

# Argument encoding and voice in Kadorih of Central Kalimantan

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In this paper, I examine argument encoding and voice in Kadorih on the basis of text frequency. Kadorih, formerly known as ‘Ot Danum’ and ‘Dohoi’, is an Austronesian language spoken in the upriver region of Central Kalimantan, Indonesia. I conclude that: (i) N- is the actor voice prefix; (ii) -Vn- is the undergoer voice infix; (iii) the two voices are similar in terms of subject ellipsis and their sensitivity to person hierarchy; (iv) they differ from each other in the way they encode pronominal and indefinite arguments (with undergoer voice having special constructions and several functions in discourse); (v) voice affixes are distinct from valency changing affixes in terms of frequency and paraphrasability.<sup>1</sup>

## 1. Introduction

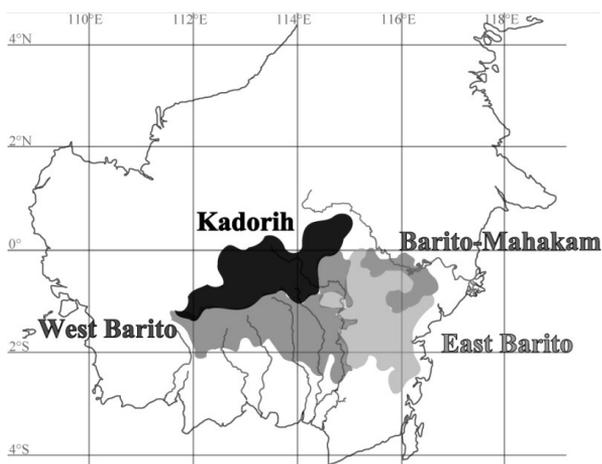
The aim of this paper is to describe and examine argument encoding and voice in Kadorih, using an approach which is descriptive and text-based rather than formalistic. Kadorih is an Austronesian language belonging to the (West) Barito subgroup of Malayo-Polynesian languages. Argument encoding and voice in Barito languages have hardly been discussed to date. This paper attempts to look into these grammatical systems in one of the Barito languages. The present section is a brief introduction of Kadorih. Section 2 provides a phoneme chart and a short description of Kadorih morpho-phonological alternations. Section 3 focuses on argument encoding. Section 4 deals with voice. In section 5, it is concluded that N-forms (= N-prefixed verbal forms) are by default in actor voice and -Vn-forms (= -Vn- infixed verbal forms) are in undergoer voice. Abbreviations are explained at the end of this paper.

According to *Ethnologue* (2009), Kadorih is also known as ‘Ot Danum’, ‘Dohoi’ (Hudson 1967) or ‘Malahoi’ (language code: ot̄d), and the number of its speakers is estimated to be 78,800 by SIL in 2007. Dialects include: Ot Balawan, Ot Banu’u, Ot Murung, Ot Olang, Ot Tuhup, Salawai (Melawi), Dohoi, Ulu Ai’ (Da’an), Sebaung, **Kadorih** and Kuhin (Lewis 2009).

Kadorih is a language of relatively little importance in the region. It is overshadowed by Ngaju Dayak (‘Kahayan’) and Indonesian, which are the prestige languages in the region and are used as ‘appropriate’ languages in schools and religious assemblies. Moreover, all Kadorih people speak Ngaju, and about half of them can speak Indonesian. As a result, Kadorih speakers tend to perceive their language to be of minor significance for their culture and society.

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**Figure 1: Distribution of Kadorih and Barito languages in Borneo**

The main published sources of Ot Danum are:

- a word list from 1916–17 (Stokhof 1986:3–16)
- a comparative study involving Ot Danum lexicon (Hudson 1967)
- a grammar sketch (Santoso et al. 1985)
- a morphosyntactic sketch (Taib et al. 1990)
- a sociolinguistic study (Meyers et al. 2003)
- a morphosyntactic sketch (Inagaki 2006)
- texts and wordlist (Inagaki Unpublished)
- a grammar and wordlist (Inagaki 2008)
- a description of tense, aspect, and modality (Inagaki 2011)

## 2. Morphophonology

Kadorih has eighteen consonants and five vowels as shown in the chart below, representing phonemes by orthographic letters in *italic*. Where needed, phonetic values in IPA are added between brackets.

consonants	bilabial	alveolar	alveolo-palatal	velar	glottal	vowels	
stop	<i>p b</i>	<i>t d</i>	<i>c j</i> [tʃ dʒ]	<i>k g</i>			
nasal	<i>m</i>	<i>n</i>	<i>ny</i> [ɲ]	<i>ng</i> [ŋ]		<i>i</i>	<i>u</i>
fricative	<i>w</i> [β]		<i>s</i> [ɕ]		<i>h</i>	<i>e</i>	<i>o</i>
trill		<i>r</i>				<i>a</i>	
flap		<i>l</i> [ɾ]					
approximant			<i>y</i> [j]				

**Table 1: Kadorih phonemes**

There are no phonemic long vowels in Kadorih, but there are identical vowel sequences such as *aa*, which are realized as heterosyllabic [V.V] sequences.

