CHAPTER 16

ERGATIVITY AND AUSTRONESIAN-TYPE VOICE SYSTEMS

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16.1 INTRODUCTION

MANY languages of the Austronesian family exhibit what has been called a "voice system":[1] a particular pattern of alternations in word order, case marking, and verbal morphology, which also interacts with Ā-extraction. The voice system has been a central concern in the study of Austronesian syntax. One influential proposal for such languages treats them as morphologically and syntactically ergative. The ergative hypothesis is attractive because it offers a way of mapping some of the morphosyntactic properties that look uniquely Austronesian, such as its voice morphology, to familiar features of non-Austronesian languages.

In this chapter, we critique the ergative analysis of Austronesian-type voice system languages, using data from well-studied voice system languages, including Tagalog, Malagasy, and Atayalic languages, along with new data from Balinese and Dinka (Nilotic), a non-Austronesian language with all of the hallmark properties of an Austronesian voice system.[2] On the basis of dissociations between case, voice, and

[1] The "voice system" has been made famous by Philippine languages, although the basic description (section 16.1.1) also applies to a range of Formosan and Western Malayo-Polynesian languages. The voice system has been reconstructed for Proto-Austronesian (Wolff 1973; Starosta et al. 1982/2009). See also n. 4 on the term "voice system."

[2] We note that there are also Austronesian languages which are morphologically and syntactically ergative but do not exhibit the voice system described here. See for example Otsuka (Chapter 40, this volume) for discussion of Tongan.

extraction, we argue that there must be mechanisms other than ergativity that will yield the behavior associated with Austronesian voice.

The chapter is organized as follows. We first introduce Austronesian voice systems and their treatment as morphologically and syntactically ergative. In section 16.2, we present new data from the Nilotic language Dinka, a non-Austronesian language with a voice system, in which dissociations between voice and case reveal a consistently nominative-accusative alignment. Section 16.3 documents evidence from multiple extraction in the Malay/Indonesian languages Balinese and Bahasa Indonesia that a voice system can exist in the absence of strict syntactic ergativity. In addition, we show that there are surprising restrictions on the licensing of in situ subjects in these languages, unexpected under an ergative analysis.

16.1.1 Properties of a Voice System

Voice systems are characterized by the fact that a single argument of the clause—possibly a non-core argument, as we will see—is privileged in certain ways. This argument may be in a certain linear position or receive a particular morphological marking, and dedicated morphology on the verb indicates which argument of the verb was chosen for this special status. Furthermore, Ā-extraction is often limited to this privileged argument.

By way of example, consider the sentences in (1). The sentences all describe Tali eating fish, but vary in word order, case marking, and verbal morphology.

(1) Voice alternation in Squliq Atayal (Liu 2004):[3]

a. M-aniq qulih qu *Tali'*.
sv-eat fish QU *Tali*
'Tali eats fish.' Subject Voice (SV)

b. Niq-un na' Tali' qu *qulih* *qasa.*
eat-OV GEN Tali QU *fish* *that*
'Tali ate the fish.' Object Voice (OV)

c. Niq-an na' Tali' qulih qu *ngasal* *qasa.*
eat-LV GEN Tali fish QU *house* *that*
'Tali eats fish in that house.' Locative Voice (LV)

d. S-qaniq na' Tali' qulih qu *qway.*
IV-eat GEN Tali fish QU *chopsticks*
'Tali eats fish with chopsticks.' Benefactive/Instrumental Voice (B/IV)

In each example, one argument of the verb (in italics) is in sentence-final position preceded by the marker *qu*. Voice morphology on the verb (in bold) reflects this choice of

[3] Glosses and translations are modified. It is most common in the Philippine and Formosan literature to refer to Subject Voice and Object Voice as "Actor Voice" and "Patient Voice," respectively.

argument. It is common for Philippine and Formosan languages to have four or five distinct voices. Note that the subject in Non-Subject Voices is preceded by the genitive case maker *na*, which is also used for nominal possessors. This genitive marking of Non-Subject Voice subjects will become important later.

We will refer to the special argument as the "pivot." A terminological warning is immediately in order: we mean to use the terms "pivot" and "voice" as pre-theoretical labels for the privileged argument cross-referenced by verbal morphology in these languages and the morphology cross-referencing it. The use of "voice" should not be conflated with familiar active/passive alternations in non-Austronesian languages.[4]

An important property of voice systems is that Ā-extraction is typically restricted to the pivot argument, as illustrated by Squliq Atayal *wh*-questions (2–3).[5] Subject Ā-extraction requires Subject Voice morphology (2a–b), while object Ā-extraction requires Object Voice morphology (3a–b). This pattern extends to other voices as well.

(2) Subject *wh*-question ⇒ Subject Voice:

a. Ima (qu) wal m-aniq sehuy qasa?
who QU PAST SV-eat taro that
'Who ate that taro?'

b. *Ima (qu) wal niq-un sehuy qasa?
who QU PAST eat-OV taro that

(3) Object *wh*-question ⇒ Object Voice:

a. *Nanu (qu) wal m-aniq (qu) Yuraw?
what QU PAST SV-eat QU Yuraw

b. Nanu (qu) wal niq-un na Yuraw?
what QU PAST eat-OV GEN Yuraw
'What did Yuraw eat?'

Atayal exhibits all of the hallmark properties of an Austronesian-type voice system. These properties are summarized in (4). It is worth noting, however, that not all Austronesian languages which could be or have been described as having a voice system clearly exhibit all four of these characteristics.

[4] A range of different terms have been used in previous Austronesian literature for these same notions. For example, the terms "subject," "focus," "topic," and "trigger" have all been used by some authors for what we call the "pivot" here. Similarly, the "voice system" is often called a "focus system," among other terms. See Blust (2002); Ross and Teng (2005) for an overview of terminological use in the literature, also discussed in Blust (2013: sec. 7.1).

[5] *Wh*-questions in Atayal and other Austronesian voice system languages have been variously analyzed as Ā-movement of the *wh*-word itself or a pseudocleft construction with the *wh*-word predicating a headless relative to its right; either way, we assume these examples involve Ā-extraction over the pivot argument.

(4) Characteristics of Austronesian-type voice systems:
   a. A privileged argument: One argument is designated the "pivot," and is realized in a particular morphological form and/or structural position, regardless of its original grammatical function.
   b. Articulated voice morphology: Morphology on the verb varies with the choice of pivot, including options for taking certain oblique arguments as pivots.
   c. Extraction restriction: Ā-extraction (*wh*-movement, relativization, topicalization, etc.) is limited to the pivot argument.
   d. Marking of non-pivot subjects: Non-pivot subjects are morphologically marked, often coinciding with the form of possessors (i.e. genitive case).

One of the main challenges of Austronesian syntax is to explain this unique constellation of properties. One prominent attempt to do so, which we will now review, is to analyze voice systems as morphologically and syntactically ergative. (See also Kaufman (Chapter 24, this volume) for further discussion of Austronesian voice systems and their analysis.)

