

## WHAT MAKES A VOICE SYSTEM? ON THE RELATIONSHIP BETWEEN VOICE MARKING AND CASE\*

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One of the major questions in Austronesian syntax concerns the relationship between voice marking, extraction, and case. Two common approaches have dominated previous literature. Either voice morphology marks extraction and case, or voice morphology feeds extraction and case. These positions are difficult to distinguish, because of the prominent one-to-one correspondence of voice, case, and extraction. In this paper, we bring new insights to this debate, with original data from Balinese and Dinka, a Nilotic language of South Sudan, which we show exhibits a familiar Austronesian-type voice system. We observe environments in these languages where the correspondence between voice and case and voice and extraction breaks down, in a manner that we argue provides evidence that *voice marks extraction*. Unlike in other extraction-marking languages, however, voice also affects case in Austronesian-type voice systems. We suggest that this is because extraction targets a case position. We account for the changes in case marking in the clause by suggesting that, when the external argument is not extracted, languages must employ alternative strategies to license it.

### 1. Introduction

In a striking example of syntactic uniformity across genetically and geographically disparate languages, many languages morphologically mark the difference between *non-subject* (a) and *subject* (b) extraction. Consider first the behavior of English *do*-support in (1). English non-subject *wh*-questions require the insertion of *do* to host tense specification, while *do*-support is crucially unavailable in subject *wh*-questions.

- (1) *English T-to-C movement*:
- a. Who *did* Alex see?
  - b. Who saw Alex?

Similarly, in French the form of the embedded complementizer varies in long distance *wh*-questions (2). This alternation is conditioned by which element is extracted. When a non-subject argument is extracted, as in (2a), the complementizer *que* is realized. When the subject is extracted, as in (2b), *qui* appears.

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- (2) *French que/qui alternation:*
- a. Qui penses-tu [*que* Marie a rencontré]?  
 who think-you that Marie has met  
 ‘Who do you think Marie has met?’
- b. Qui penses-tu [*qui* a rencontré Marie]?  
 who think-you that has met Marie  
 ‘Who do you think has met Marie?’

A similar extraction asymmetry is also observed in a subset of Mayan languages (see e.g. Stiebels, 2006). When a non-subject argument is extracted, as in (3a), the same verb form is used as in a corresponding declarative clause. But when a subject is extracted, the “Agent Focus” form of the verb must be used (3b).

- (3) *Agent Focus in Kaqchikel (Erlewine, to appear a):*
- |                            |                         |
|----------------------------|-------------------------|
| a. Achike xutěj ri a Juan? | b. Achike xtj-ö ri wäy? |
| what ate the CL Juan       | who ate-AF the tortilla |
| ‘What did Juan eat?’       | ‘Who ate the tortilla?’ |

Lastly, we observe that in Moro (Niger-Congo; Sudan) non-subject extraction, such as the case of object extraction in (4a), triggers optional *wh*-concord indicated by prefixing all words after the *wh*-word with *nə*. This concord is unavailable in subject extraction examples such as (4b).

- (4) *Moro wh-concord (Rohde, 2006; Rose et al., 2014):*
- |                                      |                          |
|--------------------------------------|--------------------------|
| a. ɲwədʒeki (nə).Kuku (nə).gətaðoŋo? | b. ɲwədʒeki gətaðo Kuku? |
| who (WH).Kuku (WH).abandon           | who abandon Kuku         |
| ‘Who did Kuku abandon?’              | ‘Who abandoned Kuku?’    |

In contrast to languages that exhibit subject vs non-subject extraction marking, many Austronesian languages appear to display a *more articulated* form of extraction marking. Languages like Atayal (Formosan; Taiwan) have morphology on the verb that not only differentiates subject extractions from non-subject extractions, but also distinguishes between different types of non-subject extractions.<sup>1</sup> Each example in (5) below has one constituent marked with *qu* and in sentence-final position, and the choice of constituent in this position correlates with different *voice* morphology on the verb. This set of examples illustrates one of the most well-known aspects of Austronesian syntax: *the voice system*.

<sup>1</sup>The “voice” morphology studied here has also been called “focus” and “topic” marking in different corners of the Austronesian literature. Note that this Austronesian voice morphology is distinguished from familiar Indo-European-style active/passive alternations, which are also called “voice.”

