# The Mismatch between Morphological Symmetricality and Syntactic Ergativity in Pazeh

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#### **Abstract**

This paper discusses the interaction and the mismatch between a syntactically ergative system and morphologically symmetrical markings in Kulon-Pazeh (Austronesian language, ISO: UUN, Taiwan, henceforth Pazeh), specifically referring to the effect of voice morphology on the surface realisation of arguments. Based on the evidence from Pazeh, I argue that there is no one-to-one correspondence of symmetricality or correlation between syntax and morphology. At the morphology level, Pazeh demonstrates symmetricality for the markings on the verbs in actor voice, undergoer voice and instrumental voice, but at the syntactic level, the surface realisation of arguments shows that the system is, in fact, ergative, and hence deeply asymmetrical. This study shows that the operation of the Pazeh voice system contains a mismatch of symmetricality between syntax and morphology, involving copresent parallel structures which can be best illustrated using the Lexical Functional Grammar (LFG) framework. The finding contributes to the empirical understanding on voice alternations and the alignment system of Austronesian languages of Taiwan.

# 1 Introduction<sup>1</sup>

Voice systems are a typical feature of many Austronesian languages. For Philippine-type voice systems, it is commonly claimed that the semantic role of the subject is indicated by the affix on verb (Himmelmann, 2005; Zeitoun & Huang, 1997). The notion of symmetricality of Austronesian voices has been discussed jointly at both the syntactic level and the morphological level in the literature. The definition varies from author to author. According to the definition given by Himmelmann (2005: 113-114), having a symmetrical voice system may refer to having at least two voice alternations with morphological markings on the verb, and neither of the verb forms is a derived form of another. Symmetricality at the syntactic level is also observed in some Western Austronesian languages, also known as the Indonesian-type, where none of the voices has their nominal arguments taking overt marking by prepositions or case markers (Arka, 2003; Himmelmann, 2002: 11, 2005: 112). In Balinese, actor and patient arguments of transitive verbs can be equally selected as the grammatical subject without demotion of the other argument (Arka, 2019). However, unlike the Indonesian-type languages, Pazeh is

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<sup>&</sup>lt;sup>1</sup> I would like to thank the anonymous external and internal reviewers for their comments which contribute to the improvement of this paper. All remaining errors are my own.

categorised as the Philippine-type. Based on the above definition of symmetricality, Pazeh only demonstrates symmetricality for voice alternations at the morphological level, not at the syntactic level. That is, the morphosyntactic operations for voices in Pazeh reveal a mismatch between morphological symmetricality and syntactic ergativity. Traditional terminology used by previous studies on this language has been hindering the search for a suitable morphosyntactic category for its voice system, and often led to confusion with the type of alignment system whether it is symmetrical, accusative or ergative.

This paper is organised as follows: In section 2, I present an overview of the morphological marking for three identified voices in Pazeh, illustrating the symmetrical markings at the morphological level. In section 3 and 4, I provide an overview of the phrasal markers and grammatical functions in Pazeh, showing evidence for a syntactically ergative system in Pazeh. In section 5, I provide empirical data for pronominals to illustrate how the pronominal paradigm in Pazeh supports an ergative analysis. Concluding remarks are given in section 6.

## 2 Pazeh voices and morphological affixation

Pazeh is an indigenous language of Taiwan, which used to be spoken in the northwest plains. It can be considered as a language with a null pronoun (i.e. pro-drop languages discussed in (Falk, 2006: 49–60)). Previous studies on Pazeh including Lin (2000) and Li and Tsuchida (2001, 2002) have identified at least three voices in Pazeh² (i.e. mV-, -en, sa(a)-...(-an)/ si-...-(-an)). The affixes are used to denote actor voice, undergoer voice and instrumental voice respectively. To illustrate, in actor voice, the affix selects a nominal phrase to be the subject whose semantic role is Agent, as in (1a) and the example sentence (1d). Patient voice affix signals the subject whose semantic role is Patient, as in (2b) and the sentence (2d), whereas instrumental voice affix indicates the subject whose semantic role is Instrument, as in (3c) and the example (3d).