There are three main phonological alternations and restrictions in the morphology of Kadorih.

First, there is a nasal substitution process, whereby the initial consonant of a base is replaced by a homorganic nasal, as demonstrated in (1).

- (1) a. *mahtoi* ‘die’ (*pahtoi* ‘death’), *mua* ‘bear fruit’ (*bua* ‘fruit’)  
 b. *naang* ‘fly’ (*taang* ‘flying’)  
 c. *nyihoi* ‘roast’ (*sihohi* ‘roast’), *nyalan* ‘walk’ (*jalan* ‘road’)  
 d. *ngahit* ‘urinate’ (*kahit* ‘urine’)

This nasal substitution happens as a rule with initial voiceless obstruents. It happens only sporadically with initial voiced obstruents, and forms such as *mua* ‘bear fruit’ and *nyalan* ‘walk’ in (1a) and (1c) are rarely attested.

A different set of substitution rules applies in verbs that have *ngaN-* or *maN-* prefixed. In these verbs, base-initial voiced obstruents can be in ND~N free variation word medially, for example, *mandolak~manolak* ‘flower’ (*dolak* ‘flower of fruits’), *ngambahua~ngamahua* ‘renew’ (*bahua* ‘new’), *nganderoh~nganeroh* ‘impede’ (*deroh* ‘busy’). Base-initial voiceless obstruents (*p-/t-/c-/k-/s-*) can be in T~N free variation word medially (e.g. *macuba~manyuba* ‘try’ (*cuba* ‘see what happens’)).

Verbs with base-initial sonorants such as *maringan* ‘wound’ (*ringan* ‘wound’), *ngahawon* ‘carry something in embrace’ (*hawon* ‘embrace’), *ngalasut* ‘heat something’ (*lasut* ‘heat’) do not show any free variation; nor do verbs with base-initial vowels such as *mia* ‘be ashamed’ (*ia* ‘shame’), *mihkoh* ‘be feared’ (*ihkoh* ‘fear’), *mauhcan* ‘rain on’ (*uhcan* ‘rain’).

Second, the vowel of a prefix CV- or an infix -VC- shows free variation between *a* and *o* as in (2): *ba~bo-*, *ha~ho-*, *pa~po-*, *ta~to-*, *ka~ko-*, and *-an~-on-*.

- (2) a. *baluhpak~boluhpak* ‘blister’ (*luhpak* ‘blister’)  
 b. *hasombang~hosombang* ‘meet’ (*sombang* ‘meeting’)  
 c. *pataang~potaang* ‘fly (transitive)’ (*taang* ‘flying’)  
 d. *tatiruh~totiruh* ‘fall asleep’ (*tiruh* ‘sleep’)  
 e. *kaduon~koduon* ‘ability’ (*duon* ‘get’)  
 f. *sanhpou~sonhpou* ‘be roofed’ (*sahpou* ‘roof’)

Third, vowels of a complex affix must be identical: *bata~boto*, *kana~kono*, *paka~poko* do occur, but *\*bato*, *\*bota*, *\*kano*, *\*kona*, *\*pako* or *\*poka* do not. Compare the derivations in (3).

- (3) a. *batasahpou~botosahpou* ‘(roof) be fixed’ (*sahpou* ‘roof’)  
 b. *kanaluhca~konuluhca* ‘be spat on’ (*luhca* ‘saliva’)  
 c. *pakadoni~pokodoni* ‘nearest’ (*doni* ‘near’)

### 3. Morphosyntax

Section 3.1 describes how enclitics and suffixes cross-reference the person/number categories of the subject on the head of a clause. Section 3.2 summarizes the tendency for argument encoding concerning person and Actor/Undergoer arguments.

## 3.1. Bound subject pronouns

Kadorih has an accusative-type alignment system marking agentive argument (=A) in transitive clauses in the same way as sole arguments (=S) in intransitive clauses. The A=S arguments can be cross-referenced on various kinds of clause ‘operators’ such as aspect-modality auxiliaries/adverbs and subordinators.

