How to miss a paradigm or two: Multifunctional ma- in Tagalog

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1. Introduction

The first major grammar of Tagalog was published in 1745 by the Catholic missionary Sebastian de Totanes. Since then, quite a few grammars have been published, including the perhaps finest piece of American structuralist grammar writing, Bloomfield’s (1917) *Tagalog Texts with Grammatical Analysis*. Even a very superficial glance through a number of these grammars and grammatical sketches immediately reveals a bewildering heterogeneity: apart from the phonology sections these grammars have very little in common in terms of overall structure and terminology. Of course, some of this heterogeneity is due to differences in grammatical framework and anticipated readership, and in this regard Tagalog grammar writing does not differ from grammar writing on any other language. But it is probably fair to say that in the case of Tagalog the heterogeneity is more profound in that there is no agreement with regard to a number of fundamental issues of grammatical structure, including the nature of grammatical relations and basic lexical and morphological categories. In short, more than 250 years of more or less continued grammatical analysis do not seem to have been long enough to establish a widely accepted basic grammatographic practice for Tagalog (or any other Philippine language, for that matter).

Among the factors which contribute to this lack of a common grammatographic practice is the following paradox: Philippine languages are very similar to, and at the same time very different from, Indo-European languages, on which all (western) grammaticographic practices are based. When working on isolating Chinese or polysynthetic Cayuga, the differences to Standard Average European are almost immediately obvious and it is clear that these require major adjustments of Greek and Latin-based grammatical categories. This is not so in the case of Tagalog: in some sense
Tagalog has voice alternations, in another it has not; there is evidence for the grammatical relation subject, the lexical categories noun, verb and adjective, a distinction between derivation and inflection, nominal case marking, core vs. peripheral arguments, etc.; but there is, equally, lots of counter-evidence against these categories (see Himmelmann 2005 for examples, discussion and references). Or, to put this in a perhaps more productive way, most of the basic categories of Standard Average European are also found in Tagalog, but in an interestingly different way.

Many problems in identifying the basic categories for an adequate description of Tagalog are caused by the pervasive multifunctionality of practically all grammatical items (function words as well as affixes). This chapter explores some of the problems created by these items for grammatical analysis and the structure of descriptive grammars, using the multifunctional prefix ma- as its primary example. As further illustrated in section 2, this prefix occurs in formations that have been termed adjectival, involuntary action, potential, abilitative, stative, etc. The major goal of this chapter is to propose a coherent systematics for the multiple uses and functions of this prefix.

The basic challenge posed by a multifunctional affix is to uncover the language-internal systematics of its uses, i.e. a systematics based on language-internal evidence and not one derived from a supposedly universal grid of semantic and/or grammatical categories. This includes in particular decisions about polysemy and homophony, i.e. whether one is dealing with an item conveying a single, possibly highly general meaning, or one with multiple, but related meanings, or simply a case of chance resemblance on the formal side.

There is no single pat solution for this problem which would apply to all multifunctional affixes in all languages of the world. See Enfield (this volume) for (mostly semantic) arguments pertaining to the decision between monosemy and polysemy. Here we will be concerned with evidence for and from paradigm structure, a kind of evidence which has always been applied without much discussion in the case of Indo-European and Afro-Asiatic languages but which is often not used outside this group of languages. In particular with regard to putatively agglutinating languages such as Tagalog, little use of paradigms is made, probably based on the assumption that straightforward compositionality on the formal side is also mirrored by straightforward compositionality on the content side.

Paradigms in Tagalog (and other western Austronesian languages) are of a somewhat different nature than those in Indo-European languages in
they are not clearly inflectional but instead show quite a few derivational characteristics, as further illustrated in section 3. Although Tagalog paradigms lack the generality characterizing inflectional paradigms in Indo-European languages, they are still paradigms in adhering to the principle of constant correlation or proportionality (x relates to x' as y relates to y', regardless of the formal details). The morphological and semantic parameters underlying these correlations are essential in uncovering the language-internal systematics of multifunctional affixes such as ma-.

It is argued here that to date the nature of this affix has been misunderstood because analysts have failed to notice that it participates in two different, but related paradigms. On the one hand, ma- serves as the marker for potentive dynamic verbs in undergoer voice (section 5). On the other hand, it marks basic statives (section 6). A by-product of this exercise will be the recognition of the fact that next to aspect/mood and voice, dynamicity - the distinction between dynamic and stative predicates – is of fundamental importance to Tagalog grammar (section 7).

Given this focus on paradigms, it will not come as a surprise that I will follow here the basic assumptions of a WORD-AND-PARADIGM approach to morphology. Most importantly, rather than talking about morphemes as minimal units of form and meaning, I will speak of (bound) formatives - i.e. formal units attaching to lexical bases – which in a given morphosyntactic context may convey (or realize) such and such a bundle of semantic and/or syntactic features. It is only in this framework that the term multifunctional affix has a straightforward and consistent interpretation, i.e. a formative which occurs in a multitude of morphosyntactic contexts conveying a number of different bundles of semanto-syntactic features. In morpheme-based morphology, strictly speaking there cannot be a multifunctional morpheme since morphemes are units of meaning and form (so a multifunctional affix is either polysemous or “represents” two or more homonymous morphemes).

Many examples in this chapter come from the author’s own corpus of spontaneous spoken narratives, including the author’s own transcriptions of stories from Wolff et al.’s (1991) textbook and accompanying audio cassettes (see Himmelmann 1999: 245f for details). Other sources are Bloomfield’s (1917) text collection and the example clauses found in Father English’s (1986) dictionary. In the examples from the narrative corpus features of the spoken language (in particular common reductions) are retained.
2. Multifunctional ma-

This section reviews (part of) the semantic range of words marked with the Tagalog prefix *ma-* or its variant *mà-* (with secondary stress/lengthened vowel). To begin with, we have to take note of the fact that many words prefixed with *ma-* allow the aspect/mood alternations illustrated in Table 1 with the base *takot* ‘fear’. The formative *ma-*, which is the conventional citation form of the prefix, is the basic or non-realis form which contrasts with the realis formative *na-*. Accented reduplication (the vowel in the reduplicated syllable is distinctly long) signals imperfective aspect in either mood. As we will see in section 3 below, this aspect/mood alternation is found with many other affixed formations in Tagalog. In fact, it is so general that these alternations can be (and have been) called aspect/mood inflection.

Table 1. Aspect/mood inflection for *ma-takot* ‘fear, be afraid’

<table>
<thead>
<tr>
<th>NON-REALIS/PERFECTIVE</th>
<th>NON-REALIS/IMPERFECTIVE</th>
<th>REALIS/PERFECTIVE</th>
<th>REALIS/IMPERFECTIVE</th>
</tr>
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<tbody>
<tr>
<td>ma-takot</td>
<td>ma-tàtakot</td>
<td>na-takot</td>
<td>na-tàtakot</td>
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</table>

In (1) *matakot* is a non-realis perfective form (also called the base form) while *natàtakot* in (2) is a realis imperfective form:

(1) *baká ngá kayó’y matakot*
    *baká’ ngá kayó ay ma-takot*
    ‘maybe really 2.PL PM MA-fear’
    ‘maybe you would be scared’

(2) *natàtakot silá*
    *na-RDP1-takot silá*
    ‘they were frightened’

Strictly speaking, then, the formations to be investigated here may carry the prefixes *ma-* or *na-*, the changing nasal indicating a regular realis/non-realis alternation as it is also found in many other Tagalog prefixes (e.g. *maki-/naki-, maka-/naka-, mag-/nag-*). Thus, when speaking about ‘the prefix *ma-*’, reference does not pertain to a specific formative of the shape */ma/ but rather to the complete inflectional paradigm given in Table 1. In this section, any formative which belongs to this paradigm is glossed simply as MA, as in the preceding two examples.
Before we proceed with an illustration of the uses of ma-, another complication needs to be mentioned. There are some formations, further illustrated in section 4, where ma- does not alternate with na- (or any other prefix for that matter), and some where na- does not alternate with ma- (or any other prefix for that matter). Thus, we have to distinguish between a variable and an invariable ma-, the former being the conventional citation form of the alternating pair ma-/na-. The remainder of this section (and most of this chapter) will be concerned with variable ma-, which is simply called ma- unless there is a need to distinguish it from invariable ma-.

Words formed with (variable) ma- can roughly be grouped into the following five sets based on their semantics. To begin with, there are words expressing a bodily condition or an emotional state. In addition to the two preceding examples, compare:

(3) hindí na naman tayo na gugútom
    hindí' na namán tayo na -RDP1-gutom
    NEG now truly 1.PL.IN RLS.MA-RDP1-hunger
    ‘we are not starving’

(4) napipe sya.
    na- pipi siyá
    RLS.MA-dumb 3.SG
    ‘He got dumb.’ (Bloomfield 1917: 285/29)

“Bodily condition or state” here also includes ‘be alive, live’, ‘be dead, die’ and ‘sleep’.

