“Voice” Markers in Amis:  
A Role and Reference Grammar Analysis

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This paper reanalyzes the voice markers in Amis within the RRG framework. The traditional four-voice system in this language is first regrouped into a voice system and an applicative system. The former contains two voice operations: actor voice and undergoer voice, while the latter subsumes the instrument applicative and the locative applicative constructions. The applicative constructions follow the undergoer voice pattern. These two systems operate at the two different phases of the linking from semantics to syntax; the applicative markers indicate a marked choice of the undergoer, while the voice markers influence the selection of the privileged syntactic argument. Three most productive voice forms, mi- (AV), ma- (AV and UV), and -en (UV), are further decomposed into logical structures to account for their derivational functions and other semantic features such as TAM marking and agentivity indication. The prefix mi- contains an activity predicate with an optional motional/purposive component. The suffix -en is analyzed as an agentive accomplishment marker. As for the form ma-, it exhibits four different logical structures: activity, result state, transient/plain state, and active/causative accomplishment.

Key words: Amis, voice markers, applicative markers, RRG, lexical decomposition

1. Introduction

Due to their semantic and functional complexity, the voice or focus markers in the
Philippine and the Formosan languages have long been a research interest in the Austronesian literature. Upon reviewing the Philippine-type voice related morphology, Himmelmann (2002:9) makes three comments regarding a system like that in Table 1:

Table 1: Possibly voice-related morphology in Philippine-type languages

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Infixes</th>
<th>Suffixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>si-/i-</td>
<td>-um/M-</td>
<td>-en/-in</td>
</tr>
<tr>
<td></td>
<td>-in-</td>
<td>-an</td>
</tr>
<tr>
<td></td>
<td>-i</td>
<td>-a</td>
</tr>
</tbody>
</table>

First, it is not clear whether they are all actually voice affixes. Second, it is not obvious in what sense these forms actually form a system. Third, it is unclear whether the idea of a “focus system” on a morphological level includes morphological formatives beyond the formatives that appear to be directly involved in voice alternations. The voice markers in Amis, in addition to their canonical function of indicating the thematic role of the grammatical subject with a verbal affix, also exhibit some intriguing formal and functional complexities that echo Himmelmann’s comments, especially the first two.

In this paper, I re-examine these voice markers in the framework of Role and Reference Grammar (henceforth RRG based on Van Valin & LaPolla (1997), referred to as VVLP (1997), and Van Valin (2005), referred to as VV (2005)). Two major analyses are proposed in the discussion. First, I argue that these voice markers are actually composed of a set of voice markers and a set of applicative markers. The former affects the selection of the privileged syntactic argument and the Aktionsart features of the predicates, while the latter mainly signals a marked undergoer choice by either adding a
new argument to the core of the predicate to become the undergoer or giving the macrorole status to a non-macrorole core argument. Second, I show that the derivational functions and semantic features carried by three voice forms \textit{mi-} (AV), \textit{-en} (UV), and \textit{ma-} (AV and UV) can be more adequately accounted for through a decompositional analysis.

This paper is organized as follows. Section 2 provides an overview of the forms and functions of the voice markers in Amis based on the four-voice system proposed in previous studies. In particular, I show the asymmetrical properties displayed between the actor/patient voice set and the instrument/locative set and the potential inadequacy of placing all the markers under a single voice system. Section 3 introduces the RRG framework, especially the two-phase linking from semantics to syntax and the decompositional modal for analyzing predicates. Sections 4 and 5 are the central part of this paper, especially §5. In §4, a reanalysis of the voice system is proposed. There are two voice distinctions in this system: actor and undergoer; the so-called instrument voice and locative voice are treated as applicative constructions, which follow the undergoer voice pattern by default. After the separation of voice markers and applicative markers is established, §5 presents the logical structures of the three most commonly found voice markers \textit{mi-} (AV), \textit{-en} (UV), and \textit{ma-} (AV and UV) in the RRG-based decompositional modal. Section 6 summarizes and concludes this paper.

2. An overview of forms and functions of the voice affixes

Consider the examples in (1) that present a typical set of sentences illustrating the voice phenomenon in Amis:

\begin{quote}
\begin{center}
(1) a. \textbf{mi-adup} \textbf{∅-ci} \textbf{mama} t-u \textbf{fafuy} n-u \textbf{lutuk}.
\end{center}
\end{quote}

\begin{center}
AV-hunt NOM-PPN father DAT-CN pig GEN-PPN mountain
\end{center}

‘\textit{Father is hunting mountain pigs.}’

‘\textit{Father is going to hunt mountain pigs.}’

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\textsuperscript{3} The phonetic symbols used in the transcription generally follow the IPA system, with the following exceptions: /e/ stands for schwa [ə], /d/ for voiceless lateral [ɻ], /’/ for glottal stop [ʔ], /q/ for epiglottis stop [ɧ], and /ng/ for /ŋ/. The glosses used in this paper (see list of abbreviations at the beginning of this volume) follow Wu (2006), after Liu (1999) with some modification. Notice that the morphemic glosses for the voice markers are different before and after §4. Before that, these voice markers are glossed based on the previous analysis, but they are glossed according to the new analysis proposed in the paper after §4.
As shown in (1), there is an affix on the verb (the boldfaced part) that varies according to the semantic role the NP marked by the nominative case (the underlined part). Previous studies such as Yan (1992), Wu (1995, 2000), Liu (1999), and Liu (2003) have treated the sentences in (1a-d) respectively as agent/actor focus/voice, patient focus/voice, instrument focus/voice, and locative focus/voice sentences, as the NPs marked by the nominative case in these sentences bear the roles of agent/actor, patient, instrument, and location respectively. By the same token, the sentence in (1e) is also treated as a kind of patient focus/voice construction, as the NP marked by the nominative case also bears the patient role in the sentence, which is the same as (1b).

(1) e. mi-adup-an n-i mama k-u fafuy n-u lutuk.
PV-hunt-PV GEN-PPN father NOM-CN pig GEN-PPN mountain
‘Father hunted the mountain pig.’
‘The mountain pig was what Father hunted.’

Based on examples like (1a-e), the studies mentioned above have claimed that Amis makes four voice distinctions. Such a four-voice system can be illustrated by the following table, revised from Liu (1999:19):

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Table 2: Previous analysis of the voice system of Amis

<table>
<thead>
<tr>
<th>Voice Type</th>
<th>Markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor Voice (AV) Markers (or Agent Voice Markers)</td>
<td>mi-</td>
</tr>
<tr>
<td>Patient Voice (PV) Markers</td>
<td>ma-</td>
</tr>
<tr>
<td></td>
<td>mi-...-an</td>
</tr>
<tr>
<td></td>
<td>-en</td>
</tr>
<tr>
<td></td>
<td>-en</td>
</tr>
<tr>
<td>Instrument Voice (INV) Markers</td>
<td>sa-</td>
</tr>
<tr>
<td>Locative Voice (LV) Markers</td>
<td>-an</td>
</tr>
</tbody>
</table>

Table 2 illustrates the most frequently found analysis of the voice system in studies of Amis grammar, though members included in each voice set might vary. In fact, a multi-voice system like Table 2 is quite prevalent in the study of the Formosan languages. Table 3 presents the voice (focus) affixes found in the Formosan languages discussed in Zeitoun et al. (1996).7

Table 3: List of the focus affixes of some Formosan languages in Zeitoun et al. (1996)

<table>
<thead>
<tr>
<th>Language</th>
<th>AF</th>
<th>PF</th>
<th>LF</th>
<th>IF/BF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wulai Atayal</td>
<td>m-, -m-, ∅</td>
<td>-un</td>
<td>-an</td>
<td>s-</td>
</tr>
<tr>
<td>Mayrinax Atayal</td>
<td>m-, -um-, ∅</td>
<td>-un</td>
<td>-an</td>
<td>si-</td>
</tr>
<tr>
<td>Isbukun Bunun</td>
<td>m-, ma-, ∅</td>
<td>-un</td>
<td>-an</td>
<td>isi-</td>
</tr>
<tr>
<td>Stimul Paiwan</td>
<td>-om-</td>
<td>&lt;in&gt;, -in</td>
<td>-an</td>
<td>si-</td>
</tr>
<tr>
<td>Nanwang Puyuma</td>
<td>-om-, ma-, mi-, m-, ∅</td>
<td>-ay, -aw</td>
<td>-an</td>
<td>-anay</td>
</tr>
<tr>
<td>Saisiyat</td>
<td>-om-, ma, m-, ∅</td>
<td>-an</td>
<td>-an</td>
<td>si-</td>
</tr>
<tr>
<td>Tsou</td>
<td>mo, ɓ-, mi, m-, -m-</td>
<td>-a</td>
<td>-i</td>
<td>-eni</td>
</tr>
</tbody>
</table>

Compare Tables 2 and 3. We can find at least two striking differences between the voice system in Amis and those in other Formosan languages. First, the dual presence of the form ma- in both AV and PV sets is only found in Amis but not in other Formosan

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5 The actor voice set actually also includes a zero form (i.e. ∅, as seen in Table 3), which appears with unaffixed predicates that have an actor NP marked by the nominative case. However, since there is no evidence showing the necessity of postulating a zero form, I thus exclude it from this table.

6 Both ma-...-um- and ma-ka- have limited occurrences, especially ma-...-um-. I have only found a ma-...-um- example in my field notes; the UV form that is more commonly elicited for -um- verbs is ma-. As for ma-ka-, it is more commonly found in ma- psych-predicates such ma-ka-ulah (cf. ma-ulah ‘like’) and ma-ka-ngudu.

7 The original transcription in Zeitoun et al. (1996) is kept in the table, but the information on Amis is excluded.
languages, in which ma- is only found in the AV (AF) set. The use of ma- as a patient voice marker makes Amis a bit like the Philippine languages, as this prefix also appears in the NAV set (e.g. goal voice) in the Philippine languages such as Tagalog (for potentive aspect/mood as discussed in Himmelmann 2005b) and Cebuano (for abilitative (+intention) as seen in Payne 1994). Second, as noted in Zeitoun et al. (1996), the Amis INV and LV markers sa- and -an have to appear with other affixes (e.g. pi- in sa-pi-adup in (1c) and pi-adup-an in (1d)), and these affixes are the morphological variants of the AV markers. I shall further discuss this point in §2.2.

Like the Philippine-type voice system discussed in Himmelmann (2002), the voice system in Amis also exhibits semantic/functional and morphosyntactic peculiarities, especially the asymmetrical properties observed between the AV/PV and INV/LV sets. Such asymmetries, discussed in §2.1 and §2.2, thus challenge a unified analysis that groups these forms into a single system under the rubric of voice.

### 2.1 Semantic/functional asymmetries between the AV/PV and INV/LV sets

In spite of sharing the same function of indicating the semantic role of the NP marked by the nominative case in the sentence, the AV/PV markers have been reported to show close interaction with the semantics of the predicates that they attach to, but such interaction has not been found between the INV/LV markers and the predicates. The relation between AV/PV markers and verbal semantics can be illustrated by following observations. To begin with, these markers, especially the AV set, are often utilized as verb class differentiators in previous studies (e.g. Huang 1988, Yan 1992, Liu 2003). As one can see in Table 2, there are three forms in the AV set: mi-, -um-, and ma-. Generally speaking, the roots appear with one of these three forms by default, and this default choice often reveals the information of the types of the derived verbs. For example, mi- verbs can be characterized to be (syntactically) transitive verbs with a more dynamic nature, e.g. mi-nanum ‘(go to) drink (water)’ from nanum ‘water’ and mi-palu ‘(go to) beat someone’ from palu ‘beat’, -um- verbs are mostly intransitive, and this default choice often reveals the information of the types of the derived verbs. For example, mi- verbs can be characterized to be (syntactically) transitive verbs with a more dynamic nature, e.g. mi-nanum ‘(go to) drink (water)’ from nanum ‘water’ and mi-palu ‘(go to) beat someone’ from palu ‘beat’, -um- verbs are mostly intransitive.

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8 The prefix mi- has especially been employed as the major indicator for verb classification in Amis.

9 “By default” means that the affix is usually the one that goes with the root upon data elicitation, or this affix is the one that is provided by the speakers when they are asked to provide Amis equivalents for the verbs in Mandarin Chinese or in English.

