). So, in order to carry out the action of the verb (cutting up), the Agent must leave his original position and go to where the kalamansi are.

4.1.2 (geret)ay (kanay ta kalamunding.)  
cut up (you for me) please kalamansi fruit  
'Please cut up some kalamansi for me.'

The situation reflected in this utterance is that the Patient is within easy reach of the Agent, and it will not be necessary for him to move from his original position in order to carry out the action of the verb. Note also that the -ay suffix in both instances signals obligative mode, which is used when making a polite request. In 4.1.2, -ay may be said to have replaced the -an suffix, which would be used in a statement describing the same situation.<sup>6</sup>

4.2 The combination of the subject focus affixes ag- + paN- signals intense distribution of the action of the verb either with respect to multiple Patients or sometimes directed to multiple Goals.

4.2.1 (yay n)ag(tagtag yang sabud tung kaun.)  
*that is who distributed seedlings rice paddy*  
*'That is who distributed the seedlings in the rice paddy.'*

4.2.2 (yay n)agpan(agtay yang sabud tung kaun.)  
*that is who distributed seedlings rice paddy*  
*'That is who distributed the seedlings in all the rice paddies.'*

4.2.3 (n)ang(alang aw ra ta aBel.)  
*bought I now clothing*  
*'I bought some clothing.'*

4.2.4 (n)agpang(alang da ta aBel.)  
*bought now clothing*  
*'He went around buying clothing.'*

4.3 The subject focus affixes ag- and aN- contrast in the following ways:

ag- = thoroughgoing, intense, long-term, durative action;  
 also in certain contexts it implies that all possible  
 Patients actually receive the action.

aN- = diffuse, rather short-term punctiliar action; in  
 certain contexts it implies the selection of one or a  
 few Patients from a group of many.

4.3.1 (n)ag(takwal ti duduy ta niuy.)  
*climbed up laddie coconut*  
*'Laddie climbed up and got coconuts (implies several).'*

4.3.2 (n)an(akwal ti duduy ta niuy.)  
*climbed up laddie coconut*  
*'Laddie climbed up and got some (a few) coconuts.'*

4.3.3 (ti tampulanu yay n)ag(lampasu yang pasungan.)  
*Tampulanu that scrubbed feed trough*  
*'It was Tampulanu who thoroughly scrubbed the feed trough.'*

4.3.4 (ti tampulanu yay n)an(lampasu yang pasungan.)  
*Tampulanu that scrubbed feed trough*  
*'It was Tampulanu who scrubbed the feed trough a bit.'*

Also, there is some evidence that p-ag- contrasts with p-aN- in the same way in nonsubject focus clauses.

4.3.5 p(in)ag(barik na yang kakay yang karabaw.)  
*broke he foot of carabao*  
*'He broke all the feet of the carabao.'*

4.3.6 p(in)am(arik na yang kakay yang karabaw.)  
*broke he foot of carabao*  
*'He broke the carabao's foot.'*

4.3.7 p(in)ag(pelaran na yang bakayan.)  
*felled he the beach*  
*'The beach was where he felled the trees (a thorough job).'*

4.3.8 p(in)am(elaran na yang bakayan.)  
*felled he the beach*  
*'The beach was where he felled (a few) trees.'*

Clearly, more analysis of the meanings of ag- and aN- is necessary. For this, verbs should be tried in clauses of the following kinds, with careful attention being given to meaning differences.

Subject focus:	ag-	versus	aN-	versus	ag-p-aN-
Object focus:	p-ag--en	versus	p-aN--en	versus	-en
Referent focus:	p-ag--an	versus	p-aN--an	versus	-an
Associate focus:	i-p-ag-	versus	i-p-aN-	versus	-i

4.4 With certain verbs the presence or absence of aN- signals the occurrence of certain participant roles.

4.4.1 With some verbs this affix signals the occurrence of Goal.

4.4.1.1 (n)an(ukuk ti tampulanu yang kulu na) tung ayu?.  
*bowed Tampulanu head his G: tree*  
*'Tampulanu bowed his head down upon the tree branch.'*

- 4.4.1.2 (pin)an(ukukan na) yang ayu (yang kulu na.)  
 *bowed he G: tree head his*  
*'He bowed his head down upon the tree branch.'* (Cf. 4.4.3.)
- 4.4.2 With other verbs this same affix signals the occurrence of Source.
- 4.4.2.1 (n)an(laksu yang babay) tung ni kasawa na.  
 *ran woman S: spouse her*  
*'The woman ran away from her husband.'*
- 4.4.2.2 (pin)an(layugan yang kanug) yang bayay na.  
 *flew eagle S: nest its*  
*'The eagle flew away from its nest.'* (Cf. 4.4.4.)
- 4.4.2.3 (pin)ang(egetan na) yang tabaku u.  
 *bit he S: tobacco my*  
*'He bit some off from my plug of tobacco.'* (Cf. 4.4.5.)
- 4.4.3 By contrast, with some verbs the absence of aN- signals the occurrence of Source.
- (tinukukan na) yang ayu (yang kulu na.)  
 *ducked he S: tree head his*  
*'He ducked his head away from the tree branch.'* (Cf. 4.4.1.2.)
- 4.4.4 With other verbs the absence of this affix signals the occurrence of Goal.
- (linayugan) aw (yang kutung.)  
 *flew G:me rice bird*  
*'The rice bird flew over to me.'* (Cf. 4.4.2.2.)
- 4.4.5 With still other verbs the absence of this affix signals the occurrence of Location.
- (kinegetan na) yang kakay (yang mula u.)  
 *bit he L: foot of child my*  
*'He bit the foot of my child.'* (Cf. 4.4.2.3.)
- 4.5 The infix -um-, in addition to signalling subject focus, also has the following meanings: unplanned, unintentional, unexpected, casual action. It can be a spur-of-the-moment action, a mere happenstance, something short-lived, lackadaisical, or a mere token type of action.