- (5) *Squliq Atayal voice marking (Liu, 2004):*<sup>2</sup>
- |  |   |
|--|---|
| a. <i>M</i> -aniq qulih qu' Tali'.                 | <i>Actor Voice (AV)</i>                     |
| AV-eat fish QU Tali                                |   |
| ‘Tali eats fish.’                                  |   |
| b. Niq- <i>un</i> na' Tali' qu' qulih qasa.        | <i>Patient Voice (PV)</i>                   |
| eat-PV GEN Tali QU fish that                       |   |
| ‘The fish, Tali ate.’                              |   |
| c. Niq- <i>an</i> na' Tali' qulih qu' ngasal qasa. | <i>Locative Voice (LV)</i>                  |
| eat-LV GEN Tali fish QU house that                 |   |
| ‘In that house, Tali eats fish.’                   |   |
| d. <i>S</i> -qaniq na' Tali' qulih qu' qway.       | <i>Instrumental Voice (IV)</i> <sup>4</sup> |
| IV-eat GEN Tali fish QU chopsticks                 |   |
| ‘With chopsticks, Tali eats fish.’                 |   |

In the remainder of this paper, we will refer to the argument cross-referenced by voice morphology as “*subject*,” and refer to movement to this subject position as “*extraction*.” The terms “*actor*” and “*patient*” will be used to refer to arguments with these thematic roles.

There are two aspects of the Atayal voice system worth highlighting here, which also hold of many other Austronesian languages. First, in the non-actor voice clauses in (5b–d), the actor is marked with genitive case. Second, in  $\bar{A}$ -constructions such as *wh*-questions, only the “subject” can be  $\bar{A}$ -extracted (to the left) in Atayal.<sup>5</sup> In Atayal, we thus observe a strict correlation between (a) voice morphology on the verb, (b) the constituent in the clause-final “subject” position, (c) the constituent which can be  $\bar{A}$ -extracted, and (d) the pattern of case marking on nominals.

The differences between plain extraction marking of the type illustrated in (1–4) and Austronesian voice systems have led to two different types of approaches: (i) voice morphology is like extraction marking, but by a different mechanism, such as *wh*-agreement or case agreement (e.g. Chung, 1994; Richards, 2000; Pearson, 2001, 2005); (ii) voice morphology actually encodes argument structure alternations which result in extraction restrictions (Guilfoyle et al., 1992; Aldridge, 2004, 2008; Legate, 2012, e.g.). Amongst the former group of theories, it is held that voice morphology is ‘cosmetic’, like extraction marking. That is, voice morphology does not drive the derivation nor determine case, but simply reflects the results of that derivation. In the latter group of theories, voice plays an important role in determining the course of the derivation. The voice morphology chosen determines which argument can be promoted to “subject” position as well as the case morphology of the external argument. In practice, these two positions are difficult to distinguish, because both proposals can handle the prominent one-to-one correspondence of voice, case, and extraction often found in Austronesian voice systems.

<sup>2</sup>Translations are modified from Liu (2004), so that the argument cross-referenced by voice morphology is uniformly translated as a topic in English. See Erlewine (to appear b) for evidence that the sentence-final “subject” position in Squliq Atayal tracks the discourse topic, as well as for discussion of *qu*.

<sup>4</sup>There is also a Benefactive Voice with the same prefix *s-* as Instrumental Voice.

<sup>5</sup>This data is not shown here for reasons of space.

In this paper, we present arguments that voice morphology in Austronesian should be viewed as *extraction marking*, much like the morphological alternations in (1–4). We present two systems in which the one-to-one correspondence between voice, case, and extraction *breaks down*, the Nilotic language Dinka and Indonesian-type languages like Balinese. In Dinka, which exhibits an Austronesian-type voice system, we can dissociate voice and case. In Balinese, we can dissociate voice and extraction. These breakdowns are inconsistent with a view of Austronesian-type voice morphology as *extraction feeding*, because such a view predicts mismatches to be impossible. Crucially unlike in the non-voice languages in (1–4), we propose that voice affects case because the “*subject*” position (the argument referenced by voice morphology) is a *mixed A/Ā-position*. The external argument must move to this position to be case-licensed. If this movement is unavailable, alternative strategies must be utilized to license the external argument. Interestingly, it appears that languages make use of different alternative licensing strategies. We examine three such strategies below.