16.1.2 The Ergative Hypothesis

In the late 1970s and early 1980s, a line of work emerged suggesting that voice system languages should be analyzed as morphologically and syntactically ergative (De Guzman 1976, 1988; Payne 1982; Cooreman et al. 1984; Gerdts 1988b), and the hypothesis has been modernized and championed in the past decade by Aldridge (2004 and subsequent work). Payne (1982), for example, draws explicit parallels between the clause structure of Tagalog and that of the ergative language Yupik Eskimo.

The central tenet of the ergative hypothesis is that the privileged argument of the clause (our "pivot") carries absolutive case. Marked subjects in Non-Subject Voices are ergative arguments. Subject Voice clauses with transitive roots are analyzed as antipassive clauses, so that Voice morphology is, in the simplest cases, a marker of the verb's syntactic transitivity.

We illustrate the ergative hypothesis using the Squliq Atayal voice system described in section 16.1.1.[6] Example (5a) repeats the Squliq Atayal examples (1b), reglossed according to an ergative analysis, together with an intransitive clause from Liu (2004) in (5b). Alterations are bolded.

(5) Squliq Atayal as an ergative language:
   a. Niq-un na' Tali' qu qulih qasa.
      eat-TRANS ERG Tali ABS fish that
      'Tali ate the fish.' Object Voice (1b) = transitive

[6] The presentation here follows ergative analyses of Atayal as in Huang (1994) and Starosta (1999); and the ergative analysis of the sister language Seediq (Atayalic) in Aldridge (2004).

b. Cyux m-'abi' qu Tali'.
PROG INTRANS-sleep ABS Tali
'Tali is sleeping.' Subject Voice = intransitive

In an ergative analysis, Object Voice clauses are analyzed as simple transitive clauses, in which the object is marked with absolutive case and the subject with ergative case (5a). Recall that in Atayal Object Voice—and more generally in Non-Subject Voices—the subject is morphologically marked in the same way that nominal possessors are, with the marker *na*. This is treated as a syncretism between ergative and genitive case, a common pattern cross-linguistically (Trask 1979). In this analysis, Subject Voice marks a syntactically intransitive clause, so that the prototypical case of SV is an example like (5b), in which the intransitive subject is morphologically marked in the same way as the transitive object in (5a): with the absolutive marker *qu*. The voice morphology glossed as OV and SV in (5) are then markers of the clause's syntactic transitivity, transitive and intransitive, respectively.

This analysis can be extended to Subject Voice clauses with transitive roots by treating them as antipassive constructions. (See Polinsky (Chapter 13, this volume) for an overview of the antipassive cross-linguistically.) The antipassive alternation takes the transitive verb in (5a) and demotes the object *qulih* 'fish' into an oblique, resulting in a syntactically intransitive verb with a single argument, *Tali*. The result is (6): the verb is now intransitive and therefore bears intransitive morphology (*m-*). *Tali* is now the subject of an intransitive verb and thus carries absolutive (*qu*). No morphology is associated with the antipassivization proper.[7] The argument 'fish' which was demoted is, under this view, now an oblique. No oblique marking is observed in (6), but note that this argument would be preceded by a distinct marker in other Atayalic languages such as Mayrinax Atayal (Huang et al. 1998; Huang 2000).

(6) Subject Voice with a transitive root is analyzed as an antipassive (AP):
M-aniq qulih qu Tali'.
INTRANS-eat(AP) fish(OBL) ABS Tali
'Tali eats fish.' Subject Voice (1a) = antipassive

Additional voices beyond Subject and Object Voice can be analyzed as applicative constructions (Aldridge 2004), which introduce an adjunct or indirect object as the highest internal argument. It is this argument that is then picked out as the absolutive. Note that we will mainly concentrate on the contrast between Subject and Non-Subject Voices, taking Object Voice as our representative case.

The final ingredient in an ergative analysis is syntactic ergativity. Recall that in Austronesian-type voice systems, only the pivot argument cross-referenced by voice morphology (in the descriptive terminology used in the previous section) can be

[7] The lack of overt morphological evidence for the ergative hypothesis led some researchers to develop alternative, usage-based diagnostics for ergativity, for example based on the corpus frequency and acquisition of different voices. Such arguments will not be discussed here. See Cumming and Wouk (1987) for review and discussion.

Ā-extracted. Under the ergative hypothesis, this is described as a restriction that only absolutive arguments can be Ā-extracted. For example, a transitive object *wh*-question requires Object Voice, which is the regular transitive clause form, as the object is then the absolutive argument. A transitive subject *wh*-question requires Subject Voice, which uses antipassivization to turn the transitive subject into an absolutive argument.[8]

This type of extraction restriction is independently observed in many (though not all) morphologically ergative languages (e.g. Manning 1994). A classic example of this extraction restriction in an unambiguously morphologically ergative language comes from Dyirbal (Pama-Nyungan; Australia), in (7a–c).

(7) Dyirbal relativization targets the absolutive (Dixon 1979: p. 128):

a. ŋuma-ŋgu [duŋgara-ŋu]-ru yabu bura-n.
father-ERG cry-REL-ERG mother(ABS) see-PAST
'Father, who was crying, saw mother.' Intransitive subject relative

b. ŋuma [yabu-ŋgu bura-ŋu] duŋgara-nʸu.
father(ABS) mother-ERG see-REL cry-PAST
'Father, who mother saw, was crying.' Transitive object relative

c. ŋuma [bural-ŋa-ŋu yabu-gu] duygara-nʸu.
father(ABS) see-AP-REL mother-DAT cry-PAST
'Father, who saw mother, was crying.' Transitive subject relative ⇒ antipassive

Intransitive subjects and transitive objects (absolutive arguments) can be relativized without restrictions, but relativization of a transitive subject requires an antipassivization step first (7c), in order to make the subject an absolutive.

This property that only absolutive arguments can be Ā-extracted is often referred to simply as "syntactic ergativity," although the label originally referred to the presence of any syntactic process sensitive to the ergative/absolutive distinction. We will adopt this terminological choice here and refer to this syntactically ergative extraction asymmetry as "syntactic ergativity."

Consider how the ergative hypothesis captures each of the core properties of voice systems (4):

(8) The ergative hypothesis for Austronesian-type voice systems, following (4):

a. A privileged argument: Every clause has one absolutive argument.

b. Articulated voice morphology: Morphology on the verb reflects the transitivity of the clause and any argument structure alternations, which correlate with the choice of absolutive argument. Applicatives introduce an additional argument as the highest internal argument, which will thus be absolutive.

