Middle Voice in Formosan Languages

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1 Introduction

This paper is a survey report of the up-to-date understanding of the verbal prefix ma- (and other related forms) in Formosan languages. It will be shown that the prefix expresses situation types that commonly cluster around middle voice markers found across languages (Kemmer 1993), but the middle voice category is never recognized among Formosanists. What comes closest is Huang and Sung (2008), who discuss what they call “undergoer focus” in Kavalan. I shall start with the three languages covered in Huang and Sung (2008), i.e. Kavalan, Amis, and Paiwan, and then move on to Puyuma (Teng 2008) and Rukai (Zeitoun 2007), both of which illustrate “passive” and “anticausative” verbal forms in addition to “active/transitive” ones. What comes next is Bunun, where ma- is argued by de Busser (2009) to be an event type prefix, in sharp contrast to its traditional characterization as a voice/Focus marker. After dealing with individual language, I shall conclude this report with some discussions.

2 Kavalan

2.1 Voice morphology

In Kavalan, two major voice (or Focus) categories are traditionally recognized, actor voice marked by m- or -(u)m- (AV) and patient/locative voice marked by -an (LV), as respectively illustrated in (1) and (2).¹

(1) a. m-lizaq ti Rungay tu sunis
     AV-like PNM Rungay OBL child
     ‘Rungay likes children.’

   b. p<m>ukun ya baqi tu sunis
     <AV>hit NOM old.man OBL child
     ‘The old man is hitting a child.’ (Jiang 2006:8)

¹There is a third category beneficiary/instrumental voice marked by -ti. But due to its infrequent use in Modern Kavalan, I will not discuss it here.
However, there is another verbal affix *ma-, which usually goes unmentioned in grammatical sketches of Kavalan (e.g. Chang 1997; Hsieh 2007). When it is ever mentioned (e.g. Jiang 2006; Li 2006), the prefix is oftentimes treated like a variant of patient voice marker on a par with *an on the ground that the thematic role of the nominative-marked argument (hereafter *pivot*) in both cases is patient and that agent in both cases is marked by genitive, as in (3) and (4).

(3) a. *ma-ziut-na ya taquq 'nay ta paRin-an
   MA-hang-3SG.GEN NOM chicken that LOC tree-LOC
   'He hung the chicken on the tree.'

   b. ziu±-an-na ya taquq 'nay ta paRin-an
      hang-IV-3SG.GEN NOM chicken that LOC tree-LOC
      'He hung the chicken on the tree.' (Huang & Sung 2008:161)

Huang and Sung (2008) is probably the first to grant the prefix *ma- an independent status in the voice system. They argue that even on semantic grounds MA-verbs differ to a great extent from LV verbs, as we shall see later. Moreover, they also show that MA-verbs pattern like realis AV verbs, rather than LV verbs, in terms of syntagmatic compatibility with tense, aspect, and mood markers. For instance, neither MA-verbs nor realis AV verbs (marked by *m-) can combine with the future clitic =pa, but LV verbs can, as in (4).

(4) a. *ma-qan-ku=pa tiRuR 'nay
   MA-eat-1SG.NOM=FUT egg that

   b. *q<m>an=pa=iku tu tiRuR
      <AV>eat=FUT=1SG.NOM OBL egg

   c. qan-an=ku=pa tiRuR 'nay
      eat-IV=1SG.GEN=FUT egg that
      'I will eat the egg.' (Huang & Sung 2008:163)

That is to say, MA-verbs illustrate mixed properties of AV and LV verbs, resembling AV verbs in some respects but LV verbs in others. The intermediate status of MA-verbs is even more obvious when the same semantic domain is considered. Hsieh (2007) points out that MA-marked cognitive verbs may favor different coding for the cognizer, depending on the lexical item. For instance, while the cognizer of *ma-supaR ‘MA-know’ is marked by nominative, following AV constructions, that of *ma-kalingun ‘MA-forget’ is marked by genitive, following LV constructions, as in (5).
2.2 Semantics of MA-verbs

Huang and Sung (2008) identify the following middle situation types for MA-verbs in Kavalan:

**Spontaneous events** Spontaneous events are those where an entity undergoes a change of state but there is no external causer or event-initiator responsible for the change, except for some kind of natural force, such as events of melting, ripening, or withering. (6) implies that the chicken-rotting event takes place spontaneously or naturally without involving any sort of volitional causer or agent.

\[(6) \text{ma-di}=t \ 'si \ na \ taquq \ 'nay} d\]

\[
\text{ma-rot=PERF meat GEN chicken that} \]

\[
\text{‘That chicken rots.’} \quad \text{(Huang & Sung 2008:167)}
\]

**Anticausative events** MA-verbs can also be used in anticausative events where an entity is caused into action by some external causer, which is either contextually irrelevant or simply unknown, as in (7).

\[(7) \text{ma-baksi}=t \ \text{tanian sudad 'nay} d\]

\[
\text{MA-throw where book that} \]

\[
\text{‘Where was the book thrown?’} \quad \text{(Huang & Sung 2008:168)}
\]

**Passive-like events** Passive-like events are those where the pragmatic emphasis is predominantly put on the potential or result of a patient undergoing some action, and much less on who the action-initiator is. If the focus is on the potential, the event is usually generic and impersonal, as in (8), where the taste of water is compared to that of wine. If the focus is on the result, the event can become more passive-like when a personal agent is allowed for explicit coding, as in (8).

\[(8) \text{ma-nanum zuvum zuv azu Raq} d\]

\[
\text{MA-drink water this like wine} \]

\[
\text{‘This water tastes like wine.’} \quad \text{(Huang & Sung 2008:167)}
\]
Naturally reciprocal events Naturally reciprocal events are those which necessarily imply two (or more) entities acting on each other, such as events of meeting, marrying, or sticking, as in (10). Given the multiple functions of MA-verbs, I believe (9) might also permit an anticausative interpretation (e.g. a bill being stuck onto the table), though the potential ambiguity is not mentioned in Huang and Sung (2008). Further investigation is needed to verify this.

(10) ma-quppit ya klisiw a zu
MA-stick NOM money LIG this
‘The money stuck together.’ (Huang & Sung 2008:170)

Naturally collective events Naturally collective events are those which necessarily involve multiple participants acting together, a prototypical example being events of gathering. An event of gathering won’t be “gathering” if there is only one participant involved. (11) illustrates an event of gathering in Kavalan. Like (9), (10) might also have an anticausative interpretation, meaning “Children were gathered near the pond.” But then again, more consultant help is needed to verify the potential ambiguity.

(11) yau ta kinil-an na btuq 'nay sunis 'nay ma-lisimpu
EX LOC side-LOC GEN pond that child that MA-gather
‘Children gathered near the pond.’ (Huang & Sung 2008:170)

2.3 MA-verbs vs LV verbs

Although both MA-verbs and LV verbs describe patient-oriented events, they differ as least in two respects, one formal and the other functional. Formally, the genitive agent is optional for MA-verbs, as in (12), but obligatory for LV verbs, as shown in (13).