The remainder of this paper is organized as follows. In section 2, we introduce the Nilotic language Dinka as a language with an Austronesian-type voice system, and we show that voice morphology can be dissociated from the processes governing case marking in Dinka. Section 3 further argues that voice morphology can be dissociated from the extraction restriction, in instances of multiple extraction in Balinese. In section 4, we turn to the question of why voice morphology often triggers changes in case marking throughout the clause. We argue that what distinguishes Austronesian-type voice systems is that extraction targets a case position, so that extraction interferes with the licensing of the actor. We link differences between voice systems to different strategies for licensing the actor in non-actor voices.

## 2. Dissociating voice and case in Dinka

If voice morphology is extraction marking, we expect to find *dissociations between voice and case*, since voice would not directly determine case. Rather, in this view, the mechanisms that give rise to case marking should in principle be independent of voice. We find such dissociations in Dinka, a Nilotic language of South Sudan, with a voice system highly reminiscent of Austronesian (Van Urk and Richards, to appear).

### 2.1. The Dinka voice system

Dinka is a V2 language of the Nilotic family spoken in South Sudan. While not genetically related to Austronesian, it displays a voice system reminiscent of those in the Austronesian family. Dinka has three voices, which reflect the grammatical function of the *clause-initial “subject” position*:

- (6) a. Àyén à-càm      cuṛn nẹ̀ pàl. Actor Voice (AV)  
 Ayen 3S-eat.AV food P knife  
 ‘Ayen is eating food with a knife.’

- b. Cuḥn à-céem Áyèn nè pàl. *Patient Voice (PV)*  
 food 3S-eat.PV Ayen.NOM P knife  
 ‘Food, Ayen is eating with a knife.’
- c. Pàl à-céemè Áyèn cuḥn. *Oblique Voice (OblV)*  
 knife 3S-eat.OBLV Ayen.NOM food  
 ‘With a knife, Ayen is eating food.’

As in Germanic V2 languages, the highest verb or auxiliary occupies second position. Voice morphology appears on this verbal element, marking the grammatical function of the constituent in clause-initial position. In (6), we observe that the verb *câam* ‘eat’ takes distinct forms which cross-reference the element in first position. If an auxiliary is present, it occupies second position instead of the main verb. Voice morphology then appears on the auxiliary (7a–c).

- (7) a. Àyén à-cé cuḥn câam nè pàl. *AV*  
 Ayen.ABS 3S-PRF.AV food.ABS eat.NF P knife.ABS  
 ‘Ayen has eaten food with a knife.’
- b. Cuḥn à-cíi Áyèn câam nè pàl. *PV*  
 food.ABS 3S-PRF.PV Ayen.NOM eat.NF P knife.ABS  
 ‘Food, Ayen has eaten with a knife.’
- c. Pàl à-cénnè Áyèn cuḥn câam. *OblV*  
 knife.ABS 3S-PRF.OBLV Ayen.NOM food.ABS eat.NF  
 ‘With a knife, Ayen has eaten food.’

Regardless of where voice morphology appears, the clause-initial XP always appears in the unmarked case, usually called “absolutive” in the Nilotic literature (e.g. Dimmendaal, 1985; Andersen, 1991, 2002).

As in many Austronesian languages, voice marking restricts overt  $\bar{A}$ -extraction. The constituent undergoing  $\bar{A}$ -extraction must be the argument cross-referenced by voice morphology:

- (8) a. Yeḥà cé cuḥn câam nè pàl? *AV*  
 who PRF.AV food.ABS eat.NF P knife.ABS  
 ‘Who has eaten food with a knife?’
- b. Yeḥú cíi Áyèn câam nè pàl. *PV*  
 what PRF.PV Ayen.NOM eat.NF P knife.ABS  
 ‘What has Ayen eaten with a knife?’
- c. Yeḥú cénnè Áyèn cuḥn câam. *OblV*  
 what PRF.OBLV Ayen.NOM food.ABS eat.NF  
 ‘What has Ayen eaten food with?’