(4) shows the examples of bound subject pronouns. In (4a) and (4b), the person/number (P/N) suffixes *-k* [1SG] and *-i* [3SG] are marked on the ability/possibility auxiliary *duon* ‘can’. The final *-n* of this and other operators is deleted in the process. Each suffix cross-references the A argument in the clause, i.e. *ahku* ‘I’ and *inai Yoga* ‘Yoga’s mother’ respectively. In (4c), the P/N enclitic *do* [3PL] is marked on the same auxiliary. This enclitic cross-references the A argument *iroh* ‘they’.

(4)a. A argument: [person: first], [number: singular]

*ahku duo-k po-kalah io.*  
I can-1SG.A CAUS-lose 3SG

‘I can defeat him.’

b. A argument: [person: third], [number: singular]

*inai Yoga ya=duo-i honong kuman sahang.*  
mother PSN NEG=can-3SG.A IPFV eat red.pepper

‘Yoga’s mother cannot eat red peppers for the time being.’

c. A argument: [person: third], [number: plural]

*iroh eam duon=do balima loh pou ijo mahcam orih.*  
3PL NEG can=3PL.A imagine house REL like ANAPH

‘They cannot imagine that kind of house.’

P/N cross-reference is obligatory for auxiliaries such as *duon* ‘can (ability/possibility)’, *ya=taan* ‘cannot (inability/impossibility)’, *elen* ‘not want (unwanting)’, *harun* ‘newly’ and *behteng* ‘be in the midst of (imperfective)’.<sup>2</sup>

Another auxiliary such as *eam* ‘not’ or *tou* ‘can’ often involves P/N cross-reference, but it is optional, as (5) shows (the optional marker is parenthesized). In this example, there is a full argument *ahku* ‘I’ cross-referenced. Referential person(/number) of undergoers can be marked only on transitive verbs as the 3rd person suffixes *-i/-u* in (5) and (6) (the allomorph *-u* appears immediately after the phoneme *i*).

(5) *ahku eam(=ku) ngoni-u.*  
1SG NEG(=1SG.A)bring-3.P

‘I will not bring it.’

However, as is true for many clauses in Kadorih, there may not be a full argument. The clause in (6) shows such a case in which the 1st singular free pronoun is missing.

<sup>2</sup> Person and number marking on the dual auxiliary *duon* ‘can’ is sensitive as to whether the actor is able to perform an action or is in a state: *duon* is obligatorily marked with a person/number suffix if and only if the enabling condition is internal to an actor (expressing an ability). P/N markers are obligatorily unmarked if the enabling condition is outside the actor (expressing a possibility). See Inagaki (2011) for details.

- (6) *eam=ku taa-i.*  
NEG=1SG.A know-3.P

‘I don’t know it.’

The occurrence of singular pronominal suffixes and enclitics is phonologically conditioned, that is, suffixation is restricted to hosts ending in *-n*, as with *duon* ‘can’, *ya=taan* ‘cannot’, *elen* ‘not want’ and *harun* ‘newly’ (see also *(ah)kan* ‘for, in order to’ and *kobain* ‘reason, because’ in (10) below).<sup>3</sup> Table 2 shows the free pronouns and their bound counterparts.

	1SG	2SG	3SG	1PL.IN	1PL.EX	2PL	3PL
free	<i>ahku</i>	<i>ihko</i>	<i>io</i>	<i>ihto</i>	<i>ihkai</i>	<i>ihkam</i>	<i>iroh</i>
enclitic	<i>ku</i>	<i>ko</i>	<i>ah/oh</i>	<i>to</i>	<i>kai</i>	<i>kam</i>	<i>(n)do</i> <sup>4</sup>
suffix	<i>-k</i>	<i>-m</i>	<i>-i/-u</i>	—	—	—	—

**Table 2: Free pronouns and subject person/number markers**

Both suffix and enclitic can be marked on the same auxiliary. In (7), even though the auxiliary *harun* ‘newly’ is suffixed with *-k* [1SG], the enclitic *ku* [1SG] is added to the suffixed form. The free pronoun can also be added for pragmatic reason. An overt free pronoun denoting the speaker (as shown in (5) above) or the hearer can be uttered for the purpose of putting an emphasis on the existence of Actor argument. This double occurrence is observed characteristically with the 1st person singular.

- (7) *(ahku) haru-k=ku soleng=ah.*  
(1SG) newly-1SG.A=1SG.A understand=3.P

‘I arrived at my understanding of it.’

The P/N cross-reference in Kadorih is not restricted to agentive arguments in transitive clauses. The examples in (8) and (9) show cross-reference of sole arguments in intransitive clauses.