- 4.5.1 (ti tampulanu yay s)um(inagep yang bula?.)  
*Tampulanu that caught ball*  
*'Tampulanu was the one who caught the ball.'*  
 (He had not really planned to, but because he hated to see the ball hit the ground without being caught, he caught it.)
- 4.5.2 m(inisik taang anen u.)  
*picked up this rice my*  
*'He picked up some of my rice in his hand.'*  
 (He was walking by, hungry, and, on the spur of the moment, he found himself scooping up a handful of cooked rice from my pile.)
- 4.5.3 m(initbit ti tampulanu ta sang bilug ang niuy.)  
*carry by fingers Tampulanu one unit coconut*  
*'Tampulanu carried one coconut by his fingers.'*  
 (He just happened to come by and pick one up.)
- 4.5.4 (yay tukaw ang) m(inali ti tampulanu.)  
*that first dug up Tampulanu*  
*'Tampulanu was the first one to dig up (the ground).'*  
 (He dug the first few shovelfuls for his child's grave.)

## 5. METHODOLOGY

When there are a large number of stem features to be examined, how can one know ahead of time which of the features will be most useful for purposes of classification? Some notes on the methodology used during the research for this paper follow, and they may suggest some answers to that question.

5.1 It has been the experience of students of Philippine languages that infrequent affixes and affixes whose occurrence and meaning are highly predictable have little value for classificatory purposes. Because it falls in the latter category, most investigators have given little consideration to the causative prefix *pa-* in classifying verb stems.

5.2 In this classification study the three subject focus affixes *ag-*, *aN-*, and *-um-* were the first ones chosen. The two reasons for this are that (1) this is where most students have started, and (2) the differences in the meanings of these affixes were not clearly understood. Next, the object focus suffix *-en*, the referent focus suffix *-an*, and the accessory focus prefix *i-* were chosen because most previous

investigators have taken these into account also, and they have found much complexity in both their surface and deep structures.

5.3 The first classification was made on the basis of which of these six affixes could occur with a given stem. The affixes *i-* and *-an*, however, were found to occur with all the stems examined, which means that the classification was really based on only the other four.

5.4 The second classification was made on the basis of the roles expressible in clauses whose verbs are affixed by *-en*, *-an*, and *i-* and by affix combinations including these three affixes. Subject focus affixes were disregarded, because in many Philippine languages subject focus clauses tend to have one tagmeme fewer than nonsubject focus clauses, and it was presumed, therefore, that this would limit what these clauses could reveal about role structures.

The choice of these three affixes was a happy one, for when they were compared, new role structures that had never before been noticed were quickly recognised. This, in turn, stimulated further elicitation to see if the newly discovered roles and structures occurred also with other verbs.

Often there was difficulty in identifying roles. There were several instances of indeterminacy between pairs of roles, such as between Goal and Patient, Goal and Beneficiary, Patient and Concomitant, and Goal and Location. To cope with this problem, I found it necessary to refine the initial, tentative definitions with which I had started. For instance, it was not until Goal was defined as the target toward which the action is directed that it could be clearly distinguished from Patient and Location.

Also as work progressed, by trial and error I learned how to recognise and evaluate clues given by my language helper, which facilitated differentiation of roles. One such hint, that Concomitant, even though animate, is an inert, passive participant during the action, helped to contrast Concomitant with Patient. This does not mean, however, that all ambiguities have been resolved. For instance, Goal is still difficult to distinguish from Beneficiary in some cases.

Another aid in identifying roles was to transform clauses from one focus to another. This was valuable, because only certain roles can be encoded as topic in clauses of a given focus.

5.5 After the affixes to be considered were decided, the verbs were studied to see what combinations of roles and affixes they could take. Then the stems were grouped into classes. Each class was posited on the

basis of the correlations of role combination with affix that are possible with its member verbs. Where a verb was found to share some, or even one, of the affix-role correlations that define a class, it was added to that class as a subclass.

In order for more verbs to be included in a class than would otherwise be possible, a mutually exclusive relationship between two affix-role correlations was sometimes posited. In such cases, some verbs in a class take one correlation; other verbs take the other correlation; but no verbs take both. Often the only difference is the affix that co-occurs with the role combination.

5.6 Eventually it became evident that numerous role combinations were involved in the distinguishing of the different verb stem classes. An effort was made to reduce this complexity to a small set of diagnostic features for distinguishing all sixteen stem classes; however, no consistent way was found to do so.

## 6. MULTIPLE ROLE COMBINATIONS

Aside from methodology, this research paid dividends in other respects as well. For instance, I became impressed during elicitation sessions with my language helper with what might be called the "elasticity" of verb stems. It is this property, it seems, that allows a native speaker to use verb stems in new situations as needed. Such a new situation might elicit from a speaker a role that perhaps had never before occurred with that particular stem in that speaker's idiolect. I received the impression that, if one were to elicit more and more situations describable by a particular verb stem, he would find that more roles could occur with that verb stem than he at first had thought possible.

A case in point may be helpful. There is a verb *upak* 'remove bark' and also a verb *kanit* 'remove hide'. That the role of Quantity may occur with *upak* reflects a cultural reality: the bark of certain trees has commercial value and, therefore, has to be measured. This same role, however, may not occur with *kanit*, because the hides of animals have little or no commercial value for the Tagbanwa. Therefore, to measure, or count, them is meaningless.

Consequently, by the end of this study it had become clear that more verbs than generally realised have several expressible role combinations, rather than just one. This appears to be more frequent than has been implied in general case grammar writings or reported heretofore for Philippine languages. For the Kalamian Tagbanwa verbs studied,



disregarding affixes that correlate with role combinations, one can obtain the following statistics showing the correlation of number of role combinations with verb stems. For example, it is found that the number of verb stems that may occur with three role combinations is thirteen.

No. of role combinations:	1	2	3	4	5	6	7	8	9
No. of verb stems:	3	10	13	8	11	9	2	3	1

One stem was found to occur with as many as ten role combinations. That stem is takwal 'climb up',<sup>7</sup> and these ten role combinations are the following:

6.1 /AG-P<sub>t</sub>/

takwal(en) mu (ra kanay) yang niuy.

V: climb up A: you now please G-P<sub>t</sub>: coconut  
'Please climb up (and get) the coconut.'

6.2 /AP<sub>t</sub>G/

t(in)akwal ni paulu yang baul yamen tung budiga.

V: climbed up A: Paulo P<sub>t</sub>: trunk our-ex. G: storage  
'Paulo climbed up to the storage place (and got) our trunk.'

6.3 /AG-PB<sub>t</sub>/

(i)t(in)akwal aw anya ta niuy.