[8] See for example Aldridge (2004) for a detailed derivation o fthis extraction restriction. Note that, for Aldridge, the structural position of absolutive arguments makes it the unique target for movement; the extraction asymmetry is not a ban on movement of ergative or oblique arguments per se.

c. Extraction restriction: The language is syntactically ergative: Ā-extraction (*wh*-movement, relativization, topicalization, etc.) is limited to the absolutive argument.
d. Marking of non-pivot subjects: Transitive subjects are ergative. Ergative may be syncretic with genitive. (In Subject Voice, antipassivization makes the subject absolutive.)

The ergative hypothesis was illustrated here using the Atayalic language of Squliq Atayal, but it has also been considered in contemporary literature for other well-studied Austronesian voice system languages, including Tagalog (Aldridge 2004), Malagasy (Paul and Travis 2006), and Indonesian (Aldridge 2008b).

The strength of the ergative hypothesis lies in the fact that it offers an explanation of voice system behavior that does not require postulating mechanisms that are unique to Austronesian. Under the assumption that Austronesian languages are syntactically ergative, this view allows us to recast voice systems as a particular grouping of argument structure alternations which are otherwise cross-linguistically well attested.

In the next two sections, however, we show that there are voice systems which cannot plausibly be analyzed as ergative. In Dinka, a Nilotic language with all the properties of an Austronesian voice system, dissociations between voice and case uncover a consistently nominative-accusative alignment. In Balinese and Bahasa Indonesia, two Malay/Indonesian languages, multiple extraction in questions, topicalization, and relative clauses reveals the absence of syntactic ergativity in OV clauses. These facts suggest that neither morphological nor syntactic ergativity are necessary ingredients for an Austronesian-type voice system. We conclude then that, even if ergativity might underlie some Austronesian voice systems, there must be mechanisms other than ergativity that will bring about a voice system.

16.2 Dissociating Case and Voice in Dinka

In this section, we introduce the voice system of the Nilotic language Dinka. As in Austronesian languages, voice morphology in Dinka correlates with restrictions on extraction and changes in case relations. Most importantly for our purposes, Dinka subjects display the same case pattern that has provided the impetus for the ergativity view of Austronesian voice, alternating between unmarked case in the Subject Voice and a marked case also used for possessors in all other voices, variously referred to as genitive, oblique, or marked nominative (Andersen 1991, 2002; König 2008b, Chapter 37, this volume).

However, in Dinka, case marking on subjects is dissociable from voice morphology. We will show that there are several syntactic environments in which the voice system is suppressed, triggering the appearance of Subject Voice as a morphological default. In

these contexts, however, subjects still appear in the genitive case, the case that would be treated as ergative in an ergative analysis. In fact, these environments show a consistent nominative-accusative alignment. As a result, there must be a mechanism that yields these case marking patterns that is independent of voice morphology.[9]

16.2.1 The Dinka Voice System

Dinka is a Nilotic language spoken in South Sudan. Data in this chapter is from Dinka Bor, the major dialect in the southeastern dialect group. Dinka is a V2 language, which, following van Urk (2015), we take to reflect a requirement of C that it must have a specifier, with concomitant movement of the highest verb/auxiliary up to C. Dinka, like Malagasy (e.g. Pearson 2001, 2005), has three voices, which reflect the grammatical function of the noun phrase in Spec-CP, or the pivot. Subject Voice is used when the subject is the clause-initial pivot (9a), Object Voice when it is the object (9b), and the Oblique Voice is employed for all other choices of pivot (9c).

(9) Voice on second position verb:

a. Bòl **à-càm** cuïn **cé** păal.
Bol 3s-**eat.sv** food P knife
'Bol is eating the food with a knife.' Subject Voice (SV)

b. Cuïn à-**cɛ́ɛm** Bôl nè păal.
food 3s-**eat.ov** Bol.GEN P knife
'The food, Bol is eating with a knife.' Object Voice (OV)

c. Păal **à-cɛ́ɛmè** Bôl cuïn
knife 3s-**eat.oblv** Bol.GEN food
'With a knife, Bol is eating the food.' Oblique Voice (OblV)

Voice morphology appears on the verb or auxiliary in C, which is the main verb in (9a–c). However, if an auxiliary is present, the highest auxiliary moves to second position, just as in Germanic V2 languages. In such constructions, voice distinctions are made on the auxiliary and not the verb. The examples in (10a–c) illustrate this for the perfect auxiliary *cé*.[10]

(10) Voice on second position auxiliary:

a. Bòl **à-cé** cuïn câam nè păal.
Bol 3s-**perf.sv** food eat.NF P knife
'Bol has eaten food with a knife.' Subject Voice

[9] See also König (2008b, Chapter 37, this volume) for descriptions of Nilotic languages with the same case pattern without voice morphology.

[10] Dinka differs in this respect from many Austronesian languages, in which voice morphology appears on the verb. However, it is known that even related languages can vary in whether certain

b. Cuiin à-cíi Bôl câam nè păal.
food 3s-PERF.OV Bol.GEN eat.NF P knife
'Food, Bol has eaten with a knife.' Object Voice

c. Păal à-cénè Bôl cuiin câam.
knife 3s-PERF.OBLV Bol.GEN food eat.NF
'With a knife, Bol has eaten the food.' Oblique Voice

As in Austronesian languages, voice has repercussions for case marking and extraction. The pivot always occurs in the unmarked case, regardless of its grammatical function, as evident in the examples in (9a–c) and (10a–c). In addition, voice restricts extraction, so that only the pivot can undergo *wh*-movement, for example (11a–c).

(11) Voice restricts extraction:

a. Yeŋà **càm/*céɛm/*céɛmè** cuiin nè păal?
who eat.SV/eat.OV/eat.OBLV food P knife
'Who is eating the food with a knife?' Subject Voice

b. Yeŋó **céɛm/*càm/*céɛmè** Bôl nè păal?
what eat.OV/eat.SV/eat.OBLV Bol.GEN P knife
'What is Bol eating with a knife?' Object Voice

c. Yeŋó **céɛmè/*càm/*céɛm** Bôl cuiin?
what eat.OBLV/eat.SV/eat.OV Bol.GEN food
'What is Bol eating the food with?' Oblique Voice

Just as in other voice systems, the case marking on subjects alternates with voice. In Subject Voice, the clause-initial subject occurs in the unmarked case (12a), but, in Object Voice or Oblique Voice, subjects appear in the genitive case (12b).[11]

(12) Voice determines case marking on subjects:

a. **Àyén** à-càm cuiin nè păal.
Ayen 3s-eat.SV food P knife
'Ayen is eating the food with a knife.'

b. Cuiin à-céɛm **Áyèn** nè păal.
food 3s-eat.OV Ayen.GEN P knife
'The food, Ayen is eating with a knife.'

morphology is expressed on the verb or auxiliary. We therefore believe this difference does not preclude us from considering Dinka in the context of a broader discussion of Austronesian-type voice systems, as Dinka does exhibit the core properties summarized in (4).

[11] Case marking in Dinka involves tonal alternations. See Andersen (2002) for an overview.