- (8)a. *haru-m lombut=hom.*  
newly-2SG.S come=here.now.visible  
‘You arrived now (I’m seeing you).’
- b. *amun nyaro bahiu, ihto ya=taan=to nahasong.*  
top not.exist wind 1PL.IN NEG=know=1PL.IN.S breathe  
‘If there was no air [around us], we would not be able to breathe.’
- c. *(ahku) ya=puji=ku tiruh mahcam orih.*  
(1SG) NEG=EXP=1SG.S sleep like ANAPH  
‘I have never slept like that (= sitting on a tree in a jungle).’

<sup>3</sup> The clause operator *noin* ‘later’ (as in (11a) below) is an exception, as it does not undergo suffixation. Further research is needed for a more precise description of the distribution of enclitics/suffixes.

<sup>4</sup> Enclitic *(n)do* ‘they’ occurs as *do* when it follows a word ending in *n* (e.g. *duon* (in (4c)) and *ndo* elsewhere. The latter is the result of initial vowel loss in *endo* ‘theirs’.

The intransitive predicates in (8) (viz. *lombut* ‘come’, *nahasong* ‘breathe’, and *tiruh* ‘sleep’) require only one argument each. The S argument is expressed by the suffix *-m* [2SG] in (8a), the enclitic *to* [1PL.IN] and the free pronoun *ihito* [1PL.IN] in (8b), and the enclitic *ku* [1SG] (with or without a pronoun *ahku* [1SG]) in (8c)<sup>5</sup> respectively. All of the S arguments in (8) are animate entities and bear Actor role, but consider the following examples.

(9)a. *ukur io eam=ah tou baduruh,*  
so.as.to 3SG NEG=3SG.S can collapse

‘So that it (=the pole of a working bench) won’t break.’

b. *ya=taa-i leket=ndai lisan kabain danum=rih.*  
NEG=know-3SG.S cling=PFV epoxy reason water=ANAPH

‘The epoxy resin bond will no longer stick due to the [rain] water.’

The bV-form *baduruh* ‘collapse’ in (9a) can be analyzed as an anti-causative suppressing the Actor argument. The semantic role of the S argument *io* [3SG] which is cross-referenced by *ah* [3SG] in this example is not Actor but Undergoer. On the other hand, the predicate *leket* ‘cling’ in (9b) is a base form, which takes the Actor argument in intransitive clauses.

The examples in (8) and (9) suggest that the P/N markers cross-reference S arguments irrespective of their semantic roles. This means that — taking into account the P/N cross-reference of A arguments described in (4)–(7) above — there is good reason to consider the alignment system of Kadorih as a syntactic one, and the A=S argument as syntactic subjects.

The P/N cross-reference can be observed with subordinators (as in (10)), and with adverbs (in (11)).

(10)a. *ka-k tahtou sanang=ndai,*  
for-1SG.S wealthy happy=PFV

‘In order for me to be completely rich/happy.’

b. *kobai-k (ahku) ngorih susu,*  
reason-1SG.A (1SG) drink milk

‘Because I drank milk.’

In (10a), *-k* [1SG] is used as there is no full S argument (see also *-i* [3SG] in (9b)). On the other hand, in (10b), when the full pronoun *ahku* [1SG] is added, *-k* cross-references the 1st person singular subject. The suffix will be referential or informative in cases such as (10a). In (11), the P/N markers are also referential.<sup>6</sup>

<sup>5</sup> Phonologically, the clitic *ku* must attach to the following word *tiruh* because *ku* and *tiruh* can more easily constitute an extended prosodic word than the resulting *yapujiku* (*tiruh*).

<sup>6</sup> In (11a), *noin* is followed by an enclitic *=ku*. There are no forms *\*noi-k*, *\*noi-m* or *\*noi-u* in which a P/N suffix is attached to *noin* (see also fn. 2). In (11b), the linker suffix *-n* attaches to the clause operator *holu* ‘at first’. In this paper, *-n* is analysed as a linker only if the remainder of the word is a free morpheme. For example, *duon* ‘can’ in (4) and *harun* ‘newly’ in (7) and (8) are not analyzed as ‘auxiliary + linker’ as they are never realized as *\*duo* and *\*haru*.

- (11)a. *noin=ku nguan eku aro bara emu=tuh, eku=tuh.*  
 later=**1SG.A** make mine much from yours=**DEM** mine=**DEM**  
 ‘Later, I will maximize mine (=my gathering) more than yours, mine.’
- b. *holu-n=to masang=ah.*  
 at.first-LINK=**1PL.IN.A** put.on=3.P  
 ‘First, we install it (= plank) (i.e., on the bottom of a boat).’