(12) a. ma-ziut-na ya taquq 'nay ta paRin-an
MA-hang-3SG GEN NOM chicken that LOC tree-LOC
‘He hung the chicken on the tree.’

b. ma-ziut ya taquq 'nay ta paRin-an
MA-hang NOM chicken that LOC tree-LOC
‘That chicken hung on the tree.’ (Huang & Sung 2008:161)
(13) a. ziut-an-na ya taquq ’nay ta paRin-an
hang-IV-3SG.GEN NOM chicken that LOC tree-LOC
‘He hung the chicken on the tree.’
b. * ziut-an ya taquq ’nay ta paRin-an
hang-IV NOM chicken that LOC tree-LOC
‘That chicken hung on the tree.’ (Huang & Sung 2008:161)

Functionally, the genitive agent for MA-verbs tends to be unintentional or has no control over the action while that for LV verbs typically carries out the action on purpose or has full control over it, as contrasted in (14).

(14) a. ma-bassing-ku aizipna
MA-sneeze-1SG.GEN 3SG.NOM
‘I sneezed in front of him.’
b. bassing-an-ku aizipna
sneeze-IV-1SG.GEN 3SG.NOM
‘I sneezed in front of him (on purpose).’ (Huang & Sung 2008:170)

Not surprisingly, the formal and functional differences between MA-verbs and LV verbs are correlated: intentional agent calls for obligatory coding while unintentional agent does just fine with optional coding, presumably because the former is held more accountable for the outcome of the action than the latter and that higher accountability gives rise to higher pragmatic prominence, hence greater chance for coding.

3 Amis

3.1 Voice morphology

Traditional descriptions of Amis voice morphology assume four categories: actor voice (AV) marked by mi-, ma-, or um-, patient voice (PV) marked by -en, locative voice (LV) marked by -an, and instrument voice (IV) marked by sa-, all of which are reflexes of Proto-Austronesian. However, Wu (2006, 2007) recently revised this four-way distinction and argued for a dichotomic analysis of voice system in Amis, where traditional AV remains intact but the other three voice categories are subsumed under the so-called “undergoer voice” (UV). In her analysis, traditional PV is a “plain” UV while traditional LV and IV are applicative constructions where a “marked undergoer” (either location or instrument) is chosen. The applicative analysis, she argues, better accounts for the co-occurrence of traditional IV and PV, as in (15).

(15) aka sa-pi-lüek-en k-u-ra caklis t-u-ra kilang
NEG.IMP IV-PF-chop.tree-PV NOM-CN-that ax DAT-CN-that tree
‘Don’t use that ax to chop down the tree!’ (Wu 2007:110)

Recall that Huang and Sung (2008) also use the term “undergoer voice” for Kavalan, but in a different sense. By the same term Huang and Sung (2008) refers mostly to patient role whereas Wu (2006, 2007) means a macrorole that encompasses patient, goal, location, and instrument.
Given the Amis data, it might be on the right track to separate two layers of operation, i.e. what she calls “voice system” and “applicative system”, but even the proposed voice dichotomy fails to explain the co-occurrence of traditional AV and LV (or locative applicative in her term), as in (16).

(16) \text{mi-radiw-an aku k-u-ni}  \\
\text{MI-song-LA 1SG.GEN NOM-CN-this}  \\
‘I sang this.’ (Patient-locative applicative)  \\
‘I sang for (getting) this.’ (Goal-locative applicative)  \\
(Wu 2007:120)

Her solution to this unexpected situation is to posit two types of \text{mi}: mysterious \text{mi} (glossed as MI), as in (16), and actor voice marker \text{mi} (glossed as AV), as in (17).

(17) \text{mi-radiw kaku t-u-ni a radiw}  \\
\text{AV-song 1SG.NOM DAT-CN-this LIG song}  \\
‘I am going to sing this song.’  \\
(Wu 2007:120)

Thus, from her point of view, the \text{mi} in (17) is a voice marker, but the mysterious \text{mi} in (16) is not. This dual treatment of \text{mi} is unfortunate, for it does not capture the semantic generalization she proposes for MI-verbs. That is, in addition to plain activity reading, MI-verbs optionally have a motional/purposive reading, which is shared by both of her two types of \text{mi}, as in (18).

(18) a. \text{mi-ka-ranam kaku i ci kaka-an}  \\
\text{AV-KA-have.breakfast 1SG.NOM PREP PNM older.sibling-DAT}  \\
‘I am going to Brother’s place to have (a special) breakfast.’  \\
(Wu 2007:122)

b. \text{mi-cikay-an aku i pitilidan k-u-ni a cuidad}  \\
\text{MI-run-LA 1SG.GEN PREP school NOM-CN-this LIG book}  \\
‘I ran to school for (getting) this book.’  \\
(Wu 2007:124)

The same unfortunate dual treatment is also found in her analysis of MA-verbs, which are sometimes AV verbs, as in (19a), and sometimes (plain) UV verbs, as in (19b).

(19) a. \text{ma-ulah 0-ci sawmah (i) ci panay-an}  \\
\text{AV-love NOM-PNM Sawmah PREP PNM Panay-DAT}  \\
‘Sawmah likes Panay.’  \\
(Wu 2007:131)

b. \text{ma-patay n-i aki k-u-ra fafuy}  \\
\text{UV-dead GEN-PNM Aki NOM-CN-that pig}  \\
‘That pig was killed by Aki.’  \\
(Wu 2007:135)

Like the case in Kavalan, the dual analysis of MA-verbs in Amis is based on morphosyntactic patterns: if the non-pivot argument of a MA-verb is marked by genitive, that verb is considered UV; if not, then it is an AV verb. This formal perspective to MA-verbs loses the descriptive elegance that could have been gained from a semantic-functional perspective, which is the topic of next section.
3.2 Semantics of MA-verbs

Wu (2006, 2007) distinguishes two types of ma- based on the voice dichotomy she proposes (AV and UV), but four types of ma- based on verbal semantics and logical structure, as in (20), with corresponding examples given in (21).

(20)  
a. ma-1 (ma- activity verbs): \[\text{do'} (x, [\text{pred'} (x, (y))])\]  
b. ma-2 (ma- result state verbs): \[(\text{INGR/BECOME}) \text{pred'} (x, (y))\]  
c. ma-3 (ma- transient/plain state verbs): \[\text{pred'} (x, (y))\]  
d. ma-4 (ma- active/causative accomplishment):  
\[...\text{do'} (x, [\text{pred'} (x, y)]) \ldots(\text{INGR/BECOME}) \text{pred'} (x, y)\]  
(Wu 2007)

(21)  
a. ma-tayal  
NEUT-work 1SG.NOM  
'I am working.'  
(Wu 2007:122)

b. ma-ruhem tu k-u pawli  
NEUT-ripe PERF NOM-CN banana  
'The banana is ripe (just now).'</n  
(Wu 2007:131)

c. ma-laluk ø-ci sawmah  
NEUT-diligent NOM-PNM Sawmah  
'Sawmach is diligent.'  
(Wu 2007:131)

d. ma-patay n-i aki k-u-ra fafuy  
UV-dead GEN-PNM Aki NOM-CN-that pig  
'That pig was killed by Aki.' (=19b)  
(Wu 2007:135)

Notice that Wu’s first three types of MA-verbs (i.e. ma-1 through ma-3) are those that can only take one argument (i.e. the pivot), and based on this fact she creates another mysterious category “neutral” for them (hence the gloss NEUT), just as she does for the mi- that goes with -an (see 16). Her rationale is that the sole argument of these verbs is always marked by nominative, so “this is no voice function associated with these markers (Wu 2007:100).” In other words, her semantic classification of MA-verbs does not even take AV MA-verbs (as in 19a) into consideration. All these undesired messy issues can be eliminated if we investigate the functions of ma- in light of cross-linguistic middle voice semantics.