With (some) positional predicates (‘sit’, ‘lie’, ‘hang’, etc.), forms with ma- denote being in, or getting oneself into, the position denoted by the base:

(5) Isang araw naupó sya sa taburete sa
    isá-ng araw na- upó' siyá sa taburete sa
    one-LK day RLS.MA-sitting 3.SG LOC stool LOC
giná ng apat na hukay
giná' ng apat na hukay
    center GEN four LK hole
    ‘One day he sat down on the chair between the four pits, …’ (Bloomfield 1917: 24/39)

(6) tapos siya'y nahigá'
    tapos siyá=ay na -higá'
    end 3.SG=PM RLS.MA-lying.down
    ‘Then she lay down, …’
A third set is formed by *ma*-prefixed words denoting (acts of) perception. When these are used as predicates, the thing perceived appears in subject position (marked by the specific article *ang* or one of its alternates), while the perceiver appears in a genitive or possessor phrase.

(8) \[ \text{mà} \text{kíta mo bukas ang gandá ng} \]
\[ \text{átin-ng báhay} \]
\[ \text{átin-ng bahay} \]
\[ 1.P.L.IN.DAT-LK house \]
\[ 'tomorrow you will see how beautiful our house will be (lit. you will see the beauty of our house) \]

The fourth set of *ma*-words denotes involuntary actions, i.e. actions which occur without the full control of the actor or which an actor is “enabled to perform by virtue of outer circumstances”, as Bloomfield (1917:293) puts it. If the action is semantically transitive, the undergoer occurs in subject function, while the actor appears in a genitive or possessor phrase, just as in the case of perception predicates. The lack of control characterizing involuntary actions ranges over a fairly broad semantic domain which includes spontaneous (re-)actions over which the actor has absolutely no control as in:

(9) \[ \text{biglá nyang ànbigkás iyón} \]
\[ \text{biglá’ niyá -ng ná -bigkás iyón} \]
\[ \text{sudden 3.SG.POSS-LK RLS.MA-enunciation DIST} \]
\[ '(Terrified) she suddenly exclaimed this: …' \]

It also includes accidental actions, i.e. actions which the actor physically controls but did not intend to carry out.
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(10) **na**-dálá ko ang lábró
    na- dalá ko ang lábró
    RLS.MA-carried 1.SG.POSS SPEC book
    ‘I took the book by accident.’

Finally, inanimate effectors (in the sense of Van Valin and Wilkins 1996) are generally depicted as not being in control of the action triggered by them.

(11) ang dahun ay na-**dálá** ng tubíg.
    ang dahon ay na -RDP1-dálá ng tubíg
    SPEC leaf PM RLS.MA-RDP1-carried GEN water
    ‘The leaf was being carried along by the water.’

Note that putting together all these different uses under a single label involuntary already involves quite a few abstractions, which distinguishes this group of formations from the ones previously mentioned. The presentation here follows a widespread practice in Tagalog grammatical descriptions.

The fifth widely recognized usage of **ma**- is to mark the ability or opportunity to carry out an action. Again, words affixed with **ma**- in this sense are undergoer-oriented in that the undergoer occurs in subject function:

(12) kung **mà**-bibili iyán.
    kung ma -RDP-bilí iyán
    if MA-RDP-sale MED
    ‘If that can be sold.’

(13) Kung hindí tayo âalís ngayón ay hindí
    kung hindí’ tayo RDP1-alís ngayón ay hindí’
    if NEG 1.PL.IN RDP1-departure now PM NEG
    natin ma-RDP1-panoód ang parada.
    natin ma-RDP1-panoód ang parada
    1.PL.IN.POSS MA-RDP1-look.at SPEC parade
    ‘If we don’t go now, we won’t be able to see the parade.’ (Wolff et al. 1991: 286)

In realis mood, this usage generally conveys that an actor succeeded or managed to carry out an action despite a number of obstacles.
The last two uses of *ma-* , the ability and the involuntary uses, share an important property: They occur with exactly the same set of bases. That is, in principle all of the preceding six examples are ambiguous between an ability and an involuntary reading. To illustrate, example (10) also means ‘I was able to carry the book’ in addition to ‘I took the book by accident’. Conversely, example (12) also means ‘if that happens to be sold’ or ‘if that is sold by accident’.

To summarize the data surveyed so far, the variable prefix *ma-* occurs in the following five types of expressions:

1. bodily conditions or emotional states
2. positionals
3. perception predicates
4. involuntary actions
5. ability to perform an action

This is not a comprehensive list of the uses of *ma-* , but it is sufficient to serve as a first illustration of the multifunctionality of *ma-* . Before we further expand this list (in section 4 below), it will be useful briefly to recall the descriptive problems posed by multifunctional affixes such *ma-* , using existing grammatical descriptions of Tagalog as examples.

At some level, all existing descriptions of Tagalog distinguish the five different uses of *ma-* listed above, giving roughly the same kinds of characterizations for them. The reason for this agreement would appear to be the semantic coherence of these uses and the fact that “involuntary action”, “perception”, “ability”, etc. correspond to grammatically relevant categories also found in other languages.

Tagalog grammars diverge significantly, however, with regard to the problem of how to combine these different uses into higher-level categories. In fact, in quite a few descriptions the authors avoid taking an explicit stand on this issue. But there are two reasons why the problem of a higher-level systematization cannot be avoided.
First, there is no neutral way of presenting the information on the different uses of *ma*- which would avoid any implications with respect to a higher-level categorization. Basically two options exist for solving the presentational problem. The first option is to present all uses together in one part of the description, typically using the formative *ma*- as (part of) the heading of this section. This arrangement suggests that there is a single prefix *ma*- which has a number of (related) meanings and functions (and hence is polysemous) or a highly general meaning which is contextually modulated. Bloomfield’s (1917) analysis of both variable and invariable *ma-* (§§438–441, 463–466) is a prototypical representative of this option in that he makes it quite clear that for him there is only a single prefix *ma*- for which he distinguishes a number of different meanings. Thus, for example, he characterizes one usage as “object directly affected by an action which an actor is able to perform” (§438 = the fifth usage (“ability”) in the list above). Another one pertains to “the animate performer of an involuntary act” which includes emotion or sensation and “processes of life” such as ‘get lame’, ‘lived’, ‘died’, etc. (§441 = the first usage (“bodily conditions or emotional states”) in the list above). And so on.

The second option is to present the different uses of *ma*- in a number of different places in the grammar, which implies homonymy, i.e. that there are a number of different prefixes which happen to have the same shape /ma/ (*ma-*1, *ma-*2, etc.). This is the strategy used in Schachter and Otanes (1972) who distinguish a *ma-* which occurs in ability and involuntary-action verbs (1972: 330–333), an actor voice (“actor focus” in their terminology) marking *ma-* which occurs with predicates denoting emotions and positions (1972: 288, 301), an undergoer voice (“object focus”) marking *ma-* which occurs with perception predicates (1972: 288, 296), and an intransitive *ma-* used with “verbs of becoming” (1972: 288, 307).

These two examples should make it clear that the mere arrangement of information on the uses of the formative *ma*- already has implications for its higher-level systematics and that there is no non-committal way of representing this information, at least in linear texts (I will refrain from discussing here the possibilities of hypertext representations).

The second reason why the question of a higher-level analysis of *ma*- cannot be avoided is the fact that a good grammatical description does not simply consist of a list of grammatical formatives and constructions and their meanings and functions. Instead, an insightful descriptive analysis will attempt to uncover the systematic relationships that exist between individual formatives and constructions. Even if one does not believe in a single
“great underlying groundplan” (Sapir 1921:144) that makes a language tick and encompasses every little detail of its structure (ranging, say, from morphophonological rules of vowel alternations to the formation of ordinal numbers to constraints on tense marking in complex sentences), hardly any linguist would doubt that at least subsets of the formatives and constructions found in a given language closely interact and form a “system” demanding a description as such. With regard to Tagalog *ma-*-, this means that one would not only like to know whether and in what sense the different uses of this prefix form a system but also how this prefix fits into the larger system (or systems) of “verbal” affixations in Tagalog.

Inasmuch as one believes that evidence for systematic interrelationships between formatives and constructions is to be gleaned from the attested structures themselves rather than from a putative universal grammar, the evidence provided by the shape of a given set of formatives is without doubt of primordial importance. That is, in dealing with multifunctional affixes the principle of “one form – one meaning” will be the major heuristic. The initial assumption will be that such an affix is highly general (or perhaps polysemous) rather than homonymous. The point where descriptive approaches diverge most sharply in dealing with multifunctional affixes is with regard to what evidence is considered strong enough for weakening the “one form – one meaning” principle (and the intensity with which such evidence is sought).

Of major importance in this regard is the question of what is used to define “one form” in this equation. Contrary to what appears to be assumed in quite a number of discussions of multifunctional affixes, the segmental make-up of a given formative is not the only parameter relevant to determining “one form”. Usually, suprasegmental differences are also relevant (but recall that the suprasegmental differences between *ma-* and *mà-* are disregarded here when speaking of variable *ma-*). Furthermore there are also distributional factors, including syntactic distribution and distribution with regard to (independently established!) lexical classes, which may provide important formal evidence for distinguishing different formatives. It is not my intention here to review all possible kinds of evidence relevant to deciding what may be considered “one form”. Instead, I wish to focus on one type of evidence, i.e. paradigmatic evidence, which is all too often ignored, in particular in non-highly inflectional languages.