10 Strictly speaking, these affixes have no voice functions for intransitive verb, as the only argument of such verbs is always marked by the nominative case, and thus there is no “voice” function associated with such markers. Only the derivational properties are relevant for the intransitive verbs. For such examples, these affixes will be glossed as “neutral” (NEUT) instead of AV.
physical activities that are less dynamic, e.g. *k-um-a’en ‘eat’ from *ka’en ‘eat’ and *r-um-akat ‘walk’ from *rakat ‘walk’, and ma- verbs are frequently associated with involuntary activities or states, e.g. *ma-kerker ‘shiver’ from kerker ‘shiver’ and ma-ulah ‘like’ from ulah ‘like; love’. Some of the roots can appear with members in the AV set other than the default choice, but the derived verb types will be changed. Consider the examples in (2):

(2) a. *r-um-adiw ‘sing’ > radiw ‘song’
   a’.’ *mi-radiw ‘go to sing a specific song’
   a”.’ ma-radiw ‘good at singing’
   b. ma-tayal ‘work’
   b’.’ *mi-tayal ‘go to do a certain work’
   c. ma-tuniq ‘soft’
   c’.’ *mi-tuniq ‘soften’

The root form radiw ‘song’ appears with -um- by default. As shown in (2a-a’), the mi-version of a -um- verb adds a motional/purposive feature to the predicate, while the ma-version of the same root becomes a state predicate. The root form tayal ‘work’ co-occurs with ma- by default. The mi-form of a ma- activity verb also generates a motional/purposive reading as one can see in the comparison between (2b) and (2b’). The root tuniq ‘soft’ also appears with ma- by default. The examples in (2c-c’) show that the mi-form of a ma-state verb will become a causative predicate. These semantic changes will be further explicated in §4.

Furthermore, these voice affixes have been claimed by Yan (1992) as an index of transitivity, in a sense based on Hopper & Thompson (1980), for the verbs affixed by them. Based on parameters proposed by Hopper & Thompson, Yan postulates a scale of semantic transitivity for the voice affixes (or focus affixes in his terminology), ni- verbs (i.e. mi- verbs in the dialect that I investigated) occupy the highest-ranking position while a class of ma- verbs12 that denotes state of nature or human propensity (e.g.

11 Some of the root forms such as ranam ‘breakfast’ have to be affixed with ka- when they are affixed with mi-, e.g. mi-ka-ranam ‘go to some place to have a special breakfast’ instead of *mi-ranam. The presence of ka- seems to be a retention of ma-, as such roots appear with ma- by default, e.g. ma-ranam ‘have breakfast’, and ma- verbs typically become ka- verbs in many morphological processes. Nevertheless, this ma- → mi-ka- process seems to be an idiosyncratic pattern for some ma- verbs only rather than a common morphological rule, as it is only limited to some unpredictable set of ma- verbs but not all of the ma- verbs.

12 There are four classes of ma- verbs differentiated in Yan’s work. These ma- verbs are classified based on their semantic features, number of arguments, and the possibility to undergo mi- derivation. As mentioned, he ranks the transitivity of the predicates based on the parameters
ma-cidal ‘sunny’ and ma-laluk ‘diligent’) is placed at the lowest-ranking position on the scale. A similar observation regarding the semantic transitivity has also been claimed by Tsukida (1993) for the PV suffix -en, as she mentions that this suffix signals the rising possibility of the happening of an event and the intention of the actor for a verb.

Finally, as pointed out by Zeitoun et al. (1996), the AV and PV markers carry default tense-aspect-modality (TAM) information for the predicates that they attach to, but such information is not found with the INV/LV sets; the INV and LV predicates seem atemporal in Amis. The default TAM information carried by the voice markers refers to the observation that when the contextual information is available in a sentence, the voice markers of a verb will correlate with the temporal readings summarized in Table 4:

Table 4: Voice markers and TAM markings (based on Zeitoun et al. 1996)

<table>
<thead>
<tr>
<th>Voice Markers</th>
<th>Default Tense/Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>mi-</td>
<td>on-going or future</td>
</tr>
<tr>
<td>ma- (AV)</td>
<td>on-going</td>
</tr>
<tr>
<td>-um-</td>
<td>on-going</td>
</tr>
<tr>
<td>Ø (unaffixed verbs in this study)</td>
<td>on-going or future</td>
</tr>
<tr>
<td>ma- (PV)</td>
<td>past</td>
</tr>
<tr>
<td>-en</td>
<td>future</td>
</tr>
</tbody>
</table>

As shown in Table 4, the voice markers in general make two tense-aspect distinctions: past (expressed by ma- (PV)) and non-past (expressed by AV markers mi-, ma-, -um-, and the UV suffix -en). However, once the contextual information is made clear, the default TAM information carried by these voice markers will be neutralized. Such neutralization can be illustrated by the examples in (3):

(3) a. mi-palu Ø-ci kilang ci canglah-an anini/anudafak/inacila.
   AV-beat NOM-PPN Kilang NCM Canglah-DAT now/tomorrow/yesterday
   ‘Kilang is beating Canglah now.’
   ‘Kilang is going to beat Canglah tomorrow.’
   ‘Kilang beat Canglah yesterday.’

proposed by Hopper & Thompson (1980), and his ranking includes both two-place and one-place predicates. As we can see, his ma- verbs at the lowest-ranking end on the scale are actually intransitive verbs.

As reported in Zeitoun et al. (1996), the unmarked TAM distinctions designed by the voice affixes in Amis are different from other Formosan languages investigated in that paper; in those languages, the TAM distinctions are made between realis and irrealis.

13
b. ma-ka’en n-i aki k-u-ya futing anini/anudafak/inacila.
   PV-eat GEN-PPN Aki NOM-CN-that fish now/tomorrow/yesterday.
   ‘Aki is eating that fish now.’
   ‘Aki will eat that fish tomorrow.’
   ‘Aki ate that fish yesterday.’

The example in (3) shows that once the contextual information is made clear, the default TAM meaning carried by the voice markers is no longer retained. For example, the unmarked reading of *mi*-verbs is either on-going or (immediate) future, but as seen in (3a), the *mi*-verb can actually co-occur with the time expression that indicates a past temporal frame. By the same token, the *ma*-V verbs usually denote past events, but they can appear time expressions that show an on-going or a future temporal frame, as seen in (3b). The neutralization illustrated in (3) indicates the TAM meaning is inferred from rather than absolutely marked by the voice markers, and such inference is related to the semantics of these voice markers, in particular, their lexical aspect features. These features will be further discussed later in this paper.

The above-mentioned functions served by the AV and PV voice markers strongly indicate that these markers are primarily derivational, as they seem to have their own semantic content, and they can change the semantic structures of the verb (e.g. changing the verb types). These features make them more like derivational morphemes rather than the inflectional category canonically associated with voice markers. Notice that the argument that I propose here for the derivational nature of the Amis voice affixes is not quite the same as the one proposed for the voice markers in the Philippine languages as derivational morphemes. The rationale of the latter primarily consists of three properties displayed by the voice markers in the Philippine languages, as mentioned in Reid & Liao (2004:453). First, these markers cannot freely occur on all verbs. Second, they do not freely alternate with one another as in a voice-marking system, and third, they are typically preserved in nominalization and other derivational processes. In fact, these three properties are also found in Amis, as we shall see in the verbal paradigms discussed later.

2.2 Morphosyntactic asymmetries between the AV/PV and INV/LV markers

In addition to the semantic/functional asymmetries presented in the previous section, there are at least two morphosyntactic asymmetries found between the AV/PV and INV/LV markers.

To begin with, the AV/PV and INV/LV sets show asymmetrical paradigms in some morphological processes. While most of the AV/PV predicates conjugate in these morphological processes, the INV/LV ones are often exempt from the conjugation. There are at least two types of morphological processes that can be identified based on
the changes of the forms of the voice markers. The first type, termed full-preservation type, involves the addition of affixes but no formal changes of the voice markers; in other words, the voice markers are fully preserved during the morphological process. In the second type, termed \(pi-/ka\)- alternation type, the voice markers become either \(pi\)- or \(ka\)- with or without additional affixation. Roughly speaking, verbs affixed with \(mi\)- become \(pi\)+ V in these processes, while verbs appearing with affixes other than \(mi\)-, such as \(ma\)- and \(-um\)-, become \(ka\)+ V.\(^{14}\) The full-preservation type can be found in the formation of the factual mood and the irrealis mood. These two mood forms can also be used in the formation of a relative clause. The \(pi-/ka\)- alternation pattern is found in the imperative construction, in the position following the negative predicate \(ca'ay\) ‘not’, and even in the formation of INV and LV forms. These processes will be discussed below, and a more complete list of morphological processes that display the two patterns is provided in the appendix.\(^{15}\)

Consider Table 5, which presents two processes showing the full-preservation pattern:

**Table 5: Two morphological processes showing the full-preservation pattern of the voice markers**

<table>
<thead>
<tr>
<th>Voice Markers</th>
<th>Examples</th>
<th>Irrealis Mood (Ca Reduplication-V)</th>
<th>Factual Mood (V-ay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV</td>
<td>(mi)-</td>
<td>ma-(mi)- (ma-mi-palu)</td>
<td>(mi)-...-ay</td>
</tr>
<tr>
<td></td>
<td>(-um)- (r)-(um)-(adiw) ‘sing’</td>
<td>Ca-...-um- (ra-(r)-um-(adiw))</td>
<td>(-um)-...-ay</td>
</tr>
<tr>
<td></td>
<td>(ma)- (ma)-(ula) ‘like’</td>
<td>ma-(ma)- (ma-(ma)-(ula))</td>
<td>(ma)-...-ay</td>
</tr>
<tr>
<td>PV</td>
<td>(ma)- (ma)-(palu) ‘beat; get beaten’</td>
<td>ma-(ma)- (ma-(ma)-(palu))</td>
<td>(ma)-...-ay</td>
</tr>
<tr>
<td></td>
<td>(-en) (palu)-(en) ‘beat (for sure)’</td>
<td>Ca-...-(en) (pa-(palu)-(en))</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>(mi)-...-(an) (mi)-(palu)-(an) ‘beat’</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>INV</td>
<td>(sa)- (sa)-(pi)-(palu) ‘use something to beat’</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>LV</td>
<td>(-an) (pi)-(plau)-(an) ‘beat at some place’</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

\(^{14}\) There has been no attempt at glossing \(pi\)- and \(ka\)- in the present paper due to the difficulty to summarize the complicated semantics of these two affixes (and especially \(ka\)-).

\(^{15}\) For more details of the discussion of the table, please refer to Wu (2006).
We can see the two morphological processes that form the irrealis and factual moods of the predicates in Table 5. The irrealis mood is formed by a process known as *Ca*-reduplication\(^{16}\) and then attaching the reduplicant to the predicate. The factual mood is formed by attaching the factual suffix -\textit{ay} to the predicate. In these two processes, the forms of the voice markers are fully preserved. As shown in Table 5, only the AV markers \textit{mi-}, -\textit{um-}, \textit{ma-}, and the UV markers \textit{ma-} and -\textit{en} participate in the two morphological processes though the UV -\textit{en} cannot be affixed with the factual mood marker -\textit{ay}.\(^{17}\) The INV and LV forms do not participate in these two processes. As mentioned earlier, these two mood forms, especially the -\textit{ay} form,\(^{18}\) are also the forms that can show up in relative clauses. In fact, the voice-marked predicates, except the INV and LV forms, cannot appear in relative clauses in their bare forms; they have to, for example, be inflected with mood expressions such as -\textit{ay} or Ca-reduplication. The examples are given in (4):

\begin{enumerate}
\item (4) a. ma-patay tu k-u-ya \textit{mi-kalat-ay/}mi-kalat
\begin{itemize}
\item NEUT-dead ASP NOM-CN-that AV-bite-FAC/*AV-bite
\item \textit{ci} \textit{aki-an} (a) wacu.
\item PPN Aki-DAT LIN dog
\end{itemize}
\textit{\textquotesingle That dog that bit Aki is dead.\textquotesingle}

\item (4) b. tati\textquoteright ih k-u-ya \textit{ma-ka\textquotesingle en-ay/}ma-\textit{ka\textquotesingle en} \textit{n-i}
\begin{itemize}
\item bad NOM-NCM-that PV-eat-FAC/PV-eat GEN-PPN
\item \textit{aki} (a) tali.
\item Aki LIN taro
\end{itemize}
\textit{\textquotesingle That taro that Aki ate was bad.\textquotesingle}

\item (4) c. tati\textquoteright ih k-u-ya \textit{ka-ka\textquotesingle en-en/}ka\textquoteright en-en \textit{n-i} \textit{aki}
\begin{itemize}
\item bad NOM-NCM-that IRR-eat-PV/eat-PV GEN-PPN Aki
\item (a) tali.
\item LIN taro
\end{itemize}
\textit{\textquotesingle That taro that Aki ate was bad.\textquotesingle}
\end{enumerate}

\(^{16}\) This reduplication pattern consists of the copying of the first consonant of the stem and the addition of a vowel /\textit{a}/ following the reduplicated consonant. That is why this reduplication pattern is often referred to as the Ca-reduplication.

\(^{17}\) There are two possible reasons for such incompatibility. First, it is rare, if not impossible, to find the co-occurrence of two or more suffixes in Amis. Second, as the suffix -\textit{en} indicates a future event by default, it is less likely to construe the combination of a future event with a factual mood marker.