Huang and Sung (2008) identify the following middle situation types for MA-verbs in Amis:

**Spontaneous events**  Only ma-, but never mi-, can be used in spontaneous events, such as a rock-cracking event in (22). In addition, (21b) above can also be considered an example of spontaneous events.³

³Maybe “ripen” is a better gloss for ruhem than ‘ripe’.
ma-ngela’/*mi-ngla’ tu ku ongcuy
MA-leak/AV-leak PERF NOM huge.rock
‘The huge rock racked.’ (Huang & Sung 2008:176)

Spontaneous events are not only restricted to naturally-occurring events like those of cracking, rotting, or ripening, but also include events where no intentional agent is implied, as in (23), where the bottle is conceptualized to break naturally, rather than caused to break by an intentional agent.

ma-ari’ tu ku talid
MA-break PERF NOM bottle
‘The bottle broke.’ (Huang & Sung 2008:176)

**Introverted bodily action events** Introverted bodily action events are those which involve the human body and where the action and its effect happen (in most cases) within the action-initiator, such as events of crying and working. (21a) above is such an example.

**Passive-like events** Both facilitative and posture events call for the use of ma-, as illustrated in (24) and (25) respectively.

(24) a. fangcal ma-pa-’aca ku kiyafes
good NEUT-CAUS-buy NOM guava
‘Guavas are easy to sell.’ (Huang & Sung 2008:177)

(25) a. ma-teli i kayakay ku eecay a fekloh
MA-place LOC bridge NOM one LIG stone
‘A stone lies on the bridge.’ (Huang & Sung 2008:177)

**Mental events** The most common types of mental events are those of emotion, cognition, and perception (ECP). The first two types are illustrated in (26).

(26) a. ma-’osi kaku cingman
MA-hate 1SG.NOM 3SG.ACC
‘I hate him.’ (Huang & Sung 2008:177)

b. ma-fana’ kaku cingman
MA-know 1SG.NOM 3SG.ACC
‘I know him.’ (Huang & Sung 2008:178)

Combining Wu’s and Huang & Sung’s findings, I summarize the role-relation alignment patterns of the arguments of MA-verbs in Amis as in Table 1. When subsumed under the semantic notion of middle voice, Wu’s neutral, AV, and UV MA-verbs all demonstrate the generalization that the target of effect (the participant at which an action is directed) is marked by nominative while the source of effect, if present, is marked...
Table 1: Alignment patterns of the arguments of MA-verbs in Amis

<table>
<thead>
<tr>
<th>Category</th>
<th>NOM</th>
<th>GEN (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Spontaneous events ((ma-2))</td>
<td>theme</td>
<td>N/A</td>
</tr>
<tr>
<td>Passive-like events</td>
<td>patient</td>
<td>N/A</td>
</tr>
<tr>
<td>Introverted bodily action events ((ma-1))</td>
<td>actor</td>
<td>N/A</td>
</tr>
<tr>
<td>AV</td>
<td>NOM</td>
<td>LOC</td>
</tr>
<tr>
<td>Emotional events</td>
<td>experiencer</td>
<td>stimulus</td>
</tr>
<tr>
<td>Cognitive events</td>
<td>cognizer</td>
<td>cognizee</td>
</tr>
<tr>
<td>UV</td>
<td>NOM</td>
<td>GEN (optional)</td>
</tr>
<tr>
<td>Anticausative ((ma-4))</td>
<td>causee</td>
<td>causer</td>
</tr>
<tr>
<td>Middle Voice</td>
<td>NOM</td>
<td>OBL</td>
</tr>
<tr>
<td></td>
<td>TARGET of EFFECT</td>
<td>SOURCE of EFFECT</td>
</tr>
</tbody>
</table>
by oblique. Some explanations for this generalization are in order here. First, the actor role may not seem to be typical of an effected participant, but notice that it is the actor of introverted bodily action, the effect of which usually goes back to the actor. Since the actor is both the source and target of effect at the same time, the nominative marking is motivated.

Second, the experiencer or cognizer of mental events are target of effect in the sense that they are the participants that actually sense the emotion or cognition and are effected by its consequences. In a hating event, for instance, it is the hater who experiences and is effected by the hatred (e.g. getting angry when seeing the hated one), which the hated one may not even be aware of.

Third, the stimulus and cognizee in (26) consist of cingra ‘3sg’ and -an, which is glossed as ACC by (Huang & Sung 2008). But the same suffix is treated as DAT by Wu (2006, 2007), as in (27).

(27) ma-ulah kaku ci panay-an
    MA-like 1SG.NOM PNM Panay-DAT

‘I like Panay.’

(Wu 2007:119)

Given the ergative nature in Amis (and most other Formosan languages), the accusative analysis is probably not accurate, and the dative analysis is problematic too since no other Formosan languages have been reported to have a dative category that is separate from locative. So a better analysis for -an may be locative, which is a common type of obliques.

Finally, genitive that marks agent or causer is usually considered a core case (hence not oblique) among Austronesianists, but notice that there is a crucial difference between genitive in MA-verb constructions and genitive in other non-actor voice constructions (i.e. traditional PV, LV, and IV). Specifically, while genitive for the former construction is optional, genitive for the latter is obligatory. The optionality of the causer of anticausative events may suggest a non-core nature of this special kind of genitive phrase, which can be analogized to the English by-phrase.

Therefore, compared with Wu’s two-way constructional (AV and UV) or four-way semantic classification (ma-1 through ma-4) of Amis MA-verbs, Table 1 presents a more coherent and elegant description for MA-verbs in terms of both their semantic functions and role-relation alignment patterns. What Table 1 does not cover, though, is Wu’s ma-3 (transient/plain state verbs), which might derive from the resultative reading often associated with anticausative events. The connection between resultative and plain stative meanings expressed by MA-verbs goes beyond the scope of this current report, but is definitely a topic worth pursuing in the future.

MA-verb and typical PV verb (marked by -en in Amis) constructions both select patient as the pivot argument, but they differ in two crucial aspects. First, MA-verbs usually describe a generic event whereas PF verbs an actually-occurring specific event, as contrasted in (28).

(28) a. fangcal ma-pa-‘aca ku kiyafes
    good MA-CAUS-buy NOM guava

‘Guavas are easy to sell.’
b. fangcal pa-’aca-en ku kiyafes
good CAUS-buy-PV NOM guava

‘Guavas were easy to sell.’ (Huang & Sung 2008:177)

Second, the agent for MA-verbs is non-intentional whereas that for PF verbs is intentional, as illustrated in (29).