In highly inflectional languages, this kind of evidence is employed almost automatically, without much discussion and without the need to justify its use. To recall just one well-known example, the English suffix *-s*
marks both plural in nouns and the 3rd person singular present tense of verbs. In both functions the morphonological alternations are identical: [iz] after sibilants, voiceless [s] after voiceless non-sibilant consonants, etc. Despite this perfect segmental identity, the idea that this is a case of polysemy or generality has never been seriously entertained simply because it is clear that the two uses of the formative belong to two very different paradigms. (In addition, of course, the knowledge that modern -s diachronically reflects two different formatives (3rd singular marking -p and plural marking -es) and the fact that there is no obvious semantic relation between the two functions also strongly suggest homonymy.)

In the case of Tagalog ma-, no paradigms are immediately obvious which would suggest a basic systematics for its different uses. In fact, paradigms are little used in Tagalog grammars because the morphology is segmentally transparent, approaching “ideal agglutination” in that the boundaries between affixes and bases are hardly ever a problem. But easy segmentability is only one of a number of parameters underlying the traditional agglutinating vs. flectional-distinction, as recently emphasized by Plank (1999). With regard to quite a few other parameters, Tagalog in fact is rather flectional. The fact that most high frequency affixes are multifunctional is one major flectional characteristic. Another one is the fact that these formatives typically convey a bundle of morphosyntactic features rather than a single feature (that they are cumulative rather than separatist in Plank’s (1999: 282) terminology). It is this parameter that we now turn to because it also provides evidence for paradigmatic organization and thus language-internal evidence for the systematization of the different uses of ma-.

3. On the nature of paradigms in Tagalog: Aspect/mood and voice

The only obvious paradigm in Tagalog which is similar to inflectional paradigms in Indo-European languages is the aspect/mood paradigm already mentioned in the preceding section and illustrated for variable ma- in Table 1. Aspect/mood alternations are not restricted to words prefixed with variable ma- but occur in a large number of other morphologically complex formations, in particular words marked with voice affixes (also called focus affixes in the Philippinist literature). In this section, we will see that because of its intimate formal link to aspect/mood marking, voice marking is also paradigmatically organized, despite the fact that it is essentially deriva-
tional. This in turn will provide an important lead for the further systematization of *ma*-words. We begin by reviewing the formal exponents of the aspect/mood alternations in different voices.

It is widely, though not unanimously, agreed that there are four basic voices in Tagalog, i.e. actor voice, patient voice, locative voice and conveyance voice. The latter three share a number of morphological and syntactic properties which makes it convenient to refer to them collectively as undergoer voices. While there is essentially only a single formative for each of the undergoer voices, there are a number of distinct formatives for actor voice. Table 2 lists the major affixes signaling these voices and the alternations marking aspect (perfective vs. imperfective) and mood (realis vs. non-realis). It illustrates only the two most important actor voice formatives, *-um-* and *mag-* . All other actor voice prefixes (e.g. *maN-* ) follow the pattern of *mag-* (non-realis *m* alternating with realis *n*).

**Table 2. Aspect/mood alternations in different voices for *bili* ‘purchase’**

<table>
<thead>
<tr>
<th></th>
<th>AV</th>
<th>AV</th>
<th>PV</th>
<th>LV</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NON-REALIS/</strong></td>
<td>b-um-ili</td>
<td>mag-bili</td>
<td>bilh-in</td>
<td>bilh-án</td>
<td>i-bili</td>
</tr>
<tr>
<td>PERFECTIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NON-REALIS/</strong></td>
<td>bibili</td>
<td>mag-bibili</td>
<td>bibilh-in</td>
<td>bibilh-án</td>
<td>i-bibili</td>
</tr>
<tr>
<td>IMPERFECTIVE</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>REALIS/</strong></td>
<td>b-um-ili</td>
<td>nag-bili</td>
<td>b-in-ili</td>
<td>b-in-ilh-án</td>
<td>i-b-in-ilí</td>
</tr>
<tr>
<td>PERFECTIVE</td>
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</table>

As can be gleaned from Table 2 (and also from Table 1), the marking of the aspectual distinction is completely general and transparent: Accented reduplication of the first CV unit of the stem marks imperfective aspect. Perfective aspect remains formally unmarked, regardless of voice.

The formal manifestations of the realis/non-realis distinction are somewhat less transparent and, more importantly, closely linked with voice marking. Thus, while in the undergoer voices, realis is signaled by the infix *-in-* , there is no clear exponent for realis mood in *-um*-actor voice. In *mag*-actor voice, realis/non-realis is conveyed by the alternation between *m* and *n* already familiar from the aspect/mood paradigm for *ma-* .
Not all formations are formally compositional in that each morphosyntactic feature (aspect, mood, voice) is conveyed by a separate formative. Perfective aspect and non-realis mood are actually implicated by the absence of a particular formative. Furthermore, the realis patient voice forms (binili, binibili) lack a separate voice formative as does the non-realis imperfective form (bibili) in the -um-paradigm.

This lack of formal compositionality is a very important diagnostic for paradigmatic organization. One major principle for paradigms is the principle of constant correlation (Seiler 1966: 197) or proportionality (Uhlenbeck 1985): binili relates to bilhín as does binilhán to bilhán, magbili to bilhin as nagbili to binili, etc., regardless of the particular formatives involved. While such correlations may hold both semantically (on the content side) as well as formally (on the expression side), the correlations on the content side are the ones of central importance. They presuppose (or imply) a grid of morphosyntactic features which are always conveyed together: Any given form which is part of the paradigm always conveys the triplet of aspect, mood and voice. There is no way of creating a form which conveys only one of these features. Thus, formations which convey two or more morphosyntactic features and are non-compositional in their formal make-up by their very nature imply paradigmatic organization. Applied to our current example this means that because the aspect/mood alternations remain constant across the different voices and their formal exponence is inherently linked to voice marking, voice itself becomes part of the paradigm. And it is in this sense – and only in this sense – that voice is paradigmatically organized in Tagalog.

There are other diagnostic features of paradigmatic organization, most of which are not met by Tagalog voice alternations. They differ in this regard quite clearly from the aspect/mood alternations. Perhaps most importantly, voice alternations are not general in the same way as aspect/mood alternations. Aspect/mood formations are general, for example, in that for any given aspect/mood formation there are (almost) always three complementary ones (for a major exception, see the next section). Voice alternations are much less regular and predictable. Not many Tagalog lexical bases or derived stems are like bili in that they co-occur with all five voice affixes illustrated in Table 2.9 Some bases typically occur only in two voice forms, others in three, etc., and while it is possible to make some generalizations about typical patterns based on the semantics of the base and the voice affix there are many exceptions to such patterns (cf. Himmelmann
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1987: 129–145). Consequently, one voice form does not imply the existence of another voice form.

Another basic characteristic of paradigms according to Bybee (1985: 50–58) is the existence of a formally and semantically basic, unmarked form. Such a basic form is easily identifiable for the aspect/mood alternations (i.e. non-real is perfective). In contrast, there is no evidence for a basic voice formation from which the other voices are derived.

These differences point to the fact that the voice alternations have more characteristics of derivation than inflection. In particular because of their lack of generality, it is widely believed that they do not form a paradigm. In this view, the concept paradigm is limited to inflectional paradigms on the assumption that inflectional paradigms are always totally general (i.e. every base subcategorized for the paradigm occurs in all forms considered to be part of the paradigm). But, as Seiler (1966: 197) points out, this is not even true for the prototypical paradigms of Latin. Not every Latin verb has a supine form and not every Latin noun occurs in vocative case. Furthermore, as just stated, the fact that voice marking is formally intertwined with aspect/mood marking in such a way that all three morphosyntactic features always come in a package implies an extended aspect/mood and voice paradigm, even though the voice alternations are much less regular and general than the aspect/mood alternations.

This is not to deny that there are significant differences between the two types of alternations. In order to capture these differences, one could say that aspect/mood alternations form an inflectional paradigm while voice alternations form a derivational paradigm. As opposed to inflectional paradigms, derivational paradigms are characterized by a lack of generality which in turn implies a more important role for semantic and pragmatic factors in accounting for the actually occurring forms (for example, whether a given base occurs in conveyance voice depends very much on the compatibility of the meaning of the base with the meanings of conveyance voice formations).

Importantly, not all derivational formations are paradigmatically organized. To the contrary, derivational formations typically do not involve paradigms. A Tagalog example for a typical derivational formation in this sense is the formation of words meaning ‘fond of doing X’ with pala- as in palasimbá ‘fond of going to church’ (base simbá ‘church’), palatawa ‘fond of laughing’ (base tawa ‘laugh, laughter’), etc. In this case, the derivation is both formally and semantically fully compositional, there is no need to refer to any other categories than the derivational prefix pala- and the bases
it occurs with. Derivational formations which are paradigmatically organized, on the other hand, involve two or more categories, obey the principle of constant correlation along different dimensions and consist of forms which are formally not fully compositional. In the most clear-cut cases, they are formally intertwined with alternations which are clearly inflectional, as just illustrated for the Tagalog voice alternations.