<sup>&</sup>lt;sup>2</sup> Lin (2000) and Li and Tsuchida (2001, 2002) applied the "focus system" framework, containing terminology specifically developed for describing the Austronesian languages of the Philippines. In their analysis, Pazeh demonstrates four types of verbal construction for voices, namely, agent focus, patient focus, instrumental focus and locative focus. Please refer to Ross and Teng (2005) for clarification on the differences between common terminology and those used by Formosan linguists. Due to insufficient empirical data to justify the status of locative voice, I will only discuss the morphosyntactic operation for actor voice, undergoer voice and instrumental voice in this paper.

- (1) -baket 'hit'
  - a. mu-baket b. baked-en c. saa-baket 'AV.hit' 'UV.hit' 'IV.hit'
  - d. mu-baket (a) rakihan ki aba
    AV-hit OBL child ABS father.DEF
    'The father beat a child.'

(Li & Tsuchida, 2001: 81)

- (2) -xe'et 'tie (with.something)'
  - a. me-xe'et b. xe'ed-en c. saa-xe'et 'AV.tie' 'UV.tie' 'IV.tie'
  - d. xe'ed-en ni Awi ki wazu tie-UV ERG person.name ABS dog.DEF 'Awi put a leash on the dog.'

(Li & Tsuchida, 2001: 322)

- (3) -te'eng 'throw'
  - a. me-te'eng b. te'eng-en c. si-te'eng 'AV.throw' 'UV.throw' 'IV.throw'
  - d. si-te'eng (a) wazu ni rakihan ki batu IV-throw OBL dog.INDEF ERG child.DEF ABS stone.DEF 'The child throw the stone at a dog.'

(Li & Tsuchida, 2001: 32)

A survey of verb roots with high semantic transitivity shows that the morphological forms of Pazeh verb are shown to be equally marked for these three voices. Li and Tsuchida (2001) provided rich evidence to support this claim, as cited in example (4) to (7) below.

				'eat'	(4) -ken/-kan
saa-ken-an 'IV.eat'	c.	kan-en 'UV.eat'	b.	me-ken 'AV. eat'	a.
				xes 'cut'	(5) -kixis/-kex
saa-kixis 'IV.cut'	c.	kexez-en 'UV.cut'	b.	mu-kixis 'AV. cut'	a.
				'dig'	(6) -kizu
saa-kizu 'IV.dig'	c.	kizu'-un 'UV.dig'	b.	mu-kizu 'AV.dig'	a.
				'cook'	(7) -talek
saa-talek 'IV.cook'	c.	talek-en 'UV.cook'	b.	mu-talek 'AV.cook'	a.

An investigation on the effect of voice affixation shows that different morphological markings on the verb reflect different selection of the arguments to be the pivot. The notion of pivot has been applied to the discussion of the Philippine-type voice systems by Foley and Van Valin (1984). In the case of Tagalog, the selection of an argument of a verb in the voice system (a.k.a. focused NP) is considered to involve pragmatic factors (e.g. definiteness) within a clause. Therefore, the selected argument is considered to show a functional similarity to English topics, where its discourse status and the syntactic status are operated under what Foley and Van Valin (1984: 115) called the "pragmatic pivots." This notion of pivot is introduced into LFG by Manning (1994, 1996) under the discussion of the inverse mapping theory, and later expanded by Falk (2006) to distinguish the properties of pivots from those of argumenthood. Falk's theory of pivot highlights the adaptability of the pivothood to account for languages that are not argument-pivot languages (e.g. Mandarin), where pivothood seems unrelated to argument mapping (Falk, 2006: 206). For the purpose of discussing the flexibility of turning certain arguments into pivot at the a-structure, as in the case of Pazeh, I adopt the idea of "a-subject" proposed by Manning (1996) and "l-subject (i.e. logical-subject)" mentioned in Arka (2003) in this paper. Manning (1994, 1996) differentiated the a-subject from the grammatical subject (i.e. g-subject or surface GF-SUBJ). It is considered in this paper that these different concepts of subjects are helpful to reveal the interaction between morphology and syntax with different subjects at different structures (a-str, f-str and sem-str).

In the case of Pazeh voice alternation, an actor argument is selected as the

grammatical subject or pivot in actor voice, whereas in non-actor voices, a patient/ an instrument is selected. However, further investigation in the following sections shows that in addition to the grammatical subject or pivot selection triggered by the voice morphology on the verb, these equally marked morphological affixations will also trigger both promotion and demotion of an argument. The distribution of phrasal markers serves as a clue to reveal the non-symmetrical pattern of syntax in Pazeh.