(29) a. ma-pa-’oning aku ku kuahecalay a riko’
MA-CAUS-dirty 1SG.GEN NOM white LIG clothes

‘I got the white clothes dirty.’

b. pa-’oning-en aku ku kuahecalay a riko’
CAUS-dirty-PV 1SG.GEN NOM white LIG clothes

‘I made the white clothes dirty.’ (Huang & Sung 2008:178)

4 Paiwan

4.1 Voice morphology

Like Amis, Paiwan has the traditional four voice categories. Chang (2000), for instance, identifies the following voice affixes:

(30) a. Actor voice (AV): ma-; ø; -en- (or m-; or -en-)

b. Patient voice (PV): -in- (or in-); -in (or -en)

c. Locative voice (IV): -an

d. Beneficiary/Instrumental voice (BV/IV): si-

(Chang 2000:94)

She assumes that ma- is one of the variants of AV markers and argues that verbs marked by it are stative, as in (31), which is taken from Wang (2005).

(31) a. ma-zeli-anga ti palang
MA-tired-PERF NOM Palang

‘Palang got tired.’

b. ma-puljaw-anga ti palang
MA-drunk-PERF NOM Palang

‘Palang got drunk.’ (Wang 2005:22)

Although (31) does illustrate the stative nature of ma-, but this is not the whole story about it, as we shall see in the next section on the semantics of MA-verbs.

4.2 Semantics of MA-verbs

Based on Huang and Sung (2008), the following middle situation types are identified for Paiwan MA-verbs:
**Spontaneous events** (32) illustrates an event of natural rotting and an event of spontaneous breaking.

(32) a. *ma-vuk a vutulj*
    MA-rot NOM meat
    ‘The meat rotted.’

b. *ma-pete’-anga zua papuhana’an*
    MA-break-PERF that vase
    ‘The vase broke.’

(Huang & Sung 2008:173)

**Introverted bodily action events** A self-rolling event, as in (33), suffice to illustrate introverted bodily action events.

(33) *ma-ru’u ti palang*
    MA-roll PNM Palang
    ‘Palang himself rolled down.’

(Huang & Sung 2008:174)

Notice that the rolling event expressed by *ma-* above is not stative at all, contrary to Chang’s (2002) characterization of it. Instead, the event describes a dynamic action, but the effect of the action accrues back on the action-initiator. This semantic aspect of *ma-* would be expected, rather than exceptional, if the middle voice category were recognized.

**Passive-like events** A facilitative event, such as (34), is a common example of passive-like events.

(34) *ma-dele a ma-‘iljang a vuclaceday a kava*
    MA-easy LIG MA-dirty NOM white LIG clothes
    ‘White clothes easily get dirty.’

(Huang & Sung 2008:173)

**Naturally reciprocal events** In (naturally) reciprocal events, Paiwan prefers reduplicating a *Ca* syllable between *ma-* and the verb root, of which *C* is the first consonant, as in (35).

(35) *na ma-ta-tuvaday-anga tiadu*
    PERF MA-RED-separate-PERF 3PL.NOM
    ‘The separated from (or divorced) each other.’

(Huang & Sung 2008:174)

**Naturally collective events** An event of gathering is a typical instance of naturally collective events, as in (36).

(36) *i tatan a ma-‘epu-e’pu a situ*
    LOC pond LIG MA-gather-RED NOM student
    ‘Students gathered at the pond.’

(Huang & Sung 2008:173)
4.3 MA-verbs vs PV verbs

MA-verbs and PV verbs (marked by -in/-in- or -in/-en) share the common feature that their pivot argument is typically an effected participant that undergoes some sort of action, but they differ in two crucial aspects, one formal and the other functional. Formally, they show different degree of tolerance with an explicit agent/causer phrase. PF verbs are much more readily to tolerate an explicit agent than MA-verbs do, as contrasted in (37), where (37d) is unacceptable due to the presence of the genitive agent phrase.

(37) a. `<in>uleng tua makalijaw azua cepeng
   <PV>cover OBL cloth that basket
   ‘That basket was covered with a cloth.’

   b. `<in>uleng tua makalijaw azua cepeng ni palang
      <PV>cover OBL cloth that basket GEN Palang
      ‘Palang covered the basket with a cloth.’

   c. ma`-uleng tua makalijaw azua cepeng
      MA-cover OBL cloth that basket
      ‘That basket was covered with a cloth.’

   d. *ma`-uleng tua makalijaw azua cepeng ni palang
      MA-cover OBL cloth that basket GEN Palang
      Intended: ‘Palang covered the basket with a cloth.’

   (Huang & Sung 2008:175)

Moreover, while it is merely a matter of tendency that MA-verbs do no permit the genitive agent phrase, it becomes a rule when the agent is pronominal (see Huang & Sung 2008:175), presumably because pronominal agent is higher in pragmatic significance, which is incongruent with the prototypical middle semantics that MA-verbs express. Thus, pronominal agent can collocate with PF verbs, but never with MA-verbs, as contrasted in (38).

(38) a. ku-p<in>e`te’ a papuhanaan
    1SG.GEN<PV>break NOM vase
    ‘I broke the vase.’

   b. *ku-ma-pete’ a papuhanaan
    1SG.GEN-MA-break NOM vase
    Intended: ‘I broke the vase.’

   (Huang & Sung 2008:175)

Functionally, even if no genitive agent phrase is expressed, there is an implied agent who is responsible for the action expressed by PV verbs whereas no such agent is implied in the case of MA-verbs, as contrasted in (39).
(39) a. ma-ru’u ti palang
   MA-roll PNM Palang
   ‘Palang himself rolled down (the hill because of his carelessness).’ (=33)

b. r<in>u’u ti palang
   <PV>roll PNM Palang
   ‘Palang was rolled down (the hill by others).’ (Huang & Sung 2008:174)

5 Puyuma

5.1 Voice morphology

Puyuma has the four traditional voice categories, actor voice (AV) marked by m-, -em-, or ma-, patient voice (PV) marked by -aw, locative voice (LV) marked by -ay, and referential (or circumstantial) voice (RV) marked by -anay. Teng (2008) reanalyzes AV markers into an intransitive marker (ITR) and all the other three voice markers into transitive markers (TR), dubbed as TR1, TR2, and TR3, which correspond to traditional PV, LV, and RV respectively. (40) is illustrative of her reanalysis.

(40) a. s<em>alretrag=ku    dra enay
   <ITR>pour.out=1SG.NOM ID.OBL water
   ‘I poured out some water.’

b. ku=salretrag-aw  na  enay i babulru’
   1SG.GEN=pour.out-TR1 DF.NOM water LOC yard
   ‘I poured out the water in the yard.’

c. ku=salretrag-ay  dra enay nu=tranguru’
   1SG.GEN=pour.out-TR2 DF.NOM water 2SG.POSS=head
   ‘I poured some water on your head.’

d. ku=salretrag-anay=la  na  enay
   1SG.GEN=pour.out-TR3=PERF DF.NOM water
   ‘I have poured out the water.’ (Teng 2008:161)

This reanalysis of voice markers into (in)transitive markers reveals an ergative view on Puyuma syntax, which is line with the findings in many other Formosan languages (e.g. see Huang (1994) for Atayal, Liao (2002) for Kavalan, Wang (2004) for Thao, and Chang (2011) for Tsou). Nevertheless, Teng (2008) still shows a bias in favor of traditional non-actor voice (NAV) markers (or transitive markers in her term) by subcategorizing them based on the thematic role of the pivot argument while at the same time lumping all the intransitive markers together, regardless of the the consistent correspondences between the specific intransitive marker used and the the thematic role of the pivot argument. For instance, when the same verb root can collocate with more than one intransitive marker, m- selects agent but ma- selects theme/patient as the pivot argument, as contrasted in (41).
Thus, Teng (2008) should have subcategorized different intransitive voice markers based on the semantic roles of the pivot argument, just as she did for transitive voice markers as in (40). In fact, MA-verbs deserve an independent category within intransitive markers, for their pivot argument is typically an effected participant that undergoes some action or state, with the source of effect coming either from the same participant or some other underspecified participant. From here we move on to the semantics of MA-verbs.