Having made the distinction between inflectional and derivational paradigms, it should be clearly understood that although voice marking may be less general and regular than aspect/mood marking it is still surprisingly productive and widespread when looked at from the point of view of Standard Average European. For example, it is not an exception that an apparently semantically intransitive base such as *lakad* ‘walk, gait’ allows for all four basic voice formations:

(15) matulin siyáŋ lumakad.
    ma-tulin siyá-ng -um-lakad
    ST-speed 3.SG-LK -AV-walk
    ‘He walks fast.’ (English 1986)

(16) nilakad\(^{10}\) ng mga batá’ ang buóng
    -in- lakad ng mangá batá’ ang buó’ -ng
    RLS(UG)-walk GEN PL child SPEC entire-LK
    sampúŋ milya.
    sampú’ -ng milya
ten LK mile
    ‘The children walked the whole ten miles.’ (English 1986)

(17) huwág lakarán ang damó.
    huwág lakad-an ang damó
    NEG.IMP walk-LV SPEC grass
    ‘Don’t walk on the grass.’ (English 1986)

(18) huwág mong ilakad ang bagong
    huwág mo -ng i- lakad ang bago-ng
    NEG.IMP 2.SG.POSS-LK CV- walk SPEC new-LK
    sapatos.
    sapatos
    shoe
    ‘Don’t use the new shoes in walking.’ (English 1986)

That is, although for most lexical bases only a subset of voice formations is conventionalized and frequently used, it would appear that almost
all lexical bases have the potential to occur in all basic voice formations if the resulting formation “makes sense” in both semantic and pragmatic terms.

The previous discussion provides an important lead for the further investigation of Tagalog ma-. There is the possibility that ma-formations also participate in one or more derivational paradigms. More specifically, the fact that voice marking is intimately connected with aspect/mood marking suggests the possibility that ma- also conveys voice-alternations (recall that Schachter and Otanes (1972) consider some of the uses of ma- to be voice alternations). But before exploring this possibility, we have to take into account a further complication: The existence of invariable formations with ma-.

4. A further complication: Invariable ma-formations

At this point, the pervasive multifunctionality of affixes in Tagalog comes into play once again. All the formatives found in Table 2 also occur in other formations which are not inflectable for aspect/mood. There are, for example, formations involving the “patient voice” suffix -in meaning ‘prone to whatever the base denotes’ as in lagnat-in ‘prone to fever’ (< lagnat ‘fever’), which however unlike “true” patient voice formations do not alternate with *làlagnatin, *nilagnat, etc. In the current context, it is of course of major interest that there are a substantial number of ma- formations which are not inflectable for aspect/mood.

In addition to appearing on words expressing bodily conditions or emotional states, the prefix ma- also appears on words denoting “qualities” (or “properties”) when these are used as attributes or predicates (for the time being, this ma- is simply glossed with ??):

(19) ang ma-liit na hayop
    SPEC ??-smallness LK animal
    ‘the small animal.’

(20) ni-lakar-an ko ang ma-bató-ng kalye
    RLS(UG)-walk-LV 1.SG.POSS SPEC ??-stone-LK street
    ‘I walked on a stony road.’
How to miss a paradigm or two

Unlike in examples (1)-(4) above, the prefix ma- here is invariable and thus, for example, does not alternate with na- in realis perfective contexts as in example (21). Instead, words with invariable ma- participate in other alternations such as optional plural marking through unaccented CV reduplication (see malalaking in example (7) above; and see Himmelmann (forthcoming) for a much more detailed discussion of the differences between the two formations).

There are two options for dealing with the interrelationship between variable and invariable ma-. First, one could consider invariable ma- formations as something completely different from variable ma- formations, thus assuming homonymy. This option is chosen in a large number of descriptions of Tagalog where invariable ma- is considered an adjective marker (Schachter and Otanes (1972: 198–200) is a prominent example). Alternatively, one could acknowledge the obvious semantic communality that both ma- formations denote states and consider invariable ma- formations defective members of a single class of ma- marked words. This is implied in Bloomfield’s solution (1917: 288f) who suggests that invariable ma- formations form a subclass of “special static words” within the larger class of ma- formations.

We will return to these two options in section 6 below. Here we simply note, that invariable ma- formations are not limited to the “basic” form (i.e. ma- plus non-reduplicated base). There are also formations which are restricted to the realis form na-. Thus, only na-, never ma-, occurs with locational predicates, which usually consist of na- plus a deictic element as in (22) or na- plus a prepositional phrase introduced by the general locative preposition sa as in (23).

(22) nároon si Magayón
    ná-doón si Magayón
    RLS.?%-DIST.LOC PN Magayon
    ‘Magayon was there.’

(23) semantalang sya ’y nasa tabí ng ilog
    samantala-ng siyá ay na-sa tabí ng ilog
    meanwhile-LK 3.SG PM RLS.?%-LOC side GEN river
    ‘When he was close to the riverside, …’
Locational predicates allow accented reduplication for imperfective aspect although this is infrequently used:

(24) habang sya y násása loób ng katawán
    habang siyá ay ná- RDP1-sa loób ng katawán
    during 3.SG PM RLS.??.-RDP1-LOC heart GEN body

    nitó.
    nitó
    PRX.GEN

‘while he is within the latter’s body …’ (Bloomfield 1917: 44/1)

Semantically, these locational predicates are closely related to the positional ones in (5)-(7) above. They also convey the aspect/mood value suggested by the formation (i.e. they are in fact realis formations, as indicated in the glosses). Again, there is the problem of how to relate these two formations. Schachter and Otanes (1972: 254–259) stick to homonymy and call them “locative adjective phrases”. Bloomfield (1917: 295) lists them together with the positionals without further comment. Given the fact that here aspectual reduplication is possible and that they primarily occur in predicative function, an analysis of locational na-marked predicates as defective members of a general ma-stative class would seem even more plausible than in the case of the “quality”-denoting ma-formations discussed above.

The two types of invariable ma-formations just presented are of interest in two regards. First, as noted at the beginning of this section, the co-occurrence of semantically related variable and invariable formations is a feature shared by both voice formations and ma-formations. Although this obviously does not provide for a strong argument, it adds to the voice-like characteristics of ma-formations. Second, as will be recalled from section 2, there are five different uses of variable ma-, i.e. expressions conveying a bodily condition or emotional state, position, perception, involuntary action, and the ability to perform an action. Only two of these, i.e. bodily condition or emotional state and position, have semantically related invariable uses. Again, while this is not strong evidence, it may contribute to an argument for combining the five different uses of variable ma- into two higher-level groupings, the first consisting of bodily condition/emotional state and position, the second of perception, involuntary action and ability. As we will see in the next section, there is in fact quite good evidence for the second grouping which can also be paradigmatically related to the voice alternations in Table 2.
5. Extending the paradigm: Potentive vs. non-potentive

The easiest point to start the search for higher-level groupings of inflectable ma- formations are the involuntary action and ability uses (examples (9)-(14) above). As already noted in section 2, these two uses are linked by the fact that they overlap more or less completely: Any formation which allows an involuntary action reading (in any of the various senses distinguished in section 2) usually also allows an ability reading and vice versa.\(^{12}\)

While it is rare crosslinguistically that involuntary and ability uses are conveyed by the same form and far from obvious how they are linked semantically, use of the same formative for both uses is extremely common and widespread in western Austronesian languages, regardless of the shape of the formative (in Acehnese, for example, the prefix ter- conveys these meanings, among others).\(^{13}\) It will thus not come as a surprise that there is a broad consensus in the literature that the involuntary action and ability uses form a single category.

The only problem that actually exists with regard to this category is the appropriate name for it. Potential, aptative and volitive are among the terms that have been used for this category, none of which is really satisfactory in characterizing exactly this set of uses. Here I follow Rubino (1997) in using the new term potentive to refer to formations which convey both involuntary action and ability readings.

It is also uncontroversial that potentive ma- formations are patient voice forms because they regularly alternate with potentive formations in other voices. Thus we find maka- for potentive actor voice as in (25), ma- -an for potentive locative voice as in (26), and ma-i- for potentive conveyance voice as in (27).

(25) at hindí maka-baríl sa kanyá
    and NEG POT.AV-gun LOC 3.SG.DAT
    ‘(The man got bitten by the ants) and wasn’t able to shoot at him.’

(26) kung inyóng mapagtiisán iyán
    if 2.PL.DAT-LK POT-GER-suffer-LV MED
    ‘if you (are able to) endure this …’
(27) **na**luto ko na
    -luto’ ko na
    RLS.POT-CV-cooked 1.SG.POSS now
    ‘(Good heavens, you will have to say it is not possible to return the rice, because) I already happened to cook it.’

Viewed from the point of view of voice formation, this means that for a given voice, there are always two forms, a non-potentive one involving one of the affixations listed in Table 2 and a potentive one, which always includes *ma* (or *na* in realis mood). This is illustrated for conveyance voice by the following two examples:

(28) a. **ni**luto’ ko na ang manók
    i -in -luto’ ko na ang manók
    CV-RLS(UG)-cooked 1.SG.POSS now SPEC chicken
    ‘I already cooked the chicken.’

b. **na**luto’ ko na ang manók
    -i -luto’ ko na ang manók
    RLS.POT-CV-cooked 1.SG.POSS now SPEC chicken
    ‘I already happened to cook the chicken.’

Note that the overall structure of the two preceding examples is absolutely identical. In particular, there is no change in the number or the marking of the core arguments. The correspondence shown in these two examples is absolutely regular and general: For every voice form denoting a controlled action there is a corresponding form which denotes the involuntary performance or the ability to perform this action. The basic correspondences are listed in Table 3.