V: climbed up B<sub>t</sub>: for me A: he G-P: coconut  
'He climbed up (and got) a coconut for me.'

6.4 /AQ<sub>t</sub>/

t(in)akwal(an) na yang mga niuy ang atia.

V: climbed up A: he Q<sub>t</sub>: plural coconut that  
'He climbed up (and got) that many coconuts.'

6.5 /AB<sub>t</sub>C/

t(in)akwal(an) aw (ra) anya ta pinli?.

V: climbed up B<sub>t</sub>: for me now A: he C: rope  
'He climbed up with a rope for me.'

6.6 /ALC<sub>t</sub>/

(i)t(in)akwal aw ni paulu tung ayu?.

V: climbed up C<sub>t</sub>: with me A: Paulo L: tree  
'Paulo climbed up into the tree with me (on his back).'

6.7 /AL<sub>t</sub>/

t(in)akwal(an) ni runsilyu yang balagen.

V:climbed up A: Ronsillo L<sub>t</sub>: vine  
'Ronsillo climbed up on the vine.'

6.8 /AL<sub>t</sub>G/

t(in)akwal(an) ni paulu yang aldan ang atia tung budiga.

V:climbed up A: Paulo L<sub>t</sub>: ladder that G: storage place  
'Paulo climbed up on that ladder to the storage place.'

6.9 /AGB<sub>t</sub>/

(i)t(in)akwal aw anya tung tumbung yang ayung atia.

V:climbed up B<sub>t</sub>:for me A:he G: tip of tree that  
'He climbed up to the tip of that tree for me (so he could look out over the ocean for my launch).'

6.10 /ALB<sub>t</sub>/

(i)t(in)akwal aw anya tung balagen.

V:climbed up B<sub>t</sub>:for me A:he L: vine  
'He climbed up on the vine for me.'

It may be noted that only five affix-role correlations were used in classifying takwal as simultaneously a member of both classes 4 and 5.

On the basis of the foregoing illustrations, it may be instructive to posit for takwal what Langendoen (1970:79-80) calls "role structure". That is the set of roles inherent in this stem, which reflects a distinct real-life situation.<sup>8</sup> From this set of roles a speaker may select what he wants to encode in speech. It is seen that takwal requires more than one role structure to account for all the role combinations that may be used with it in talking.

[ALGP ~ G-P(B)] can be posited as one of the role structures inherent in the verb takwal, and this role structure is actualised in Kalamian Tagbanwa clauses as the following role combinations: /AG-P/ (6.1), /APG/ (6.2), and /AG-PB/ (6.3). /AQ/ (6.4) could also be generated from this case frame, since Q is a kind of Patient. The real-life situation reflected in this case frame is that of an Agent climbing up a certain Location (tree) toward a Goal where there is a Patient that he wishes to acquire, optionally for a Beneficiary.

[ALGC(B)] can be posited as another role structure inherent in the verb takwal. It is actualised as these role combinations: /ABC/ (6.5) and /ALC/ (6.6). The real-life situation reflected is that of an

Agent, conveying some kind of a Concomitant, climbing up a certain Location (tree) toward a Goal, optionally for a Beneficiary.

[ALG(B)] may be posited as the third role structure inherent in the verb *takwa*, which is actualised in clauses as the following role combinations: /AL/ (6.7), /ALG/ (6.8), /AGB/ (6.9), and /ALB/ (6.10). The real-life situation reflected here is that of an Agent climbing up a Location (tree) to a Goal, optionally for a Beneficiary. The purpose of this action is neither conveying a Concomitant nor acquiring a Patient, but some other type of action.

It may be noted that the three role structures posited above differ from each other by one role each: P ~ G-P versus C versus neither. Further, we find that they can be combined into one overall formula:

$$\left[ \text{ALG} \left( \left\{ \begin{array}{l} \text{C} \\ \text{P} \sim \text{G-P} \end{array} \right\} \right) (\text{B}) \right]$$

Finally, in order to be explicit about the methodology used in determining these role structures, the following steps are given.

(1) Gather in a set all the role combinations that seem to describe the same real-life situation.

(2) List all the individual roles that are found in these combinations.

(3) Take each combination in turn and ask which role is, or may optionally be, in the situation verbalised by that particular combination.

(4) Hopefully, step (3) will show what situation(s) lie behind each combination and which of the combinations really belong together because they describe the same situation. (Conceivably, a given role combination can belong simultaneously to two sets of combinations. That is, a role combination can be used ambiguously to verbalise either of two quite distinct real-life situations.)

(5) If one finds several such ambiguous sets of role combinations, each set having a different underlying real-life situation, then these underlying situations can be compared by the same method (steps 1-4 above) to see if they are all indeed different, or whether some of them can be combined.

(6) The goal is to describe as many role combinations as possible as being verbalisations of a single situation type.

(7) Once role structures have been posited for a sufficient number and variety of verbs, the final step is to try to draw up encoding and deletion rules that will specify which role combinations may be used to

actualise a particular role structure when a given real-life situation is talked about.

## 7. CONCLUSION

To summarise, it seems to be evident that classifying verbs by affix potential is quicker and easier than classifying them by role combinations. The latter way, however, even though more difficult, reveals much more about how verbs are used.

For example, an understanding of role combinations makes it easy for one to disambiguate homophonous utterances. Note the following:

### 7.1 /APS<sub>t</sub>/-an

t(in)aluk(an) aw                   anya yang geed.

V:hid                   S<sub>t</sub>:from me A:he P:   bolo

'He hid the bolo from me (so I would not use it to hurt anyone).'

### 7.2 /APB<sub>t</sub>/-an

t(in)aluk(an) aw                   anya yang geed.

V:hid                   B<sub>t</sub>:for me A:he P:   bolo

'He hid the bolo for me (so that a third party could not borrow it).'

### 7.3 /APG<sub>t</sub>/-an

p(in)lek(an) ti   tampulanu ni kasawa na   ta bila?.

V:threw               G<sub>t</sub>: Tampulanu A: spouse his P: fishhook

'Tampulanu's wife threw him a fishhook.' (The one he had been using had broken.)

### 7.4 /APS<sub>t</sub>/-an

p(in)lek(an) ti   tampulanu ni kasawa na   ta bila?.