Following Siewierska’s (2004: 126) terminology, Kadorih person/number cross-reference will be called ‘ambiguous agreement’, that is, person agreement markers ‘occur both in the presence of an overt controller in the same construction [...] and in the absence of such a controller’.

### 3.2. Argument encoding in discourse

There are three parts of speech and two types of bound morphemes used for argument encoding in Kadorih, that is, nouns (or noun phrases), full pronouns, demonstratives, pronominal enclitics and suffixes. (12) lists some of the encoded arguments in the examples mentioned earlier. (13) gives examples of demonstratives.

- (12) a. Noun phrases: *inai Yoga* ‘Yoga’s mother’, *lohpou* ‘house’, *bahiu* ‘air’  
 b. Full pronouns: *ahku* ‘I’, *io* ‘he/she/it’, *iroh* ‘they’, *ihito* ‘we (inclusive)’,  
*eku* ‘mine’, *emu* ‘yours’  
 c. Enclitics: *ku* [1SG], *ah* [3], *to* [1PL.INCL]  
 d. Suffixes: *-u/-i* [3(SG)], *-k* [1SG], *-m* [2SG]

- (13)a. *ihuh mukin tuu.*  
**DEM.PROX** possibly true  
 ‘It is probably true.’
- b. *jihuh cuhcuk aran anak=ku.*  
**FOC.DEM.PROX** fitting name child=1SG.POSS  
 ‘This is the perfect name for my child.’
- c. *orih naing=ah.*  
**ANAPH** word=3SG.POSS  
 ‘That’s the story.’

In the discourse, there is a tendency for argument encoding in two participant clauses. That is, in my Kadorih texts, the Actor of an event tends to be encoded as a 1st or 2nd person pronominal in approximately 70 percent (= 392/560) of two participant clauses. On the other hand, the Undergoer of an event tends to be encoded as 3rd person (mainly a noun phrase) in approximately 94 percent (= 666/710) of clauses. Table 3 shows the number of Actor and Undergoer encoded as 1st/2nd person and 3rd person respectively (or the number of 1st/2nd person and 3rd person pronominals that encode Actor role and Undergoer role respectively).

	1st/2nd pronominals	3rd person (mainly nouns)
Actor	392	168
Undergoer	44	666

**Table 3: Argument encoding in two-participant clauses**

1st/2nd person pronominals tend to denote Actor in about 90 percent (= 392/436) of two participant clauses. On the other hand, 3rd person pronominals tend to denote Undergoer in about 80 percent of clauses (= 666/834). These statistical facts suggest that argument encoding in two participant clauses is moderately sensitive to the well-known ‘person (or animacy) hierarchy’ rule claiming that 1st person has precedence over 2nd person, and 2nd person over 3rd person.

The figures in Table 3 are based on my text corpus of spoken monologues which I recorded, transcribed and translated into Indonesian with the help of native speakers. The texts include twenty two stories (representing 2305 intonational units and told by nine Kadorih speakers between 20 and 80 years of age (Inagaki unpublished)). Elided arguments “Ø” were uncounted (for argument ellipsis, see 4.1–4.2). The counted arguments are the ones accompanied by the verbs, including N-forms (see (1) above), -Vn-forms (see (2f) above) and bare verbal forms that are in predicate function.

The tendency noted above is stronger in the case of argument encoding in -Vn-clauses. Undergoer arguments in -Vn- clauses are 3rd person in all sixty examples. In other words, all subject arguments of -Vn- clauses are 3rd person in my text corpus. See 4.3 for more detail.

#### 4. Voice alternation and valency changing

Voice is the grammatical category governing the relation between the (surface) subject and the predicate in the same clause. Kadorih has actor voice in which the surface subject of a clause is, in most cases, Actor of an event, and undergoer voice in which the subject is invariably Undergoer. The voice alternation in Kadorih can be characterized as a view-point alternation that does not affect the propositional meaning.

##### 4.1. Actor voice

In this paper, N-forms and bare verbal forms are described to function as actor voice predicates. For the allomorphy of N-forms, see (1) in section 2.

The following examples demonstrate the actor voice construction, where an N-verb or a bare verb selects an Actor subject. The agentive arguments in (14a) and (14b) are Actor subjects (*ah*)*ku* ‘I’ selected by the N-form (*ngoniu* ‘bring it’) and the bare verbal form (*taai* ‘know it’) respectively. Note that, in (14b), the free subject pronoun does not occur and the Actor of the ‘knowing’ event is only denoted as the referential clitic =*ku*.

(14)a. *ahku eam=ku ngoni-u.* (= 5)

1SG NEG=1SG.A bring-3.P

‘I will not bring it.’

b. *eam=ku taa-i.* (= 6)

NEG=1SG.A know-3.P

‘I don’t know it.’