#### 3 Phrasal markers

The use of phrasal markers as a preliminary reference to the syntactic status of arguments is not uncommon in the literature of Austronesian languages in Taiwan. Often these phrasal markers are known as case markers as in Li and Tsuchida (2001: 32) and Lin (2000: 123). According to Li and Tsuchida (2001, 2002), Pazeh allows all kinds of phrasal markers to be omitted in natural speech, but when the markers are present, they have different forms, indicating different cases. Therefore, the absence of phrasal markers does not mean that the case marking is not in effect because these markers are usually presented in careful speech. Pronominal forms also support this claim, which will be discussed in section 5. However, even though both Li and Tsuchida (2001, 2002) and Lin (2000) observed the patterns of phrasal markers, the syntactic functions of the arguments involved in voice alternations remain unexplored in the existing literature.

Among all the phrasal markers shown in Table 1, Li and Tsuchida (2001, 2002) use the terms: nominative case for the argument selected by the voice morphology, genitive case for the agent in undergoer voice, oblique case for the patient in actor voice and locative case for locative argument, but they did not explicitly express the grammatical functions encoded by each case marker, and the type of voice alignment under their analysis remains unknown.

Table 1. Li and Tsuchida (2001: 32–33): Pazeh phrasal markers

Nominative	Genitive	Oblique	Locative
ki	ni	u/a	di

Lin (2000) diverges from Li and Tsuchida (2001, 2002) in that the patient argument in actor voice is labelled as accusative case, and she specifically analysed the argument denoted by nominative case as the subject, and the one marked by accusative case marker as the object, while leaving the grammatical function of the genitive case argument undecided. Lin's (2000) analysis as shown in Table 2 suggests that Pazeh language might have a nominative-accusative alignment system, but the framework she used appears to have disadvantages in presenting a comprehensive account of how the

morphosyntactic operation works in voice alternations. Under the LFG framework, my analysis in the following sections shows that the distribution of three markers (i.e. ki re-analysed as absolutive case, ni as ergative case and u and a as oblique case) provides evidence that syntactically Pazeh has an ergative alignment system as shown in Table 3.

Table 2. Lin (2000: 123–124): Pazeh phrasal markers

Nominative	Genitive	Accusative	Locative
ki	ni	u/a	di

Table 3 Case markers and grammatical functions of Pazeh in this paper<sup>3</sup>

Form	ki	ni	u/a
Grammatical Functions	SUBJ	OBJ	$\mathrm{OBL}_{ heta}$
<i>f-str</i> info	$(\uparrow CASE) = ABS$	$(\uparrow CASE) = ERG$	$(\uparrow CASE) = OBL$

# 4 Ergative pattern: demotion and promotion of an argument

In the LFG framework (Bresnan & Kanerva, 1989; Bresnan & Mchombo, 1987; Nordlinger & Bresnan, 2011), it is uncontroversial that the argument preceded by the absolutive case marker ki is the syntactic subject (SUBJ). For instance, in a semantically and syntactically intransitive clause, as in (8) below, ki marks the sole core argument, and it also consistently marks the core argument selected by the designated voice as shown in (9) and (10). In other words, the voice morphology, as mentioned in the previous section, triggers the selection of a privileged argument to occupy the SUBJ slot, marked by the absolutive marker.

The grammatical functions of the non-subject arguments are not as obvious as the subject argument, yet the different distribution of phrasal markers u and ni reveals that the non-subject arguments in actor voice as in (8) and the one in undergoer voice as in (9) have different grammatical functions.

(8) liaka m-angit lia ki rakihan then.ADV STAT-cry already.ADV ABS child.DEF 'Then the child cried.'

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<sup>&</sup>lt;sup>3</sup> To focus on the topic addressed in this paper, I will not discuss the grammatical function and the case marking of the previously labelled locative case.

- (9) mu-baket (a) wazu ki saw AV-hit OBL dog.INDEF ABS person.DEF 'The person hit a dog.'
- (10) baked-en ni Sabung ki rakihan hit-UV ERG person.name ABS child.DEF 'Sabung hit the child.'