V:threw               S<sub>t</sub>: Tampulanu A: spouse his P: fishhook

'Tampulanu's wife threw away his fishhooks.' (She wanted to put a stop to his fishing.)

Identifying, cataloging, and describing role combinations associated with verb stems is admittedly difficult, and at the beginning it seems even to be subjective. The results, however, are well worth the effort for those who wish to generate semantically acceptable utterances in appropriate situational contexts.

## NOTES

1. Material for this paper was gathered in Banwang Daan, a barrio of the municipality of Coron, Province of Palawan, Republic of the Philippines. The speakers of Kalamian Tagbanwa, estimated to number approximately 5000, live scattered along the coasts of the many islands comprising the Calamian and Linapacan Groups. This area is located between the islands of Mindoro to the northeast and Palawan to the southwest. The people refer to themselves as the Tagbanwa and to their dialect as Tinagbanwa. This ethnic group is linguistically, culturally, and geographically distinct from the Tagbanwa who inhabit the central region of the island of Palawan. Kalamian Tagbanwa is a dialect of the Kalamian language, which, according to Dyen (1965:30), belongs to the Sulic Hesion. There are two other dialects known to belong to this language, Kalamian and Agutaynon. As the name suggests, Kalamian Tagbanwa is more closely related to Kalamian than to Agutaynon. The author has engaged in field work under the auspices of the Summer Institute of Linguistics during various periods since 1957. The research for this paper was done during a three-month workshop, held at Nasuli, Malaybalay, Bukidnon, in 1972. The author wishes to express appreciation for the assistance received from Doctors Alan and Phyllis Healey, linguistic consultants of the Papua New Guinea Branch of the Summer Institute of Linguistics, and also for the help given by Mr Alejandro Lunsod, who is a native speaker of Kalamian Tagbanwa. The work was also facilitated by a concordance of native text material made on the IBM computer of the University of Oklahoma by the Linguistic Information Retrieval Project of the Summer Institute of Linguistics and the University of Oklahoma Research Institute, and sponsored by Grant GS-270 of the National Science Foundation. The phonemes of Kalamian Tagbanwa consist of seventeen consonants, p, t, k, b, d, g, ~~h~~, r, ~~g~~, m, n, ŋ, s, l, w, y, and ? (glottal stop), and four vowels, i, ɨ (high central), u, and a. All examples are written as above except that ŋ is symbolised by the digraph

ng, and  $\dot{\iota}$  as e, and initial ? is not written.

2. Process and state verbs have not been examined; therefore, the classes discussed in this paper cannot be taken as a complete classification of Kalamian Tagbanwa verb stems.

3. N is a morphophoneme, which is actualised as a nasal at the position of articulation of the following stem-initial consonant. In the case of aN-, the following rules apply: (1) stem-initial p and b > m; (2) stem-initial k > ŋ; (3) with certain stems, initial t and s > n; and (4) resultant geminate nasal sequences are reduced to a single nasal. Other relevant morphophonemic information is as follows: -um- has an allomorph m- and past tense forms -umin- ~ min-. Also, -en has the past tense form -in-; -an has -in--an; i- has i--in- ~ in-; and ag- and aN- occur in the past tense as n-ag- and n-aN- and in the nonpast tense as m-ag- and m-aN-. Further details are given in Ruch 1964.

4. Most of the names used for participant roles are taken from Chafe 1970.

5. Parts of an example not directly illustrating the feature(s) under discussion are enclosed in parentheses.

6. In a seminar, David Zorc suggested that with -an the Agent's motion is optional; whereas with i- his motion away from his original position is obligatory.

7. Subsequent to the analysis and classification discussed in this paper, two additional role combinations were discovered for takwal 'climb up': /AGB<sub>t</sub>/ and /ALB<sub>t</sub>/.

8. "Real-life situation" here means not one specific situation, but a large set of similar situations.

## REFERENCES

Ballard, D. Lee, Jr.

- 1973 "The semantics of Inibaloi verbal affixes", to appear in *Lingua*.

Chafe, Wallace L.

- 1970 *Meaning and the structure of language*. Chicago: University of Chicago Press.

Chandler, Donna Hettick

- 1974 "Verb stem classes in Northern Kankanay". *Pacific Linguistics, Series A*, No. 41, *Papers in Philippine Linguistics* No. 5.

Dyen, Isidore

- 1965 "A lexicostatistical classification of the Austronesian languages". *Indiana University publications in anthropology and linguistics. Memoir 19*, supplement of *IJAL*.

Forster, Jannette and Myra L. Barnard

- 1968 "A classification of Dibabawon active verbs". *Lingua* 20.265-278.

Langendoen, D. Terence

- 1970 *Essentials of English grammar*. New York: Holt, Rinehart and Winston.

Reid, Lawrence A.

- 1966 *An Ivatan syntax. Oceanic Linguistics special publications, 2*. Honolulu: University of Hawaii.

Ruch, Edward R.

- 1964 The phonological and morphophonemic systems of Kalamian

Tagbanwa. Master's thesis, Cornell University.

Wolff, John U.

1970 "The classification of Cebuano verbs". *Philippine Journal of Linguistics* 1:1.12-24.



# A LEXICOSTATISTICAL EVALUATION OF TAGALOG-CHAMORRO RELATIONS

JEANNETTE WITUCKI

1. Introduction
2. Substitutions
3. Sound correspondences
4. The lists
5. Computation of time depth

## 1. INTRODUCTION

The primary purpose of this work is to present a new lexicostatistical comparison of Tagalog and Chamorro<sup>1</sup>. The presentation has a secondary function in that it makes available to other scholars an adequate and extensive Chamorro word list which can be used in further tests. The list used was recently compiled and is much more representative of the native language than was the list used by Dyen in his *A Lexicostatistical Classification of the Austronesian Languages* (1965). Dyen's sources were von Preissig (1918) and Fritz (1908); these dictionaries seem to suffer from biased elicitation (an excess of European concepts) and the use of informants who spoke fluent Spanish which they naturally used when producing words to match the European concepts suggested to them.