It is important to note that non-initial actors appear in a dedicated case, the “marked nominative”, while non-initial patients are unmarked (i.e. absolutive). Case alternations are not realized using affixes as is common cross-linguistically, but rather by alternations in tone. Observe that the external argument, *Áyén*, in clause initial position (6a,7a) bears a distinct tonal pattern from the same argument in non-initial position: *Áyèn*, in the (b–c) examples above. In this respect as well, Dinka behaves like Austronesian languages, which display dichotomies between subject and non-subject actors. We will return to this point below.

## 2.2. Voice is independent of case

V2 in Dinka, as in many other V2 languages, is limited to certain types of clauses. In non-V2 clauses, no argument is extracted to the front of the clause, resulting in verb-initial order. We will use these environments to see whether voice morphology patterns with case or with extraction. As we will see, voice patterns with extraction, and only default voice morphology appears in non-V2 environments.

Matrix *yes-no* questions are verb-initial in Dinka, with no constituent fronted to the clause-initial position (9).

(9) *Verb-initial yes-no question with AV and marked nominative actor:*

*Nhiár* *Máyèn* *Àdít?*  
*love.AV* *Mayen.NOM* *Adit.ABS*  
 ‘Does Mayen love Adit?’

As (9) shows, a novel pattern emerges in such a clause. Elements following the highest verb or auxiliary appear just as they do when they are not in clause-initial position in V2 clauses. Thus, word order is strict (the actor must come before the patient) and the actor and patient are case-marked just as they are when not extracted. The actor appears in the “marked nominative”, just as in Patient Voice or Oblique Voice (e.g. 7b–c). The patient is in the absolutive, just as in the Agent Voice (7a) or Oblique Voice (7c). Voice morphology, however, is necessarily Agent Voice in *yes-no* questions. We treat this as an instance of *default* marking, since Agent Voice otherwise does not appear with “marked nominative” case on the subject (as in 7a).

There are a number of other verb-initial environments which make the same point, that alternations in voice are not necessary to drive case marking on non-“subject” nominals. Following the complementizer *yè*, verb-initial order is found, with (default) AV on the highest verb/auxiliary, but “marked nominative” on the postverbal subject (10).

(10) *Verb-initial order under yè complementizer:*

*À-yùkkù* *luêel*, [*yè* *nhiár* *Máyèn* *wôck*].  
 3S-PRF.1PL say.NF C *love.AV* *Mayen.NOM* 1PL.ABS  
 ‘We say that Mayen loves us.’



### 3. Voice and multiple extraction in Balinese

In this section, we present another breakdown of the common one-to-one correspondence of voice, case, and extraction. Specifically, we observe a dissociation between voice morphology and extraction in Indonesian-type languages, such as Bahasa Indonesia (Chung, 1976; Cole and Hermon, 2005), Jambi Malay (Yanti, 2010), and Balinese. Here we focus on Balinese.

We concentrate here on the Actor Voice and Patient Voice in Balinese (13a–b).<sup>6</sup>

- (13)a. *Actor Voice (AV):*  
Polisi *ng*-ejuk Nyoman.  
police AV-arrest Nyoman  
'A policeman arrested Nyoman.'
- b. *Patient Voice (PV):*  
Nyoman  $\emptyset$ -ejuk polisi.  
Nyoman PV-arrest police  
'A policeman arrested Nyoman.'

In this impoverished voice system, any argument that is promoted to the pre-verbal subject position other than the actor is cross-referenced with Patient Voice morphology. As we have seen above for Atayal and Dinka, voice morphology imposes an extraction restriction. When the actor argument appears in subject position, AV morphology must appear on the verb (14a). When the patient argument appears in subject position, PV morphology must appear on the verb (14b).

- (14)a. *Actor extraction*  $\Rightarrow$  AV:  
Nyen *ng*/ $\emptyset$ -alih ci ditu ibi?  
who AV/\*PV-search you there yesterday  
'Who looked for you there yesterday?'
- b. *Patient extraction*  $\Rightarrow$  PV:  
Apa *ng*/ $\emptyset$ -alih ci ditu ibi?  
what \*AV/PV-search you there yesterday  
'What did you search for there yesterday?'