We refer to this case as genitive, because it also appears on possessors (see Andersen 2002 and König 2008b for discussion). In any case, the similarity with Austronesian voice systems is striking. It should be clear then that Dinka has all the properties that make an ergativity approach to voice appealing: a case alternation with subjects and restrictions on extraction that correlate with voice morphology.

16.2.2 Against an Ergative Analysis of Dinka

We will now show that we can rule out an ergative analysis of Dinka. This leads us to the conclusion that, despite the advantages of the ergative analysis, there must be a different mechanism for arriving at an Austronesian-style voice system.

The first problem with an ergative analysis of Dinka is that morphology encoding argument structure alternations has a different distribution than voice morphology. For example, Dinka has an antipassive construction, which is independent of the voice system described in section 16.2.1. As documented in detail by Andersen (1992), antipassive morphology appears on the verb and the object is demoted to an optional PP (13a–b).[12]

(13) Dinka has an independent antipassive:

a. Àyén à-cḛ̈ cuḭ̈n **câam**.
Ayen 3S-PERF.SV food **eat.NF**
'Ayen has eaten the food.'

b. Àyén à-cḛ̈ càm (ḛ̀ cuḭ̈n).
Ayen 3S-PERF.SV **eat.AP.NF** P food
'Ayen has eaten food.'

Antipassive morphology always appears on the lexical verb, even when an auxiliary is present, as (13b) illustrates. Voice morphology, in contrast, shifts to the highest auxiliary if one is present, as previously discussed. This difference is problematic for a view in which voice morphology is argument structure morphology, particularly if we treat Subject Voice as an antipassive.

Another problem faced by an ergative view of Dinka is that the mechanisms behind voice morphology can be shown to be independent of the mechanisms behind genitive case marking. In particular, there are several syntactic environments in Dinka in which

[12] There is also an independent applicative construction, which introduces benefactive arguments. Like the antipassive, this morphology is restricted to the verb. It is not unreasonable to think, however, that Dinka might have two distinct applicatives (along the lines of Pylkkänen 2002).

Mark Baker (p.c.) asks whether we could think of Dinka as having two different antipassives, as has been claimed for some Mayan languages. However, it is not clear that all of the constructions that have been analyzed as antipassives in Mayan in fact are true antipassives—see e.g. Smith-Stark (1978), Grinevald Craig (1979), Aissen (1999a), Stiebels (2006) for arguments against viewing Agent Focus (formerly described as the "agentive/focus antipassive") as an antipassive.

V1 order is possible, and where no phrase overtly moves to Spec-CP. In these contexts, subjects surface in the genitive case, but the clause is marked with Subject Voice.

The V1 pattern is found obligatorily in *yes-no* questions and optionally in *wh*-in situ questions or after the finite complementizer *è̤*. Both environments involve full finite clauses, but differ from matrix declarative clauses in allowing V1 order (14a–c).

(14) V1 order in yes-no and in situ questions and embedded clauses:

a. Cé̤ Áyèn cuī̤n câam?
PERF.SV Ayen.GEN food eat.NF
'Has Ayen eaten the food?'

b. Cám Bôl ŋó̤?
eat.SV Bol.GEN what
'What is Bol eating?'

c. A-yṳ̀ṳ̀kṳ̀ luêeel [è̤ cé̤ Áyèn cuī̤n câam].
3S-HAB.1PL say.NF C PERF.SV Ayen.GEN food eat.NF
'We say that Ayen has eaten the food.'

We propose that the V1 order arises because these constructions involve C heads that do not require V2.[13] When these V1 orders are possible, every nominal in the clause is case-marked just as when it is not the pivot. Subjects are genitive, as in Object Voice and Oblique Voice clauses. Importantly, however, a V1 clause only allows Subject Voice morphology. This mismatch is surprising under an ergative analysis. If we take Non-Subject Voice morphology to reflect ergative alignment, genitive should not be able to surface in the absence of this morphology. It should not matter whether V2 is possible, since these clauses are big enough to host the requisite argument structure alternations.

It is worth reflecting briefly on what kind of approach to voice morphology might fare better with regard to the facts in (14a–c). We think that, at least for Dinka, this pattern argues strongly for an analysis in which voice morphology is treated as extraction marking, as in *wh*-agreement or case agreement approaches (e.g. Chung 1994; Richards 2000; Pearson 2001, 2005; Rackowski 2002). If voice morphology is a by-product of extraction, then there should not be voice distinctions in clauses without extraction. We can then interpret the Subject Voice just as the default form in the voice morphology paradigm.[14]

The final problem for an ergative analysis we would like to discuss is that the genitive case on non-pivot subjects shows no sensitivity to properties of the verb, such as transitivity and

[13] Another option is that some of the constructions involve silent operators that satisfy V2 but do not participate in the voice system, either because they are not nominal in nature or because they are base-generated in the left periphery and so have not undergone movement.

[14] Certain nonfinite clauses in a range of Formosan languages can only occur in Subject Voice (Chang 2010), which suggests that Subject Voice is a morphological default in these languages as well. This view is strengthened by the analysis of such embeddings as restructuring, and the availability of so-called long passive constructions which show that the embedded Subject Voice morphology is not syntactically real. See Chen (2010, 2014) for such arguments from Mayrinax and Squliq Atayal and Wurmbrand (2015) for discussion.

unaccusativity.[15] As long as the subject is not clause-initial, such as in a V1 clause, genitive case may surface in unaccusatives (15a), unergatives (15b), and antipassives (15c).[16]

(15) Genitive case occurs with all intransitives:

a. Bé̤ lè̤c dhuôoŋ?
FUT.SV **stick.GEN** break.INCH.NF
'Will the stick break?'

b. Thé̤t Bôl?
cook.SV **Bol.GEN**
'Is Bol cooking?'

c. Bé̤ Bôl càm (è̤ cuî̤in)?
FUT.SV **Bol.GEN** eat.AP.NF P food
'Will Bol eat food?'

This pattern too is surprising under an ergative analysis, because it reveals a consistent case marking for subjects according to a nominative-accusative alignment.

Taken together, these facts suggest that there are mechanisms other than ergativity that will yield an Austronesian-type voice system. Specifically, it seems clear that there are syntactic processes independent of ergativity that may lead to voice morphology as well as a case alternation involving genitive for subjects.

16.2.3 Genitive as a Repair

In this section, we consider the question of what mechanism might lie behind the assignment of genitive case in Dinka. As discussed in the previous section, we assume that voice morphology in Dinka should be treated as a form of extraction marking, as in *wh*-agreement or case agreement proposals (Chung 1994; Richards 2000; Pearson 2001, 2005), given its independence from the processes behind case marking on subjects. The view of genitive case we want to pursue here is that it represents a strategy for licensing nominals not in a case position, and so functions as a type of repair (cf.

[15] See Rackowski (2002) for similar argumentation in Tagalog.