\(^{18}\) The suffix -\textit{ay} has been analyzed as a nominalizer in Lin (1995) and Liu (1999). However, Wu (2003) argues that this suffix is actually a mood marker for factuality.
d. tati’ih k-u-ya mi-ka’en-an n-i aki (a) tali.
   bad NOM-CN-that PV-eat-PV GEN-PPN Aki LIN taro
   ‘That taro that Aki ate was bad.’

e. ma-futiq k-u-ya ka-ulah-an n-i panay (a) wawa.
   NEUT-sleep NOM-CN-that PV-like-PV GEN-PPN Panay LIN child
   ‘The child who Panay likes is sleeping.’

f. ma-pitek aku k-u sa-pi-cikcik n-i aki
   UV-break IS.GEN NOM-CN INV-PI-cut GEN-PPN Aki
t-u dateng (a) pu’ut.
   DAT-CN vegetable LIN knife
   ‘I broke the knife with which Aki cuts the vegetables.’

g. tayra ∅-ci panay mi-ladum i
go NOM-PPN Panay AV-fetch water PREP
pi-ladum-an n-i aki (a) tefun.
   PI-fetch water-LV GEN-NCM Aki LIN well
   ‘Panay went to fetch water at the well where Aki fetched water.’

As illustrated in the relative clauses in (4), the AV predicates and the PV predicates marked by ma- and -en have to show up with either the factual mood or the irrealis mood, but the -an PV forms (e.g. mi-…-an and ka-…-an), the INV form, and the LV forms can only appear in the bare form in the relative clause.

The morphological processes showing the pi-/ka- alternation are exemplified in Table 6.

**Table 6:** Some morphological processes with the pi-/ka- alternation of the AV/PV markers

<table>
<thead>
<tr>
<th>Voice Markers</th>
<th>Examples</th>
<th>Imperative Mood</th>
<th>ca’ay Negative Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV</td>
<td>mi-</td>
<td>mi-palu ‘(go to) beat’</td>
<td><em>pi- (pi-palu)</em></td>
</tr>
<tr>
<td></td>
<td>-um-</td>
<td><em>r-um-adiw ‘sing’</em></td>
<td><em>ka-…-um</em></td>
</tr>
<tr>
<td></td>
<td>ma-</td>
<td><em>ma-ulah ‘like’</em></td>
<td><em>ka- (ka-ulah)</em></td>
</tr>
<tr>
<td>PV</td>
<td>ma-</td>
<td>ma-palu ‘beat; get beaten’</td>
<td>----</td>
</tr>
</tbody>
</table>

19 The INV forms for ma- (UV) and -en should be placed in the table that shows the full-preservation (i.e. Table 5), as the pi-/ka- alternation does not occur in this morphological process.

20 The infix -um- is also retained in the pi-/ka- alternation pattern.
As we can see from this table, the AV predicates and the UV predicates marked by ma-
or -en become either pi- or ka- in the imperative construction and the ca’ay negative construction. Verbs affixed by mi- become pi- + V, while verbs appearing with affixes other than mi- become ka- + V. Notice that for -en verbs, the prefix ka- is optional, and in fact, its absence is more frequently found in the data. The INV and LV forms behave slightly different in these two morphological processes. The INV form does not follow the pi-/ka- alternation pattern in the imperative sentence, but it can follow the pi-/ka-pattern in the ca’ay negative construction. However, as I shall show later in this section, there are two types of structures when an INV predicate appears after ca’ay ‘not’, termed the verbal type and the nominal type. The verbal type is the one that shows up in Table 6 (i.e. ka-sa-…), while the nominal is formed by the nominative case marker ku plus the INV predicate (i.e. ku sa-…). While the second type is generally acceptable for every speaker I have consulted, the first type is rendered ungrammatical by some speakers. Unlike the INV form, the LV form and the PV form marked by -an do not follow the pi-/ka-alternation pattern in the two processes. The LV form cannot function as a predicate in the imperative construction, nor can it show up as a verbal predicate after ca’ay. The LV form is preceded by a case marker after the negative predicate ca’ay; in other words, it is structured like a nominal predicate. I shall further discuss this structure later in this section.

The pi-/ka-alternation pattern is found in the formation of the INV and LV forms, as shown in Table 7:

---

I have only found the form ka-...-en in verbs denoting psych-states such as ngudu ‘embarrassed; humbled; respect’ and ulah ‘like’. For such verbs, both ka-...-en and -en forms are found, and the latter seems to suggest a stronger tone of command, though more investigation is needed to confirm this observation. I have not tried the acceptability of ka-...-en for other types of verbs in the imperative construction. The function of ka- in ka-...-en in the negative construction is not the same as the ka- in the negative construction. As mentioned, the presence of ka- of ka-...-en in the imperative construction suggests a milder tone of command, but the presence of ka- of ka-...-en in the negative construction carries an emphatic tone for the negated event. It is possible that there is more than one ka- involved here. More investigation is required.
Joy Wu

Table 7: Forms of the verbs in INV and LV constructions

<table>
<thead>
<tr>
<th>Actor Voice (AV)</th>
<th>mi-</th>
<th>-um-</th>
<th>ma-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument Voice (INV)</td>
<td>sa-pi-</td>
<td>sa-ka-...-um-</td>
<td>sa-ka-</td>
</tr>
<tr>
<td>Locative Voice (LV)</td>
<td>pi-...-an</td>
<td>ka-...-um-...-an</td>
<td>ka-...-an</td>
</tr>
</tbody>
</table>

As seen in table 7, in the INV and LV constructions, in addition to the voice markers sa- and -an, the stems are affixed with pi- or ka-, the choice of which depends on the their corresponding AV forms; if the verb takes mi- as the AV marker, the INV and LV counterparts will be sa-pi-... and pi-...-an, while sa-ka- and ka-...-an are the INV and LV forms for AV verbs that are marked other than mi-. This observation indicates the possibility that the AV forms are derived prior to the INV and the LV sets, as the AV forms will decide their corresponding INV and LV forms.

Besides the asymmetrical paradigms presented in Tables 5 and 6, there is another morphosyntactic asymmetry displayed between the AV/PV forms and INV/LV forms. As mentioned, there are two types of structures following the negative predicate ca’ay ‘not’: the verbal type and the nominal type. The major difference between the two structural types is that in the latter, the case marker ku will show up between ca’ay and the other predicate; in other words, this predicate is constructed as a nominal structure. The AV forms and the PV forms marked by ma- and -en all have the verbal type of structure in the ca’ay negative construction. Some examples are given in (5):

(5) a. **mi-tangtang** kaku t-u futing.
AV-cook 1S.NOM DAT-CN fish
‘I am going to cook fish.’ or ‘I am cooking fish.’

a’. ca’ay **pi-tangtang** kaku t-u futing.
NEG PI-cook 1S.NOM DAT-CN fish
‘I didn’t cook fish.’ (Negative, Actor Voice)

b. **ma-palu** n-i ina kaku.
PV-beat GEN-PPN mother 1S.NOM
‘Mother beat me.’

b’. ca’ay **ka-palu** n-i ina kaku.
NEG KA-beat GEN-PPN mother 1S.NOM
‘Mother didn’t beat me.’ (Negative, Patient Voice)

c. **palu-en** n-i mayaw ∅-ci dongi.
beat-PV GEN-PPN Mayaw NOM-PPN Dongi
‘Mayaw will beat Dongi.’

c’. ca’ay (**ka-palu-en** n-i mayaw ∅-ci dongi.
NEG KA-beat-PV GEN-PPN Mayaw NOM-PPN Dongi
‘Mayaw (never) beats Dongi.’ (Negative, Patient Voice)
As shown in (5), the AV and PV forms appear immediately after ca’ay, following the pi-/ka- alternation pattern that I have discussed earlier. Moreover, there is no case marker showing up between the negative predicate and the non-negative predicate, and the voice marking function of the non-negative predicate is also preserved. On the contrary, the INV and LV predicates appear with nominal structure, as exemplified in (6):

(6) a. **sa-pi-palu n-i mayaw ci dongi-an**
   InV-PI-beat GEN-NCM Mayaw PPN Dongi-DAT
   k-u-ni a sastiq.
   NOM-CN-this LIN stick
   ‘It is this stick that Mayaw beat Dongi with.’

   a’. **ca’ay k-u sa-pi-palu n-i mayaw ci dongi-an k-u-ni a sastiq.**
   Dongi-DAT NOM-CN-this LIN stick
   ‘Mayaw didn’t use this stick to beat Dongi.’

   a’’. ?**ca’ay ka-sa-pi-palu n-i mayaw ci dongi-an k-u-ni a sastiq.**
   Dongi-DAT NOM-CN-this LIN stick
   ‘Mayaw did not use the stick to beat Dongi.’

b. **ca’ay k-u pi-palu-an n-i mayaw ci dongi-an k-u-ni anudafak.**
   Dongi-DAT NOM-CN-this tomorrow
   ‘This is not the place where Mayaw is going to beat Dongi tomorrow.’

b’.*ca’ay ka-pi-palu-an n-i mayaw ci dongi-an k-u-ni anudafak.**
   Dongi-DAT NOM-CN-this tomorrow

As shown in (6), the INV and LV forms are preceded by the nominative case marker ku in this negative construction beginning with ca’ay ‘not’. Notice that it is also possible for the INV form to show up with the verbal type of structure in the ca’ay negative construction, as seen in (6a’’). However, such a structure is treated as ungrammatical by some speakers, and that is why a question mark ‘?’ is placed at the beginning of the sentence. The nominal properties of INV and LV forms can also be observed in the affirmative sentences. While the INV and LV forms can appear at the predicate positions
exemplified in (1c-d), they often appear with the nominal identificational constructions like (7). However, such a structural variety or even preference has not been found for AV and PV forms.

(7) a. u sastiq k-u____ sa-pi-palu n-i mayaw
    CN stick NOM-CN INV-PI-beat GEN-PPN Mayaw
    ci Dongi-DAT
    ‘Mayaw used the stick to beat Dongi.’
    (LIT. ‘The stick is what Mayaw used to beat Dongi.’)

    b. u-ni cacanuyan k-u____ pa-teli-an n-i
    CN-this cradle NOM-CN CAUS-put-LV GEN-PPN
    ina t-u wawa.
    mother DAT-CN child
    ‘Mother put the child in this cradle.’
    (LIT. ‘This cradle is where Mother put the child.’)

The above-demonstrated semantic/functional as well as morphosyntactic asymmetries indicate the AV and PV predicates are treated rather differently from the INV and LV sets, and hence, question the adequacy of giving a unified treatment of these forms.

Perhaps the most convincing examples that support a non-unified analysis for these voices markers are ones like (8):

(8) a. aka sa-pi-litek-en k-u-ra caklis
    NEG.IMP INV-PI-chop tree-PV NOM-CN-that ax
    t-u-ra kilang!
    DAT-CN-that tree
    ‘Don’t use that ax to chop down the tree!’

    b. ma-sa-pi-sanga n-i aki t-u takid k-u-ya a’ol.
    PV-INV-PI-make GEN-NCM Aki DAT-CN bottle NOM-CN bamboo
    ‘Aki used use that bamboo to make the bottle.’

The PV markers co-occur with the INV marker in (8). If both of them serve the voice operation functions, we shall expect that there are two possible voice choices in each sentence: the patient or the instrument. However, it is always the latter that is chosen to be the grammatical subject (i.e. marked by nominative case), not the former. This observation indicates that these two markers should have different functions in the sentence, and again, challenges the unified analysis of treating both of them as voice markers as
seen in the previous studies. Hence, in this paper, I shall propose a reclassification of the voice system that teases apart the AV/PV and InV/LV sets. But before proceeding to the major discussion of this paper, I would like to briefly introduce the relevant theoretical perspectives from RRG adopted in my analysis.