<table>
<thead>
<tr>
<th>NON-POTENTIVE</th>
<th>POTENTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV</td>
<td>-um-</td>
</tr>
<tr>
<td></td>
<td>-in</td>
</tr>
<tr>
<td>PV</td>
<td>ma-</td>
</tr>
<tr>
<td>LV</td>
<td>ma--an</td>
</tr>
<tr>
<td>CV</td>
<td>i-</td>
</tr>
</tbody>
</table>

There is ample evidence that the relation between potentive and non-potentive forms is a paradigmatic one. To begin with, there is a constant
semantic ratio in that -um- relates to maka- as -in to ma-, etc., independent of the formal make-up of these forms. In addition, the correspondence between potenteive and non-potenteive forms is very general. For almost all potenteive forms there is a corresponding non-potenteive one and vice versa. The alternation between the two formations is also syntactically and semantically absolutely regular: The number and coding of arguments in both constructions is identical and the meaning difference always pertains to ability or lack of control. Furthermore, the potenteive/non-potenteive distinction constitutes an obligatory choice in Tagalog grammar. That is, there is no neutral way to say ‘I broke a glass’ in Tagalog. Either I did it on purpose, in which case a non-potenteive form has to be used. Or it was an accident, in which case it is necessary to use the potenteive form (see also Wolff et al. 1991: 305f). This (part of the) paradigm is thus a truly inflectional paradigm in the sense established in section 3 (Wolff et al. 1991: 284, in fact, speak of potential inflection).

The potenteive/non-potenteive alternation gives us an important diagnostic for the further systematization of the remaining three other uses of ma-presented in section 2. In all likelihood, uses of ma- which clearly are patient voice formations are also potenteive formations. There are two major pieces of evidence for patient voice status: a) the ma- formation regularly corresponds to a patient voice formation with -in; and b) it allows for the overt expression of an undergoer subject and a non-subject actor marked as a possessive or genitive argument.

These criteria are fully met by perception predicates (‘see’, ‘hear’, ‘feel’, etc.). The following two examples show the base diníg ‘audible’ first in potenteive patient voice meaning ‘hear’ and then in non-potenteive patient voice meaning ‘listen to’:

(29) nang mà-riníg itó ng Kastila
     nang mà- diníg itó ng Kastila
     when POT.PV-audible PRX GEN Spaniard
     ‘When the Spaniard heard this, …’ (Bloomfield 1917: 28/19)

(30) dinggin mo ang maestra.
     diníg -in mo ang maestra
     audible-PV 2.SG.POSS SPEC female.teacher
     ‘Listen to the teacher.’ (English 1986)

Depending on the meaning of the base, it is of course also to be expected that a potenteive patient voice formation regularly alternates with other po-
tentive voice formations. The following example shows *dinig* in potenti
tive actor voice:

(31) at nakàrinig siyá ng mga huni ng at nakà- diníg siyá ng mangá huni ng
and RLS.POT.AV-audible 3.SG GEN PL chirping GEN
ibon
ibon
bird

‘… and then he heard some birds chirping.’

These examples also make it clear that perception predicates semantically fit the non-potenti
tive - potenti
tive distinction: The potenti
tive forms refer to unplanned, casual, non-directed perceptions, the non-potenti
tive forms to perceptions which are controlled in the sense that attention is consciously directed towards a given input. The major difference between the action predicates such as ‘shoot’ and ‘cook’ in (25) and (27) above and a percep
tion predicate such as *dinig* is that the latter usually occurs with potenti
tive affixation, while the former are more frequently found with non-potenti
tive affixation.14

The fact that perception predicates appear in two different formations which vary with regard to intentionality or control will not come as a sur-
prise to typologically informed readers. Similar differences are found in languages which have grammaticized the distinction between dynamic (or active) and stative eventualities (see, for example, Mithun 1991). Two points are to be noted here. First, many existing descriptions of Tagalog set up a special verb class for perception predicates, assuming that there is a special *maka/-ma-* inflection for these verbs (e.g. Schachter and Otanes 1972: 288, 296) and thus missing the generalization that there is a highly general potenti
tive/non-potenti
tive alternation for predicates of nearly all semi
tactic classes. Second, as will be seen shortly, potenti
tives including non-
directed perceptions are strictly to be distinguished from “truly” stative eventualities in Tagalog.

Unlike perception predicates, the remaining two semantic classes of *m*
marked expressions, i.e. expressions conveying a bodily condition or emo
tional state and positional predicates, do not fulfil the criteria for patient voice formations and also fail to show any of the correspondences listed in Table 3 in a regular and general fashion. Instead, they occur in a set of very different alternations, as discussed in the following section.
6. Another paradigm: Static voice alternations

Prima facie, one would not expect expressions conveying a bodily or emotional condition or state (‘hungry’, ‘angry’, ‘afraid’, etc.) to allow for voice alternations simply because they only have a single semantic core argument, i.e. the one experiencing hunger, anger, fear, etc. But then Tagalog is well known for allowing voice alternations in expressions for what would appear to be semantically intransitive activities, such as ‘run’, ‘dance’ and so on, as shown in examples (16)-(18) above. And there are in fact expressions for bodily conditions or emotional states which at least formally appear to be voice-marked. That is, next to *matakot* ‘afraid’ in (1) there is also *ikatakot* and *katakutan*:

(32) ang pagkalunod ng Kastila’ ay
SPEC GER-ST-drown GEN Spaniard PM
*ikinatakot* ng tatlong maugnakaibigan.
i- -in- ka-takot ng tatlong maugnakaibigan
CV--RLS(UG)-ST-fear GEN three-LK friends
‘The drowning of the Spaniard frightened the three friends.’ (Bloomfield 1917: 272/24)

(33) *kinatatakutan* siyá ng mga tao
- -d RD1-takot-an siyá ng mangá tao
-RLS(UG)-ST-RDP1-fear-LV 3.SG GEN PL people
dito.
dito
PRX.LOC
‘People here are afraid of him.’

(34) hindi nilá nálálam
hindi’ nilá na- RDP1-alam-an
NEG 3.PL.POSS RLS.POT-RDP1-knowledge-LV
kung dapat *katakutan* ang aswáng.
kung dapat ka-takot-an ang aswáng
if should ST-fear-LV SPEC vampire
‘they did not know whether a vampire was really to be feared’ (Bloomfield 1917: 36/9)

These formations differ quite clearly in form and meaning from the potenti
tive forms reviewed in the preceding section. In place of the prefix *ma-*,
which occurs in all potentive forms, there is another prefix, i.e. ka-. Conveyance voice (prefix i-) and locative voice (suffix -an) marking as well as aspect/mood marking (reduplication, realis undergoer infix -in-), however, are the same as in the other paradigms.

Semantically, the conveyance voice form is used when giving the reason on account of which someone experiences a given emotional or bodily state. The locative voice form pertains to the person or thing at which a given emotion is directed. The difference between these two formations admittedly is often rather subtle (as with English ‘to be afraid of’ vs. ‘to be afraid on account of’ or ‘to be angry because of’ vs. ‘to be angry with’).

What is most important here is the fact that all these formations principally exclude the involvement of an agent, i.e. an entity which is represented as intending to bring about a given state of affairs (and usually also controlling much of the action(s) required for bringing it about). That is, ikinatakot or katakutan can never ever mean ‘frighten’ in the sense of someone actively arousing fear in another being. Instead, causes for experiencing a given emotional or bodily state are typically inanimate things or abstract states of affairs. This constitutes the major difference to the potentives. In potentive formations, there always is a potential agent implied even if in the specific state of affairs referred to by a potentive form this agent is presented as not being in full control. Forms referring to states of affairs which principally exclude the involvement of an agent are called stative formations, those which principally allow the involvement of an agent, dynamic formations.

The distinction between statives and potentives is not just a semantic one. Instead, it also has a number of morphosyntactic correlates which can be most easily shown by contrasting stative expressions with corresponding potentive ones. A particularly clear illustration of the difference is provided by potentive perception expressions since these involve an experiencer rather than an agent in the strict sense and thus are rather similar to expressions for emotional or bodily states which also involve experiencers.

In a stative formation such as na-galit siyá ‘she was/got angry’ the subject (siyá) is an experiencer. In a corresponding experiential potentive formation such as nà-kita siyá ‘she was/got seen’, the subject is the stimulus of a perception/visual experience, not the perceiver/experiencer. The perceiver, if overtly expressed, has to be coded as a genitive (nà-kita siyá ng aso ‘the dog saw her’). Statives with na-/na-, on the other hand, generally do not allow genitive arguments. If one wanted to add the object of the anger to nagalit siyá this would have to be marked as a locative (e.g.
nagalit siyá sa aso ‘she was angry with the dog’). That is, the basic alignments of semantic roles and syntactic functions is very different in poten-
tives and statives even though both formations may denote experiences. Table 4 summarizes the differences.