5.2 Semantics of MA-verbs

In terms of morphosyntax, there are two types of MA-intransitives: those which have bivalent counterparts (marked by -en/-en-) and those which do not, as shown in Table 2 and Table 3 respectively.

Some clarifications are in order here. First, in both groups there are members that are not marked by ma- in the realis form, and they are all adjectival verbs, such as bias ‘hot’ and buhlay ‘beautiful’. We know they should be grouped together with MA-verbs because they show the same irrealis/imperative or bivalent verb patterns as MA-verbs. The absence of ma- in those verbs might be a case of MA-attrition, which gives rise to the so-called zero-marked AV marker. Second, bivalent verbs, though allowed to take two arguments, are intransitive in the sense that the P argument, when present, is not an individuated, fully effected, and definite one, unlike the one in the three transitive constructions (TR1, TR2, and TR3). Thus, given the ergative nature of Puyuma syntax as well as the indefiniteness of the P argument, bivalent verbs marked by -en/-en- (AV form for short) should be better understood as antipassive in the sense of Shibatani (2006). As for monovalent verbs (MA-form for short) that alternate with bivalent ones, they are more like anticausative verbs because the pivot argument is typically a patient that undergoes an action requiring an external causer. For instance, events of cooking (ma-deru ‘cooked’) in most cases do not happen without a causer that initiates the cooking.

<table>
<thead>
<tr>
<th>Stem</th>
<th>Monovalent (MA-form)</th>
<th>Bivalent (AV form)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ba’aw</td>
<td>ba’aw ‘alive’</td>
<td>b&lt;en&gt;a’aw ‘save’</td>
</tr>
<tr>
<td>bias</td>
<td>bias ‘hot’</td>
<td>b&lt;en&gt;iias ‘make hot’</td>
</tr>
<tr>
<td>deru</td>
<td>ma-deru ‘cooked’</td>
<td>d&lt;em&gt;eru ‘cook’</td>
</tr>
<tr>
<td>sede’</td>
<td>ma-sede’ ‘absent’</td>
<td>s&lt;em&gt;ede’ ‘resign’</td>
</tr>
<tr>
<td>bu’utr</td>
<td>ma-bu’utr ‘extinguished’</td>
<td>b&lt;en&gt;a’utr ‘stop’</td>
</tr>
<tr>
<td>ba’itr</td>
<td>ma-ba’itr ‘burned’</td>
<td>b&lt;en&gt;a’itr ‘burn’</td>
</tr>
</tbody>
</table>
Table 3: One-form intransitive verbs in Puyuma (Teng 2008:125)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Realis</th>
<th>Imperative</th>
<th>Irrealis</th>
</tr>
</thead>
<tbody>
<tr>
<td>-remeng</td>
<td>ma-remeng</td>
<td>ka-remeng</td>
<td>ka-ra-remeng</td>
</tr>
<tr>
<td>-sepel</td>
<td>ma-sepel</td>
<td>ka-sepel</td>
<td>ka-sa-sepel</td>
</tr>
<tr>
<td>bulray</td>
<td>bulray</td>
<td>ka-bulray</td>
<td>ka-ba-bulray</td>
</tr>
<tr>
<td>sadru</td>
<td>sadru</td>
<td>ka-sadru</td>
<td>ka-sa-sadru</td>
</tr>
</tbody>
</table>

(either a person or an instrument). Third, Table 2 shows once again the systematic semantic differences between monovalent MA-verbs and bivalent EM/EN-verbs, and thus the need to subcategorize these two types of intransitives.

In terms of semantics, on the other hand, MA-verbs express a whole range of situation types that are commonly expressed by a middle voice marker in languages where such a voice category is recognized. But since Teng (2008) does not recognize middle voice in Puyuma, I had to go through her monograph and look for all the instances of MA-verbs. The situation types that Puyuma MA-verbs express are then summarized in (42), where the page numbers in Teng (2008) are indicated in parentheses.

\[(42)\] Situation types expressed by Puyuma MA-verbs

a. Plain state events: *ma-’idrung ‘old’ (p.59); ma-’itrilr ‘stingy’ (p.124); ma-rwuwa ‘able’ (p.122)
b. Anticausative events: *ma-bu’utr ‘extinguished’ (p.126); ma-’itr ‘burned’ (p.126); ma-deru ‘cooked < MA-cook’ (p.126)
c. Resultative events: *ma-lriay ‘drunk’ (p.189)
d. Introverted bodily action events: *ma-trangis ‘cry’ (p.122); ma-reîÁ Żani ‘harvest’ (p.121)
e. Translational motion events: *ma-ragan ‘move up’ (p.189)
f. Emotional events: *ma-biring ‘jealous’ (p.124); ma-sepel ‘upset’ (p.125)
g. Cognitive events: ma-ladrám ‘know’ (p.206); ma-ranger ‘want’ (p.254)
h. Speech action events: ma-’engay ‘tell’ (p.121); ma-drekî ‘scold’ (p.122)
i. Collective events: ma-da-dikes ‘hold together < MA-RED-hold’ (p.175)
j. Naturally reciprocal events: ma-dratikul ‘fight (with each other)’ (p.123)
k. Reciprocal events: ma-da-da’ul ‘inform each other < MA-RED-inform’ (p.173); ma-pa-pingitr ‘scratch each other < MA-RED-scratch’ (p.174)

(42) shows that “anticausative” is not general enough to cover all the situation types expressed by MA-verbs. For instance, *ma-trangis ‘cry’ does not predicate on a participant that is caused to cry. Rather, “middle voice” better captures the wide range of situation types where MA-verbs are applicable in the sense that the effect of action is restricted to the referent of the pivot argument, whether it is the action-initiator (e.g. as in bodily action events) or action-recipient (e.g. as in anticausative events).
### 5.3 Transitive, passive, and anticausative formatives

In addition to MA-verbs, there are three other verb types that also select patient/causee as the pivot argument, termed by Teng (2008) as Transitive 1 (traditional PV, marked by -aw), ki-Passive, and mu-Anticausative, as shown in (43).