3. Theoretical framework

The RRG framework adopted here follows the versions introduced in VVLP (1997) and VV (2005). A general organization of this RRG framework is diagramed in Figure 1:

As shown in Figure 1, RRG posits a direct mapping (i.e. the Linking Algorithm) between the semantic representation of a sentence and its syntactic representation. The semantic representation part of the theory is what the major discussion of the paper is based on. This part consists of a decompositional representation of the predicates, termed the logical structures (LS). The content of the logical structures is based on the various properties of lexical aspects displayed in the predicates (i.e. Aktionsart, as first discussed in Vendler (1967) and later elaborated in Dowty (1979)). Five basic Aktionsart classes are differentiated based on the features such as punctuality and telicity. These classes are shown in Table 8 with examples from English, and their logical structures are given in Table 9. These logical structures constitute the semantic representation in RRG, in which the arguments are linked to different argument positions in the syntactic representation.
**Table 8:** Aktionsart classes, their features, and some English examples

<table>
<thead>
<tr>
<th>Class</th>
<th>Aktionsart Features</th>
<th>English Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>[+static], [-dynamic], [-telic], [-punctual]</td>
<td>be sick, be tall, be dead, love, know, believe, have</td>
</tr>
<tr>
<td>Activity</td>
<td>[-static], [+dynamic], [-telic], [-punctual]</td>
<td>march, walk, roll (intransitive), swim, think, snow, write, drink</td>
</tr>
<tr>
<td>Achievement</td>
<td>[-static], [-dynamic], [+telic], [+punctual]</td>
<td>pop, explode, collapse, shatter (intransitive)</td>
</tr>
<tr>
<td>Semelfactive</td>
<td>[-static], ±dynamic, [-telic], [+punctual]</td>
<td>flash, cough, tap, glimpse</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>[-static], [-dynamic], [+telic], [-punctual]</td>
<td>melt, freeze, dry (intransitive), learn</td>
</tr>
<tr>
<td>Active</td>
<td>[-static], [+dynamic], [+telic], [-punctual]</td>
<td>walk to the park, eat the fish</td>
</tr>
</tbody>
</table>

**Table 9:** Aktionsart classes and the logical structures

<table>
<thead>
<tr>
<th>Aktionsart Class</th>
<th>Logical Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td><strong>predicate’</strong> (x) or (x, y)</td>
</tr>
<tr>
<td>Activity</td>
<td><strong>do’</strong> (x, [<strong>predicate’</strong> (x) or (x, y)])</td>
</tr>
<tr>
<td>Achievement</td>
<td>INGR <strong>predicate’</strong> (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>INGR <strong>do’</strong> (x, [<strong>predicate’</strong> (x) or (x, y)])</td>
</tr>
<tr>
<td>Semelfactive</td>
<td>SEML <strong>predicate’</strong> (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>SEML <strong>do’</strong> (x, [<strong>predicate’</strong> (x) or (x, y)])</td>
</tr>
<tr>
<td>Accomplishment</td>
<td>BECOME <strong>predicate’</strong> (x) or (x, y), or</td>
</tr>
<tr>
<td></td>
<td>BECOME <strong>do’</strong> (x, [<strong>predicate’</strong> (x) or (x, y)])</td>
</tr>
<tr>
<td>Active Accomplishment</td>
<td><strong>do’</strong> (x, [<strong>predicate’</strong> (x) or (x, y)]) &amp;</td>
</tr>
<tr>
<td></td>
<td>INGR <strong>predicate’</strong> (z, x) or (y)</td>
</tr>
<tr>
<td>Causative</td>
<td>α CAUSE β, where α, β are LSs of any type</td>
</tr>
</tbody>
</table>

Another perspective taken from RRG is its view of agency; that is, the notion “agency” is not necessarily lexically marked. As argued in Van Valin & Wilkins (1996), in most cases, agency is an implication of the way a particular verb is used in a sentence, and not an inherent lexical property (e.g. *kill* vs. *murder* in English). The operator DO will only show up in the logical structure for the verbs with lexicalized agency such as English *murder* (DO’ (x, [**do’** (x, [**kill’** (x, y)])))). As one can see in Table 9, DO does not show up as a primitive operator in the logical structures, as in contrast to **do’**, which is deemed as a primitive operator for activity predicates with or without agentive implicature (e.g. plain activity verbs and involuntary activity verbs).

In addition to the above-mentioned decompositional analysis, another theoretical perspective that will be utilized in the analysis is the linking system of RRG, especially the two-phase linking from the argument position in the logical structures to the syntactic

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representation. Figure 2 gives a summary of the whole linking system:

**SYNTACTIC FUNCTIONS:**
- **PSA:** Direct Core Arguments
- **Oblique Core Arguments**

Privileged Syntactic Argument [PSA] Selection:
- Highest ranking MR = default (e.g. English)
- Lowest ranking MR = default (e.g. Dyirbal)

**SEMANTIC MACROROLES:**

<table>
<thead>
<tr>
<th>ACTOR</th>
<th>UNDERGOER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arg of</td>
<td>1st arg of</td>
</tr>
<tr>
<td>DO</td>
<td>do' (x..., pred' (x,y)</td>
</tr>
</tbody>
</table>

Transitivity = No. of Macroroles [MRe] |
- Transitive = 2
- Intransitive = 1
- Atransitive = 0

Argument Positions in **LOGICAL STRUCTURE**

<table>
<thead>
<tr>
<th>Verb Class</th>
<th>Logical Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE</td>
<td>predicate' (x) or (x,y)</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>do' (x, [predicate' (x) or (x,y)])</td>
</tr>
<tr>
<td>ACHIEVEMENT</td>
<td>INGR predicate (x) or (x,y)</td>
</tr>
<tr>
<td>SEMELACTIVE</td>
<td>SEML predicate' (x) or (x,y)</td>
</tr>
<tr>
<td>ACCOMPLISHMENT</td>
<td>BECOME predicate' (x) or (x,y)</td>
</tr>
<tr>
<td>ACTIVE ACCOMPLISHMENT</td>
<td>do' (x, [predicate', (x, (y))]) &amp; INGR predicate', (z, x) or (y)</td>
</tr>
<tr>
<td>CAUSATIVE</td>
<td>α CAUSE β, where α, β are LSs of any type</td>
</tr>
</tbody>
</table>

**Figure 2:** Summary of RRG linking system

As shown in Figures 1 and 2, the linking in RRG is supposed to work both ways from semantics to syntax and from syntax to semantics; this bi-directional linking is indicated by the bi-directional arrows (i.e. ↔), and there are three phases or steps for the whole linking process. However, in this paper, I only focus on the linking from semantics to syntax, especially the last two phases. A simplified version for these two phases is given in Figure 3 and the tasks of each phase are also specified.

---

22 For the scope of this paper, I shall not discuss the details of Figure 2. Please refer to VVLP (1997) and VV (2005) for more discussion. Information regarding this figure can also be found in Wu’s Chinese introduction to Role and Reference Grammar in this volume.
<table>
<thead>
<tr>
<th>Phases</th>
<th>Linked Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2</td>
<td>Syntactic Functions</td>
<td>Link the macrorole and non-macrorole arguments to proper syntactic functions based on the PSA selection hierarchy in Figure 5 and PSA selection principles stated in (10).</td>
</tr>
<tr>
<td>Phase 1</td>
<td>Semantic Macrorole</td>
<td>Link the arguments to the semantic macroroles based on the Actor-Undergoer Hierarchy in Figure 4 and the principles of macrorole assignment stated in (9).</td>
</tr>
</tbody>
</table>

**Figure 3:** The two-phase linking from semantics to syntax

As shown in Figure 3, the first phase links a given argument in the LS to semantic macroroles, which refer to semantic roles generalized across thematic relations. Two macroroles, actor and undergoer, are distinguished in RRG, and these two roles correspond to the primary arguments in a prototypical transitive sentence. The assignment of macroroles to a given argument makes crucial reference to its position in the logical structure. The default choice follows the hierarchy in Figure 4 (VV 2005:126) and a set of principles stated in (9):

![Actor-Undergoer Hierarchy (AUH)](image)

Actor selection: highest ranking argument in LS
Undergoer selection:
- Principle A: lowest ranking argument in LS (default)
- Principle B: second highest ranking argument in LS

**Figure 4:** Actor-Undergoer Hierarchy (AUH)

---

23 The two macroroles generally correspond to the Agent and Patient of transitive verbs in Formosan languages. However, this correspondence breaks down with intransitive verbs. As mentioned in the principles in (9), in RRG terms intransitive predicates also make the Actor/Undergoer macrorole distinction. However, in Formosan languages, an intransitive predicate with a single core argument marked by the nominative case tends to be marked morphologically as Agent Focus (or Actor Focus) even when the core argument is Undergoer in RRG terms.
(9) Default Macrorole Assignment Principles

   a. Number: the number of macroroles a verb takes is less than or equal to
      the number of arguments in its LS:
      1. If a verb has two or more arguments in its LS, it will take two macroroles.
      2. If a verb has one argument in its LS, it will take one macrorole.

   b. Nature: for verbs which take one macrorole:
      1. If the verb has an activity predicate in its LS, the macrorole is actor.
      2. If the verb has no activity predicate in its LS, the macrorole is undergoer.

The second phase of linking maps the arguments (macrorole and non-macrorole arguments) onto the syntactic representation, and this phase includes a sub-step of privileged syntactic argument (PSA, or grammatical subject) selection from the arguments. The PSA selection follows the hierarchy in Figure 5 and a set of principles in (10):

   Arg of DO > 1st arg of do' > 1st arg of pred' (x, y) > 2nd arg of pred' (x, y) > Arg of pred' (x)

   Figure 5: PSA Selection Hierarchy

(10) Privileged Syntactic Argument Selection Principles

   a. Syntactically accusative language constructions: highest ranking macrorole
      is default choice.

   b. Syntactically ergative constructions: lowest ranking macrorole is default
      choice.

Based on the hierarchy and the principles, accusative languages will choose actor as the PSA, while in ergative languages undergoer will be the default choice. It is at this step that voice comes into play, as one of the major functions of voice is to offer multiple choices of PSA for the languages that employ this mechanism. Thus, passive in

24 These principles are only relevant to the default cases of macrorole assignment. However, there may be marked cases such as applicative constructions. For such marked cases, their macrorole assignment will be stated in the construction schema of each construction. For example, as I shall argue later, the InV and LV constructions are actually applicative constructions that indicate a marked choice of undergoer (e.g. instrument and location, instead of patient). For these applicative constructions, their undergoer selection does not follow the default rules stated in Figure 4 and the rules in (10); it will be specified in their construction schema.

25 The major cross-linguistic functions of voice are discussed in RRG: PSA modulation and argument modulation. The former permits an argument other than default argument in terms of the PSA selectional hierarchy in Figure 5 to function as the PSA, while the latter gives a non-canonical realization to a macrorole argument (e.g. realizing the macrorole as an oblique
accusative languages tend to choose the lowest-ranking macrorole as the PSA, while the antipassive voice in ergative languages will pick the highest-ranking macrorole as the PSA.

In the following section, I shall incorporate the RRG framework introduced above into the analysis of the voice system in Amis.

4. The dichotomy of the voice system

Based on the formal and functional differences of the AV/UV sets and INV and LV sets of voice markers discussed in §2, I propose a new analysis of the Amis voice system as shown in Table 10:

<table>
<thead>
<tr>
<th>Actor Voice (AV)</th>
<th>Undergoer Voice (UV)</th>
<th>Instrument (INA)</th>
<th>Locative (LA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain</td>
<td>ma-</td>
<td>ma-…(-um-)</td>
<td>ma-ka-ka-…-en</td>
</tr>
<tr>
<td>Applicative</td>
<td>Instrument</td>
<td>(ma)-sa-sa-…(-en)</td>
<td></td>
</tr>
<tr>
<td>Goal-Locative</td>
<td>mi-…-an</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Patient-Locative</td>
<td>mi-…-an</td>
<td>-um-…-an</td>
<td>ka-…-an</td>
</tr>
<tr>
<td>Location-Locative</td>
<td>pi-…-an</td>
<td>ka-…-um-…-an</td>
<td>ka-…-an</td>
</tr>
</tbody>
</table>

In this new analysis, there are only two voice alternations in Amis: actor and undergoer. The other two so-called voice markers sa- and -an are treated as applicative markers for instrument applicative and locative applicative constructions, and these applicative constructions constitute a sub-type of the undergoer voice.

There are two functions performed by these applicative markers, and both functions affect the first phase of linking (i.e. the macrorole assignment) displayed in Figure 3.

---

26 Notice that the co-occurring affixes of the applicative constructions such as pi- and ka- are left out in the role of instrument applicative but are retained for the locative applicative constructions, as for the latter, these co-occurring affixes will affect the types of the semantic roles of the applied argument. For example, pi-…-an indicates a different semantic role from mi-…-an.
These applicative markers either signal a marked choice of undergoer\textsuperscript{27} by adding an adjunct-like argument to the core, or assign the undergoer status to a non-macrorole core argument. The first function is mainly found with the instrument applicative, the goal-locative, and location-locative applicative constructions. Some examples are given in (11), where we can see that an otherwise adjunct NP becomes a core argument once the verb is applied:

\begin{enumerate}
\item[(11)]
\begin{enumerate}
\item a. {\textit{mi-dohdoh kaku t-u titi i falah.}}
\textit{AV-roast 1S.NOM DAT-CN meat PREP coal}
'I am going to roast (the) meat over the coal.'
\item a'. {\textit{sa-pi-dohdoh aku t-u titi k-u falah.}}
\textit{INA-PI-smoke 1S.GEN DAT-CN meat NOM-CN coal}
'I use the coal to smoke the meat.'
\item b. {\textit{mi-adup \_ci mama t-u fafuy i lutuk.}}
\textit{AV-hunt NOM-PPN father DAT-CN pig PREP mountain}
'Father is going to hunt the (mountain) pig on the mountain.'
\item b'. {\textit{pi-adup-an n-i mama t-u fafuy k-u-ni lutuk.}}
\textit{NOM-CN-this mountain}
'Father hunted the (mountain) pig on this mountain.'
\item c. {\textit{mi-cikay kaku i pitilidan mi-ala t-u-ra cudad.}}
\textit{AV-run 1S.NOM PREP school AV-take DAT-CN-that book}
'I am going to run to school to get that book.'
\item c'. {\textit{mi-cikay-an aku i pitilidan k-u-ni a cudad.}}
\textit{MI-run-LA 1S.GEN PREP school NOM-CN-this LIN book}
'I ran to school for (getting) this book.'
\item c''. {\textit{mi-cikay-an/??c-um-ikay-an aku tayra i lumaq}}
\textit{MI-run-LA/run<UM>LA 1S.GEN go PREP house}
\textit{n-i panay k-u-ni qayam.}
\textit{GEN-PPN Panay NOM-CN-this bird}
'I ran to Panay’s place to get this chicken.'
\end{enumerate}
\end{enumerate}