However, in Balinese, extraction of multiple arguments to pre-verbal position is also possible. Multiple extraction occurs when the actor is fronted to be in immediate preverbal position and subsequently another argument undergoes *wh*-movement.<sup>7</sup> In such cases, the verb is PV:

- (15) Buku cen Nyoman *ng*/ $\emptyset$ -paca?  
book which Nyoman \*AV/PV-read  
'Which book did Nyoman read?'

We can explain these facts if we view voice morphology as extraction marking. If PV surfaces whenever a patient is extracted and AV is the default realization, we expect to see PV if multiple extraction is ever possible. Under an extraction marking view, voice morphology is logically independent of the extraction restriction. In contrast, under a view in which voice morphology drives argument structure alternations, voice morphology is the mechanism by which the extraction restriction is created. As a result, we do not expect to find dissociations such as in Balinese.

<sup>6</sup>The Actor Voice and Patient Voice are described as the two “active” voices in Indonesian-type languages, which also have other “passive” voices. See e.g. Arka (2003); Aldridge (2008).

<sup>7</sup>This configuration is reminiscent of the famed “bodyguard” construction in Malagasy (Keenan, 1976). Due to space limitations, we will not describe our analysis for these multiple extraction constructions here.



Under this kind of proposal, the difference between a voice system like Balinese, in which multiple extraction is possible, and Dinka, in which it is not, must be independent of the mechanisms behind voice. Rather, we might imagine that the difference between Dinka and Balinese is much like the difference between English, in which multiple instances of  $\bar{A}$ -movement—such as topicalization and *wh*-movement—cannot co-occur, and Italian, in which multiple instances of  $\bar{A}$ -extraction can target the same left periphery.

#### 4. The relationship between voice and case

We now turn to the relationship of voice systems and case/nominal licensing. We have argued so far that Austronesian-type voice morphology is extraction marking. However, unlike extraction marking in non-voice system languages (English, French, Kaqchikel, Moro in §1), voice often has *repercussions for case throughout the clause*. We propose that what unifies voice systems is that the position in the clause periphery targeted by  $\bar{A}$ -extraction, the “subject” position, is a *case position*. Here we will call this subject position Spec,CP.

In AV clauses, the actor is licensed in this case position. In non-AV (NAV) clauses, when a XP that is not the actor undergoes  $\bar{A}$ -movement, it deprives the actor of its licenser, since extraction targets its case position. Thus, the actor must be licensed using an alternative strategy. We suggest that differences between voice systems arise in part because voice languages handle the problem of licensing the external argument actor in non-actor voices differently. In particular, we will demonstrate *three strategies* for licensing the actor in NAV:

1. Ergative/genitive marking in Formosan/Philippine-type voice systems;
2. Oblique (prepositional) case in the Dinka voice system;
3. Pseudo-noun incorporation in the Balinese voice system.

Even genetically close languages may use different strategies, while some genetically distant languages (e.g. Formosan or Philippine-type and Dinka) use conceptually very similar strategies.

##### 4.1. Strategy 1: ergativity

The first strategy we identify is to license the actor with ergative/genitive case. This is the strategy observed in Atayal. Here we will consider the following AV and PV examples:

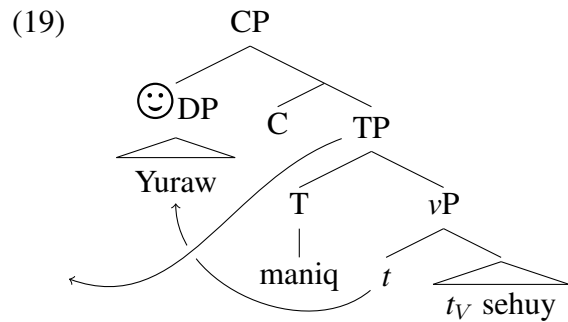
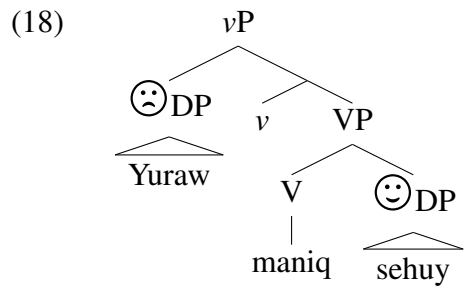
(16) *Actor Voice (AV):*

*M*-aniq sehuy (qu) Yuraw.  
 AV-eat taro QU Yuraw  
 ‘Yuraw eats taro.’