(43) a. \( ku=sulud-\text{aw} \) na \( \text{katengdraw-an} \)  
\[ 1\text{SG.GEN}=\text{push-TR1 DF.NOM sit-NMLZ} \]  
‘I pushed the chair away.’ [Transitive 1]  
b. \( \text{ki}=-\text{susu-sulud}=\text{ku} \)  
\[ \text{PASS-RED-push}-\text{1SG.NOM ID.OBL person} \]  
‘I got pushed by others.’ [ki-Passive]  
c. \( \text{tu} '='\text{etr}'\text{etr}-\text{anay} \) \( \text{i} \) \( \text{mu-sulud} \) na \( \text{katengdraw-an} \)  
\[ 3\text{GEN}=\text{jostle-TR3 TOP ACAUS-push DF.NOM sit-NMLZ} \]  
‘He jostled, and so the chair was pushed away.’ [mu-Anticausative]  

(Teng 2008:184)

The differences among these three constructions, she explains, lie in the presence or absence of the control or volitionality of both the actor and the patient. Transitive 1 differs from ki-Passive and mu-Anticausative in that the actor in the former case is volitional while that in the latter two cases is not. Also, “while the patient subject of an anticausative is non-volitional, the patient subject of a passive at least exercises a degree of intention.” (Teng 2008:188) These two points are summarized in Table 4, where the plus and minus symbol respectively indicate presence and absence of volitionality.

Interestingly, like MA-verbs, MU-verbs can also express some middle situation types, such as self-propelled translational motion events in (44a) and spontaneous events in (44b).

(44) a. \( \text{mu-la} '='\text{utr} \) na \( \text{kawi} \)  
\[ \text{ACAU5-float ID NOM timber} \]  
‘The timber is floating (on the water).’  
(Teng 2008:179)  
b. \( \text{mu-bu} '='\text{utr}=\text{la} \) na \( \text{lawlaw} \)  
\[ \text{ACAU5-stop=PERF ID.NOM lamp} \]  
‘The lamp went out.’  
(Teng 2008:180)

Moreover, mu-Anticausative allows the presence of an actor/causer phrase, which is marked by oblique, just like the case in ki-Passive. Given the data available in Teng (2008), it seems that the actor/causer of mu-Anticausative is usually inanimate, such as
“road” and “firecrackers” in (45) below, but that of *ki*-Passive can be humans but typically indefinite, as in (43b) above.

(45) a. *mu*-se’d  
  dr  
  *da*  
  *ran*  
  tu=dare’
  ACAUS-interval  ID.OBL  road  3POSS=earth

   ‘His land was separated by a road.’  (Teng 2008:190)

b. *mu*-purur  
  na  
  suan  
  dra  
  paletrurukan
  ACAUS-escape  DF.NOM  dog  ID.OBL  firecracker

   ‘The dog was frightened away because of firecrackers.’  (Teng 2008:179)

Teng (2008) does not compare *ma*-Intransitive with *mu*-Anticausative or *ki*-Passive, so it is not clear how MA-verbs fit into the picture in Table 4. But given the label “monovalent” that she gives to MA-verbs, I assume they do not allow the presence of any actor/causer phrase, which separates them from MU-verbs andKI-verbs. If this is the case, we would then have a continuum of three undergoer-oriented constructions: (i) *ki*-Passive is most passive-like because it takes human actor/causer; (ii) *ma*-Intransitive is most middle-like because it expresses a wide range of middle situation types and does not allow the expression of actor/causer; (iii) *mu*-Anticausative is situated between the two extremes because it expresses some middle situation types and at the same time permits the presence of actor/causer, though typically an inanimate one.

6 Rukai

6.1 Voice morphology

Unlike other Formosan languages, Rukai is probably the only one that does not have such traditional voice categories as AV, PV, LV, and RV. Instead, it illustrates a voice dichotomy between what Zeitoun (2007) calls “active” (marked by *o*) and “passive” (marked by *’i*), as in (46).

(46) a. *’olr*  
  *’a*  
  *o-ka’ace*  
  *ta’olro*
  snake  TOP  ACT-DYN.NFIN.bite  dog

   ‘As for the snake, (it) bit the dog.’

b. *’a*  
  *i-ka’ace*  
  *’olr*  
  *’a*
  dog  TOP  PASS-DYN.NFIN.bite  snake

   ‘As for the dog, (it) was bitten by the snake.’  (Zeitoun 2007:144)

Within active, there is another dichotomy between so-called “dynamic” (marked by *o*) and “stative” (marked by *ma*), as in (47).

(47) a. *o’-ongolo-nغا*  
  *vavaa*  
  *ama-li*
  DYN.FIN-drink-already  wine  father-1SG.GEN

   ‘My father has drunk wine.’

b. *ma-ha’ao*  
  *lroolai*  
  *ana*  
  *tamatama*
  STAT.FIN-scold  child  that  middle-aged.man

   ‘That middle-aged man scolds/scolded (the) children.’  (Zeitoun 2007:329)
Table 5: Two types of MA-verbs in Rukai (Zeitoun 2007:141-42)

<table>
<thead>
<tr>
<th></th>
<th>Dynamic</th>
<th>Stative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o-kilisi</td>
<td>‘tighten’</td>
<td>ma-kilisi ‘be tightened’</td>
</tr>
<tr>
<td>o-visare</td>
<td>‘damage’</td>
<td>ma-visare ‘be damaged’</td>
</tr>
<tr>
<td>o-kane</td>
<td>‘eat’</td>
<td>ma-kane ‘be eaten’</td>
</tr>
<tr>
<td>to-takolra</td>
<td>‘do sth., bad’</td>
<td>ma-takolra ‘be bad’</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to-dhao</td>
<td>‘make many’</td>
<td>ma-dhao ‘many’</td>
</tr>
<tr>
<td>to-toalrai</td>
<td>‘make big’</td>
<td>ma-toalrai ‘big’</td>
</tr>
</tbody>
</table>

Table 6: Alternative case marking patterns of MA-verbs in Rukai (Zeitoun 2007:399)

<table>
<thead>
<tr>
<th>Stem</th>
<th>Gloss</th>
<th>Verb + Nom</th>
<th>Verb + ObI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ma-rilai</td>
<td>‘be slim’</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>ma-eleme</td>
<td>‘be poor’</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>ma-taipi</td>
<td>‘be flattened’</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>ma-kolidhi</td>
<td>‘be scratched’</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>ma-ekreme</td>
<td>‘be dizzy’</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ma-pilai</td>
<td>‘be tired’</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

6.2 Semantics of MA-verbs

In terms of morphosyntax, there are at least two types of MA-verbs: those whose dynamic counterparts are marked by o- and those whose dynamic counterparts are marked by to-, as illustrated in Table 5. It seems that the differential markers for dynamic verbs correlate with the semantics of MA-verbs. Specifically, MA-verbs whose dynamic counterparts are marked by o- are anticausative verbs (Group 1) whereas those whose dynamic counterparts are marked by to- are plain stative verbs (Group 2). These two types of MA-verbs are reminiscent of those seen in Amis and Puyuma earlier.

If we assume monovalent verbs in Rukai, both dynamic and stative, are intransitive in nature, then Rukai would be a language that shows split intransitivity, where agentive S is marked by o- and patientive S by ma-. Compare, for instance, o-alop ‘hunt’ and ma-caleme ‘rotten’ (see Table 7 for more). Interestingly, split intransitivity takes place not only across verbs marked differently, but also within verbs that share the same marking. Specifically, there are a small number of monovalent MA-verbs whose sole argument can be marked by nominative, oblique, or both, depending on the verb stems. Table 6 shows the alternative case marking patterns of MA-verbs. Based on the limited data available, it seems that the differential marking again correlates with the semantics of MA-verbs. Those that only take nominative are plain stative verbs, those that only take oblique are anticausative or unaccusative verbs, and those that take both are experiential verbs.