As seen above, the locative-instrument in (11a) and the location (11b) become the core arguments in the applicative constructions in (11a’) and (11b’). These two arguments subsequently replace the default undergoer \textit{titi} ‘meat’ and \textit{fafuy} ‘pig’ assigned based on

\textsuperscript{27} This is similar to the split-O phenomenon discussed in Huang (2005).
the AUH in Figure 4 and become the new undergoer in (11a’) and (11b’). That is, the presence of these applicative markers can override the general principles of default macrorole assignment stated in Figure 4 and (9). The addition of a core argument is also found in examples (11c-c’). The goal NP in (11c) shows up as a core argument of a non-initial predicate in a serial verb construction. This is the only way to mention a goal NP in an AV sentence in Amis. In the goal-locative applicative construction in (11c’), the goal NP becomes the core argument of the initial predicate in (11c’), which is now the only predicate in (11c’), and the goal NP subsequently becomes the undergoer of this sentence. Notice that the goal NP is only found with the form mi-...-an, as we can see in (11c’’), the form c-um-ikay-an is not preferred to show up in this sentence.28

As for the second function, it is mostly found with the patient-locative applicative construction, which involves no addition of a core argument but simply gives the macrorole status to a non-macrorole core argument. Examples follow:

(12) a. mi-adup ∅-ci aki t-u fafuy n-u lutuk.
    AV-hunt NOM-PPN Aki DAT-CN-that pig GEN-CN mountain
    ‘Aki is going to hunt mountain pigs.’
    ‘Aki is hunting mountain pigs.’
    a’. ma-adup n-i aki k-u-ra fafuy n-u lutuk.
    UV-hunt GEN-PPN Aki NOM-CN-that pig GEN-CN mountain
    ‘Aki hunted that mountain pig.’
    a”. adup-en n-i aki k-u-ra fafuy n-u lutuk.
    hunt-UV GEN-PPN Aki NOM-CN-that pig GEN-CN mountain
    ‘Aki will hunt that mountain pig (for sure).’
    b. mi-adup-an n-i aki k-u-ra fafuy n-u lutuk.
    MI-hunt-LA GEN-PPN Aki NOM-CN-that pig GEN-CN mountain
    ‘Aki hunted that mountain pig.’

The sentence in (12a) is an AV sentence, and its plain UV counterparts are given in (12a’) and (12a’’). As shown in the data, the applicative UV construction in (12b) show the same argument structure as the plain UV constructions in (12a’a’’). In other words, there is no addition of the core argument in the semantics of the predicate. The function of mi-...-an in (12b) is to make the non-macrorole core argument in (12a) (i.e. the NP

28 The semantic roles of the NPs affected by mi-cikay-an and c-um-ikay-an are different; mi-cikay-an indicates an enhanced goal NP, while c-um-ikay-an indicates an enhanced patient NP (e.g. something that is run upon). However, while it is impossible for the form -um-...-an to affect a goal NP, it is also possible that mi-...-an affects the status of a patient NP, as seen in (12b).
marked by the dative case) a macrorole. This function is also found in the examples in (13) in which the applicative form ka-…-an in (13b) also involves no addition of a core argument, as shown in the comparison between the applicative UV construction in (13b) and the plain UV construction in (13a').

\[
\text{(13) a. ma-ulah kaku ci panay-an.} \\
\quad \text{AV-like 1S.NOM PPN Panay-DAT} \\
\quad \quad \text{‘I like Panay.’}
\]

\[
\quad a'. \text{ ma-ka-ulah aku } \emptyset -ci \text{ panay.} \\
\quad \text{UV-KA-like 1S.GEN NOM-PPN Panay} \\
\quad \quad \text{‘I like Panay.’}
\]

\[
\quad b. \text{ ka-ulah-an aku } \emptyset -ci \text{ panay.} \\
\quad \text{KA-like-LA 1S.GEN NOM-PPN Panay} \\
\quad \quad \text{‘I like Panay.’}
\]

Sometimes the function of the applicative construction can be ambiguous. For example, the form \textit{mi-radiw-an} in (14b) has two readings that correspond to the two

\[
\text{(12) c. mi-nanum kaku } (t-u \quad \text{nanum}). \\
\quad \text{AV-water 1S.NOM DAT-CN water} \\
\quad \quad \text{‘I am going to drink (water).’ or ‘I am drinking (water).’}
\]

\[
\quad c'. \text{ ma-nanum aku } k-u \quad \text{nanum.} \\
\quad \text{UV-water 1S.GEN NOM-CN water} \\
\quad \quad \text{‘I drank the water.’}
\]

\[
\quad d. \text{ kalamkam-en aku k-um-a’en } t-u \quad \text{hemay.} \\
\quad \text{fast-UV 1S.GEN eat<NEUT> DAT-CN rice} \\
\quad \quad \text{‘I will eat (meal) fast.’}
\]

\[
\quad d'. \text{ kalamkam-en aku k-um-a’en } k-u \quad \text{hemay.} \\
\quad \text{fast-UV 1S.GEN eat<UM> NOM-CN rice} \\
\quad \quad \text{‘I will eat the rice fast.’}
\]

As shown in the examples, while the NP marked by the dative case receives a generic reading, the NP marked the nominative case gets a referential, specific reading. This is especially obvious in the contrast between (12d) and (12d’), as we can see that the dative NP in (12d) does not really refer to ‘rice’ but ‘meal’ in general. However, when marked by the nominative case, \textit{hemay} ‘rice’ will refer to a bowl of rice. This contrast is similar to the examples \textit{Pat drank beer vs. Pat drank the beer} discussed in VV (2005:64), in which it is argued that \textit{beer} in \textit{Pat drank beer} is not a macrorole. Notice that it is possible to omit this generic NP, as shown in (12c). See Wu (2006) for more discussion.

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29 One of the indexes for the non-macrorole status of the NP marked by the dative case is the possible non-specific reading of the NP, in contrast with NP marked by the nominative case, which always receives a definite reading. Consider:
functions discussed above.

(14) a. mi-radiw kaku t-u-ni a radiw.
    AV-song 1S.NOM DAT-CN-this LIN song
    ‘I am going to sing this song.’

b. mi-radiw-an aku k-u-ni.
    MI-song-LA 1S.GEN NOM-CN-this
    ‘I sang this.’ (Patient-Locative Applicative)
    ‘I sang for (getting) this.’ (Goal-Locative Applicative)

An important feature of the applicative sentences discussed above is that they all follow
the undergoer voice pattern, as the undergoer of these applicative sentences is marked
by the nominative case. Compare (11b) and the sentences in (8), and we can see that
without the voice markers ma- and -en, (11b) still follows the UV pattern. This com-
parison shows that applicative constructions are by default UV constructions. Given the
ergative nature of Amis (Chen 1987), it is not surprising that this language will have the
undergoer as the default choice of the PSA even without the presence of the undergoer
voice marker.

The functions of the voice markers are related to the second phase of linking. That
is, they affect the linking of the macrorole and non-macrorole arguments to the syntactic
functions. In particular, they serve the functions of indicating the PSA choice between
actor and undergoer, and they may also give a non-canonical realization of a macrorole
argument as a non-macrorole core argument. The second function is found in the under-
goer argument of an actor voice sentence; this argument is realized as non-macrorole
argument syntactically. See Wu (2006) for more discussion.

The new analysis outlined in Table 10 offers a good reason for why the instrument
NP is the PSA when there is a co-occurrence of ma- and sa- or sa- and -en, as seen in
(8). The marker sa- indicates that there is marked choice of the undergoer (i.e. instrument
in this case), and the voice markers ma- and -en show that the undergoer is the PSA. In
other words, these two markers operate at different phases of the linking from semantics
to syntax.30 After separating the voice markers and the applicative markers and discuss

30 As pointed out by the reviewer, the co-occurrence of a voice marker and an applicative marker
in Amis presents an atypical case that is not found in other Formosan languages. Nevertheless,
the analysis of treating so-called instrument voice and locative voice as applicative constructions
has also been proposed by Huang (2005) for other Formosan languages. I assume that the
applicative constructions and the voice operations in these Formosan languages are also
related to different phases of linking from semantics to syntax, in RRG terms. In this regard,
Amis does not seem to present an atypical case.
their functions in the linking system, I shall focus on the exploration of the semantics of the voice markers in the following section.

5. A decompositional analysis of the voice markers

In this section, I offer an RRG-based decompositional analysis for the following voice markers: \textit{mi-} (AV), \textit{-en} (UV), and \textit{ma-} (AV and UV). As I show later, these decompositional representations can not only account for their semantic properties, especially their default TAM reading, but also their derivational possibilities. I begin with \textit{mi-}.

5.1 The analysis of \textit{mi-}

The prefix \textit{mi-} is found most frequently in the following two types of examples:

\begin{align*}
\text{(15) a. } & \text{mi-nanum} \quad \emptyset\text{-ci} \quad \text{aki} \quad t\text{-u} \quad \text{nanum.}^{31} \\
& \text{AV-water} \quad \text{NOM-PPN} \quad \text{Aki} \quad \text{DAT-CN} \quad \text{water} \\
& \text{‘Aki is going to drink water.’ or ‘Aki is drinking water.’} \\
\text{b. } & \text{mi-palu} \quad \emptyset\text{-ci} \quad \text{sawmah} \quad \text{ci} \quad \text{mayaw-an.} \\
& \text{AV-beat} \quad \text{NOM-PPN} \quad \text{Sawmah} \quad \text{PPN} \quad \text{Mayaw-DAT} \\
& \text{‘Sawmah is going to beat Mayaw.’ or ‘Sawmah is beating Mayaw.’}
\end{align*}

As seen in (15a), this prefix is attached to a root denoting an object and derives a verb expressing an activity with the object denoted by the root as its cognate object. It can also be attached to a root expressing an activity and derive a verb expressing that activity, e.g. (11b). Notice that the \textit{mi-} verbs in (11) can have a progressive reading or a motional/purposive reading. This was noted by Zeitoun et al. (1996).

An activity verb in Amis is not necessarily derived from the affixation of \textit{mi-}; other affixes such as \textit{ma-} or \textit{-um-} can also derive an activity verb. Unlike \textit{mi-} activity verbs, \textit{ma-} and \textit{-um-} activity verbs only get the progressive reading, as reported in Zeitoun et al. (1996). While most roots tend to occur with only one of the affixes to form an activity verb, some roots have more than one possibility. However, the \textit{mi-} forms of the roots that take either \textit{-um-} or \textit{ma-} to form an activity by default always carry a motional/}

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31 According to Yan (1992), the \textit{mi-} affix (equivalent to \textit{ni-} in his paper) can be omitted in his dialect (one of the Southern dialects). However, as remarked by my informants, such sentences, though understandable, sound very childish.
purposive reading,\textsuperscript{32} and the goal is preferably specified in the sentence. Consider:

\begin{tabular}{ll}
(16) & a. ma-ranam \quad kaku. \\
 & NEUT-have breakfast \quad 1S.NOM \\
 & ‘I am having my breakfast.’ \\
 b. & mi-ka-ranam\textsuperscript{33} \quad kaku i ci kaka-an. \\
 & AV-KA-have breakfast \quad 1S.NOM \ PREP \ PPN \ older sibling-DAT \\
 & ‘I am going to Brother’s place to have (a special) breakfast.’ \\
 c. & k-um-a’en \quad kaku t-u pawli. \\
 & eat<A V> \quad 1S.NOM \ DAT-CN \ banana \\
 & ‘I am eating a banana.’ \\
 d. & mi-ka’en \quad kaku i ci panay-an. \\
 & AV-eat \quad 1S.NOM \ PREP \ PPN \ Panay-DAT \\
 & ‘I am going to Panay’s place to have a banquet.’ \\
 e. & ma-tayal \quad kaku. \\
 & NEUT-work \quad 1S.NOM \\
 & ‘I am working.’ \\
 f. & mi-tayal kaku t-u demak n-i panay. \\
 & AV-work \quad 1S.NOM \ DAT-CN \ matter \ GEN-PPN \ Panay \\
 & ‘I am going to do Panay’s work.’
\end{tabular}

As we can see in (16), \textit{mi-} form adds motional/purposive reading for the verb (i.e. ‘go to a certain place to do something’), although the place or the goal is not always mentioned in the sentence. The motional/purposive reading of \textit{mi-} offers a possible reason for why only \textit{mi-} form can combine with applicative marker -an and adds a goal argument in the core, but not -um- or \textit{ma-}, as seen in the discussion of the applicative constructions.

Based on the above observations, the following logical structure is proposed for \textit{mi-}:

\begin{equation}
\text{\textit{mi-}: (\text{do}'(x, [\text{go}'(x)]) \& \text{INGR be-at'}(z, x)) \quad \text{PURP}) \quad \text{do}'(x, [\text{pred}'(x, y)])}
\end{equation}

The LS in (17) is composed of two parts. The first part is a motional/purposive component expressed by the logical structure “(\text{do}'(x, [\text{go}'(x)]) \& \text{INGR be-at'}(z, x)) \quad \text{PURP})”, while the second part is a plain activity represented by “\text{do}'(x, [\text{pred}'(x, y)])”.