(Li & Tsuchida, 2001: 42–44, 80–81; re-glossed by the author of this paper)

On the one hand, the marker u and a are used to denote the non-subject argument in actor voice clauses as in (9) and (11) for an indefinite patient. On the other hand, the marker ni denotes the non-subject argument in undergoer voice clauses as in (10) and (12) for a definite agent. The differences in the definiteness of the non-subject arguments in actor voice and undergoer voice suggest a difference in the semantic transitivity of the two voice types. Based on the transitivity parameter defined by Hopper and Thompson (1980), indefiniteness of the patient argument in actor voice clauses implies a less individuated or less affected argument, whereas the status of the agent arguments in undergoer voice clauses shows the opposite, always definite. The differences in the degrees of semantic transitivity support the hypothesis that an actor voice verb forms an extended intransitive construction where the non-subject argument is denoted by an oblique marker, and an undergoer voice verb forms a transitive construction, using a marker different from the one in actor voice.

- (11) me-ken ki balan u alaw
  AV-eat ABS cat.DEF OBL fish.INDEF
  'The cat ate fish.'

  (Lin, 2000: 102)
- (12) kan-en ki alaw ni balan eat-UV ABS fish.DEF ERG cat.DEF 'The cat ate the fish.'

(Lin, 2000: 132)

The distribution of phrasal markers for non-subject arguments in the instrumental voice clauses provides a further clue to clarify the status of the ergative case marked agent and oblique case marked patient. Similar to undergoer voice, the agent in the instrumental voice clause shown in (13) is also marked by an ergative marker ni. But different from undergoer voice, instrumental voice affixation not only has an effect on the selection of the

subject argument, but also increases the valency of the verb from two to three. The instrument is marked by the absolutive marker, taking the SUBJ positive. Ergative case agent has a definite reading, but the patient argument marked by the oblique marker, is found to be indefinite. In topicalised clauses, the agent in instrumental voice and the agent in the undergoer voice as shown in (14) and (15) respectively, can both take the topic position, whereas empirical data show that there is no occurrence of topicalised indefinite patient in actor voice or instrumental voice. This also means that it is only possible to topicalise a patient argument when the clause is in undergoer voice. Topicalization<sup>4</sup> here works as a diagnostic measure to test the core status of non-subject arguments.

(13) saa-baket (a) wazu ni rakihan ki patakan IV-hit OBL dog.INDEF ERG child.DEF ABS bamboo.DEF 'The child used the bamboo stick hitting a dog.'

(Li &Tsuchida, 2001: 43)

(14) yaku ka, sa-ken-an ki salaman a sumay 1SG.FREE TOP IV-eat ABS bowl.DEF OBL rice.INDEF 'I, used the bowl eating rice.'

(Lin, 2000: 135)

(15) ita ka, ka-ken-en di laladan ki sumay 1PL;INC.FREE TOP RED-eat-UV P table.DEF ABS rice.DEF 'We all (inclusive), are going to eat the dishes at the table.'

(Lin, 2000: 128)

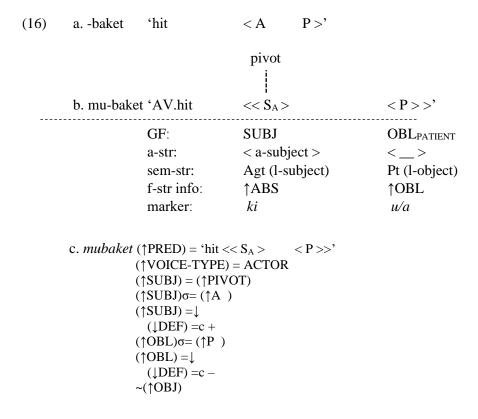
Semantic transitivity, phrasal markers and syntactic manipulation in topicalised clauses have all provided supporting information showing that the syntactic system of Pazeh is not as symmetrical as the system of Indonesian-type languages, such as Balinese (Arka, 2003). The GF for arguments marked by u or a is OBL $_{\theta}$ , and the most likely GF to be assigned to the argument marked by a core marker, ni will be OBJ. Under this analysis, the hallmarks of a Philippine-type voice system can be seen from the interaction of voice affixations and an ergative system with parallelism between f-str and a-str as shown in (16), (18) and (20) below.