Dyen's cited classification places Chamorro in the Malayopolynesian Linkage, although it has been frequently noted that Chamorro appears to be most closely related to Philippine languages (in Dyen's Hesperonesian Linkage). On the Philippine relationship, see, for example, comments by

Safford (1903:292) and Topping (1968:78). Dyen himself does not feel that his tentative classification of Chamorro is correct, and he explains the problem as follows: "The lexicostatistically defined position of Chamorro as a member of the Malayopolynesian Linkage is very likely to need revision. Chamorro shares so many features with the Hesperonesian languages and particularly with those of the Philippines as to suggest that Chamorro's percentages for some reason are distorted. It is not unlikely that the heavy borrowing from Spanish has deflated its percentages at least with Hesperonesian languages and perhaps more particularly with Philippine languages" (1965:51).

Dyen is undoubtedly correct to conclude that Spanish influence on Chamorro has been so great as to deflate its percentages with any language which was a markedly less heavy borrower. Although modern, everyday Chamorro does not contain as many Spanish loans as might be suggested by dictionaries like those of Fritz and von Preissig, the number of such loan words in Chamorro is many times the number found in Tagalog. Yet the groups speaking these two languages were contacted and placed under Spanish influence at approximately the same time in history (roughly, the middle decades of the 17th century). The cause of the more pervasive influence of Spanish on Chamorro almost certainly lies in the nature of the Chamorro homeland. This is a chain (the Marianas) of quite small islands; the largest island is Guam which measures at the most only 30 by 10 miles. The Chamorro had no place to go, to escape or to gain a measure of relief and freedom from Spanish control over their lives. Small-island people are singularly helpless when large-nation peoples are on the move.

The problem created by Spanish loans into Chamorro is easily demonstrated by research into older Chamorro forms, now obsolete. One finds that for a very large percentage of now-dominant Spanish loans, the recently-remembered native forms are cognates of Tagalog words elicited for the same meanings. This is true, for example, of the numerals one through five; Chamorro uses Spanish words for these numerals while Tagalog retains the native forms. This situation occurs so frequently that it is obvious that the use of Spanish loans would greatly distort the result of a lexicostatistical test of relationship between the two languages. How great this distortion would be is suggested by my finding that Chamorro contains a percentage of Spanish loans which is greater than that of Tagalog by approximately six to one. This figure was determined by study of core vocabulary items; the percentages might be even more disparate if taken from analysis of the general vocabulary. For these reasons, therefore, I decided to eliminate Spanish loan words from my lists.

Both the Tagalog and the Chamorro lists used in the present test were obtained from informants. Forms for the Chamorro lists were taken from my files, which contain lexical data from four informants<sup>2</sup>, all from Guam. The Tagalog list was obtained for me by Robert Michero, from two Tagalog-speakers<sup>3</sup> now residing in Los Angeles.

## 2. SUBSTITUTIONS

The lexical base for this comparison is the standard 200 word list, as given in Gudschinsky (1956:186-200). It was necessary to make some substitutions in order to have an adequate word-count; with the substitutions I was able to compare 194 word pairs. Without the substitutions, the lists would have had only 166 word pairs, since in 34 cases, a meaning in the standard 200 word list was absent (this may mean "un-collected as yet") or unusable in either Tagalog or Chamorro or both. Seventeen of the "unusables" were Spanish loan words in Chamorro; the Tagalog data contained two Spanish loans (possibly three, as I suspect No. 46 also). Whatever the justification, meanings dropped from my lists will hereafter be referred to as "omissions".

To replace the omissions, another meaning, judged to be as universal as most in the original list, was substituted. Some replacements were taken from the standard 100 word list, which has a few words not found in the 200 word list. The generally problematic words 'snow', 'freeze', and 'ice' were of course without representation in either of these warm-climate languages. Six omissions were left unreplaced, due to the usual shortage of satisfactory word pairs with "core" meanings.

A list of the omissions follows (Figure 1). The columns give word number, word omitted, reason for the omission, and word used in its stead (if replaced). In column three, the terms "loan", "lack", and "dup." are used. The term "loan" should be understood to refer to Spanish loans only. "Lack" means of course that a word for the original meaning is absent in either or both languages. "Dup." means that the word elicited for a meaning in either or both languages is a duplicate (at least in the root) of a word elicited for another meaning which has been retained in the lists. The symbol  $\emptyset$  is used in column four to mean "no replacement made".

Readers who are critical of my substitution policy will be somewhat relieved to learn that out of 28 replacements used, only eight turned out to be cognate pairs. This gives a cognate percentage of 28.6% as compared with the 37.6% found in the lists as a whole.

FIGURE 1: List of omissions

No:	Omission:	Reason:	Replacement:
1	<i>all</i>	loan Ch.	<i>again</i>
12	<i>bird</i>	loan Ch.	<i>burn (injury)</i>
26	<i>day</i>	dup. Ch. 'sun'	∅
45	<i>feather</i>	dup. Ch. 'hair'	<i>cry</i>
50	<i>five</i>	loan Ch.	∅
52	<i>flow</i>	dup. Ch. 'run'	<i>downwards</i>
53	<i>flower</i>	loan Ch.	<i>carry/bring</i>
56	<i>foot</i>	loan Ch.	<i>finger</i>
57	<i>four</i>	loan Ch.	<i>loan</i>
58	<i>freeze</i>	lack Ch., Tag.	<i>full</i>
63	<i>green</i>	lack Ch.	<i>knee</i>
64	<i>guts</i>	lack Ch.	<i>gift</i>
70	<i>heart</i>	loan Ch.	<i>center</i>
79	<i>ice</i>	lack Ch. loan Tag.	<i>be ill</i>
82	<i>kill</i>	dup. Ch., Tag. 'die'	<i>hunger</i>
84	<i>lake</i>	dup. Tag. 'river'	<i>like/love</i>
91	<i>liver</i>	loan Ch.	<i>medicine</i>
96	<i>meat/flesh</i>	loan Ch.	<i>moon</i>
109	<i>one</i>	loan Ch.	<i>horn (of animal)</i>
110	<i>other</i>	loan Ch.	<i>plant</i>
135	<i>sing</i>	loan Ch., Tag.	<i>run</i>
137	<i>skin</i>	dup. Ch., Tag. 'bark'	<i>sibling</i>
144	<i>snake</i>	loan Ch.	<i>speak</i>
145	<i>snow</i>	lack Ch., Tag.	<i>soft</i>
155	<i>straight</i>	dup. Ch. 'right/correct'	<i>round (shape)</i>
164	<i>thick</i>	dup. Ch. 'heavy'	∅
169	<i>three</i>	loan Ch.	∅
171	<i>tie</i>	dup. Tag. 'rope'	<i>true</i>
174	<i>tree</i>	dup. Tag. 'wood'	<i>tall</i>
176	<i>two</i>	loan Ch.	<i>house</i>
190	<i>wife</i>	dup. Ch., Tag. 'husband'	<i>rule</i>
194	<i>with</i>	dup. Ch. 'and'	∅
198	<i>you-plural</i>	dup. Tag. 'thou'	∅
200	<i>yellow</i>	loan Ch.	"asthma"