However, MA-verbs are more than plain stative, anticausative, or experiential. Based on Zeitoun (2007), I identify the following situation types for Rukai MA-verbs in (48).


a. Plain stative events: ma-rilai ‘slim’; ma-eleme ‘poor’; ma-kocingai ‘difficult, expensive’; ma-dhao ‘numerous’

b. Experiential events: ma-calokocoko ‘have a headache’; ma-akalrame ‘thirsty’

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c. Spontaneous events: *ma-caleme* ‘rotten (of sweet potatoes)’; *ma-eceme* ‘wither’

d. Meteorological events: *ma-dhelrereme* ‘cloudy’; *ma-dhalremedheme* ‘dark’

e. Cognitive events: *ma-rimoro* ‘forget’; *ma-sarivoo* ‘miss’

f. Emotional events: *ma-dhalame* ‘like’; *ma-lavahe* ‘envy’

g. Speech action events: *ma-ha’aoco* ‘scold’

Once again, we see MA-verbs are used in situation types commonly expressed by middle markers across languages.

### 6.3 Active, passive, and anticausative formatives

Like Puyuma, Rukai has two other undergoer-oriented formatives aside from MA-verbs. Corresponding to *ki*-Passive in Puyuma, there is ‘*i*-Passive in Rukai. Both dynamic and stative verbs can be passivized, but passivization only applies to those that take two arguments, not to those which take only one, as illustrated in Table 7.

In addition, Zeitoun (2007) draws an analogy between Puyuma *mu*- and Rukai *mo*-, which are both considered “anticausative.” (49) shows the contrast between dynamic active (marked by *o*) and anticausative (marked by *mo*-).

(49) a. *o-dhaolo-nga-lr ao*  
*ta-poli la ta-eclrange*  
DYN.FIN-mix-already-1SG.NOM INAL-white and INAL-black  
‘I mixed black and white together.’ [Dynamic active]

b. *mo-dhaolo-nga*  
*ta-poli la ta-eclrange*  
DYN.FIN-mix-already INAL-white and INAL-black  
‘White and black mixed together.’ [*mo*-Anticausative] (Zeitoun 2007:245)

While the semantic contrast between dynamic active and anticausative is straightforward, the one between so-called stative active and anticausative is not. Zeitoun (2007) gives the following minimal pair in (50), but does not explain how MU-verbs semantically differ from MA-verbs, other than try to show their difference in the English translations. As a matter of fact, little attention is paid to MU-verbs in her grammar of Rukai, where only a brief section is devoted to *mu*-Anticausative.

(50) a. *ma-dhokac e*  
*ooma-li*  
STAT.FIN-dirt filed-1SG.GEN  
‘My field is (all) mud.’ [Stative active]

b. *mo-dhokac e*  
*ooma-li*  
ACAUS-dirt field-1SG.GEN  
‘My field is covered with mud.’ [*mo*-Anticausative] (Zeitoun 2007:246)

Earlier we see how *ma*-Intransitive, *mu*-Anticausative, and *ki*-Passive might form a middle-passive continuum in Puyuma, here in Rukai there seems to be a similar pattern, at least in terms of sound correspondences, as shown in Table 8. However, some caution is needed because many pieces of information are still yet to be gathered, such as whether *mo*-Anticausative and ‘*i*-Passive can be used to express middle situations and
Table 7: Passivization of dynamic and stative verbs in Rukai (Zeitoun 2007:144-46)

<table>
<thead>
<tr>
<th>Active</th>
<th>Number of Argument</th>
<th>Active</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>one-arg.</td>
<td>o-alopo ‘hunt’</td>
<td>*i-alopo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o-coroko ‘jump’</td>
<td>*i-coroko</td>
<td></td>
</tr>
<tr>
<td>two-arg.</td>
<td>o-aha’a ‘cook’</td>
<td>*i-aha’a ‘be cooked’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o-kane ‘eat’</td>
<td>*i-kane ‘be eaten’</td>
<td></td>
</tr>
<tr>
<td>Stative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>one-arg.</td>
<td>ma-caleme ‘rotten’</td>
<td>*i-ka-caleme</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ma-celekere ‘ponder’</td>
<td>*i-ka-celekere</td>
<td></td>
</tr>
<tr>
<td>two-arg.</td>
<td>ma-dhalame ‘like’</td>
<td>*i-ka-dhalame ‘be liked’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ma-lavahe ‘envy’</td>
<td>*i-ka-lavahe ‘be envied’</td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Correspondences of undergoer-oriented constructions in Paiwan and Rukai

<table>
<thead>
<tr>
<th>active</th>
<th>passive</th>
<th>anticausative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puyuma</td>
<td>intransitive ma-</td>
<td>ki-</td>
</tr>
<tr>
<td>Rukai</td>
<td>stative ma-</td>
<td>*i-</td>
</tr>
</tbody>
</table>

how ma-Stative and mo-Anticausative would differ from *i-Passive in terms of the degree of tolerance with an agent phrase and the semantic types of the agent phrase if it is ever present. Answers to these questions require future research.

7 Bunun

7.1 Voice morphology

Bunun has the four traditional voice categories: actor voice (AV) marked by ma-, m-, or ø-, patient voice (PV) marked by -un, locative voice (LV) marked by -an, and instrumental voice (IV) marked by is- (see Zeitoun 2000). Disagreeing with this traditional paradigmatic treatment, de Busser (2009) reanalyses m(a)- and is- in Takivatan Bunun as a respective member of event type and participant orientation verbal prefixes, which are two of the three major semantic types in the language. Under such an analysis, the voice markers in Takivatan would all be suffixes -ø for AV, -un for UV, and -an for LV, thus forming a homogeneous paradigm.

7.2 Semantics of MA-verbs

Semantically, there are two major types of MA-verbs, termed “dynamic” and “stative” by de Busser (2009). While dynamic MA-verbs can take a P argument, stative ones cannot, as shown in (51).

(51) a. ma-tasʔi humaq
    DYN-build house
    ‘build houses’
De Busser (2009) argues that dynamic *ma*- and stative *ma*-, though identical in form, should be distinguished because their causative and associative variants have different marking. As shown in Table 9, the causative variant of dynamic *ma*- is *pa*- whereas that of stative *ma*- is *pi*. Also, dynamic *ma*- has an associative variant marked by *ka*, stative *ma*- has none. As an illustration, the contrast between dynamic neutral and its causative variant is shown in (52).