Generally, a zero morpheme should not be distinguished unless it is contrastive. A possible problem for the analysis of a bare verbal form is that it can be analyzed to consist of a zero voice morpheme plus a stem. On the contrary, the morphemic analysis of N- is supported by an explicit marker, i.e., nasality.

In this paper, it is assumed that bare verbal forms are by default in actor voice, which is the most frequent or *basic* voice in Kadorih, and is usually indicated by N-.<sup>7</sup> Thus there is no need to assume a zero voice morpheme  $\emptyset$  in bare verbal forms.

In (15), transitive bare verbs choosing Actor as their subjects are listed (see (1) for examples of N-verbs). These forms function as actor voice predicates.

(15) Transitive bare verbs selecting Actor subject:

*dohop* ‘help’, *duon* ‘get’, *hapan* ‘use’, *hocok* ‘arrive’, *kuman* ‘eat’, *murik* ‘go upstream’, *rimbit* ‘raise’, *sohu* ‘go downstream’, *soleng* ‘understand’, *taan* ‘know’, *talingau* ‘forget’, *tukun* ‘arrive’

The sole subjects in (16a) and (16b) are Actor arguments used with the intransitive N-verb *mondui* [N-pondui] ‘take a bath’ and the intransitive bare verb *lombut* ‘come’ respectively. In (16a), the proper noun *Sangumang* denotes the Actor of the ‘bathing’ event, while in (16b), the referential suffix *-m* [2SG] denotes the Actor of the ‘coming’ event.

(16)a. *Sangumang mondui anan.*

PSN (= S) take.a.bath there

‘Sangumang took a bath there.’

b. *haru-m lombut=hom.*

newly-2SG.S come=here.now.visible

‘You arrived now (I am seeing you).’

Intransitive N-verbs and bare verbs in (17a) and (17b) are used with Actor subjects. Again, these verbs function as actor voice predicates.

(17)a. Intransitive N-verbs used with Actor subject:

*meseu* ‘paddle’, *mondui* ‘take a bath’, *mosan* ‘stay’, *mosi* ‘fish’, *mutah* ‘answer’, *nanjung* ‘walk’, *nangui* ‘swim’, *nondu* ‘(cock) crow’, *naang* ‘fly’, *ngahtui* ‘move’, *ngasinok* ‘whisper’, *ngulos* ‘retrace roads’, *ngumo* ‘farm’, *nuhtui* ‘make a speech sound’, *nuhui* ‘make a noise’, *nungo* ‘nod’, *nyalan* ‘walk’, *nyihpa* ‘chew betel’

b. Intransitive bare verbs used with Actor subject:

*kaling* ‘lie’, *lanon* ‘be awake’, *lombut* ‘come’, *pakuk* ‘collide’, *tabalung* ‘meet’, *tame* ‘go into’, *tombok* ‘stand’, *tondo* ‘stop’, *tonih* ‘keep silent’, *tulak* ‘go’, *tuot* ‘sit’

In the case of intransitive N-verbs or bare verbs, Kadorih does not formally differentiate between Actor and Undergoer subjects. It is not clear whether the arguments of intransitive N-verbs and bare verbs in (18) are Actor or Undergoer. These verbs denote mental, natural, and physiological events.

(18) a. *nuhpi* ‘dream’, *nyalu* ‘lament’

b. *mua* ‘bear fruit’, *napara* ‘begin’, *notang* ‘(sun/moon) shine’

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<sup>7</sup> According to this assumption, it appears that the voice of bare verbal forms is underspecified in the lexicon. See Table 5 in 4.3. Note that there is one clear exception *ohpah* (see (21) below).

- c. *mani* ‘defecate’, *mondam* ‘have a fever’, *monyun* ‘wake up’, *nangih* ‘weep’,  
*ngahit* ‘urinate’, *ngatao* ‘laugh’, *ngomi* ‘smile’, *ngotut* ‘fart’, *nguhta* ‘vomit’,  
*nohcot* ‘shiver’, *nuap* ‘yawn’, *nyokok* ‘cough’, *nyondu* ‘hiccup’

In addition to these verbs, intransitive N-verbs in (19) are used with Undergoer subjects as shown in (20).

(19)a. Intransitive N-verbs used with Undergoer subject

*mahtoi* ‘die’, *mihkoh* ‘be afraid’, *mosak* ‘ripe, cooked’, *nahak* ‘drop’, *nihou* ‘be lost, pass away’, *nyarah* ‘surrender’

(20)a. *ko-poros kuhung=ku nihou*.  
 ABST-ache head=1SG.POSS be.lost

‘My headache has gone away.’

b. *umbot=ndai mosak ukun panguman kanuan=do*.  
 finish=PFV cooked/ripe food eating be.made=3PL

‘They finished cooking meals. (=Meals were finished being cooked by them).’

c. *aang lowu=tuh, jadi puji ulun mahtoi kana panyahkit*,  
 LOC village=DEM PF EXP human die hit disease

‘In this village, people have died of a disease.’