With common typological notations, most transitive verb roots take two arguments, A for agent, P for patient as demonstrated in (16a). In line with the

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<sup>&</sup>lt;sup>4</sup> Topicalization has been used as a diagnostic test to examine the syntactic status of the arguments in other Austronesian language of Taiwan (Teng, 2008: 149–152).

notion of core/non-core<sup>5</sup> addressed by Arka (2003, 2019), I use angle brackets in the examples below to indicate the distinction between the core and the oblique arguments. As seen in (16) and the sentence (9), when actor voice prefixation takes place, the agent will be automatically selected to occupy the SUBJ position and linked to the pivot. The patient is demoted to oblique position and has obligatory indefiniteness reading. In (16b), an agent in the *sem-str* is mapped onto the a-subject in the *a-str*, which is realised as the GF-SUBJ. By contrast, as the voice alternation changes the valence of the predicate, a patient argument is turned into a non-core argument with empty termhood (Arka, 2003: 119–124), and it is realised as an OBL argument in the *f-str*. In the sense that the patient argument is demoted to the oblique position and read as indefinite, the actor voice construction as in (9) and (11) is considered to show an antipassive behaviour. The full lexical entry for the final verb form is presented in (16c) and the resulting f-structure of sentence (9) is shown in (17).



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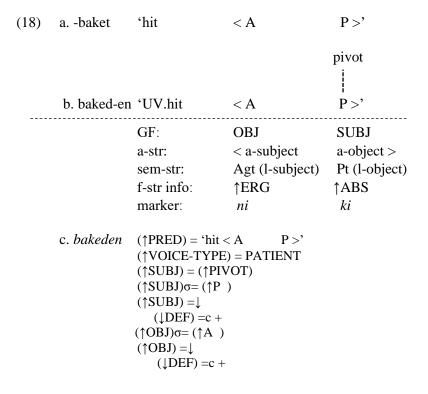
<sup>&</sup>lt;sup>5</sup> The selecting properties for the core/non-core distinction include (but not limited to) case marking by the phrasal markers and topicalisation with voice constraint. For the discussion in this paper, I will only refer to these two properties.

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(17) PRED 'hit <(\(\frac{1}{2}\)SUBJ) (\(\frac{1}{2}\)OBL PRED 'dog' CASE OBL DEF -

SUBJ PRED 'person' CASE ABS DEF +

VOICE ACTOR
```

In undergoer voice, the patient is selected by the pivot, whereas the agent is kept at the argument structure as in (18), assigned with a distinct core marker for its status. In (18b), an agent is mapped onto the a-subject not a-object in the a-str. In the concept of parallel structures adopted by Arka (2003: 122), the l-subject is firstly mapped onto the a-subject, and in the next phase, the Agent-a-subject is encoded as the surface OBJ in the *f-str*. As for the argument selected by the pivot, a patient is the l-object mapped to a-object and realised as the surface SUBJ. In other words, undergoer voice clauses as in (10) and (12) remain transitive. The lexical entry is presented in (18c) and the f-structure of sentence (10) is shown in (19).



```
(19) PRED 'hit <(\(\frac{1}{2}SUBJ\)) (\(\frac{1}{2}OBJ\))>'
OBJ PRED 'Sabung'
CASE ERG
DEF +

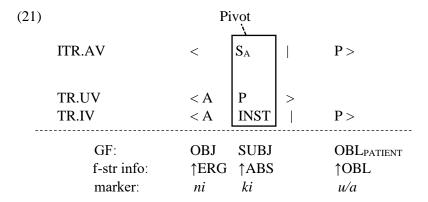
SUBJ PRED 'rakihan'
CASE ABS
DEF +

VOICE PATIENT
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As for instrumental voice shown in (20) below, the voice affixation has an applicative effect on the re-structuring of a-str as in (20b). The voice morphology adds an instrument to the base and demotes the patient to OBL. This can be explained by the fact that the ergative pattern shows low tolerance of double non-agent arguments. As seen from (14), the agent is kept as a core argument, but the patient is demoted and marked by an oblique marker, indicating an indefinite reading as shown in (20c).