[16] One of the ways in which we can tell that these are unaccusatives is that verbs like *dhuòoŋ* ('break.INCH') participate in a inchoative/causative alternation (ia–b).

(i) Inchoative/causative alternation:

a. Lé̤c à-bé̤ dhuôoŋ.
stick 3S-FUT.SV break.INCH.NF
'The stick will break.'

b. Bòl à-bé̤ lé̤c dhôoŋ.
Bol 3S-FUT.SV stick break.NF
'Bol will break the stick.'

Donohue and Donohue 2010; Imanishi 2014). To be precise, we follow Halpert (2012) in assuming that, in some languages, case morphology may be merged directly to a nominal to license it, if no other licensing strategy is available.[17] See also Stowell (1981) on English *of*-insertion.

We apply this to Dinka as follows. We propose, following van Urk (2015), that Dinka Spec-CP fulfills both of the functions traditionally associated with Spec-CP and Spec-TP, so that it is the landing site of Ā-movement, but also a case position. In Subject Voice, subjects receive case in Spec-CP and so appear in the unmarked case. In Non-Subject Voices, however, the subject needs to be licensed in a different way, because Spec-CP is occupied and T is not a case assigner. This is the role of genitive case morphology. In Dinka, this strategy is not necessary for other nominals. As van Urk and Richards (2015) show, there is a position for objects inside of the verb phrase where they may receive unmarked case.

This analysis extends well to Austronesian languages. A number of Austronesian systems can be described in the same terms as Dinka. An example is the (Squliq) Atayal system described in section 16.1 (16a–c).

(16) Voice in Squliq Atayal, repeated from (1):

a. M-aniq qulih qu Tali'
SV-eat fish QU Tali
'Tali eats fish.' Subject Voice (SV)

b. Niq-un na' Tali' qu qulih qasa.
eat-OV GEN Tali QU fish that
'Tali ate the fish.' Object Voice (OV)

c. Niq-an na' Tali' qulih qu ngasal qasa.
eat-LV GEN Tali fish QU house that
'Tali eats fish in that house.' Locative Voice (LV)

In Atayal, voice morphology references the XP that moves to the position marked by *qu*.[18] Aside from this, however, we see the same case alternations as in Dinka. Subjects are unmarked in Subject Voice and genitive otherwise, while objects are always unmarked.

We might also expect to find voice languages in which the object may also be in need of such a licensing strategy when not in pivot position. This appears to be the case in Tagalog. In Tagalog, any subject or object not cross-referenced by voice morphology is marked genitive (17a–c).[19]

[17] See Rezac (2011) for a technical implementation of the notion of repair, based on similar repairs in the context of violations of the Person-Case Constraint.

[18] The details of the analysis of Atayal is further complicated by the fact that there are cases where *qu* marks an argument other than the pivot. Such cases constitute an argument against viewing *qu* as a case marker. See Erlewine (to appear) for details.

[19] A notable exception is a process of differential object marking that targets proper names and pronouns in the context of subject extraction (e.g. McFarland 1978).

(17) Tagalog voice marking (adapted from Guilfoyle et al. 1992):

a. Sino ang b<um>ili ng damit para sa bata?
who ANG SV.ASP-buy GEN dress for OBL child
'Who bought the dress for the child?' Subject Voice (SV)

b. Ano ang b<in>ili ng tao para sa bata?
what ANG OV.ASP-buy GEN man for OBL child
'What did the man buy for the child?' Object Voice (OV)

c. Sino ang i-b<in>ili ng tao ng damit?
what ANG BV.ASP-buy GEN man GEN dress
'Who was bought the dress (for) by the man?' Benefactive Voice (BV)

This fits well with the notion that genitive is available as an alternative case-licensing strategy. Under this view, the only difference between Tagalog and Dinka or Atayal is that Tagalog also lacks a licensor for objects in non-Object Voices, triggering genitive morphology there as well.[20, 21]

In fact, we can find evidence in Tagalog as well that the distribution of genitive is independent of voice morphology. As pointed out by McGinn (1988) and Schachter (1996), Tagalog, just like Dinka, has constructions without voice distinctions. In the recent perfective, no XP is marked with *ang*-morphology and no voice morphology shows up on the verb (18).[22]

(18) Kabi-bigay lang ng maestra ng libro sa bata.
REC.PERF-give just GEN teacher GEN book DAT child
'The teacher just gave a book to the child.' (Schachter 1996: p. 7)

Importantly, both the subject and the object still receive genitive marking. This construction is then essentially analogous to the V1 constructions of Dinka, and shows that the Tagalog genitive, regardless of whether it appears on the subject or object, is also not dependent on voice.

This section has shown that the mechanisms behind voice morphology can be dissociated from those behind case marking on subjects. This is evidence that there must be routes independent of ergativity that lead to a voice system. We suggested that the marked case on Non-Subject Voice subjects reflects the presence of case morphology directly merged to the nominal, following Halpert (2012) (see also Imanishi 2014), in order to provide a way of case-licensing subjects outside of the voice system.

[20] As Aldridge (2012b) points out, genitive marking on Tagalog objects has interpretive consequences. We adopt Aldridge's proposal that this is result of the interaction between inherent licensing and the application of existential closure. See Aldridge (2012b) for details.

[21] This kind of system could also be a source of Austronesian languages in which objects in non-Object Voices surface with accusative, if we allow for the "repair" case to have a different spell-out inside the VP.

[22] As discussed in McGinn (1988) and Schachter (1996), any XP in a recent perfective clause may undergo extraction. This seems to fit well with the view, implicit in our discussion, that voice morphology is in essence cosmetic and does not impose extraction restrictions.

16.3 Dissociating Voice and Extraction in Malay/Indonesian

As discussed in the previous section, one of the defining characteristics of Austronesian voice systems is that only the nominal cross-referenced by voice morphology, the pivot, is eligible for extraction. Within an ergative analysis of Austronesian voice, this correlation is attributed to syntactic ergativity. Extraction of the subject is only possible in Subject Voice where the subject receives absolutive case.

In this section, we examine *wh*-movement in the Malay/Indonesian languages Balinese and Bahasa Indonesia. We show that contrary to the expectations of an ergative analysis, non-pivot subjects are not immobile. This indicates that syntactic ergativity is not a necessary condition of Austronesian-type voice systems. In addition, there are surprising conditions on the realization of non-pivot subjects in Balinese and Bahasa Indonesia, which suggests that they are subject to a strict head-head adjacency requirement with the verb. We argue that this reflects an alternative licensing strategy, much like genitive case in Atayal, Dinka, and Tagalog.

16.3.1 The Malay/Indonesian Voice System

Balinese and Bahasa Indonesia, as well as other Malay/Indonesian languages like Javanese and Madurese, have three voices: Subject Voice, Object Voice, and an Indo-European-style passive voice. We will only be concerned with Subject and Object Voices here.

