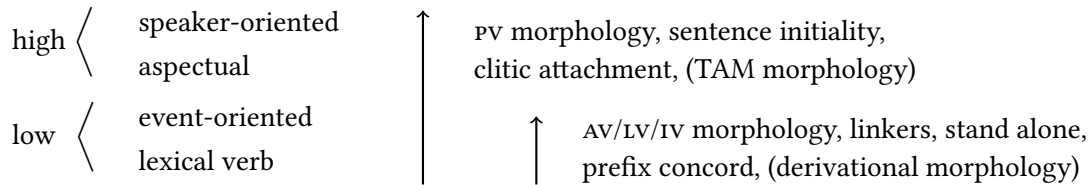# The morphological distribution of AV vs. PV in Formosan voice systems

keywords: Austronesian voice, Formosan, adverbs, A/A', categorizing heads, allomorphy

1. Overview: The forms of voice morphology—i.e. AV, PV, LV, etc.—in Austronesian voice systems have long been understood as direct reflections of the pivot argument, due to their complementary functions. I argue instead that AV should be analyzed as a verbal categorizer in the absence of extraction features, given that AV and PV have distinct morphological behaviors and distributions throughout the clause.

2. Data: In Formosan languages adverbs are realized as verbs (Chang 2006, Wu 2006, Li 2007, Yu 2008, Holmer 2010, a.o.), but verbal properties are not uniform across all adverbs. If we assume a conventional hierarchy of adverbs (cf. Cinque 1999, Ernst 2001), there is a split between high adverbs on the one hand and low adverbs and verbs on the other, corresponding to what lies above vs. below the Voice domain.

(1)   adverbial and lexical verbs, and their verbal properties

high ⟨ speaker-oriented / aspectual ↑ PV morphology, sentence initiality, clitic attachment, (TAM morphology)

low ⟨ event-oriented / lexical verb ↑ AV/LV/IV morphology, linkers, stand alone, prefix concord, (derivational morphology)

In particular, overt AV morphology is limited to low adverbs and verbs in Seediq (2), where high adverbs in AV constructions surface bare. Similar patterns are repeated in other Formosan languages such as Tsou, Paiwan, Kavalan, and Puyuma. In contrast, overt PV morphology is possible across all adverbs and verbs (3), even if it is not the adverb itself that introduces the pivot argument but a subsequent verb. This split coincides with distributional differences in other verbal properties, where LV/IV morphology, linkers, and prefix concord are restricted like AV, but sentence initiality and clitic attachment are unrestricted like PV.

(2)   a.   high adverbs: *pgluwe* 'unfortunately', *knteetu* 'often', *ncugil* 'sometimes'   [AV]
       b.   low adverbs: **m-burux** 'alone', g⟨**m**⟩*ruus* 'secretly', *thuwe* 'slowly', **m-qaras** 'happily'
       c.   lexical verbs: **m-osa** 'go', **m-kela** 'know', **m-eyah** 'come', *prading* 'start'

(3)   a.   high adverbs: *pglwe-**un*** 'unfortunately', *kntte-**un*** 'often', *ncgil-**un*** 'sometimes'   [PV]
       b.   low adverbs: *brux-**un*** 'alone', *grus-**un*** 'secretly', *thwe-**un*** 'slowly', *qras-**un*** 'happily'
       c.   lexical verbs: *sa-**un*** 'go', *kela-**un*** 'know', *yah-**un*** 'come', *prding-**un*** 'start'

3. Account: I assume that Austronesian voice is a mixed A/A' system, where the probe in C that extracts the pivot argument also agrees with the adverbs and verbs intervening between the probe and the pivot. This is modelled by the agreement features [INT: PRED; SAT: $\phi \cap$ A'] on the probe, where adverbs and verbs share a PRED feature. An information structure approach to voice has been independently motivated in the literature (Aldridge 2017, Chen 2017, Erlewine 2018), and in particular here I claim that voice morphology cannot be the spell-out of Voice, because it can be found on high adverbs located beyond the Voice domain.

   I argue that the locus of spell-out for voice morphology is the categorizing heads of these adverbs and verbs. In AV constructions, the composite probe extracts the pivot but does not agree with any adverbs or verbs (4), and thus they stay in their default forms; this is spelled-out as null for high adverbs and as AV morphology for low adverbs and verbs. In PV constructions, the composite probe extracts the pivot and also agrees with intervening adverbs and verbs (5), which then surfaces with PV morphology.