### 3. SOUND CORRESPONDENCES

A number of sound correspondences are easily observed in any comparison of Chamorro and Tagalog (as in Safford 1903:296,308; Conant 1911,

throughout). For the purposes of this test, I regarded as "proven" those sound correspondences noted in at least six Chamorro-Tagalog word pairs with the same or similar meanings. Also accepted (if found three or more times) were a few correspondences which seem to occur only in special environments; these are indicated (in the list to follow) with an asterisk. Data used to determine sound correspondences consisted of the 200 word lists and about an equal number of supplementary word pairs from the two languages. Each accepted sound correspondence was considered as only part of the evidence for the cognate status of word pairs in the lists. When a word pair was found to exhibit one or more of these sound correspondences, and to share other phonetic similarities, the members of that word pair were judged to be cognates. Only consonants were so analysed; my attempts to determine vowel correspondences were handicapped by the fact that no reliable analysis of Chamorro vowels has yet been published.<sup>4</sup>

A list of the "accepted" sound shifts is given in Figure 2. "Environment" refers only to gross position within the root morpheme. It should be understood that a vowel in initial position implies a preceding non-phonemic [?]; this feature also occurs between vowel phonemes. However [?] and silence contrast in final position after a vowel, where the glottal stop is phonemic. (These comments apply to both Tagalog and Chamorro.)

FIGURE 2: Probable Tagalog-Chamorro sound correspondences

<i>Tagalog:</i>	<i>Chamorro:</i>	<i>Environment:</i>
b	p	initial, medial
p	f	medial
d	h	initial, medial
d	ts*	initial
t	ts	initial
g	∅	initial
k	h	initial, medial
h	m*	initial, medial
h	g	initial, medial
l	h*	medial
l	n*	initial, medial
l	ts*	initial, medial
l, r	?	medial
?	l*	medial

*continued overleaf*

FIGURE 2: continued

Tagalog:	Chamorro:	Environment:
s	ts	initial
w	gw	medial
w	l	medial
∅	gw	initial
y	dz	medial
y	g*	medial
m	n	medial
ŋ	n	initial, medial

In addition to the above, the following tendencies are common: In final position, voiced stops in Tagalog tend to appear in Chamorro as voiceless stops; in the same position, voiceless stops in Tagalog are often reflected in Chamorro by [ʔ] or [∅]. The Chamorro diphthong /au/ is sometimes heard in a Tagalog cognate as two vowels separated either by a glottal stop (No. 111) or by an /h/ (No. 141).

#### 4. THE LISTS

The data used in the computations is given below. In the case of each matched word pair, the English meaning gloss is followed by Tagalog word : Chamorro word, judgement (cognate, noncognate). Transcription of Chamorro words is roughly phonemic<sup>4</sup>, while the Tagalog words are written in the native orthography, with the exception of stress and glottal notation. Glottal stops are represented in my list with /ʔ/, and primary stress, being unpredictable, is marked. In Chamorro words, primary stress will be noted only if it does not occur, as is usual, on the penultimate syllable. Meanings which might belong to more than one word class (noun, verb, adjective) should be interpreted as verbs, unless the gloss is followed by n. for noun or adj. for adjective.

1. *Again.* mulíʔ : taʔlu. Noncognate.
2. *And.* at : dza. Noncognate.
3. *Animal.* háyop : gaʔgaʔ. Noncognate.
4. *Ashes.* abó : apu. Cognate.
5. *At.* sa : gi. Noncognate.
6. *Back, n.* líkód : tati. Noncognate.
7. *Bad.* masamáʔ : baba. Noncognate.
8. *Bark (of tree).* balát : lasas. Noncognate.
9. *Because.* dáhil : saʔ. Noncognate.

10. *Belly.* tiyán : tudzan. Cognate.
11. *Big.* malakí : dáŋkulu. Noncognate.
12. *Burn (injury).* páso? : tunu. Noncognate.
13. *Bite.* kagát : aka?. Cognate.
14. *Black.* itím : átiluŋ. Cognate.
15. *Blood.* dugó? : haga?. Cognate.
16. *Blow.* hípan : gwaifi. Noncognate.
17. *Bone, n.* butó : tu?laŋ. Noncognate.
18. *Breathe.* humiŋá : haguŋ. Noncognate.
19. *Burn.* sunógin : sunuk. Cognate.
20. *Child.* báta? : patgun. Cognate.
21. *Cloud.* úlap : mapagahis. Noncognate.
22. *Cold, adj.* malamíŋ : maniŋhiŋ. Noncognate.
23. *Come.* halíka : maila. Noncognate.
24. *Count.* biláŋin : tufuŋ. Noncognate.
25. *Cut.* hiwá?in : utut. Noncognate.
26. *Day.* Ø
27. *Die.* mamatáy : matai. Noncognate. (Too similar.)
28. *Dig.* kubkubín : guaduk. Noncognate.
29. *Dirty, adj.* marumí : taki?. Noncognate.
30. *Dog.* áso : ga?lagu. Noncognate.
31. *Drink.* uminóm : gimin. Cognate.
32. *Dry, adj.* tuyó? : aŋlu?. Noncognate.
33. *Dull, adj.* mapuról : mafihfuŋ. Noncognate.
34. *Dust, n.* alikabók : asgun. Noncognate.
35. *Ear.* táyŋa : talana. Cognate.
36. *Earth (soil).* lúpa? : uda?. Noncognate.
37. *Eat.* kumá?in : kanu?. Cognate.
38. *Egg.* itlóg : tsada?. Noncognate.
39. *Eye.* matá : mata. Noncognate. (Too similar.)
40. *Fall.* mahúlog : pu?duŋ. Noncognate.
41. *Far.* maláyo? : tsagu?. Cognate.
42. *Fat (size).* matabá? : dzumuk. Noncognate.
43. *Father.* amá : tata. Noncognate.
44. *Fear, n.* tákot : ma?atñau. Noncognate.
45. *Cry.* umiyák : kati. Noncognate.
46. *Few.* ka?untí? : dídidi?. Noncognate.
47. *Fight.* áwai : mumu. Noncognate.
48. *Fire, n.* apóy : gwafi. Cognate.
49. *Fish, n.* isdá? : gwihan. Noncognate.
50. *Five.* Ø