Table 4. Basic alignments of semantic role and syntactic function in potentives and  
statives with variable ma-

<table>
<thead>
<tr>
<th>POTENTIVE</th>
<th>STATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB = Patient/Theme</td>
<td>SUB = Experiencer/Theme</td>
</tr>
<tr>
<td>GEN = Experiencer/Agent</td>
<td>GEN = none</td>
</tr>
<tr>
<td>LOC = none (for core arguments)</td>
<td>LOC = Source/Goal/Cause/Stimulus</td>
</tr>
</tbody>
</table>

A further morphosyntactic correlate pertains to actor voice forms. Po-
tentives easily allow actor voice derivations with maka-, hence nakàkita  
siyá ng aso ‘she saw a dog’. No corresponding formations exist for statives.  
In fact, given that statives principally lack agent arguments one would pre-
dict that agent voice formations are impossible for statives. This prediction  
is true in that there is no general and regular actor voice formation for  
statives. However, it is false in that there are sporadic formations from  
statives which formally can be classified as actor voice formations because  
they also involve maka-. The base galit ‘anger’ is one of the bases which  
allow a clearly stative maka- derivation, makagalit meaning ‘to be the  
cause of anger, to give offence, to irritate’. In contrast to potentive actor  
voice formations, the subject of a stative maka- formation has to be an  
inanimate cause (some state of affairs or a thing):

(35) lahát ng kanyáng sabihíy
lähát ng kanyá -ng sabí -in=ay
all GEN 3.SG.DAT-LK statement-PV=PM
makagágálit
sa akin
naka -RDP1-galit sa akin
RLS.ST.AV-RDP1-anger LOC 1.SG.DAT
‘Everything he says irritates me.’ (English 1986)

Semantically, actor voice statives are difficult to distinguish from convey-
anse voice statives in that both refer to the cause for a given state. How-
ever, they differ syntactically. In conveyance voice, the experiencer is ex-
pressed by a genitive phrase, not by a locative phrase. Compare the preceding example with:

(36)  

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>ikinagalit</td>
<td>3.SG.POSS</td>
</tr>
<tr>
<td>niyá</td>
<td>1.SG</td>
</tr>
<tr>
<td>akó</td>
<td>1.SG</td>
</tr>
</tbody>
</table>

CV-RLS(UG)-ST-anger  3.SG.POSS  1.SG

‘She got angry at me (I was the reason for her being angry).’

With regard to productivity, the stative actor voice forms are the least common of all stative formations and whenever they occur they often take on somewhat specialized meanings. Thus, for example, makagalit is ‘irritate, antagonize, give offense’ rather than plain ‘make angry’. Furthermore, the stative actor voice derivations are often conventionalized in one of the four aspect/mood forms, for example, naka-àawa’ ‘arousing pity, pitiable’ (< àwa’ ‘mercy, compassion’) or nakàka-lító (or naka-lilitó) ‘confusing’ (< lító ‘confused, at a loss’).

Table 5 summarizes the different voice forms for statives. The ma- prefix is considered the basic form which is simply glossed as ST(ATIVE). The actor voice prefix maka- occurs in parentheses to indicate its lack of productivity and the frequent occurrence of “defective” formations which do not allow aspect/mood alternations. In this regard it should be noted that all stative voice alternations - like all voice alternations in Tagalog - are not fully general in that they are not conventional with every stative base, with the exception that ma- occurs on every stative base. In addition to the basic ma-form, the conveyance voice forms are the most productive and widespread, occurring, for example, with all bases denoting emotions. Locative voice is distinctly less common.
Table 5. Stative aspect/mood and voice alternations

<table>
<thead>
<tr>
<th></th>
<th>ST</th>
<th>CV</th>
<th>LV</th>
<th>AV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-REALIS/</td>
<td>ma-</td>
<td>ika-</td>
<td>ka--an</td>
<td></td>
</tr>
<tr>
<td>PERFECTIVE</td>
<td></td>
<td></td>
<td></td>
<td>(maka-)</td>
</tr>
<tr>
<td>NON-REALIS/</td>
<td>ma-RDP1-</td>
<td>ika-RDP1-</td>
<td>ka-RDP1--an</td>
<td>(maka-RDP1-)</td>
</tr>
<tr>
<td>IMPERFECTIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REALIS/</td>
<td>na-</td>
<td>ikina-</td>
<td>kina--an</td>
<td></td>
</tr>
<tr>
<td>PERFECTIVE</td>
<td></td>
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<td></td>
<td>(naka-)</td>
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<tr>
<td>REALIS/</td>
<td>na-RDP1-</td>
<td>ikina-RDP1-</td>
<td>kina-RDP1--an</td>
<td>(naka-RDP1-)</td>
</tr>
<tr>
<td>IMPERFECTIVE</td>
<td></td>
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</tbody>
</table>

As in the case of both non-potentive and potentive dynamic voice alternations (see Table 3), the inherent link with aspect/mood inflection provides the major formal evidence for the view that the formations listed in Table 5 form a derivational paradigm.

Somewhat more indirect evidence for derivational paradigm status is provided by productive derivational relations between stative and dynamic formations. That is, lexical bases are not limited to occurring in either dynamic or stative formations. In principle, i.e. inasmuch as the resulting formation makes sense semantically and is useful pragmatically, all lexical bases can occur in either paradigm. Hence, there are dynamic derivations from bases typically denoting states and vice versa. For example, takot ‘fear’ – which usually occurs with stative affixations – also allows for dynamic derivations as in:

(37) Huwág mong takutin ang bata'.
    huwág mo -ng takot-in ang bata'
    NEG.IMP 2.SG.POSS -LK fear -PV SPEC child
    ‘Don’t frighten/scare the child!’ (English 1986)

(38) Sino ang tumakot sa iyo?
    sino ang -um- takot sa iyo
    who SPEC -AV- fear LOC 2.SG.DAT
    ‘Who frightened you?’ (English 1986)

And conversely, usually dynamic putol ‘cut’ also allows for stative derivations as in:
Nikolaus P. Himmelmann

Consequently, there are constant correlations across dynamic and stative formations (e.g. tumakot relates to ikatakot as pumutol to ikaputol, etc.), which in turn suggests that the dynamic and stative paradigms themselves are also in a paradigmatic relationship (see below, Table 6).

Given that lexical bases in principle may occur in either stative or dynamic formations, one major source of the analytical confusions surrounding ma- becomes obvious: Stative basic voice and stative actor voice are formally identical to potentiative patient voice and potentiative actor voice, respectively. This means that formations with ma- are inherently ambiguous in that they could be either potentiative or stative. In context, ambiguity rarely arises because if an agent is overtly expressed or its participation is clearly implied, the form is unambiguously to be interpreted as a dynamic one. Otherwise, a stative interpretation is the default interpretation.

An interesting borderline case in this regard is the use of ma- with inanimate effectors. The following example was presented above (section 2, example (11)) as a subtype of involuntary use or, as we can now say more precisely, potentiative patient voice:

(40) ang dahun ay nadadalá ng tubig
ang dahon ay na- RDP-dalá ng tubig
SPEC leaf PM RLS.POT.PV-RDP-carried GEN water
‘the leaf was being carried along by the water’

Inanimate effectors, however, are not prototypical agents and one may well question, whether this is indeed an example of potentiative patient voice rather than a basic stative. So what is the evidence for analyzing this example as potentiative rather than stative? As further discussed in section 5 above, there are two pieces of formal evidence for analyzing a given ma-formation as potentiative patient voice rather than stative. First, only potentiatives allow the overt expression of an argument marked by the genitive marker ng. Basic statives do not allow genitive-marked arguments but only locative marked ones. Second, an appropriate voice alternation for madalá in (40) would involve potentiative agent voice nakàdalá rather than stative convey-
How to miss a paradigm or two

ance voice ikadalá. Both points support the analysis of (40) as an example of potetive patient voice.

The voice alternation test also provides important language-internal evidence for the problem of invariable ma- formations. As will be recalled from section 4 above, in addition to the ma- formations for bodily and emotional conditions there is also a large class of formations with invariable ma- denoting “qualities” (e.g. ma-liít ‘small’, ma-buti ‘good’, ma-gandá ‘beautiful’). Despite the fact that ma- here is invariable (does not alternate for aspect/mood), these formations partake in some of the stative voice alternations listed in Table 5. In particular, most “quality” ma- formations allow derivations with ika- which occur in all four aspect/moods (they are rarely attested in texts, though). For example, there is ikaliít ‘get small on account of’, ikabuti ‘improve/get better on account of’, and ikagandá ‘be(come) beautiful on account of’. The following example illustrates the use of ikagandá as a main predicate:

(41) ikinagandá ko ang pagtina’ ng
    i- ka-in- gandá ko ang pag-tina’ ng
CV-ST-RLS(UG)-beauty 1.SG.POSS SPEC GER-dye GEN
    buhók ko.
    buhók ko
    hair 1.SG.POSS
‘I became beautiful because I dyed my hair (on account of dying my hair).’
    (Wolff 1993: 230)

Stative actor voice derivations with maka- are also possible with “quality”-denoting bases, as in makaliít ‘(inanimate) cause for someone or something to become small(er), makagandá ‘(inanimate) cause for someone or something to become beautiful’, or:

(42) Nakabuti sa kanyá ang gamót.
    naka- buti sa kanyá ang gamót
RLS.ST.AV-goodness LOC 3.SG.DAT SPEC medicine
‘The medicine benefited him (did him good).’ (English 1986)

Locative stative voice derivations with ka--an do not occur with these bases, probably because there is a very productive homophonous derivation denoting abstract qualities (e.g. kaliítán ‘smallness’, kabutihan ‘goodness, kindness’, kagandahan ‘beauty’), which does not belong to the stative voice paradigm.

The fact that invariable ma- formations partake in stative voice alternations lends further support to the analysis of invariable ma- as a defective
member of a single stative *ma-* paradigm rather than considering it a homonymous formation totally unrelated to variable *ma-* formations.