In Balinese, Subject Voice is marked by a nasal prefix *ng-*, whose form is phonologically conditioned by the initial segment of the verbal stem (19a). Object Voice is marked by the absence of this prefix (19b). The preverbal position is the canonical pivot position, to the left of all auxiliaries. Non-pivot arguments are realized to the right of the verb.

(19) Balinese Subject Voice and Object Voice

a. Tiang lakar numbas bawi-ne punika.
I will SV.buy pig-DEF that
'I will buy that pig.' Subject Voice

b. Bawi-ne punika lakar tumbas tiang.
pig-DEF that will OV.buy I
'I will buy that pig.' Object Voice

In Bahasa Indonesia, the prefix *meng-*, whose form is also phonologically conditioned, marks Subject Voice (20a). As in Balinese, Object Voice is marked by the absence of this morphology (20b). Unlike in Balinese, non-pivot subjects appear immediately to the left of the verb.

(20) Bahasa Indonesia Subject Voice and Object Voice (adapted from Cole et al. 2008):

a. Tono tidak mem-beli buku di toko buku.
Tono NEG SV-buy book LOC store book
'Tono didn't buy the book at the book store.' Subject Voice

b. Top ini sudah saya beli.
hat this PERF 1SG OV.buy
'I bought this hat.' Object Voice

Compared to the voice systems of Philippine and Formosan languages, the voice inventory of Malay/Indonesian languages is diminished. These languages do not employ separate voice morphology for cross-referencing benefactive, locative or recipient arguments. Rather, they utilize applicative marking that promotes such arguments to direct objects. As a result, any argument other than the external argument that serves as pivot is cross-referenced by Object Voice.

16.3.2 *Wh*-extraction in Indonesian Languages

Balinese and Bahasa Indonesia, like other Austronesian-type languages discussed in the previous section, show *wh*-extraction asymmetries.[23] When the verb bears Subject Voice, only the subject can be extracted. This restriction is easy to see in Bahasa Indonesia in which the marker *yang* co-occurs with *wh*-movement. Consider the dichotomy in (21a–b):

(21) Subject Voice restricts extraction to subjects (Cole and Hermon 2005):

a. *Siapa* yang ___ mem-beli buku di toko buku?
who YANG SV-buy book LOC store book
'Who bought a book at the book store?'

b. **Apa* yang Tono mem-beli ___ di toko buku?
what YANG Tono SV-buy LOC store book
Intended: 'What did Tono buy at the book store?'

[23] In addition to *wh*-extraction, Malay/Indonesian languages permit *wh*-in situ constructions. In such constructions, either argument can be questioned regardless of voice, as illustrated for Balinese by the data in (ia–d).

(i) In situ *wh*-questions show no voice asymmetries:

a. Nyen meli montor anyar?
who SV.buy car new

b. Montor anyar beli nyen?
car new OV.buy who
'Who bought a new car?'

Similar facts obtain in Balinese, although there is no analog of *yang* in the language. In Subject Voice, only the subject may be extracted (22a–b).[24]

(22) Subject Voice blocks object extraction:

a. Nyen ngalih bawi-ne punika ditu ibi?
who SV.seek pig-DEF that there yesterday
'Who looked for that pig there yesterday?'

b. *Apa ci ngalih ditu ibi?
what you SV.seek there yesterday
Intended: 'What did you look for there yesterday?'

In Object Voice clauses, only the object can be *wh*-extracted. The dichotomy is again easily seen in Bahasa Indonesia (23a–b), and also holds in Balinese (23a–b).[25]

(23) Object Voice restricts extraction to objects (Cole and Hermon 2005):

a. *Apa* yang ___ akan kamu lihat?
what YANG will 2SG OV.see
'What will you see?'

b. **Siapa* yang buku ini akan ___ lihat?
who YANG book this will OV.see
Intended: 'Who will see this book?'

(24) Object Voice blocks subject extraction:

a. Apa beli Nyoman?
What OV.buy Nyoman
'What did Nyoman buy?'

c. Cicing ngugut nyen?
dog SV.bite who

d. Nyen gugut cicing?
who OV.bite dog
'Who did the dog bite?'

Similar observations are made for Bahasa Indonesia by Cole et al. (2008). These facts indicate that voice only restricts extraction, and not whether the non-pivot argument can be questioned.

[24] We could imagine analyzing (22a) as an instance of *wh*-in situ (as in n. 23). However, more complex examples involving object scrambling showthat *wh*-subjects can undergo movement in the Subject Voice, as discussed by Arka (2004).

[25] Here, we cannot actually be sure that (24a) involves *wh*-extraction rather than *wh*-in situ, since scrambling the subject before the verb in OV is independently ungrammatical (Artawa 1994; Clynes 1995; Wechsler and Arka 1998). Furthermore, given the relatively free word order of adverbial elements, we cannot be sure that the relative position of the *wh*-phrase with respect to an adverbial indicates overt movement. Nevertheless, given the availability of overt *wh*-movement in SV clauses, we take such movement to be possible here as well.

b. *Nyen montor anyar beli ___?
who car new ov.buy
Intended: 'Who bought a new car?'

Based upon the extraction asymmetries illustrated in (23)-(24), it is often reported that *wh*-extraction only targets the nominal cross-referenced by the verb (e.g. Wechsler and Arka 1998, Arka 2004 for Balinese; Cartier 1979, Hopper 1983, Verhaar 1988, Arka and Manning 1998, for Bahasa Indonesia). Like the extraction asymmetries in Philippine and Formosan Austronesian languages which display more articulated voice systems, these facts are amenable to an ergative analysis of Austronesian voice, in which these extraction restrictions are attributed to syntactic ergativity although Balinese and Bahasa Indonesia both lack overt case morphology.

However, the extraction restriction in Balinese and Bahasa Indonesia is not as rigid as it is in Atayal or Dinka. It is possible to extract *both* subject and object arguments, so long as the appropriate Voice morphology is realized.[26] Unlike the ungrammatical (22b), the object and subject may simultaneously be extracted in Balinese when the verb bears OV morphology (25a–b).

(25) OV permits non-subject extraction:
a. *Apa* ci alih ___ ditu ibi?
what you ov.seek there yesterday
'What did you look for there yesterday?'

b. *Buku nyen* Nyoman lakar baca ___?
book which Nyoman will ov.read
'Which book will Nyoman read?'

In (25), neither argument is in situ, because both are realized to the left of the verb.[27] Such examples are problematic for an analysis of Austronesian voice which involves syntactic ergativity, because they show that non-pivot arguments may undergo movement. Extraction of an object over an already extracted subject is also attested in topicalization. In an SV clause, both the canonical SVO word order and the marked OSV word order are well formed (26) (Arka 2004).

[26] See e.g. Cole et al. (2008) and Yanti (2010) for similar observations in related languages.