51. *Float.* lumútan : gama. Noncognate.
52. *Downwards.* pababá? : papa?. Cognate.
53. *Carry/bring.* dalhín : tsuli?. Noncognate.
54. *Fly, n.* lánɡaw : lalu?. Noncognate.
55. *Fog, n.* úsok : humhum. Noncognate.
56. *Finger.* dalíri : kálulut. Noncognate.
57. *Loan, n.* híramin : adzau. Noncognate.
58. *Full (container).* punó? : mutmut. Noncognate.
59. *Fruit.* búŋaŋ : kahit. Noncognate.
60. *Give.* ibigáy : na?i. Noncognate.
61. *Good.* mabúti : maulik. Noncognate.
62. *Grass.* damó : umuk. Noncognate.
63. *Knee.* túhod : tumu. Cognate.
64. *Gift.* ala?ála : a?uk. Cognate.
65. *Hair.* buhók : pulu. Cognate.
66. *Hand.* kamáy : kanai. Cognate.
67. *He.* siyá : gwidza. Cognate.
68. *Head.* úlo : (h)ulu?. Cognate.
69. *Hear.* makiníg : huŋuk. Cognate.
70. *Center.* gitná? : talu?. Noncognate.
71. *Heavy.* mabigát : maput. Noncognate.
72. *Here.* díto : gwini. Noncognate.
73. *Hit.* tamá?an : dantsi. Noncognate.
74. *Hold/take.* hawákan : kuni?. Noncognate.
75. *How.* pa?ánow : taimanau. Cognate.
76. *Hunt.* hanápin : kahat. Noncognate.
77. *Husband (mate).* asáwa : asagwa. Cognate.
78. *I.* akó? : gwahu. Cognate.
79. *Be ill.* máysakit : malaŋo. Noncognate.
80. *If, conj.* kuŋ : aŋgin. Noncognate.
81. *In.* salu?ób : halum. Noncognate.
82. *Hunger, n.* gútom : niñalaŋ. Noncognate.
83. *Know.* maláman : tunu?. Noncognate.
84. *Like/love.* íbig : gwaidza. Noncognate.
85. *Laugh.* tumáwa : matsalik. Cognate.
86. *Leaf.* dáhon : hagun. Cognate.
87. *Left side.* kaliwá? : akagi. Noncognate.
88. *Leg.* bintí? : adiŋ. Noncognate.
89. *Lie (body).* humigá? : asun. Noncognate.
90. *Live.* mabúhay : luma?la?. Noncognate.
91. *Medicine.* gamót : amut. Cognate.
92. *Long, adj.* mahába? : anaku?. Noncognate.



93. *Louse.* kúto? : huto. Cognate.
94. *Man/male.* laláki : lahi. Cognate.
95. *Many.* marámi : mi?gai. Noncognate.
96. *Moon.* buwán : pulan. Cognate.
97. *Mother.* iná : nana. Cognate.
98. *Mountain.* búndok : uksu?. Cognate.
99. *Mouth.* bibíng : patsut. Noncognate.
100. *Name, n.* pañálan : na?ani. Cognate.
101. *Narrow.* makítid. : mafnut. Noncognate.
102. *Near, adj.* malápit : hihut. Noncognate.
103. *Neck.* le?ég : ágaga?. Noncognate.
104. *New.* bágo : pa?gu. Cognate.
105. *Night.* gabí : pweni. Noncognate.
106. *Nose.* ilón : gwi?in. Cognate.
107. *Not.* hindí? : ahi. Cognate.
108. *Old (person).* matandá? : amku?. Noncognate.
109. *Horn (of animal).* súngay : kangilun. Noncognate.
110. *Plant.* magtaním : tanum. Cognate.
111. *Person.* tá?o : tautau. Cognate.
112. *Play.* laró? : lá?imai. Cognate.
113. *Pull.* batákin : hali?. Noncognate.
114. *Push.* itúlak : tsunik. Cognate.
115. *Rain, n.* ulán : utsan. Cognate.
116. *Red.* pulá : agaga?. Noncognate.
117. *Right/correct.* táma? : tunas. Cognate.
118. *Right side.* kánan : agapa?. Noncognate.
119. *River.* ílog : sa?duk. Noncognate.
120. *Road.* da?án : tsalan. Cognate.
121. *Root, n.* dáli : hali?. Cognate.
122. *Rope.* táli? : tali. Noncognate. (Too similar.)
123. *Rotten.* bulók : mahangi?. Noncognate.
124. *Rub.* himásin : hu?dzat. Noncognate.
125. *Salt.* asín : asiga. Cognate.
126. *Sand.* buháñin : unai. Cognate.
127. *Say.* sabíhin : sañan. Noncognate.
128. *Scratch.* kamútin : ka?gwas. Noncognate.
129. *Sea.* dágat : tasi. Noncognate.
130. *See.* tiñnán : li?i?. Noncognate.
131. *Seed (pit).* butó : finsu?. Noncognate.
132. *Sew.* tahí? : laki. Noncognate.
133. *Sharp.* matúlís : diduk. Noncognate.
134. *Short.* pandák : kádada?. Cognate.