7. *ma-* and the basic categories of Tagalog verbs

We are now in a position to give a more precise account of the different uses of the prefix *ma-* and its place within the overall system of Tagalog affixes. To begin with, variable *ma-* formations belong to the class of Tagalog words which are inflectable for aspect/mood. These words can be called *verbs* for short, provided it is clearly understood that this class is defined primarily by its morphological characteristics and thus differs in many regards from verbs in other languages (see Himmelmann (forthcoming) for further details).

Like all words in this class, variable *ma-* formations are voice-marked and allow for voice alternations. More specifically, *ma-* formations partake in two different voice paradigms, being either patient voice potentives or basic statives. Potentives and statives differ not only in terms of their semantics – potentives denote dynamic eventualities, statives states – but also with regard to argument structure: Potentives, at least underlyingly, involve an agent or effector, statives don’t.

The analyses advanced in the preceding sections imply an elaborate system of basic verbal affixations, summarized in Table 6. In addition to aspect/mood inflection, this system involves distinctions with regard to voice, dynamicity (dynamic vs. stative) and control (potentive vs. non-potentive). It is paradigmatically organized in that each form conveys a fixed set of morphosyntactic features, obligatorily choosing one feature from each of the basic dimensions aspect/mood, voice, dynamicity and control. That is, a form such as *i-lakad* ‘walk with, use in walking’ is not just the conveyance voice form of *lakad*, it is the dynamic, non-potentive, non-realis, perfective conveyance voice form of *lakad*.

Table 6 basically collapses the information given in Tables 2, 3 and 5. For the sake of clarity, aspect/mood alternations have not been included (see Tables 2 and 5). That is, strictly speaking each formative in Table 6 represents a set of four derivations. For example, *-an* represents BASE-*an*, RDP1-BASE-*an*, *-in-BASE-*an* and *-in-RDP1-BASE-*an*. 
How to miss a paradigm or two

Table 6. Major affixations for Tagalog verbs (= aspect/mood inflectable words)

<table>
<thead>
<tr>
<th></th>
<th>DYNAMIC</th>
<th></th>
<th>POTENTIVE</th>
<th></th>
<th>STATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NON-POTENTIVE</td>
<td></td>
<td>POTENTIVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AV</td>
<td>-um-, mag-</td>
<td>maka-</td>
<td>(maka-)</td>
<td></td>
<td>ST.AV</td>
</tr>
<tr>
<td>PV</td>
<td>-in</td>
<td>ma-</td>
<td>ma-</td>
<td></td>
<td>ST</td>
</tr>
<tr>
<td>LV</td>
<td>-an</td>
<td>ma—an</td>
<td>ka—an</td>
<td></td>
<td>ST.LV</td>
</tr>
<tr>
<td>CV</td>
<td>i-</td>
<td>ma-i-</td>
<td>ika-</td>
<td></td>
<td>ST.CV</td>
</tr>
</tbody>
</table>

The aspect/mood and control alternations form inflectional paradigms, for two reasons. First, they are highly general, each formation implying the existence of the complementary one(s) (i.e. a non-potentive forms implies the existence of a potentive one, etc.). Second, there are clearly unmarked or basic forms for these alternations (non-realis perfective for aspect/mood, non-potentive for control). The voice and dynamicity alternations, on the other hand, show derivational features in that they are less general, less productive and exhibit quite a few formal and semantic idiosyncrasies. Still, they are also paradigmatically related to each other because of the constant correlations holding across all cells of Table 6. In section 3, the term derivational paradigm was introduced to capture both their derivational features and their paradigmatic relatedness.

The analysis of Tagalog verbal affixes proposed here accounts for the large majority of the uses of the affixations listed in Table 6. But there are a number of minor quirks and additional complications, just one of which I briefly mention here.

As shown with examples (5)-(7) above, positional predicates with ma- do not only mean being in a given position but also getting oneself into a given position. For example, maupó’ does not only mean ‘be seated’ but also ‘seat oneself, sit down’. This second meaning is somewhat unexpected in that ‘sit down’ clearly involves an agentive argument. Not surprisingly then, there is also a dynamic form umupó’ ‘sit down, sit on’. It is hard to tell whether there is a real semantic difference between dynamic umupó’ and stative maupó’ in the reading ‘sit down’. In fact, the two forms are interchangeable in many contexts. Thus, both maupó’ kayó and umupó’ kayó are used for ‘sit down!’ (imperative). Note that the two forms differ in their other readings. Only maupó’, but not umupó’, also means ‘be seated’. And in contrast to stative maupó’, dynamic umupó’ also means ‘sit up (as when getting up from bed)’.
Similar “surprises” occur with a number of other bases. But they are always limited to a fairly small, semantically well defined class of bases and thus, in my view, do not put into question the basic system for Tagalog verbal affixations proposed above.

This system allows us to systematize the different uses of variable ma-reviewed in sections 2 and 4. These can now be seen to fall into two higher-level categories, potenti ve and stative, as detailed in Table 7. Note that this higher-level distinction is based primarily on language-internal evidence (different voice alternations, different argument structure, etc.) and is not simply an instantiation of a putatively universal scheme.

Table 7. The distribution of the different uses of ma- with regard to the DYNAMIC vs. STATIVE distinction

<table>
<thead>
<tr>
<th>Dynamic (Potentive)</th>
<th>Stative</th>
</tr>
</thead>
<tbody>
<tr>
<td>perception predicates (examples (8), (29)-(31))</td>
<td>bodily condition/emotional state (examples (1)-(4))</td>
</tr>
<tr>
<td>involuntary action predicates (examples (9)-(11))</td>
<td>“qualities” (examples (19)-(21))</td>
</tr>
<tr>
<td>ability (examples (12)-(14))</td>
<td>positional and locational predicates (examples (5)-(7), (22)-(24))</td>
</tr>
</tbody>
</table>

Viewed crosslinguistically, Tagalog is somewhat remarkable in making a rather strict distinction between statives proper (eventualities which principally exclude the involvement of an agentive argument) and potenti ves (eventualities which principally include an agentive argument which however lacks control). In most languages in which a dynamicity distinction is grammaticized, there is a simple binary opposition between dynamic and stative formations, with most of the eventualities requiring potenti ve forms in Tagalog being expressed by stative forms. This may be one reason why the distinction between statives and potenti ves as basic, paradigmatically opposed categories of Tagalog verbal affixations has been missed so far.

Another reason for this failure pertains to the fact that the forms in the two paradigms partially overlap. In particular, the two forms which only consist of the prefix ma-, i.e. patient voice potentive and basic stative voice,
are very hard to distinguish semantically. The only way to distinguish them is syntactic, via the overall construction in which they occur and the voice alternations allowed for by this construction, as illustrated with example (40) above.

A third reason resides in the peculiar nature of derivational paradigms. While lacking the generality and productivity characterizing inflectional paradigms in, for example, European languages, derivational paradigms are paradigms in that they obey the principle of constant correlation along different dimensions. They typically consist of word forms which are formally not fully compositional, thus often inherently linking inflectional (e.g. aspect) and derivational (e.g. voice) features. Tagalog voice and dynamicity alternations provide two examples for such paradigms.

Inasmuch as the preceding analysis of Tagalog ma- (and Tagalog verbal affixations in general) is more convincing and useful than previous ones, it suggests that the search for derivational paradigms is an important heuristic in dealing with multifunctional affixes. These paradigms, or more precisely, the morphological and morphosyntactic evidence on which they are based, may provide the major language-internal evidence for a conclusive and empirically challengeable systematics of the different uses and functions of such affixes. This is of particular interest in those instances where semantic reasoning or syntactic distribution fail to provide conclusive evidence, which often tends to lead to the application of a putatively universal systematics (which more often than not is a systematics based on English translations).

Notes
1. In addition to Totanes and Bloomfield compare, for example, Marre (1901), Blake (1925), Wolfenden (1961), Ramos (1971), Schachter and Otanes (1972), Llamzon (1976), DeGuzman (1978), and Shkarban (1995).

2. One consequence of this state of affairs is that in every single case a decision is required of whether or not to apply the grammatical terminology established in the description of Standard Average European to a given phenomenon in Tagalog. The alternative is the creation of new, often idiosyncratic terminology by reinterpreting standard terms (e.g., focus instead of voice, topic for subject) or creating new ones (e.g. trigger for subject, transient word for verb). The present contribution is terminologically conservative, opting in most cases for the use of traditional terminology. I make no attempt to defend the basic analysis or the terminology chosen here with regard to the many
controversial topics in Tagalog grammar. For further discussion and references, see Himmelmann (1999, forth.).

3. The author himself has for a long time failed to see the differences between the two paradigms clearly and has tended to gloss all uses of ma- simply as stative.

4. The point that dynamicity is of fundamental importance to Tagalog grammar has been made in previous work, most clearly in Drossard (1984) who claims that Tagalog is a language of the “active” type in the sense of Klimov (1977). Drossard (1983, 1994) also proposes a systematization of Tagalog verbal affixations which attempts to integrate stative and dynamic affixations, but this systematization differs significantly from the one proposed here for a number of reasons, most importantly because it fails to recognize that apparently stative forms belong to two distinct paradigms. Note also that the need to distinguish dynamic from stative formations in western Austronesian languages has been pointed out repeatedly since Bloomfield (1917). But following Bloomfield’s example, there has always been the tendency to relegate the stative formations to the secondary or minor derivations, thus missing the paradigmatic relationships between stative and dynamic formations.