[27] Edith Aldridge (p.c.) asks whether the preverbal subjects in (25) could be clitics on the verb. They cannot be, for two reasons. First, Balinese does have a series of pronominal clitics but they follow the verb, as in (i) below from Wechsler and Arka (1998: p. 21). Second, these pronominal clitics are always hosted by the lexical verb, but the preverbal subjects can precede auxiliaries, as in (25b).

(i) Buku-ne jemak=a.
book-DEF ov.take=3
'(S)he took the book.'

(26) Non-pivot object topicalization:

a. Tiang nunas kopi-ne niki.
1 sv.take coffee-DEF this
'I took this coffee.'

b. Kopi-ne niki tiang nunas.
coffee-DEF this 1 sv.take
'This coffee, I took it.'

Again, in (26), neither argument is in situ, because both are realized to the left of the verb, illustrating that non-pivot arguments may undergo movement.

A similar argument has been made from Bahasa Indonesia relative clauses (Chung 1976, 1978; Cole and Hermon 2005). As in matrix *wh*-questions, relative clauses display extraction asymmetries. An object cannot be relativized if the predicate of the embedded clause bears SV morphology and the subject is in pivot position (27).

(27) Subject Voice restricts extraction to subjects:

*[Buku [yang Budi tidak akan **mem-baca**]] sangat menarik.
[buku [YANG Budi NEG will **SV**-read]] very interesting
Intended: 'The book that Budi will not read is very interesting.'

However, if the verb appears in OV, object relativization can accompany subject fronting (28).

(28) Object Voice permits multiple extraction:

[Buku [yang Budi tidak akan **baca**]] sangat menarik.
[buku [YANG Budi NEG will **OV**.read]] very interesting
'The book that Budi will not read is very interesting.'

We can see that the subject has undergone movement, because it is realized to the left of auxiliaries and negation (cf. (20)a–b). Like Balinese matrix *wh*-questions, the behavior of Bahasa Indonesia relative clauses reveals that OV is dissociable from extraction.

The observation that multiple arguments can be extracted in Malay/Indonesian languages indicates that syntactic ergativity is not a necessary condition on the formation of voice systems. Voice does not determine which arguments are available for extraction, as would be expected under a strict implementation of syntactic ergativity. Rather, Voice seems to indicate which arguments have been extracted to which positions.[28] This characterization is, like the Dinka data in section 16.2, amenable to a view that Voice morphology is extraction marking, as in *wh*-agreement or case agreement approaches (e.g.

[28] This second point is critical. Not all extraction is marked equally. *Wh*-extraction of the object over the subject requires OV morphology, as in (25) and (28). Topicalization requires SV morphology (26). We suggest that the positions targeted by these movements are distinct. Movement to the former results in a change of Voice; movement to the latter does not. Chamorro *wh*-agreement also displays a change in verbal morphology triggered by *wh*-movement (Chung 1994).

Chung 1994; Richards 2000; Pearson 2001, 2005). If voice morphology is a by-product of extraction, then multiple arguments should be able to extract, as is attested. Voice simply marks the results of the extraction process.[29] What remains to be explained is why certain combinations of extracted arguments, like (24b), are unattested, which will be addressed in the following section.

16.3.3 The Behavior of Non-Pivot Subjects

The ergativity hypothesis faces further complications when considering restrictions on non-pivot subjects. In this section, we show that there are constraints on what nominals are well formed as non-pivot subjects in Balinese.[30] Specifically, such nominals must display head-head adjacency between the nominal head and verb (e.g. Baker 2014b; Levin 2015). We suggest that this represents an alternative method of subject licensing, in lieu of the genitive case in Atayal, Dinka, and Tagalog.[31]

In Balinese, in situ subjects do not appear in a dedicated case, as in Dinka or as in many other Austronesian languages. In fact, there is no overt case morphology in the language. Instead, in situ subjects are constrained in entirely different ways. These subjects can only be realized as pronouns (29a),[32] proper names (29b), and indefinite NPs (29c). Definite descriptions are blocked from appearing in post-verbal position (29d) (Wechsler and Arka 1998).

(29) The form of Balinese *in situ* subjects:

a. Be-e daar **i**da.
fish-DEF OV.eat 3sg
'(S)he ate the fish.'

b. Be-e daar Nyo**m**an.
fish-DEF OV.eat Nyo**m**an
'Nyoman ate the fish.'

c. Be-e daar **cic**ing.
fish-DEF OV.eat **d**og
'A dog ate the fish.'

d. *Be-e daar **cic**ing-e.
fish-DEF OV.eat **d**og-**DEF**
'The dog ate the fish.'

[29] This position is taken in Saddy (1991) and was later adopted by Cole and Hermon (1994, 1998) and Soh (1996). However see Aldridge (2008b) for an alternative proposal.

[30] Similar facts hold of Bahasa Indonesia (Guilfoyle et al. 1992; Sneddon 1996). However, non-pivot subjects are limited to pronouns and proper names.

[31] See Baker (1988) for a specific implementation of how adjacency of a nominal to a verb, or more accurately the adjunction process which yields adjacency, i.e. Head Movement, can license that nominal in the absence of case assignment.

[32] The pronominal element is a clitic in low register and a free pronoun in high register speech.

This is not an instance of differential subject marking, because it groups together indefinite subjects, pronouns, and proper names, to the exclusion of definite subjects, unlike any process of differential argument marking (e.g. Aissen 2003b). Levin (2015) argues instead that what the acceptable subjects in (29a–d) have in common is that the highest nominal head (D^0 in the case of (29a–b) and N^0 in the case of (29c)) is surface adjacent to the verb. In contrast, definite subjects are headed by the suffix *-e*; the NP then intervenes between the verb and the highest nominal head.

This reflects a more general pattern. Whenever linear adjacency of the verb and the highest nominal head is disrupted, ungrammaticality arises. Such intervention can be caused both by material outside of the nominal or by material inside of the nominal. Adverbs, which generally show freedom of placement in the clause (e.g. Wechsler and Arka 1998), cannot appear between the verb and OV subject (30).

(30) NP-external intervention:
*Be-e daar **keras-keras** ida/Nyoman/cicing.
fish-DEF ov.eat **quickly** 3sg/Nyoman/dog
'(S)he/Nyoman/A dog ate the fish quickly.'

Similarly, while modifiers are canonically realized to the right of the nominal they modify, some can be realized to the left (31a). Modifier-noun order is impossible with OV subjects, however, because the modifier intervenes between the verb and the subject (31b).[33]

(31) NP-internal intervention:
a. (Liu) cicing (liu) ngugut Nyoman
many dog many sv.bite Nyoman
'Many dogs bit Nyoman.
b. Nyoman gugut (*liu) cicing (liu)
Nyoman ov.bite **many** dog many
'Many dogs bit Nyoman.