(4)   [$_{CP}$ C … [$_{aP}$ a √probably [$_{VoiceP}$ DP$_{subj}$ Voice [$_{vP}$ v √slow [$_{vP}$ v √eat DP$_{obj}$]]]]]   [AV]

(5)   [$_{CP}$ C … [$_{aP}$ a √probably [$_{VoiceP}$ DP$_{subj}$ Voice [$_{vP}$ v √slow [$_{vP}$ v √eat DP$_{obj}$]]]]]   [PV]

The contrast between AV and PV constructions is thus whether the probe agrees with its intervening predicates, which is derived from the nature of the pivot: AV pivots are transitive agents or intransitive subjects

and are the nominative subjects of the clause, while PV pivots are transitive patients and accusative (Chen 2018). This can be formalized by sensitivity to the case of the pivot or whether it moves into Spec,TP for NOM assignment. The pivot then receives topic marking when extracted, overriding existing case values.

The vocabulary items for categorizing heads are shown in (6). The categorizers *v* and *a* have different default spell-outs, but once they receive A' features they are spelled-out uniformly. One issue that arises is why categorizing and extraction morphology are in complementary distribution, when the two in theory can coexist. I propose that this is an historical consequence of the distinct origins of AV and PV (Begus et al. 2023), and can be captured synchronically by positing that categorizing features are impoverished in the context of A' features, akin to the impoverishment of ϕ-features in anti-agreement (Baier 2018).

(6) vocabulary items for Tgdaya Seediq
    a. "actor voice": $v \Leftrightarrow m\text{-}$ or $\langle m \rangle$
                     $a \Leftrightarrow \varnothing$
    b. "patient voice": $A' \Leftrightarrow \text{-}un$

(7) the spell-out of voice morphology
    a. AV: no agreement with composite probe
    b. PV: agreement with composite probe
        (i) LV: and locative features
        (ii) IV: and instrumental features

For LV and IV, I adopt the view that these are subcases of PV constructions that involve extra locative or instrumental features, due to the fact that in languages like Tsou adverbs surface with the underspecified PV morphology in LV and IV constructions (Chang 2009, Lin 2015). Overall, the novel contribution of this approach is that the divide between AV and non-AV morphology indicates whether an adverb or verb has been agreed with by a mixed A/A' probe, where AV is the absence of that. Furthermore, voice morphology is not the spell-out of the head itself that is responsible for the choice of pivot, but a reflex of agreement.

This approach is also able to capture two empirical observations: 1) voice morphology can surface on adverbs located throughout the clause, without positing that they each project a Voice layer, and 2) constructions with multiple adverbs or verbs can have multiple instantiations of the same voice specification. In particular, the distinction between default voice and voice concord languages (Wurmbrand 2014) boils down to whether the highest or all the predicates are agreed with, and the analysis of AV as default verbal morphology explains why the default voice form across Formosan languages is always the AV form.

4. AV vs. PV: If the analysis above is correct, it is able to explain the distinctions in behavior between AV and PV morphology. The idea is that AV morphology reflects features that originate close to the verb root, while PV morphology reflects features further removed; this thus has consequences on the allomorphic behavior of these voice forms with respect to the root. Namely, only AV exhibits allomorphy conditioned by the agentivity and the phonological form of its root, and only AV has idiosyncratically null forms.

(8) intransitive verbs in AV forms (Tgdaya Seediq; fieldwork)
    a. unaccusative: ***m**-huqil* 'die', ***m**-takur* 'fall', ***m**-eeniq* 'exist', *dehuk* 'arrive'
    b. unergative: *t⟨**m**⟩alang* 'run', *r⟨**m**⟩engo* 'talk', ***m**-uuyas* 'sing', ***m**-osa* 'go', *skiya* 'fly'
    c. weather: ***m**-thuda* 'snow', ***m**-bruwa* 'thunder', *thido* 'be sunny'

(9) transitive verbs in AV forms (Tgdaya Seediq; fieldwork)
    a. vowel initial: ***m**-ekan* 'eat', ***m**-angal* 'take', ***m**-imah* 'drink', ***m**-etur* 'kick'
    b. consonant initial: *s⟨**m**⟩ipaq* 'kill', *c⟨**m**⟩ebu* 'shoot', *k⟨**m**⟩eruc* 'cut', *q⟨**m**⟩ita* 'see'

As shown above, the default form of AV in Seediq is the prefix *m-*, which becomes the infix $\langle m \rangle$ when attaching to verbs that are both consonant-initial and have external arguments, i.e. unergative and transitive verb roots. This is also consistent with the fact that adverbs are spelled-out with the prefix *m-*, since they do not have external arguments. Meanwhile, PV, LV, and IV never exhibit any of the above behaviors.

Selected references: Chang HY. (2009) Adverbial verbs and adverbial compounds in Tsou. Chen V. (2017) A reexamination of the Philippine-type voice system and its implications for primary-level subgrouping. Erlewine MY. (2018). Extraction and licensing in Toba Batak. Holmer A. (2010) Seediq adverbial verbs.