5. This chapter can also be read as an argument for the need to extend the word-and-paradigm approach to an apparently agglutinative language. There is no space to address this issue in detail but it should be obvious that inasmuch as the analysis of Tagalog “verbal” affixations presented here is more successful than previous ones, it also can be used for making a case for the use of paradigms in describing an apparently agglutinative language.

6. Paragraphs 438–441 deal with both variable and invariable ma-, paragraphs 463–466 with variable and invariable mà-. That is, strictly speaking Bloomfield deals with ma- (as understood here) in two different places because his description is rigorously form-based such that all derivations involving ma- (including ones with further affixes which have not yet been mentioned here) precede all derivations with mà-. Although the two affixes are formally clearly different (mà- is pronounced with a very clearly lengthened vowel), there does not appear to be a semantic difference consistently linked to this formal difference. Schachter and Otanes (1972: 330) state that some speakers use ma- with ability verbs and mà- with involuntary action verbs. “Other speakers, however, … either do not make this distinction, or do not make it consistently.” Similarly, Bloomfield associates ma- primarily with ability (§438) and mà- primarily with involuntary action (§463), but he also lists involuntary action uses for ma- (§440) and ability uses for mà- (§464). And for the other usage types of ma-/mà- he notes that “there seems to be no abstract principle clearly separating” the two formations (1917: 294; see also §466a). Wolff et al. (1991: 285) concur that “for all intents and purposes” ma- and mà- have “the same meaning”. Given that the uses of ma- and mà- over-
lap completely for some speakers, and for others to a large degree, it would appear to be warranted to abstract from their formal differences, as it is done in most descriptions of Tagalog. This is not to deny that there may be important, but yet undetected differences associated with these two variants. But it is most likely that these differences are of a sociolinguistic nature. It is also quite likely that the two variants have distinct historical origins and were both formally and semantically distinct at an earlier stage in the history of Tagalog. Note in this regard that *ma- and mà-* are not in free variation (in a given dialect). Students of Tagalog have to learn which affix (usually) goes with which base, usage of the wrong formative yielding unidiomatic, but still understandable Tagalog.

7. In order to simplify the discussion, the enclitic genitive *s* is not included in this brief illustration. Not to mention the further complications that arise when one attempts to include the uses of -*s* as a marker for diminutives or irony discussed by Mühlhäusler (1983).

8. Grammar writing practice deviates here markedly from textbook practice. In Wolff et al.’s (1991) textbook, for example, liberal use is made of paradigms. This could be considered to be a merely pedagogical device with little support in the descriptive facts. But as Wolff (1993) makes it clear, he considers the paradigm a major construct in the descriptive grammar of Tagalog and other western Austronesian languages, a view further defended and extended here (see also Uhlenbeck 1985).

9. Voice-affixed forms of *bili* are widely used as examples for Philippine-type voice or “focus”. The discussion of these examples more often than not is incomplete and thus misleading. Among the more important points which are usually not mentioned are the following two.

First, the derivational paradigm for *bili* is quite exceptional. There are no other lexical bases in Tagalog which allow exactly the same kinds of derivations (and only very few which allow a similar number of derivations; see also Himmelmann 1987: 66f and 1999: 239FN11). Wolff et al. (1991: 1185–1190) provide a very instructive survey of derivations from *bili* using naturalistic examples, which shows that its derivational possibilities are in fact much more complex than suggested by the discussions in the syntactic and typological literature.

Second, the bare base *bili* can be used all by itself, in three different senses. Like many other Tagalog “action” bases (cp. Himmelmann, forthcoming), unaffixed *bili* can be used as the name for an action, i.e. ‘act of buying, purchase’, and to denote a (post-)state ‘bought, paid for’ as in *ang manók na bagong bili* (*SPEC* chicken *LK* recent: *LK* bought) ‘the chicken recently bought’ (cp. Bloomfield 1917: 308/26). The third meaning, ‘purchasing or buying price’, is unexpected and underlines the exceptional nature of this base (an ex-
ample is *Magkano ang bili mo diyan* (how.much SPEC buying.price 2.SG.POSS
MED.LOC) ‘How much was your buying price of that?’ (English 1985)).

10. The realis undergoer infix *-in* regularly becomes prefixed *ni-* with /l/-initial
bases.

11. More often than not there are segmentally identical patient-voice formations
which are aspect/mood inflectable and sometimes differ in accentuation from
the non-inflectable ones. Compare uninflectable *lagnátin* ‘prone to fever’ with
inflectable *lagnatin* ‘to have fever’.

12. As noted above, in some instances the two readings are distinguished suprasegmentally, unaccented *ma-* typically conveying an ability meaning, ac-
ccented *má-* an involuntary one.

13. Outside of western Austronesian, there are a few other formations which con-
vey both involuntary action and ability, including the *involitive* in Sinhala (In-
man 1993) and *out of control* morphology in Salishan languages (cp. Davis
and Demirdache 2000).

14. As a matter of fact, the lexical semantics and the morphosyntax of perception
predicates in Tagalog are more complex than the preceding remarks may indi-
cate. Unlike many other western Austronesian languages, Tagalog offers not
only a morphological means of expressing the difference between casual, non-
directed and intentional, directed perception but also (like English) a lexical
one: Next to *dínig* ‘audible’, which usually occurs with potentive affixation,
there is *pakiníg* ‘listen’ which usually occurs with non-potentive affixation.
In the case of *kita* ‘seen’, non-potentive derivations appear to be morphologically
blocked by the occurrence of non-potentive derivations from the homonymous
root *kita* ‘earnings’ (hence *kumita, kitain* ‘to earn, to gain’). Here *panóód* is
the unmarked base for ‘look at, watch’ which like *pakiníg* of course also al-
 lows potentive derivations (*mapanoód, makapanóód*, etc). In this system, it is
possible to convey fairly subtle differences such as the difference between ‘to
see something’ vs. ‘to happen to look at something’.

15. This needs further research as native speakers are not in full agreement on this
issue. Only some of them judged *nakadalá ng dahun ang tubig* acceptable,
usually with some reluctance. Others rejected it and all other alternations of-
ered (for example, with *nagdalá or ikinalá*). Clear-cut examples from natu-
ral discourse which could resolve the issue have not yet been identified.

16. Bloomfield (1917: 285) notes with regard to *maupó’* and *mahígá’* ‘lay down’:
*ma-* is used “strangely enough, for two voluntary actions which consist of a
relaxing of the muscles.”

17. As just mentioned, the place of positionals and locationals in this distinction is
not quite straightforward. Their placement here in the stative column is tenta-
tive.

18. In this regard, it may be of interest to note that the potentive uses appear to be
innovations while the stative uses can be reconstructed for Proto-Austronesian
(see Zobel (to appear) for further details). Furthermore, there is some evidence for the view that the formative ma derives from *k-um-a-, i.e. the prefix ka-(which is also found in other stative voices) plus the infix –um-. Deletion of the initial syllable of polysyllabic affixes is widely attested throughout the family (another example is the dynamic actor voice mag- which probably derives from *p-um-ag-).

Acknowledgments

This chapter owes much in spirit and actual fact to the work of John Wolff with whom I have had many discussions on the topics addressed here. In fact, the analysis proposed here for Tagalog is an adaptation and elaboration of the analysis we developed together for Toratán in Himmelmann and Wolff (1999: 52–63) which in turn is based on the pedagogical presentation of Tagalog by Wolff et al. (1991). I would like to thank Nick Evans and Alan Dench for critical discussion and useful suggestions. I am also very grateful for helpful feedback from audiences at the Linguistics Seminar Series at the RSPAS (Australian National University) and at AFLA 11 in Berlin where parts of this chapter were presented in April 2004.

Abbreviations

| ACT | ACTOR            |
| AV  | ACTOR VOICE     |
| CV  | CONVEYANCE VOICE|
| DAT | DATIVE          |
| DIST| DISTAL          |
| GEN | GENITIVE        |
| GER | GERUND          |
| IN  | INCLUSIVE       |
| IMP | IMPERATIVE      |
| LK  | LINKER          |
| LOC | LOCATIVE        |
| LV  | LOCATIVE VOICE  |
| MED | MEDIAL          |
| NEG | NEGATION        |
| PL  | PLURAL          |
| PM  | PREDICATE MARKER|
| PN  | PROPER NOUN     |
References

Blake, Frank R.

Bloomfield, Leonard

DeGuzman, Videa P.

Drossard, Werner

English, Leo J.

Himmelmann, Nikolaus P.


Himmelmann, Nikolaus P. and John Wolff

Klimov, Georgij A.

Llamzon, Teodoro A.

Marre, Aristide

Mithun, Marianne

Mühlhäusler, Peter

Plank, Frans

Ramos, Teresita V.

Rubino, Carl R.G.


Santos, Vito C.

Sapir, Edward

Schachter, Paul
Schachter, Paul and Otanes, F. E.

Seiler, Hansjakob

Shkarban, Lisa I.

Totanes, Sebastian de

Uhlenbeck, Eugenius M.

Van Valin, Robert D. and David P. Wilkins

Wolfenden, Elmer

Wolff, John U.

Wolff, John U. with Maria T.C. Centeno and Der-Hwa V. Rau

Zobel, Erik