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(20)
          a. -baket
                            'hit
                                         < A
                                                    P >'
                                                              pivot
           b. saa-baket 'IV.hit << A 'hit.with INST >'
                       GF:
                                          OBJ
                                                             SUBJ
                                                                                  OBLPATIENT
                                       < a-subject
                                                            non-a-subject > < ___ >
                       a-str:
                                       Agt (l-subject) Inst (l-oblique) Pt (l-object)
                       sem-str:
                       f-str info:
                                         ↑ERG
                                                            ↑ABS
                                                                                  ↑OBL
                       marker:
                                          ni
                                                             ki
                                                                                  u/a
          c. saabaket
                            (\uparrow PRED) = \text{'hit} << A
                                                            'hit.with INST >' < P >>'
                            (\uparrow VOICE-TYPE) = INSTRUMENTAL
                            (\uparrow SUBJ) = (\uparrow PIVOT)
                            (\uparrow SUBJ)\sigma = (\uparrow INST)
                            (\uparrow SUBJ) = \downarrow
                               (\downarrow DEF) = c +
                           (\uparrow OBJ)\sigma = (\uparrow A)
                           (↑OBJ) =↓
                               (\downarrow DEF) = c +
                           (\uparrow OBL)\sigma = (\uparrow P)
                           (\uparrow OBL) = \downarrow
                           (\downarrow DEF) = c -
```

In other words, if the system itself were syntactically symmetrical, the demotion of P would not take place. The patient would have been kept as an OBJ. In short, the visualisation of the alignment system presented in (21) below indicates that syntactically the system is not symmetrical, and it shows an ergative pattern for clauses containing non-pronominals. The next question is whether Pazeh has a split alignment system for pronominals. In this regard, another piece of evidence is found for this ergative hypothesis from the pronominal paradigm in section 5.



# 5 Further evidence from pronominal paradigm

Pazeh has a distinct set of personal pronouns for the agent in non-actor voices as shown in Table 4 below. For instance, the first-person singular form for the non-subject core argument is *naki*, as in (22). This form is a specifically used to denote a non-pivot argument, and it is different from the form for the patient in undergoer voice, as in (23).

- (22) kan-en naki dadua lia ki dadas eat-UV 1SG.ERG all.ADV already.ADV ABS potato.DEF 'I ate all the potatoes.'
  - (Li &Tsuchida, 2001: 140)
- (23) riud-en ni saw (y)aku pinch-UV ERG person.DEF 1SG.ABS 'The person pinched me.'
  - (Li &Tsuchida, 2001: 254)

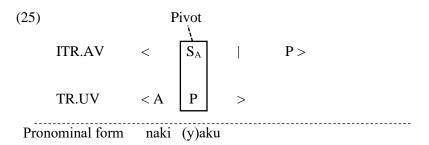
Table 4. Pazeh pronouns (Li &Tsuchida, 2001: 34)

	Agent in UV/IV	Agent in AV
1SG	naki	(y)aku
1PL;INCL	nita	(i)ta
1PL;EXCL	niam	(ya)mi
2SG	nisiw	(i)siw
2PL	nimu	(i)mu
3SG	nimisiw	(i)misiw
3PL	namisiw	(ya)misiw

For the agent in actor voice as in (24), the first-person singular form switches to (y)aku when it becomes the SUBJ or selected by the pivot. In comparison, the agent in the actor voice construction has the same form as the patient in the undergoer voice structure, whereas the SUBJ form is different from the second core argument in the undergoer voice.

(Li &Tsuchida, 2001: 140)

In sum, this pattern is in line with the ergative analysis, indicating that there is no split alignment system for the pronominals in Pazeh. The visualization of the ergative alignment for pronominals can be seen from (25) below. In addition to the pronominal forms shown in the examples, the non-pronominal arguments marked by the phrasal markers also demonstrate the corresponding case-marking and the grammatical functions as laid out in Table 3 in section 3. These examples show that Pazeh independent clauses are morphologically symmetrical for the voice affixation but syntactically ergative.