\textsuperscript{32} This purposive reading is also obtained for some \textit{ma-} predicates (e.g. \textit{mi-ulah}, \textit{mi-liyang}).

\textsuperscript{33} As remarked by the informant, such kind of \textit{mi-} forms are used in a relatively restricted way. For example, it is difficult to elicit the progressive meaning for verbs like \textit{mi-ka-ranam} and \textit{mi-ka’en}.
Notice that the motional/purposive component is parenthesized as it can be optional for some verbs (i.e. verbs that take *mi-* by default). However, the plain activity part is indispensable for all *mi-* activity verbs. In other words, the TAM reading of *mi-* can help distinguish at least two verb classes. In other words, the first class of verbs, which allows the optionality of the motional/purposive component, can have two readings with *mi-* (i.e. the motional/purposive and the progressive) (e.g. *mi-palu > palu* ‘beat’, *mi-nanum > nanum* ‘water’), while the second class with the obligatory presence of the motional/purposive component only allows the motional/purposive reading (e.g. *mi-tayal > tayal* ‘work’ and *mi-ka’en > ka’en* ‘eat’). The examples in (18) illustrate the application of the LS of *mi-* in these two verb classes:

   AV-beat NOM-PPN Sawmah PPN Mayaw-DAT
   ‘Sawmah is going to beat Mayaw.’
   ‘Sawmah is beating Mayaw.’
   a’. (**(do’) (Sawmah, [go’ (Sawmah)]) & INGR be-at’ (z, Sawmah)) PURP) **do’**
   (Sawmah, [beat’ (Sawmah, Mayaw)])
   a’’. **do’** (Sawmah, [beat’ (Sawmah, Mayaw)])
   b. *mi-ka’en* kaku i ci panay-an.
   AV-eat 1S.NOM PREP PPN Panay-DAT
   ‘I am going to Panay’s place to have a banquet.’
   b’. **do’** (kaku, [go’ (kaku)]) & INGR be-at’ (ci panay-an, kaku) PURP **do’**
   (kaku, [eat’ (kaku, y)])
   c. *mi-tayal* kaku i ci panay-an.
   AV-work 1S.NOM PREP NOM Panay-DAT
   ‘I am going to do some work at Panay’s place.’
   (i.e. I am going to do the work of Panay’s family.)
   c’. **do’** (kaku, [go’ (kaku)]) & INGR be-at’ (ci panay-an, kaku) PURP **do’**
   (kaku, [**do’** (kaku, y)])

The representation of the optional motional/purposive part in *mi-* has some important consequences. First, it explains why the applicative *mi-....-an* can occur with a goal participant (e.g. (11c’)) or a patient participant (e.g. (12b)). The goal participant is an argument of the plain activity following the motional/purposive part, while the patient participant is an argument of the plain activity without a motional/purposive component. A comparison is exemplified below:  

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34 The semantic representation for the purposive part is based on the representation of English *for* (e.g. *Mary sang for fun*) proposed in Jolly (1993).
The *mi*-verb class that only has the motional/purposive reading can be further subcategorized into two classes based on the attachment of {paka}. This phonological string has at least three interpretations: ‘be able to; happen to’, ‘cause to do or become’, and ‘through; by means of’. For the sake of our main concern, I only discuss the first two interpretations of {paka}. The first meaning is similar to the “agency cancelling” discussed in Walton (1986) for the verbs in Sama, a Philippine language, as this prefix cancels the “agentive” element inherent in the verbs.35 We may call this *paka* as an abilitative marker. The second meaning of {paka} is derived from *pa-ka-*, which contains the causative morpheme *pa-* and the prefix *ka-* (see Zeitoun & Huang 2000).36

The *mi*-verbs that only allow the motional/purposive reading do not all behave in the same way when they are prefixed with {paka}. As illustrated in (20), for verbs that usually appear with -um-, like verbs appearing with *mi-* by default, the form with {paka} gets the agency canceling reading, while for verbs that usually co-occur with *ma-* {paka} is rendered (by default) as *pa-ka-*, the causative reading:

(20) a. {paka}-nengneng (> *mi*-nengneng ‘(go to) watch’ > nengneng ‘see’) ‘happen to see; able to see’
b. \{paka\}-ka’en (> k-um-a’en ‘eat’ > ka’en ‘eat’)  
‘able to eat; dare to eat’
c. \{paka\}-tayal (> ma-tayal ‘work’ > tayal ‘work’)  
‘cause to do something’

The comparison exemplified in (20) shows that the activity verbs in Amis can be further categorized into the one with potential agentivity (i.e. mi- and -um- classes) and the one without (i.e. the ma- class). The reason that the term “potential” is adopted here is because such agentivity is cancelable with the attachment of paka- ‘abilitative’ and the expression such as ca’ay ku patudaan ‘unintentionally (or not the intention)’, while true agentivity marked by -en cannot not be cancelled by the two expressions.

When it is attached to a root denoting a state, the prefix mi- can also derive a causative accomplishment verb. For instance:

(21)  
a. ma-patay tu k-u-ni oner.  
NEUT-dead ASP NOM-CN snake  
‘The snake is dead.’
a’. mi-patay k-u matu’say t-u oner.  
AV-dead NOM-CN old man DAT-CN snake  
‘The old man is going to kill a snake.’  
‘The old man is killing a snake.’
b. ma-tuniq k-u ti’ti’.  
NEUT-soft NOM-CN meat  
‘The meat is soft.’
b’. mi-tuniq k-u kuwaq t-u ti’ti’.  
AV-soft NOM-CN papaya NOM-CN meat  
‘The papaya will soften meat.’
c. kuhcah k-u hana.  
white NOM-CN flower  
‘The flower is white.’
c’. mi-kuhcah k-u safun t-u pising isu.  
AV-white NOM-CN soap DAT-CN face 2S.GEN  
‘The soap will whiten your face.’

As shown in (21), when prefixed to a root expressing a state (either attribute or transitory/result states), mi- generates a causative accomplishment verb (i.e. ‘cause to become’), in which the causer brings about the existence of the state. The causer is typically inanimate, and this seems to be a natural interpretation for mi- + state, as an
inanimate causer such as *kuwaq* ‘papaya’ is incompatible with the motional/purposive part in *mi-*, and consequently only the activity component (i.e. $\text{do}' (x, [\text{pred}' (x, (y))]))$ in the LS of *mi-* is retained in the derivation of *mi-* + state. For an activity to be able to co-occur with a state, the desired result will be the activity bringing about the state (hence, causative accomplishment). The possibility to co-occur with inanimate causers of *mi-* also indicates that the actor argument of *mi-* verbs is not a true agent; the agentivity of *mi-* verbs is construed through the context. As we shall see later, the agentive accomplishment marker -en also derives causative accomplishments when attached to state roots. However, unlike *mi-*, the causer in -en causative accomplishment verbs has to be human. As I shall argue in the following section, this human causer requirement has to be attributed to the agentivity property pertaining to -en.

5.2 The analysis of -en

The suffix -en is also found with a variety of roots; it is attached to roots denoting an object, an activity, and a state. Observe:

(22)  
\begin{itemize}
  \item a. nanum-en aku k-u-ra sayta.  
  \begin{tabular}{lll}
    water-UV & 1S.GEN & NOM-CN-that soda \\
  \end{tabular}  
  ‘I will drink that soda (for sure).’
  
  b. palu-en n-i aki $\emptyset$-ci panay.  
  \begin{tabular}{llll}
    beat-UV & GEN-PPN & Aki & NOM-PPN Panay \\
  \end{tabular}  
  ‘Aki will beat Panay (for sure).’
  
  c. fa’det-en aku k-u-ya dateng.  
  \begin{tabular}{llll}
    hot-UV & 1S.GEN & NOM-CN-that vegetable \\
  \end{tabular}  
  ‘I will heat up that dish (for sure).’
\end{itemize}

As seen in the above examples, verbs derived by suffixing -en are similar to those derived by attaching *mi*-; -en also derives an activity from the root denoting an object (e.g. (22a)) or the root designating an activity (e.g. (22b)), and a causative accomplishment verb (22c) from a root form designating a state. These similarities seem to suggest that *mi-* and -en share the same meaning and function. However, there are some crucial differences between *mi-* and -en verbs. First, there is no “motion” component implied in the -en verb; while there is often a distance between the effector and the patient arguments of the *mi-* verbs, the patient argument is close to or right in front of the actor when an -en verb is used. Compare the corresponding imperative sentences in (23):
(23) a. pi-patay t-u-ra oner!
    PI-dead DAT-CN-that snake
    ‘(Go to) kill that snake!’ (Imperative, Actor Voice)
    (The snake is far away from the speaker and the addressee.)
b. patay-en k-u-ra oner!
    dead-UV NOM-CN-that snake
    ‘Kill that snake (for sure)!’
    (The snake is near the speaker and the addressee.)

Second, as mentioned earlier, -en only occurs with a human effector (Tsukida 1993), but such a restriction is not found with mi- verbs. Compare:

(24) a. mi-tuniq k-u kuwaq t-u ti’ti’.
    AV-soft NOM-CN papaya DAT-CN meat
    ‘The papaya will soften the meat.’
b. tuniq-en aku/*n-u kuwaq k-u ti’ti’ aca.
    soft-UV 1S.GEN/GEN-CN papaya NOM-CN meat a little
    ‘I/*Papaya will soften the meat a little.’

Third, while mi- has a motional/purposive reading, -en emphasizes more on the intention of the actor. This feature of -en has been pointed out in Tsukida (1993):

In conclusion, when an -en form expresses an event, it gives an impression that the probability for the event to occur had risen or is rising higher during the situation, and that it occurred or will occur at a particular point in time, at that very time at last…If that point in time comes after the time of utterance, the probability is already rising at the time of the utterance, and gives an impression that the event will positively occur in the immediate future…When the probability rises, a rise of the motivation on the side of the agent must accompany it. The agent does the action intentionally. (Tsukida 1993: 137-38)

In fact, while mi- verbs are allowed to co-occur with the expression “unintentionally”, -en verbs are banned in such contexts.

(25) a. ca’ay k-u pataduan n-i aki mi-curah t-u lumaq.
    NEG NOM-CN intention GEN-PPN Aki AV-burn DAT-CN house
    ‘It is not Aki’s intention to burn the house.’
b. *ca’ay k-u pataduan n-i aki curah-en k-u lumaq.\(^{37}\)

\[\text{NEG NOM-CN intention GEN-PPN Aki burn-UV NOM-CN house}\]

Furthermore, when \{paka\} is attached to -en verbs, they never get the abilitative reading.\(^{38}\) Compare the following examples with (20a-b):

\[\begin{align*}
\text{(26)} & \quad \mathbf{a. \{paka\}-palu-en} \\
& \quad \text{PAKA-beat-UV} \\
& \quad \text{‘let someone be beaten severely’} \\
& \quad \text{*‘able to beat somebody or happen to beat somebody’} \\
\text{b. \{paka\}-nengneng-en} \\
& \quad \text{PAKA-watch-UV} \\
& \quad \text{‘let someone be see watched carefully’} \\
& \quad \text{*‘able to watch or happen to see’}
\end{align*}\]

Finally, when appearing with the aspectual marker ho that indicates an incomplete status for the predicate (rendered as ‘yet’ or ‘still’ in English), -en verbs often refer to the state that has not yet resulted (i.e. the anticipatory telic point, the ‘yet’ reading) (e.g. (27a)) or get an iterative reading (e.g. (27b)), while mi- verbs can get both the progressive reading (the ‘still’ reading) and the anticipatory telic reading (e.g. (27c)):

\[\begin{align*}
\text{(27)} & \quad \mathbf{a. pa-ka-pi-nanum-en ho kaku, ta l-um-uwad.} \\
& \quad \text{CAUS-KA-PI-water-UV ASP 1S.NOM then set off<NEUT>} \\
& \quad \text{‘Let me yet drink some water, and then (we) will set off.’} \\
\text{b. ranam-en ho!} \\
& \quad \text{breakfast-UV ASP} \\
& \quad \text{‘Eat the same thing for the breakfast again!’}
\end{align*}\]

\(^{37}\) Another possible explanation for this construction may be due to the voice restriction following the “unintentionally” expression. However, as discussed in Wu (1995), in a purposive construction with two predicates, the second predicate is allowed to appear in the UV -en form, which indicates a less tight linkage between the two predicates compared with the one with the second predicate as an AV form.