(17) *Patient Voice (PV):*

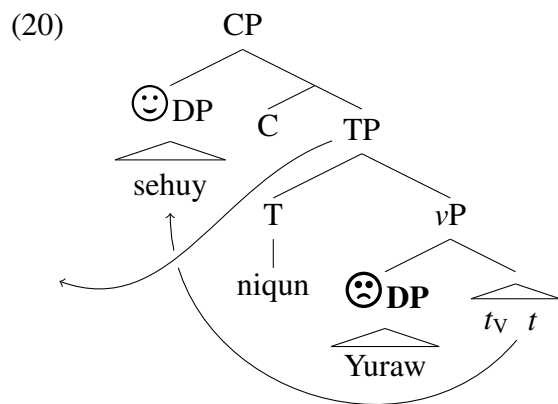
Niq-un na Yuraw (qu) sehuy.  
 eat-PV GEN Yuraw QU taro  
 ‘Yuraw eats taro.’

Consider first the derivation of the AV clause in (16). As mentioned previously, we propose that the “subject” position is Spec,CP. In the AV clause, the external argument *Yuraw* cannot be licensed in its base position, Spec,vP (18). It moves to Spec,CP and is licensed there (19).



As in a number of Austronesian languages, the “subject” position is clause-final. TP-fronting yields the observed word order (Aldridge, 2004). *Qu* marks the DP in the subject position, and is not a case marker (Erlewine, to appear b).

In NAV clauses, the actor is *genitive marked*. This genitive-marked actor has been analyzed as an *ergative* argument in some previous work (Huang, 1994; Starosta, 1999; Aldridge, 2004). Consider the derivation of the PV clause in (17). We assume that, in non-actor voices, the “subject”—in this case the patient *sehuy*—occupies the case position that licenses the actor in AV clauses. As a result, the actor is deprived of licensing (20).



This is precisely the configuration where the actor is given ergative/genitive case, using a particular choice of *v* (Aldridge, 2004; Woolford, 2006; Legate, 2008). This strategy allows the actor to be licensed in non-actor voices, when the “subject” position is unavailable.<sup>8</sup>

<sup>8</sup>Under our proposal here, voice is extraction marking, not a *v* head, but moving a non-actor to “subject” position necessarily correlates with the choice of an ergative/genitive-assigning *v*. There are important questions here regarding derivational look-ahead. We will leave these issues for future work. We note that ergative/genitive-assignment could be conceived of as an application of a last-resort or default rule, as in Imanishi (2014), which avoids (or reframes) this issue. See also footnote 9 below.

#### 4.2. Strategy 2: oblique case

We find a different strategy in Dinka. In Dinka NAV clauses, actors appear in a dedicated case, “*marked nominative*” (Koenig, 2006; Van Urk and Richards, to appear), which is tonally marked:

- |   |  |
|---|--|
| <p>(21) <i>Actor Voice (AV):</i><br/> <i>Ayén</i>    à-cḗ        cuḡn        câam.<br/> <i>Ayen.ABS 3S-PRF.AV food.ABS eat.NF</i><br/> ‘Ayen has eaten food.’</p> | <p>(22) <i>Patient Voice (PV):</i><br/> Cuḡn    a-cḡi        Áyèn        câam.<br/> <i>food.ABS 3S-PRF.PV Ayen.NOM eat.NF</i><br/> ‘Food, Ayen has eaten.’</p> |
|---|--|

“Marked nominative” is unlike familiar subject cases. “Marked nominative” does not pattern like ergative case. It is not linked to transitivity or semantic properties of the verb and can be found with unergatives and unaccusatives in environments that suppress V2:

- |   |   |
|---|---|
| <p>(23)a. <i>Adít</i>    à-nìn.<br/> <i>Adit.ABS 3S-sleep.AV</i><br/> ‘Adit is sleeping.’<br/> b. Nìn    Ádít?<br/> <i>sleep.AV Adit.NOM</i><br/> ‘Is Adit sleeping?’</p> | <p>(24)a. <i>Galàm</i>    à-cḗ        dhuòḡ.<br/> <i>pen.ABS 3S-PRF.AV break.NF</i><br/> ‘The pen broke.’<br/> b. Cḗ    galám    dhuòḡ?<br/> <i>PRF.AV pen.NOM break.NF</i><br/> ‘Did the pen break?’</p> |
|---|---|

“Marked nominative” also does not behave like nominative, however, because it is the marked case. The absolutive appears in all default contexts, as in citation form and on nominal predicates (Andersen, 1991, 2002).

- (25) *Adít*    e-dupióoc.  
*Adit.ABS COP-teacher.ABS*  
‘Adit is a teacher.’

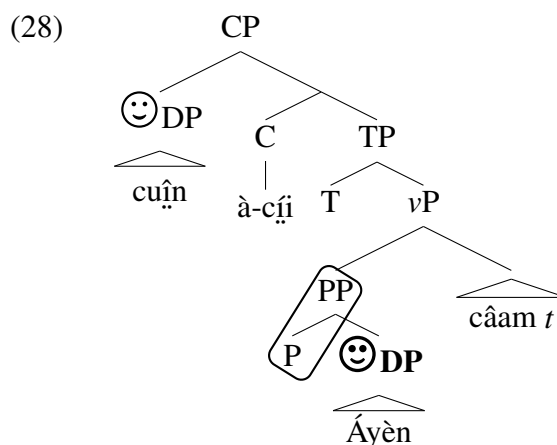
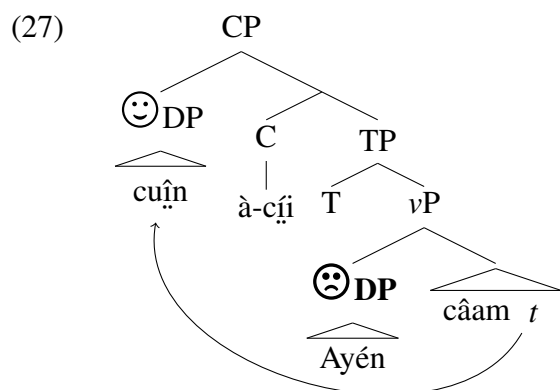
In addition, “marked nominative” is also assigned by some prepositions (Andersen, 2002):

- (26)a. Yḡn    nhiàr    yḡn        ḗ    Máyèn.  
*you love.AV house.LNK P Mayen.NOM*  
‘You love Mayen’s house.’  
b. Cuḡn    à-cḡi        câam    nḗ    pàl        nḗ    Áyèn.  
*food.ABS 3S-PRF.PASS eat.NF P knife.ABS P Ayen.NOM*  
‘The food has been eaten with a knife by Ayen.’

Instead, we propose that “marked nominative” is an oblique case, assigned by a null preposition, inserted as a repair to license a caseless nominal. We draw on the notion of repair in Rezac (2012), who suggests that prepositional material may be added at the end of a phase to license certain DPs that fail to acquire case. For similar proposals regarding prepositions for nominals which

would otherwise be unlicensed, see Stowell (1981) on English *of*-Insertion and Halpert (2012) on Bantu augment nominals.<sup>9</sup>

The derivation for Dinka NAV clauses is illustrated by the following trees. As in Atayal, we posit that the “subject” moves to Spec,CP and deprives the actor of its usual licensing position (27). To license the actor, a silent preposition is inserted, which assigns case to the actor (28).



In this view, “marked nominative” is actually a *prepositional case*, and absolutive is the only real structural case (which is why it behaves like the unmarked case). There is then no structural licenser for the subject outside of the voice system. As a result, “marked nominative” emerges as a necessary repair in non-subject voices and in structures in which the voice system is not available.

#### 4.3. Strategy 3: pseudo-noun incorporation

A different strategy is found in Balinese. In Balinese, the actor in non-actor voices forms a single “phonological word” with the verb (Clynes, 1995). In Balinese NAV clauses, post-verbal actors undergo *Pseudo-Noun Incorporation* (PNI), by means of Morphological Merger (Levin, 2014). Such actors display *strict head-head adjacency* with the verb.