# 6 Concluding remarks

In this paper, I present evidence to show how the voice affixation is performed in Pazeh and how the morphological affixation interacts with a syntactically ergative system, triggering promotion and demotion of an argument. The evidence from semantic transitivity, topicalization and the distribution of phrasal markers in actor voice, undergoer voice and instrumental voice all indicate that Pazeh has an ergative alignment system and there is no split alignment system for the pronominals.

Under the LFG framework, the analysis in this paper reveals that there is a mismatch in the so-called symmetricality of Austronesian voice system in Pazeh. The mismatch lies between the symmetricality of voice affixation and the non-symmetricality of the syntactic system. Overlooking this mismatch would easily lead to confusion with the type of alignment system of Pazeh. A deeper investigation into the syntactic properties instead of the surface morphology breaks the myth that Pazeh voice system is symmetrical as a whole.

My findings also indicate that, the issue of Austronesian voice system can be well dealt with within the framework of LFG, by acknowledging the fact that symmetricality does exist in the voice system of Pazeh, but only at the morphological level, not at the syntactic level. Misleading terminology for the case marker and grammatical labels used by previous studies are avoided within LFG framework.

#### 7 References

- Arka, I. Wayan. (2003). *Balinese morphosyntax: A lexical-functional approach*. Canberra, Australia: Pacific Linguistics.
- Arka, I. Wayan. (2019). Grammatical relations in Balinese. In Alena Witzlack-Makarevich & Balthasar Bickel (eds.), *Argument selectors: A new perspective on grammatical relations* (pp. 257–299). John Benjamins Publishing Co. doi:10.1075/tsl.123.08ark
- Bresnan, Joan, & Kanerva, Jonni M. (1989). Locative inversion in Chicheŵa: A case study of factorization in grammar. *Linguistic Inquiry*, 20(1), 1–50. Retrieved from https://www.jstor.org/stable/4178612
- Bresnan, Joan, & Mchombo, Sam A. (1987). Topic, pronoun, and agreement in Chicheŵa. *Language*, *63*, 741–782. doi:10.2307/415717
- Falk, Yehuda N. (2006). Subjects and universal grammar: An explanatory theory. New York: Cambridge University Press.
- Foley, William A., & Van Valin, Robert D. (1984). Functional syntax and universal grammar. New York: Cambridge University Press.
- Himmelmann, Nikolaus P. (2002). Voice in western Austronesian: An update. In Fay Wouk and Malcolm Ross (eds.), *The history and typology of western Austronesian voice systems* (pp. 7–16). Canberra,

- Australia: Pacific Linguistics.
- Himmelmann, Nikolaus P. (2005). The Austronesian language of Asia and Madagascar: Typological characteristics. In Alexander Adelaar & Nikolaus. P. Himmelmann (eds.), *The Austronesian languages of Asia and Madagascar* (pp. 110–181). New York, NY: Routledge.
- Hopper, Paul J., & Thompson, Sandra (1980). Transitivity in grammar and discourse. *Language*, *56*(2), 251–299. doi:10.2307/413757
- Li, Paul Jen-Kuei (李壬癸), & Tsuchida, Shigeru (eds.). (2001). *Pazih dictionary. Language and Linguistics, Monograph Series No. A2*. Taipei, Taiwan: Academia Sinica.
- Li, Paul Jen-Kuei (李壬癸), & Tsuchida, Shigeru (eds.). (2002). *Pazih texts and songs*. Taipei, Taiwan: Academia Sinica.
- Lin, Yin-Chin (林英津). (2000). bā zé hǎi yǔ [The Pazeh language]. Taipei, Taiwan: Yuanliu Publishing Company.
- Manning, Christopher D. (1994). *Ergativity: Argument structure and grammatical relations*. (PhD dissertation, Stanford University, Stanford, UK). Retrieved from https://nlp.stanford.edu/~manning/dissertations/Manning-Christopherergativity-1994.pdf
- Manning, Christopher D. (1996). *Ergativity: Argument structure and grammatical relations*. Stanford: Center for the Study of Language and Information.
- Nordlinger, Rachel, & Bresnan, Joan (2011). Lexical-Functional Grammar: Interactions between morphology and syntax. In Robert D. Borsley & Kersti Börjars (eds.), *Non-Transformational Syntax: Formal and Explicit Models of Grammar* (pp. 112–140). doi:10.1002/9781444395037.ch3
- Ross, Malcolm, & Teng, Stacy Fang-Ching. (2005). Formosan languages and linguistic typology. *Language and Linguistics*, 6(4), 739–781. Retrieved from http://hdl.handle.net/1885/84418
- Teng, Stacy Fang-Ching. (2008). *A reference grammar of Puyuma*. Canberra, Australia: Pacific Linguistics.