\(^{38}\) The analysis of \{paka\} in (26) is not clear to me at this moment. The reading of this form indicates that it is similar to the causative form pa-ka- in (20c). However, the forms in (26) are frequently used in the imperative sentences in which there is no clear involvement of any causer. I therefore leave this form unglossed.
Based on the above-mentioned features, I postulate the following logical structure for -en as in (28a) with examples illustrating this LS in (28b-c):

\[
\begin{align*}
(28) & \quad \text{a. } -en: \text{DO} (x, [\text{do}' (x, \text{pred}' (x, (y)))])) \text{ ... INGR/BECOME pred'} (x, y) \\
& \quad \text{b. } \text{palu-en} \ n-i \ \text{aki} \ \emptyset-ci \ \text{panay} \\
& \quad \text{beat-UV} \ \text{GEN-PPN} \ \text{Aki} \ \text{NOM-PPN} \ \text{Panay} \\
& \quad \text{\textquote{Aki will beat Panay (for sure).'}} \\
& \quad \text{b'. DO} \ (\text{aki}, [\text{do}' (\text{aki}, [\text{beat}' (\text{aki}, \text{panay})])]) \text{ ... BECOME beaten'} (\text{aki}, \text{panay})^{39}
\end{align*}
\]

This logical structure captures the two essential features of -en: [+agentive] (by DO) and [+telic] (by BECOME (pred')). When suffixed to an activity verb, -en derives an agentive active accomplishment. The agentive component DO explains why this suffix can only appear with [+human] effector or causer (e.g. (24b)), and it cannot appear with expressions such as “unintentionally” and the agency canceling prefix paka-. The accomplishment component is there because -en verbs always have a strong implicature of the completion of the action, which accounts for why the -en verb only refers to the state that has not been resulted but never the progressive aspect of an activity when appearing with the aspectual marker ho.

5.3 The analysis of ma-

Unlike mi- and -en, it is rather difficult to pin down a unified meaning for ma-. Recall that in Table 2, we have seen the dual presence of ma- in the voice system. However, there are actually more than two ma-s distinguished in this language. For instance, Yan (1992) proposes four classes of ma- verbs based on the argument structure and their possible derivation through the attachment of mi-. Here I would like to discuss the types of ma- from different perspectives. To begin with, in terms of the default TAM information discussed earlier, ma- verbs carry two types of reading: stative and progressive. The stative reading is found with ma- state predicates, which include

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39 The “...” part in the LS leaves the possibility to place a CAUSE between the two parts in the LS, as it is also possible for -en to derive a causative accomplishment when it attaches to a state root.
transient/result state and plain state predicates. The progressive reading of ma- has been discussed in Zeitoun et al. (1996), and it is found with predicates denoting activities that have low induced agency, as seen in the diagnostic test by the occurrence of {paka} illustrated in (20c). These ma- activity verbs are exemplified below:

(29) a. ma-tayal ∅-ci sawmah.
   NeUT-work NOM-PPN Sawmah
   ‘Sawmah is at work.’ or ‘Sawmah is doing some job.’

b. ma-kerker ∅-ci panay.
   NeUT-shiver NOM-PPN Panay
   ‘Panay is shivering.’

As seen in (29), though both verbs get a progressive reading, they differ from each other in terms of volition. That is, presumably, ma-tayal ‘work’ is volitional, while ma-kerker ‘shiver’ is involuntary. However, the picture is not that clear, as the {paka-} test shows that {paka-}tayal does not by default get the agency-canceling reading that is found in mi- and some -um- verbs. A possible reason for the preferred interpretation of {paka-} as pa-ka- for ma- activity verbs may be due to the fact that ka- is morphologically related to ma- in many syntactic constructions such as negative sentences and imperative sentences, as seen in §2. In other words, this interpretation is possibly due to an analogy of treating the ka- part of {paka-} as a morphological variant of ma-. Nevertheless, comparatively speaking, ma- activity verbs do imply lesser degree of agentivity than their mi- or -um- counterparts, and this prefix is found in many verbs denoting involuntary actions such as ma-kerker ‘shiver’ in (29) and ma-tukatuk ‘doze off’. The logical structure for ma- activity verbs (i.e. ma-1) is given in (30):

(30) ma-1 (ma- activity verbs): do’ (x, [pred’ (x, (y))])

In addition to activities, ma- is also frequently found with state predicates as we have shown examples at a few places earlier. Nevertheless, there are finer distinctions among these ma- state predicates, as they can be either result state as exemplified in (31) or plain states illustrated in (32):

(31) a. ma-adah tu kaku.
   NeUT-recover ASP 1S.NOM
   ‘I have recovered (from illness).’
   ‘I have started to recover (from illness).’
(32) a. ma-laluk ∅-ci sawmah.
   \(
   \text{NEUT-diligent NOM-PPN Sawmah}
   \)
   ‘Sawmah is diligent.’

b. ma-radiw k-u-ra kaying.
   \(
   \text{NEUT-song NOM-CN-that young lady}
   \)
   ‘That young lady is good at singing.’

c. ma-ulah ∅-ci sawmah (i) ci panay-an.
   \(
   \text{AV-love NOM-PPN Sawmah PREP PPN Panay-DAT}
   \)
   ‘Sawmah likes Panay.’

There are some differences between the two groups of \( ma \)- verbs in (31) and (32). Crucially, the verbs in (31) are interpreted as a result state that implies a process before reaching the state, while those in (31) simply denote a plain state. This semantic difference is also reflected in their syntactic structures. To begin with, the root forms of the result state predicates in (31) are coded differently in the ideophone-forming construction \( X sa \) in Amis from the root forms of the plain states in (32); the former cannot appear in the \( sa-X sa \) frame, in which the latter can occur. Consider:

(33) a. sa-usuy sa cingra.
   \(
   \text{INT-slow say so 3S.NOM}
   \)
   ‘He is so slow.’

b. *sa-icang sa k-u rikor.
   \(
   \text{INT-become dry say so NOM-CN clothes}
   \)
   c. icang sa k-u rikor.
   \(
   \text{become dry say so NOM-CN clothes}
   \)
   ‘The clothes are dry.’

Secondly, the predicates in (31) tend to appear with the perfective/inchoative aspectual marker \( tu \), but such a tendency is not found with verbs in (32) as implied in the examples. Furthermore, it is difficult to elicit the verbs in (31) with the incomplete aspectual marker \( ho \) in (affirmative) sentences, but there is no such difficulty for verbs in (32). Compare:
(34) a. ?? ma-adah ho kaku.
   NEUT-recovered ASP 1S.NOM
   ‘I am still recovering.’

b. *ma-ruhem ho k-u-ni a pawli.
   NEUT-ripe ASP NOM-CN-this LIN banana
   ‘The banana is still ripe.’

c. ma-laluk ho cingra.
   NEUT-diligent ASP 3S.NOM
   ‘He is still diligent.’

d. ma-ulah ho ∅-ci sawmah (i) ci panay-an.
   AV-like ASP NOM-PPN Sawmah PREP PPN Panay-DAT
   ‘Sawmah still likes Panay.’

As seen in (34), when appearing with the incomplete aspect marker ho, verbs like ma-laluk ‘diligent’ and ma-ulah ‘like’ are interpreted with an on-going status while predicates like ma-adah ‘recover’ and ma-ruhem ‘ripe’ cannot readily appear in such an environment. The verbs in (31) all have an inherent ending point in the events they depict. It is quite likely that this telic feature contributes to their difficult co-occurrence with the incomplete aspect marker ho. Such a telic feature is not found in the non-result state verbs in (32). To capture the distinction between the two classes of predicates, we postulate the following two logical structures:

(35) a. * ma-2 (ma- result state verbs): (INGR/BECOME) pred′(x, (y))

b. * ma-3 (ma- transient/plain state verbs): pred′(x, (y))

The LS in (31a) indicates the telic property of the verb while the one in (31b) shows that it is a non-attribute state predicate. Notice that we put a parenthesis around the INGR and BECOME part in the LS of the result state verbs, as the process part in these verbs is not usually referred to in the sentences. That is, the above-mentioned features of the result state verbs seem more relevant to the telic point inherent in these predicates but not the punctual/non-punctual features of these verbs. Even though a process before reaching an ending point is entailed in the semantics of verbs like ma-adah ‘recover’, it is difficult to refer to that process; the unmarked reading of the ma- telic verbs is always the result state, and the aspectual marker tu is preferred if one wants to refer to the

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40 This sentence sounds more natural if it is an interrogative sentence:

(34) a’. ma-adah ho cingra?
   NEUT-recovered ASP 3S.NOM
   ‘Is he still recovering?’
inception of the result state (i.e. change of state). One of the possible ways to test if there is a process is by means of the co-occurrence of pace predicates such as *ma-usuy* ‘slow’ and *harakat* ‘fast’, as exemplified in the following sentences:

(36) a. harakat/ma-usuy ma-adah k-u adada.  
fast/NEUT-slow NEUT-recovered NOM-CN ailment  
‘The ailment recovered fast/slowly.’

b. harakat/ma-usuy ma-likat k-u-ra simal.  
fast/NEUT-slow NEUT-light up NOM-CN-that light  
‘The light became lit up fast/slowly.’

The pace predicates in (36) show that there is a process before reaching the result states denoted by the *ma-* verbs.

The distinctions between *ma-* result state verbs and *ma-* non-result state verbs can also be observed in the sentences containing -en2, a suffix roughly rendered as ‘feel…; judge…’ There are at least two -ens in Amis; the first one, referred to as -en in the discussion, is analyzed as marker for agentive accomplishment and it follows the UV case marking pattern (i.e. Genitive-Nominative), while the second one, referred to and glossed as -en2, follows the AV pattern (i.e. Nominative-Dative), as seen in (37b). Usually, *ma-* result state verbs (e.g. (38)) are not allowed to appear with -en2 unless a specific context is provided. The examples are given below:

(37) a. fa’det-en kaku t-u-ya nanum.  
hot-EN2 1S.NOM DAT-CN-that water  
‘I feel that water is very hot.’

b. ma-ulah-en cingra, t-u nguhah nira,  
AV-like-EN2 3S.NOM DAT-CN lover 3S.Gen  
sa-pi-kadafu-an tu cingra.  
INA-PI-marry-MOOD ASP 3S.NOM  
‘She likes her lover very much, so she wants to get married.’

(38) a. ?? ma-ruhem-en cingra t-u-ya pawli.  
NEUT-ripe-EN2 1S.NOM DAT-CN-that banana  
‘He feels that the banana is too ripe.’

b. ?? ma-icang-en kaku t-u-ra rikor.  
NEUT-dry-EN2 1S.NOM DAT-CN-that clothes  
‘I feel the clothes are too dry.’

---

41 The acceptance of (34a-b) varies among speakers.
As seen in (38), the result state verbs do not readily take -en2. They have to appear in a specific context in which the state results from a process that is not naturally initiated, e.g. (38c-d). Such a context is not required for the non-result state verbs exemplified in (37). A possible reason for this peculiarity is that the suffix -en2 suggests a desired state or a desired limit assigned by the speaker for the unbound state predicate it attaches to; the assigned limit is redundant with regard to the telic point inherent in the result state verbs. Therefore, it is sometimes difficult to construe the combination of -en2 with a result state predicate, unless, first, there is a special context in which the result state is not naturally triggered, or, second, the derived form is rendered as the sustaining of the result state. The example in (38e) illustrates the second possibility:

(38) e. ma-adah-en tu kaku.
   NEUT-recover-EN2 ASP 1S.NOM
   ‘I feel I am recovered now.’

Notice that although the combination of telic verbs and -en2 is possible in (38e), the over-the-limit reading of the result state is no longer obtained.42

The structure of -en2 also leads us to the distinction of another type of ma- verb:

(39) a. ma-palu n-i sawmah ∅-ci mayaw.
    UV-beat GEN-PPN Sawmah NOM-PPN Mayaw
    ‘Mayaw was beaten by Sawmah.’

    UV-beat-EN2 GEN-PPN Sawmah PPN Mayaw-DAT

The predicate in (39a) is not allowed to appear with -en2, as shown in (39b). The ma- here is the UV marker in Table 10. It is often prefixed to a verb with potential agency (i.e. verbs with mi- or -um- by default) and the derived predicate carries an unmarked interpretation of a completed action. The UV ma- verb in (39a) seems to also possess a

42 As remarked by the informant, these two sentences are used to argue against someone’s assumption.
kind of telic point, as it indicates that the action is completed. However, unlike the telic result state verbs discussed earlier, the UV \textit{ma-} verbs receive an iterative reading when appearing with \textit{ho}, as shown in (40):

\begin{enumerate}
\item[40] a. \textit{ma-palu heca/ho n-u-ya mama k-u wawa.}\newline
UV-beat again/ASP GEN-CN-that father NOM-CN child
\hspace{1cm} ‘The child was beaten again by that father.’
\item[40] b. \textit{ma-nengneng ho aku.}\newline
UV-see ASP 1S.GEN
\hspace{1cm} ‘I have just watched (it), and now you want me to watch (it) again.’
\end{enumerate}

Note that the co-occurrence of a UV \textit{ma-} verb with \textit{ho}, like the combination of \textit{ma-} result state verbs and \textit{ho}, is not very common; the preferred choice in this context is \textit{heca} ‘again’. The LS of this set of \textit{ma-} verbs is given in (41). This LS indicates that \textit{ma-} adds a telic point to an activity verb or verbs that contain a \textit{do'} element:

\begin{enumerate}
\item[41] \textit{ma-4} (active/causative accomplishment):
\hspace{1cm} \ldots do’ (x, [pred’ (x, y)]) \ldots INGR/BECOME pred’ (x, y)
\end{enumerate}

There are two parts to the logical structure, an activity and an accomplishment. However, unlike the active accomplishment predicates specified in Table 9 (e.g. the consumption or creation verbs such as \textit{eat the pizza} discussed in VV (2005:44), there is no ampersand between the two predicates in the LS. The unspecified part between the activity and the accomplishment in (41) leaves the possibility that the activity can be a causing event that brings about the accomplishment part. An example like this is \textit{ma-patay} ‘kill’ illustrated in (42). If there is no causing event, then the LS of this type of \textit{ma-} verbs will be just like that of an active accomplishment.

\begin{enumerate}
\item[42] a. \textit{ma-patay n-i aki k-u-ra fafuy.}\newline
UV-dead GEN-PPN Aki NOM-CN-that pig
\hspace{1cm} ‘That pig was killed by Aki.’
\item[42] b. [do’ (aki, \varnothing)] CAUSE [BECOME dead’ (fafuy)]\footnote{The logical structure “\textit{do’ (x, \varnothing)}” before CAUSE represents an unspecified causing action (VVLP 1997:107).}
\end{enumerate}

The activity part also explains why this type of \textit{ma-} verb is allowed to appear with \textit{ho} though it is marginally acceptable sometimes. This aspectual marker goes well with an activity verb but not a result state predicate. The logical structure in (41) is similar to
that of -en in (28a); the only difference lies in the agentivity part carried by -en. Such agentivity is not found with ma-4 verbs.