We propose that this reflects a strategy of subject licensing under adjacency, following Levin (2015). In particular, we suggest that, as in Dinka, there is no case position for non-pivot subjects, and so these subjects require an alternative method of licensing. This approach lets us capture the adjacency facts, but can also explain the limited set of nominals which can occur as non-pivot subjects. Only those nominals in which the nominal head is immediately adjacent to the verb will be well formed. This restricts definite DPs to pronouns and proper names, because any other DP will have (overt)

[33] See Baker (2014b) and references cited therein for similar observations regarding pseudo-noun incorporation. In such constructions head-head adjacency is also required between the nominal head of a caseless NP and the verb. Intervention effects arise when NP-external and NP-internal material disrupts the required adjacency.

NP-material intervening between the D^0 head, which appears to the right of the NP, and the verb. Furthermore, while NPs can be larger than N^0, as in (31b), their head must be the leftmost element in the phrase.

As in Dinka, there are then two possible means of licensing the subject in Balinese (and Bahasa Indonesia). Recall from our previous discussion of the genitive repair in Dinka that we take the pivot position to be the landing site of Ā-movement, but also a case position. In Subject Voice, subjects receive case in this position. In Non-Subject Voices, however, the subject needs to be licensed in a different way, because the pivot position is occupied. This is the role of licensing under adjacency. We believe that the general logic of Baker's (1988, and subsequent work) account of licensing via Head Movement can be extended to these data. Specifically, we suggest, following Levin (2015), that adjunction of a nominal head to a verbal head renders it invisible to the Case Filter.[34]

Crucially, ungrammatical instances of multiple extraction can be captured under this view of licensing via adjunction. As noted, multiple extraction is possible when the object is extracted over an already extracted subject in the case of *wh*-movement (25) and topicalization (26). However, *wh*-movement (24b), repeated in (32a) or topicalization (32b) of a subject over an already extracted object is ungrammatical (32).

(32) Subjects cannot extract across a fronted object:

a. *Nyen montor anyar beli ___?
who car new ov.buy
Intended: 'Who bought a new car?'

b. *Cicing ia uber ___.
dog 3 ov.chase
Intended: 'A dog, it chased him/her.'

The ungrammaticality of these sentences can be captured as a failure to case-license the subject. We propose that only the pivot position is a case-position. All other positions in the left periphery are strict Ā-positions, unable to case-license arguments. If the subject is not extracted to pivot position, it must be licensed under adjunction in immediately postverbal position. Subsequent movement operations either cannot target the subject at all due to this requirement, or move the subject to a position in which licensing under adjunction is impossible, yielding ungrammaticality.

Similar facts obtain in Austronesian languages with more voices, such as Malagasy. As discussed in Paul (1996) and Keenan (2000), non-pivot subjects undergo a form of compounding with the initial verb referred to as *N-bonding*,[35] as the examples in (33a–c) demonstrate.

[34] Levin (2015) assumes that adjunction can occur at various points in the derivation (e.g. Halle and Marantz 1993; Bobaljik 1995). See Embick and Noyer (2001) for an articulated account of the interaction of adjunction and derivational timing. In the case of Balinese, adjunction occurs very late in the derivation aft er linear order has been established, capturing the strict, linear head-head adjacency requirement.

[35] N-bonding is also attested on possessors, again highlight the similarity of form shared by (non-pivot) subjects and possessors attested in many of the languages discussed in this chapter. This may suggest that possessors and non-pivot subjects in Malagasy both lack a licensor.

(33) N-bonding in Malagasy:

a. Hitan-ny lehilahy ny trano.
OV.see-DET man DET house
'The house was seen by the man.'

b. Hitan-ao ny trano.
OV.see-2SG DET house
'The house was seen by you.'

c. Hitan-dRabe ny trano.
OV.see-Rabe DET house
'The house was seen by Rabe.'

Just as in Balinese, these subjects cannot be separated from the verb (34a–b).

(34) Malagasy non-pivot subjects must be right-adjacent to the verb (adapted from Pearson 2005):

a. Nohanin-ny gidro *haingana* ny voankazo omaly.
PAST.OV.eat-DET lemur *quickly* DET fruit yesterday
'The lemur ate the fruit quickly yesterday.'

b. *Nohanin' *haingana* ny gidro ny voankazo omaly.

We propose that these subjects are licensed in the same way as Balinese non-pivot subjects, under adjunction, which yields head-head adjacency. Unlike Balinese, non-pivot subjects can be definite in Malagasy, as (33a) and (34a) show. Importantly, Malagasy differs from Balinese in that the D head is leftmost in the noun phrase and so is immediately adjacent to the verb.[36]

16.4 Concluding Remarks

In this chapter, we have shown that there are languages with Austronesian-type voice systems that do not display any ergativity. We introduced novel data from the Nilotic language Dinka, a non-Austronesian language with a voice system, which has a consistent underlying nominative-accusative alignment. In addition, we documented a dissociation between voice and extraction in Malay/Indonesian languages, which argues against the idea that all voice systems display syntactic ergativity. On the basis of these facts, we conclude that ergativity cannot be the only route to a voice system.

[36] Lisa Travis (p.c.) observes that in Malagasy Oblique Voice constructions, the non-pivot subject displays head-head adjacency with both unergative and unaccusative verbs. We assume that in both cases there is only one argument licensor. Burzio's generalization holds. When a non-core argument is extracted to pivot, the subject, regardless of base position, must be licensed under adjunction with the verb.

At the same time, there is an important generalization in the behavior of these different voice system languages: non-pivot subjects are treated differently from other arguments. In Atayal, Dinka, and Tagalog, non-pivot subjects appear in genitive case. In Balinese and Malagasy, non-pivot subjects require adjacency with the verb. We can give a unified characterization to these two types of behaviors through a requirement that non-pivot subjects require a special form of licensing (Case). The two strategies observed are simply two different ways of licensing the non-pivot subject. This licensing requirement is shared between voice system languages which are more amenable to an analysis as morphologically ergative and those which are not. A remaining open question is why and how languages differ in the availability of these two repairs: a last-resort genitive case and licensing by adjacency.

One final issue we would like to discuss relates to the analysis of voice morphology. The dissociations between voice and extraction we observed in Dinka and Malay/Indonesian support a treatment of voice as extraction marking (e.g. Chung 1994; Richards 2000; Pearson 2001; Rackowski 2002). In ongoing work, we develop a theory for Austronesian-type voice systems as extraction marking, which also explains the need for exceptional licensing of non-pivot subjects.

Acknowledgments

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Abbreviations

ABS, absolutive; AP, antipassive; ASP, aspect; BV, Benefactive Voice; DEF, definite; ERG, ergative; FUT, future; GEN, genitive; HAB, habitual; INCH, inchoative; INTRANS, intransitive; IV, Instrumental Voice; LOC, locative; LV, Locative Voice; NEG, negation; NF, nonfinite; OBL, oblique; OBLV, Oblique Voice; OV, Object Voice; P, preposition; PAST/PST, past; PRF/PFCT, perfect; REL, relative clause marker; SV, Subject Voice; TRANS, transitive.