(52) Dynamic neutral and causative verbs in Takivatan Bunun (de Busser 2009:337)

<table>
<thead>
<tr>
<th>verb form</th>
<th>gloss</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a ma-lu'ku</td>
<td>DYN-sit.down</td>
<td>‘sit down’</td>
</tr>
<tr>
<td>a' <em>pa-lu'ku</em></td>
<td>CAUS.DYN-sit.down</td>
<td>‘let somebody sit down’</td>
</tr>
<tr>
<td>b ma-tisbu'</td>
<td>DYN-explode</td>
<td>‘explode’</td>
</tr>
<tr>
<td>b' <em>pa-tisbu'</em></td>
<td>CAUS.DYN-explode</td>
<td>‘let explode; shoot (a gun)’</td>
</tr>
<tr>
<td>c ma-vuqvuq</td>
<td>DYN-shake</td>
<td>‘shake’</td>
</tr>
<tr>
<td>c' <em>pa-vuqvuq</em></td>
<td>CAUS.DYN-shake</td>
<td>‘(cause to) shake’</td>
</tr>
</tbody>
</table>

De Busser’s dynamic and stative MA-verbs are reminiscent of the two types of MA-verbs found in Rukai. Recall that unlike de Busser (2009), Zeitoun (2007) treats all Rukai MA-verbs as ‘stative’. However, unlike Bunun, Rukai has MA-verbs that are transitivized (or dynamized in Zeitoun’s term) in one way and MA-verbs that are transitivized in another. Table 10 and 11 summarize the parallel voice alternation patterns in the two languages. Stems in Group 1 and Group 2 are both marked by *ma* in both anticausative/spontaneous and plain stative situations in both languages, but they are marked differently in causative situations, again in both languages. While MA-verbs in Group 2 are plain stative verbs, MA-verbs in Group 1 express anticausative or spontaneous events, both of which are common middle situation types.

Finally, since “*ma* is the most frequently used verbal prefix in Takivatan,” (de Busser 2009:333), it is not possible to exhaust all instances of MA-verbs here. Instead, I can only present some situation types expressed by MA-verbs in (53), based on the Takivatan dictionary appended in de Busser (2009). Despite the fact that Bunun MA-verbs by and large express middle situation types as described in Kemmer (1993), I do find one or two instances which do not fit into prototypical middle semantics, such as *ma-daiyppus* ‘lay down; bury’.

| Table 9: Event type prefixes in Takivatan Bunun (de Busser 2009) |
|-----------------|-----------------|-----------------|
| Dynamic events  | Stative events  | Result state events |
| Neutral         | *ma*            | *ma* (also *mi*) | *min*          |
| Causative       | *pa*            | *pi*            | *pin*          |
| Associative     | *ka*            | –               | *kin*          |
Table 10: Two types of MA-verbs in Rukai

<table>
<thead>
<tr>
<th>Group 1</th>
<th>anticausative</th>
<th>causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>ma-kilisi ‘be tightened’</td>
<td>o-kilisi ‘tighten’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2</th>
<th>plain stative</th>
<th>causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>ma-toalrui ‘big’</td>
<td>to-toalrui ‘make sth. big’</td>
</tr>
</tbody>
</table>

Table 11: Two types of MA-verbs in Bunun

<table>
<thead>
<tr>
<th>Group 1</th>
<th>spontaneous</th>
<th>causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>ma-vuqvuq ‘shake’</td>
<td>pa-vuqvuq ‘cause to shake’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group 2</th>
<th>plain stative</th>
<th>causative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>ma-sihal ‘good’</td>
<td>pi-sihal ‘make sth. good’</td>
</tr>
</tbody>
</table>

(53) Situation types expressed by Bunun MA-verbs (de Busser 2009:575-592)

a. Plain stative events: *ma-bukdav ‘flat’; ma-buntu ‘long-winded’; ma-daykas ‘red, orange’*
b. Spontaneous events: *ma-baqis ‘emitting heat’; ma-dugqa ‘fracture’; ma-hutuq ‘faint’*
c. Anticausative events: *ma-kauskaus ‘striped’; ma-siiku ‘blinded’*
d. Grooming events: *ma-lislis ‘brush teeth’; ma-qaisu ‘wipe one’s behind’; ma-sinhav ‘wash one’s body’*
e. Bodily action events: *ma-kuskus ‘rub’; ma-kusu ‘tickle’; ma-luqku ‘sit down’; ma-tunqal ‘kick with one’s knee’*
f. Sell-propelled motion events: *ma-saupa ‘go in the direction of’;*
g. Physiological events: *ma-sauqda ‘hungry’; ma-suyhav ‘itchy; sexually aroused’*
h. Cognitive events: *ma-siap ‘know’; ma-taisaq ‘dream’*
i. Emotional events: *ma-dauida ‘love, respect’; ma-dima ‘like, be fond of’; ma-pisiy ‘scared’; ma-sunuq ‘enraged’*
j. Speech action events: *ma-sijhav ‘inquire, ask for’*
k. Collective events: *ma-tiskun ‘do something together’*

8 Discussion & Conclusion

In this report, it has been shown that functions of MA-verbs in six Formosan languages to a large extent overlap with situation types expressed by (morphological) middle markers across languages (Kemmer 1993). In light of middle semantics, the traditional treatment of MA-verbs in Formosan languages as one variant of “actor voice” (i.e. on a par with m- and -um-) seems problematic given the fact that the pivot argument of MA-verbs is typically an involuntary/unvolitional participant that is effected by some action (i.e. patientive S). Even in cases where the pivot argument of MA-verbs is a volitional actor (agentive S), the action types permitted by MA-verbs are constrained, mostly restricted
to those involving body parts, such as "harvesting," "kicking," and "scolding." However, the fact that the pivot argument of MA-verbs is sometimes spontaneous and sometimes volitional does not jeopardize the position that MA-verbs express middle semantics because "spontaneous" and "volitional" resides in the origin of an action whereas "middle" lies in the development of an action (see Shibatani 2006). Thus, these two sets of concepts can be independent of each other.

In addition, if Teng's (2008) analysis of Puyuma and de Busser's (2009) of Bunun can be generalized to other Formosan languages, it seems that there is a major dichotomy between intransitive constructions (marked by traditional AV) and transitive constructions (marked by traditional PV or LV). Within transitive constructions, different verbal suffixes are used to select the thematic role of the affected P argument, which is comparatively a rather productive process. Likewise, intransitives may be further distinguished by different prefixes or infixes, depending on the volitionality or degree of control of the S argument, but this mechanism seems to be more lexically determined. For instance, some stems are only marked by \textit{ma-} while others only by \textit{-um-} or \textit{-em-}. To some degree, the division of labor among different affixes of traditional AV is a sign of split intransitivity, where Sp tends to be marked by the prefix \textit{ma-} across languages. Interestingly enough, the splitting phenomenon also takes place within MA-verbs. In Kavalan, for instance, the cognizer of cognitive verbs is marked either by nominative or genitive, depending on the verb item. Also in Rukai, the sole argument of MA-verbs can be marked by nominative, genitive, or both, again depending on the verb stem. The current literature does not offer much regarding the splitting phenomenon, and more research is required to find out the origin and mechanism of cross- and within-intransitive splitting.

Finally, considering the complicated situation in Puyuma, where there are up to four patient-oriented constructions (i.e. \textit{aw-}Transitive, \textit{ma-Intransitive, ki-Passive, and mu-Anticausative}), traditional characterizations of "passive voice" (e.g. saying the agent is demoted or suppressed) then appear insufficient and incomplete. The passive-middle continuum found in languages like Puyuma requires us to take a more encompassing approach to passive-related constructions, a move initiated by Shibatani (1985) over 25 years ago. Also, any passive-like construction should never be investigated in isolation, and only when all passive-related constructions in a language are thoroughly compared can we understand the discourse-functional role played by each construction.
References