So far we have made four distinctions among ma- verbs: activity, result state, plain (or transient) state, and active/causative accomplishment. Except for the ma- activity verbs, it is sometimes difficult to tell which LS a particular ma- verb carries, as the same root may appear with more than one ma-. Hence, there may be ambiguity for a ma- verb in terms of the verb type if no contextual information is provided. Consider:

(43) a. ma-radiw k-u-ra kaying.
    NEUT-song NOM-CN-that young lady
    ‘That young lady is good at singing.’
   a’. good at singing’ (kaying)
   b. ma-radiw n-i aki k-u radiw aku.
    UV-song GEN-PPN Aki NOM-CN song 1S.GEN
    ‘My song was sung by Aki.’
   b’. do’ (aki, [sing’ (aki, radiw aku)]) & BECOME (sung’ (aki, radiw aku))
   c. ma-patay k-u-ra fafuy.44
    NEUT-dead NOM-CN-that pig
    ‘That pig is dead.’ or ‘That pig is killed.’
   c’. BECOME dead’ (fafuy)
   d. ma-patay n-i aki k-u-ra fafuy.
    UV-dead GEN-PPN Aki NOM-CN-that pig
    ‘That pig was killed by Aki.’
   d’. [do’ (aki, ∅)] CAUSE [BECOME dead’ (fafuy)]

As demonstrated in (43), to disambiguate the verb types of ma-radiw and ma-patay, proper contextual information has to be provided, or one can perform tests like those with -en2 and ho to distinguish the verb types.

6. Conclusion

In this paper, I have offered an RRG analysis for the voice system in Amis. I first reclassify the so-called four voice markers into two sets: voice markers and applicative markers. I argue that Amis makes only a two-voice distinction, and that the so-called instrumental and locative voices are actually applicative constructions that indicate a

44 A more natural interpretation of (43c) is the first translation, as the verb for “killing pigs” is mi-pacuk ‘slaughter (pigs)’; mi-patay is not usually used in such a context.
marked undergoer selection. These two sets of markers thus perform different functions at the two phases of linking from semantics to syntax. The applicative markers affect the undergoer choice while the voice markers influence the PSA selection.

Furthermore, I propose a decompositional analysis for three commonly found forms in the voice system: *mi-* (AV), *-en* (UV), and *-ma* (AV and UV). The logical structures of these forms are summarized in Table 11 and their most likely associated voice functions are also indicated in the table.

**Table 11: The logical structures of some voice affixes**

<table>
<thead>
<tr>
<th>“voice” affixes</th>
<th>Logical Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>mi-</em> (AV)</td>
<td>((do’ (x, [go’ (x)]) &amp; INGR be-at’ (z, x)) PURP) do’ (x, [pred’ (x, y)])</td>
</tr>
<tr>
<td></td>
<td>(motional/purposive) activity</td>
</tr>
<tr>
<td><em>-en</em> (UV)</td>
<td>DO (x, [do’ (x, [pred’ (x, (y))])]) ….BECOME (pred’ (x, y))</td>
</tr>
<tr>
<td></td>
<td>agentive active/causative accomplishment</td>
</tr>
<tr>
<td>*ma-*1 (AV or NEUT(^{45}))</td>
<td>do’ (x, [pred’ (x, (y))])</td>
</tr>
<tr>
<td></td>
<td>activity</td>
</tr>
<tr>
<td>*ma-*2 (NEUT)</td>
<td>(INGR/BECOME) pred’ (x, (y))</td>
</tr>
<tr>
<td></td>
<td>result state</td>
</tr>
<tr>
<td>*ma-*3 (UV)</td>
<td>do’ (x, [pred’ (x, (y))]) ….BECOME pred’ (x, y)</td>
</tr>
<tr>
<td></td>
<td>active/causative accomplishment</td>
</tr>
<tr>
<td>*ma-*4 (AV or NEUT)</td>
<td>pred’ (x, (y))</td>
</tr>
<tr>
<td></td>
<td>transient/plain state</td>
</tr>
</tbody>
</table>

On the one hand, the decompositional analysis proposed here can help us better understand the phenomena related to these markers in the Amis grammar. For example, the specification of the agency component in *-en* explains the reason why it only goes with human (or personified) actor, while the lack of such specified agency in *mi-* accounts for why the actor is not necessarily human or even animate. On the other hand, such an analysis also better describes the derivations among these verb classes regarding why and how the derived meaning is obtained. For instance, the logical structure of *mi-* tells us why it can derive a motional/purposive activity as well as a causative predicate from different types of roots.

The RRG-based decompositional analysis offers us a new perspective for looking into these voice markers. Such an analysis also has brought out some interesting issues for future study. First, as a voice-marked predicate may contain more than one logical

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\(^{45}\) ‘NEUT’ refers to the situation when these affixes do not have voice marking function. See Footnote 10.
structure (one from the voice affix and one from the root or stem), these logical structures may interact with each other. Therefore, we would expect that there might be some complexities regarding the performance of the Aktionsart test and the Aktionsart type of the derived verbs. Second, the discussion of Amis voice markers also calls for the necessity to offer finer distinctions among the basic Aktionsart classes. For instance, as demonstrated in the discussion, activity verbs in Amis vary in degrees of induced agentivity. However, within the current RRG model, such finer distinctions cannot be properly expressed. The same difficulty is also encountered in the differentiation of state predicates, especially that between result state and transient state. In RRG, both types of state predicates are expressed by \textit{pred}' (x, (y)). However, the two types of state verb in Amis behave differently, as illustrated in the \textit{-en2} sentences and in \textit{ho} sentences. In the present analysis, I propose a tentative solution to present the result state with a parenthesized BECOME/INGR in the LS. Nevertheless, a decompositional modal with further specifications is definitely a necessary part for the further development of RRG (cf. Mairal & Faber 2002, 2005).

References


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### Appendix: The major conjugations of Amis verbs in affirmative sentences (*“*“*“* indicates logically possible forms, not found in the corpus so far)

<table>
<thead>
<tr>
<th>Verbal Affixes</th>
<th>mi-</th>
<th>-um-</th>
<th>ma-</th>
<th>unaffixed</th>
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</thead>
<tbody>
<tr>
<td>Semantic Features</td>
<td>(motional purposive) activities</td>
<td>plain activities</td>
<td>plain activities</td>
<td>plain, involuntary activities or states</td>
</tr>
<tr>
<td>Semantic Valence</td>
<td>1 or 2</td>
<td>1 or 2</td>
<td>1</td>
<td>1 or 2</td>
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<tr>
<td>Plain Mood</td>
<td>AV</td>
<td>Neutral</td>
<td>mi-</td>
<td>-um-</td>
</tr>
<tr>
<td></td>
<td>AV</td>
<td>Past /±Agentive</td>
<td>ma-</td>
<td>ma- or ma-um-*</td>
</tr>
<tr>
<td></td>
<td>AV</td>
<td>Future/±agentive</td>
<td>-en</td>
<td>-en</td>
</tr>
<tr>
<td></td>
<td>Atemporal</td>
<td>Instrument</td>
<td>sa-pi-...</td>
<td>sa-ka-um-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Past and ±agentive</td>
<td>ma-sa-pi-</td>
<td>ma-sa-ka-...-um-*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Future and ±agentive</td>
<td>sa-pi-...-en</td>
<td>sa-ka-...-um-...-en</td>
</tr>
<tr>
<td>Locative Goal</td>
<td>mi-...-an</td>
<td>---</td>
<td>---</td>
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<tr>
<td></td>
<td>Patient</td>
<td>mi-...-an</td>
<td>-um-...-an</td>
<td>ka-...-an</td>
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<tr>
<td></td>
<td>Location</td>
<td>pi-...-an</td>
<td>ka-...-um-...-an</td>
<td>ka-...-an</td>
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<tr>
<td></td>
<td>A V or neutral</td>
<td>mi-...-ay</td>
<td>-um-...-ay</td>
<td>-um-...-ay</td>
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<tr>
<td>Factual Mood</td>
<td>UV</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Irrealis Mood</td>
<td>AV or neutral</td>
<td>Ca RED-mi-(-=ma-mi-)</td>
<td>Ca RED-...-um-</td>
<td>-um-</td>
</tr>
<tr>
<td></td>
<td>UV</td>
<td>Ca RED-...-en</td>
<td>---</td>
<td>Ca RED-...-en</td>
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<tr>
<td>Optative Mood</td>
<td>Optative or titerative</td>
<td>AV or Neutral</td>
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<td>-um-...-aw</td>
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<td>titerative</td>
<td>mi-...-aw</td>
<td>ma-(-um-)...-aw</td>
<td>---</td>
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<tr>
<td></td>
<td>Optative2</td>
<td>AV</td>
<td>sa-pi-...-an</td>
<td>sa-ka-...-um-...-an</td>
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<tr>
<td></td>
<td>UV (Instrumental)</td>
<td>sa-pi-...-aw</td>
<td>sa-ka-...-um-...-aw</td>
<td>sa-ka-...-an</td>
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<td>Imperative Mood</td>
<td>Neutral</td>
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<td>---</td>
<td>---</td>
</tr>
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<td></td>
<td>AV</td>
<td>pi-</td>
<td>ka-...-um-</td>
<td>---</td>
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<tr>
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<td>UV</td>
<td>-en</td>
<td>-en</td>
<td>---</td>
</tr>
<tr>
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<td>Instrumental Applicative</td>
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<td>sa-ka-...-um-...-en</td>
<td>sa-ka-...-um-...-en</td>
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<tr>
<td></td>
<td>AV</td>
<td>-um-</td>
<td>-um-</td>
<td>ma-ka-*</td>
</tr>
<tr>
<td></td>
<td>UV</td>
<td>Past</td>
<td>ma-pa-pi-</td>
<td>ma-pa-...-um-</td>
</tr>
<tr>
<td></td>
<td>Future/±Agentive</td>
<td>pa-pi-...-en</td>
<td>pa-...-um-...-en</td>
<td>pa-...-um-...-en</td>
</tr>
</tbody>
</table>
阿美語的“語態”標記：
一種角色指稱語法的分析

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本文採用角色指稱語法 (Role and Reference Grammar, RRG) 的理論架構，重新分析阿美語的語態系統（或稱焦點系統）。文中首先指出，一般所認為的阿美語的四種語態（即主事語態、受事語態、工具語態、處所語態），實際上包含兩種系統：語態系統及應用句式系統。前者僅包含兩種語態，即行動者語態 (actor voice, AV)，與承受者語態 (undergoer voice, UV)，後者則包含工具應用句式 (instrument applicative) 與處所應用句式 (locative applicative)。應用句式可視為是一種特別的承受者語態。就 RRG 的聯結系統而言，這兩種系統分別作用於兩種不同的聯結階段，應用句式標記指出特別的承受者選擇，而語態標記則是指出該句的特權語法論元 (privileged syntactic argument) 是行動者還是承受者。本文接著將三個最常見的語態標記形式 mi- (AV), ma- (AV, UV), 及 -en (UV) 加以解構，並以邏輯結構呈現其語意內容來解釋這些標記的特性，像是具有隱含的時貌意義或是主事性指標等。本文指出前綴 mi- 的語意是一個活動述語，並帶有一個可省略的移動性/目的性成分，後綴 -en 的語意則分析為一個具主事性的成就述語標記，而 ma- 的語意型態最為複雜，可用四種邏輯結構來呈現：活動述語、結果狀態、一般狀態、及活動/使動成就述語。

關鍵詞：阿美語，語態標記，應用句式標記，RRG，詞彙解構