In (20a), the S subject noun phrase *koporos kuhung=ku* ‘my headache’ denotes the Undergoer of the ‘disappearing’ event. In (20b) and (20c), the S subjects *ukun panguman* ‘meals’ and *ulun* ‘people’ denote the Undergoers of each event. Additionally, the Actors of each event are encoded as oblique elements, (*kanuan*)=*do* ‘(by) them’ and (*kana*) *panyahkit* ‘(hit by) a disease’.

Quite a few of the N-verbs function as actor voice predicates, while several of N-verbs (in (19), and possibly also (18)) function as undergoer voice predicates, as shown in (20). These facts suggest that the prefix N- is not strictly categorical and that the prototypical function of N-verbs should be characterized as actor voice predicate based on type frequency.

It was assumed at the beginning of this subsection that bare verbal forms will take on *basic* voice in Kadorih, i.e., actor voice. However, the bare verb *ohpah* ‘run out’ takes Undergoer as its subject argument. In (21), the Undergoer argument *ahtoi bawui jituh* ‘the liver of the wild pig’ is shared by both the last and previous predicates.

(21) *kuma-i kuma-i kuma-i, ohpah ahtoi bawui jituh*.  
 eat-3.P eat-3.P eat-3.P run.out liver wild.pig FOC.DEM.PROX

‘(He) went on and on eating it, the liver of the wild pig was all gone.’

The bare verb *ohpah* ‘run out’ is invariably used for undergoer voice predicate as in (21). Thus the voice of this bare verb is not automatically basic voice but it is exceptionally specified as undergoer voice in the lexicon. It should be noted that all other bare verbal forms conform to the basic actor voice in Kadorih.

In addition, bare verbs have much in common with N-verbs in terms of argument encoding in two participant clauses.

(22) Argument encoding in two participant clauses of actor voice (N-/bare).

a. 3RD PERSON FREE PRONOUN → ACTOR:

3rd person free pronouns *io* and *iroh* tend to be used for encoding Actor rather than Undergoer.

b. INDEFINITE → UNDERGOER:

An indefinite entity tends to be Undergoer.

c. Undergoer arguments are more resistant to ellipsis than Actor arguments (not taking imperative sentences into account)

First, the 3rd person free pronouns *io* and *iroh* appear as either Actor or Undergoer argument in my text corpus. However, for the encoding by 3rd person pronouns, Actor is preferred to Undergoer in clauses of both N-verbs (72% = 50/69) and bare verbs (72% = 8/11). The Undergoer is less likely to be encoded as 3rd person (28% = 22/80). Thus there seems to be a tendency for 3rd person pronouns to express Actor subject in actor voice.

(23) 3RD PRON. ACTOR (72%) N-/bare Verb 3RD PRON. UNDERGOER (28%)  
actor voice

Second, indefinite entities are encoded in a number of ways. Rather than with a pronoun, they are often encoded with a generic noun, such as *ulun* ‘human, people’ in (24).

(24) *eam puji ulun noon buwu aang taruk kacu.*  
NEG EXP **human** set.up fish.trap LOC (tree)upper wood  
‘People have never set up a fish trap on a tree.’

They can also be encoded with the plural marker (*do*)*lang*, a numeral (+ a classifier), or with an interrogative pronoun, as shown in (25).

(25)a. *turus nyari dolang komulan, dolang katimun.*  
then check PL crop PL cucumber

‘Then, [I will] check some [fields of] crops and cucumbers.’

b. *ahku nohto ihco bahtang kahat.*  
1SG see **one** CL:TRUNKLIKE betel

‘I saw a betel tree.’

c. *kolou=ku nguan sandung, kolou=ku nguan narai,*  
like/as=1SG.A make k.o.grave like/as=1SG.A make **what**

‘(I did great jobs at that time) as I made *sandung*, as I made anything.’

In actor voice, an indefinite entity tends to be Undergoer rather than Actor. Actor indefinite entities such as *ulun* ‘human, people’ in (24) above are not so frequent (15% = 26/169). In contrast, Undergoer indefinite entities occur in 85 percent (= 143/169) as illustrated in (26).