Evidence for this adjacency requirement is presented here. First, pre-nominal adjectives are banned on post-verbal actors. Adjectives that can normally appear pre- and post-nominally must appear post-nominally when modifying a post-verbal actor:

- |                                     |  |
|-------------------------------------|--|
| (29)a. <i>Actor Voice (AV):</i>     | b. <i>Patient Voice (PV):</i>                |
| [(Liu) cicing (liu)] ngugut Nyoman. | Nyoman gugut [( <i>*liu</i> ) cicing (liu)]. |
| (many) dog (many) AV.bite Nyoman    | Nyoman PV.bite ( <i>*many</i> ) dog (many)   |
| ‘Many dogs bit Nyoman.’             | ‘Many dogs bit Nyoman.’                      |

<sup>9</sup>Strategies 1 and 2 could be seen as very similar, if we analyzed ergative/genitive case in Formosan and Philippine languages (Atayal above) as a last resort repair. See Imanishi (2014) for such a proposal for ergativity in Mayan.

In addition to this, the post-verbal actor shows a *definiteness effect*. The definite suffix *-e* and overt determiners like *ento* ‘that’ are illicit (Wechsler and Arka, 1998, p. 441):

- (30)a. I Wayan gugut cicing.  
 ART Wayan PV.bite dog  
 ‘A dog bit Wayan.’
- b.\*I Wayan gugut cicing-*e* (*ento*).  
 ART Wayan PV.bite dog-DEF (*that*)  
 ‘The dog bit Wayan.’

We propose that this is because the presence of an NP blocks PNI of D. In support of this, we see that pronouns and proper names can undergo PNI.

- (31)a. Be-*e* daar *ida*.  
 fish-DEF PV.eat 3SG  
 ‘(S)he ate the fish.’
- b. Be-*e* daar *Nyoman*.  
 fish-DEF PV.eat *Nyoman*  
 ‘Nyoman ate the fish.’

We can derive this if pronouns and proper names occupy D<sup>0</sup> (e.g. Postal, 1966; Longobardi, 1994; Elbourne, 2001) and lack an NP, satisfying head-head adjacency.

The behavior of non-subject actors in Balinese is inconsistent with either of the two alternative licensing strategies above. If non-subject actors were case marked either by lexical case or P-insertion, we would not expect to find the head-head adjacency requirement. However, if head-head adjacency is necessary to create a structure to which Morphological-Merger can apply, then the behavior of Balinese can be captured.

## 5. Conclusion

In this paper, we presented two examples where the one-to-one correspondence of voice, case, and extraction can break down in Austronesian-type voice system languages. We argue that voice morphology is a form of *extraction marking*, which tracks the argument moved to the “subject” position (Chung, 1994; Richards, 2000; Pearson, 2001, 2005). By connecting this position to the licensing of the actor in AV clauses, we arrive at a unified explanation for *the quirky behavior of actors in NAV clauses*:

1. Ergative/genitive marking in Formosan and Philippine languages;
2. Oblique case marking in Dinka (Nilotic);
3. Pseudo-noun incorporation in Balinese.

Specifically, the idea is that (a) the external argument actor lacks structural licensing in its Spec,<sub>v</sub>P position, (b) the actor is licensed in the subject position in AV, and (c) another strategy is necessary for licensing the subject in NAV clauses.

This view of voice morphology leaves open a number of questions. First of all, we have left open the question of why and how voice languages come to show more articulated extraction marking, as we saw with in Atayal examples in (5). One appealing answer is that such non-PV non-actor voices reflect argument structure alternations that are necessary to turn PP arguments into nominals that can occupy the “subject” position, as in Rackowski’s (2002) treatment of Tagalog and Van

Urk's (in preparation) analysis of the Dinka oblique voice. A second question is what mechanism ultimately yields non-subject extraction marking (e.g. Chung, 1994; Pesetsky and Torrego, 2001; Rizzi and Shlonsky, 2007; Erlewine, to appear a). This issue is especially important, since some theories of extraction marking crucially link non-subject extraction morphology to case, such as Pesetsky and Torrego's (2001) proposal.

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