135. *Run.* tumakbó : malagu. Noncognate.  
 136. *Sit.* umupó? : fatatsun. Noncognate.  
 137. *Sibling.* kapatíd : tsi?lu. Noncognate.  
 138. *Sky.* lánit : lanit. Noncognate. (Too similar.)  
 139. *Sleep.* matúlug : matuhuk. Cognate.  
 140. *Small.* mali?ít : díkiki?. Noncognate.  
 141. *Smell (bad odour).* mabáho? : pau. Cognate.  
 142. *Smoke, n.* úsok : asu. Cognate.  
 143. *Smooth, adj.* madulás : mahlos. Cognate.  
 144. *Speak.* magsalítá? : adiñan. Noncognate.  
 145. *Soft.* malambót : máña?ña?. Noncognate.  
 146. *Some.* ilán : palu. Noncognate.  
 147. *Spit.* dumuráp : buhbuhdzi. Noncognate.  
 148. *Split.* hatí?in : ka?ka?. Noncognate.  
 149. *Squeeze.* pilipít : fugu?. Noncognate.  
 150. *Stab/pierce.* saksakín : tsaktsak. Cognate.  
 151. *Stand.* tumayó? : tuhgi. Noncognate.  
 152. *Star.* bituwín : puti?un. Cognate.  
 153. *Stick, n.* dikít : galuti. Noncognate.  
 154. *Stone, n.* bató : atsu?. Noncognate.  
 155. *Round, adj.* mabílog : adamilun. Noncognate.  
 156. *Suck.* súso : tsuptsup. Cognate.  
 157. *Sun, n.* áraw : a?dau. Cognate.  
 158. *Swell.* namagá? : pukpuk. Noncognate.  
 159. *Swim.* lumañóy : numañu. Cognate.  
 160. *Tail, n.* buntót : dádalak. Noncognate.  
 161. *That.* iyán : adzu. Cognate.  
 162. *There.* du?ón : gwinau. Noncognate.  
 163. *They.* silá : siha. Cognate.  
 164. *Thick.* Ø  
 165. *Thin.* manipís : kanifis. Cognate.  
 166. *Think.* isípín : hasu?. Cognate.  
 167. *This.* itó : ini. Noncognate.  
 168. *Thou.* kayó : hago. Cognate.  
 169. *Three.* Ø  
 170. *Throw.* itápon : dzuti. Noncognate.  
 171. *True.* toto?ó : magahit. Noncognate.  
 172. *Tongue.* díla? : hula?. Cognate.  
 173. *Tooth.* ñípín : nifin. Cognate.  
 174. *Tall.* mata?ás : lu?ka?. Noncognate.  
 175. *Turn.* íkot : kiluk. Noncognate.  
 176. *House, n.* báhay : guma?. Noncognate.

177. *Vomit.* sumúka : tu?la?. Noncognate.  
 178. *Walk.* lumákad : pu?kat. Cognate.  
 179. *Warm, adj.* ma?ínit : maipi. Noncognate.  
 180. *Wash.* húgas : na?gasgas. Cognate.  
 181. *Water, n.* túbig : hanum. Noncognate.  
 182. *We.* táyo : hita. Cognate.  
 183. *Wet, adj.* basá? : fu?gun. Noncognate.  
 184. *What?* anú : hafa. Noncognate.  
 185. *When?* ka?ilán : gai?an. Noncognate.  
 186. *Where?* sa?án : maggi. Noncognate.  
 187. *White.* patí? : á?paka?. Noncognate.  
 188. *Who?* síno : hadzi. Noncognate.  
 189. *Wide.* maláwak : ma?gwak. Cognate.  
 190. *Rule.* pangasiwa?án : ma?gasi. Cognate.  
 191. *Wind, n.* hájin : maŋlu?. Cognate.  
 192. *Wing.* bakkák : papa. Cognate.  
 193. *Wipe off.* púnas : sausau. Noncognate.  
 194. *With.* Ø  
 195. *Woman.* babá?e : palau?an. Cognate.  
 196. *Wood.* kahúyan : hadzu. Cognate.  
 197. *Worm.* ú?ud : ulu?. Cognate.  
 198. *You-plural.* Ø  
 199. *Year.* ta?ón : sakan. Noncognate.  
 200. *"Asthma".* híka : guha. Cognate.

## 5. COMPUTATION OF TIME DEPTH

To compute time depth and range of error, the standard formulas given in Lees (1953:119ff.) were used. In the comparison of Tagalog and Chamorro, 73 of the 194 word pairs were judged to be probable cognates, giving a cognate percentage of 37.6. Computation of time depth produced the figure of 2250 years before the present as the probable date of divergence for Tagalog and Chamorro.

The computation of the range of error at 7/10 confidence level gave a figure in years of 200. On the basis of this test, then, it can be stated that Tagalog and Chamorro began to diverge from a common parent language sometime between 2050 and 2450 years before the present.

The above divergence date of 2250 years  $\pm$  200 years seems consistent with what is known or suspected about the relationship between Chamorro and the Tagalic languages of the Philippines.

#### NOTES

1. Chamorro is the native language of the Mariana Islands in Micronesia; the variety used in this study is that of Guam. Tagalog is the official native language of the Philippines.
2. Ruperta Blas, Remedios Perez, Rosario Sablan, and Robert Underwood.
3. Rosemarie Salvador, from Zamboanga, Mindanao; and Gemma Cabella Ramos, from Manila, Luzon.
4. See Witucki (1973) for arguments in support of a Chamorro vowel system /i u a ai au/. This system, rather than the traditional /i e ə a o u ai au/, is used in the "roughly phonemic" representations of Chamorro words in the present paper.

REFERENCES CITED

Conant, Carlos E.

- 1911 "Consonant changes and vowel harmony in Chamorro". *Anthropos* 6:136-46.

Dyen, Isidore

- 1965 "A lexicostatistical classification of the Austronesian languages". *International Journal of American Linguistics, Memoir 19*.

Fritz, Georg

- 1908 *Chamorro Wörterbuch*. Berlin.

Gudschinsky, Sarah C.

- 1956 "The ABC's of lexicostatistics (glottochronology)". *Word* 12:175-210.

Lees, Robert B.

- 1953 "The basis of glottochronology". *Language* 29:113-27.

Preissig, Edward R. von

- 1918 *Dictionary and grammar of the Chamorro language*. Washington, D.C., U.S. Government Printing Office.

Safford, William E.

- 1903 "The Chamorro language of Guam. Part I". *American Anthropologist* 5:289-311.

Topping, Donald M.

- 1968 "Chamorro vowel harmony". *Oceanic Linguistics* 7:1:67-79.

Witucki, Jeannette

1973 "Alternative analyses of Chamorro vowels". *Anthropological Linguistics* 15:8:362-72.