(26) INDEFINITE ACTOR (15%) N-/bare verbs INDEFINITE UNDERGOER (85%)  
actor voice

Third, in non-imperative sentences consisting of N- or bare verbal predicates, Undergoer arguments are less likely to be elided than Actor arguments. Although Actor and Undergoer arguments are equally often repeated or referred to in discourse, Actor arguments in actor voice are notably more often elided in my text corpus (as in (21) and

(25a)). Undergoer ellipsis occurs in approximately 5 percent (= 38/708) of the cases, while Actor ellipsis occurs in approximately 28 percent (= 195/708).

- (27) [ACTOR] (28%) N-/bare verbs [UNDERGOER] (5%)  
 actor voice  
 ([ ] indicates an ellipsis site.)

#### 4.2. Undergoer voice

In the grammar of Kadorih, actor and undergoer voice are in contrast. A crucial difference between them is that the grammatical subject in undergoer voice is invariably Undergoer argument, while the subject in actor voice is *prototypically* Actor argument.

Undergoer voice is indicated by the infix -Vn-, where the vowel V represents /a/ and /o/ (see section 2). (28) lists some -Vn-forms and their bases. Note that the base of both *kanitot* ‘be delivered’ and *ngitot* ‘deliver’ in (28a) is *kitot* ‘(deliver)’ — one of the bound bases in Kadorih.

- (28)a. *k<an>itot* ‘be delivered’ (*ngitot* ‘deliver’)  
 b. *p<an>ahkat* ‘be asked out’ (*pahkat* ‘friend’)  
 c. *p<an>ohcon* ‘be inhabited’ (*pohcon* ‘something left behind’)  
 d. *p<an>uhi* ‘be washed’ (*puhi* ‘used (water)’)  
 e. *s<an>ahpou* ‘be roofed’ (*sahpou* ‘roof’)  
 f. *s<an>olong* ‘be intruded’ (*solong* ‘(person) intruded by an evil spirit’)

In -Vn-verb clauses, Actor arguments seem to appear in fixed position. For example, in (29), the Actor *Awo* ‘(person name)’ marked by the postposition *kai* ‘by’<sup>8</sup> always occurs in postverbal position, whereas the position of the Undergoer *pinjan* ‘dish’ is not fixed.

- (29)a. *pinjan p<an>uhi Awo=kai.*  
 dish <UV>used(water) PSN=by  
 ‘The dishes were washed by Awo.’  
 b. *p<an>uhi Awo=kai pinjan.*  
 <UV>used(water) PSN=by dish  
 ‘The dishes were washed by Awo.’

These two constituent orders, i.e. [Undergoer -Vn-verb Actor] and [-Vn-verb Actor Undergoer] are allowed without difference in propositional meaning. Other orders such as the ones listed in (30) are ungrammatical in Kadorih.

- (30) a. \*[*Awo(=kai)*] [*pinjan*] [*panuhi*] (Actor Undergoer -Vn-verb)  
 b. \*[*Awo(=kai)*] [*panuhi*] [*pinjan*] (Actor -Vn-verb Undergoer)  
 c. \*[*pinjan*] [*Awo(=kai)*] [*panuhi*] (Undergoer Actor -Vn-verb)  
 d. \*[*panuhi*] [*pinjan*] [*Awo(=kai)*] (-Vn-verb Undergoer Actor)

<sup>8</sup> Kadorih mainly uses prepositions, but the postposition *kai* is optionally used to mark Actor phrases, mainly in undergoer voice. However, it can also be cliticized to Actor suffixes and post-clitics, as in (38a).

The facts outlined in (29) and (30) show that in undergoer voice, Actor must appear immediately after the -Vn-verb.

Interestingly, argument encoding in undergoer voice is quite distinct from that in actor voice (cf. (22)) in terms of free pronouns, indefinite entities, and ellipsis. As for the shared characteristics of these two voices, see the description in 3.2.

(31) Argument encoding in two participant clauses of undergoer voice (-Vn-).

- a. Free pronouns are very rarely used for argument encoding.
- b. INDEFINITE → ACTOR or UNDERGOER:  
Indefinite Actor and Undergoer occur equally frequently.
- c. Actor arguments are more resistant to ellipsis than Undergoer arguments (not taking imperative sentences into account).

First, in undergoer voice, Actor and Undergoer are rarely encoded as free pronouns. They tend to be encoded as noun phrases, bound pronouns, or demonstratives. Only three free pronouns are attested in my text corpus. Table 4 summarizes argument encoding in undergoer voice. Undergoer tends to be encoded as a noun (phrase), while Actor tends to be encoded as bound pronoun. In (29), both are encoded as nouns, i.e. *pinjan* ‘dish’ and *Awo* ‘(person name)’.

	noun	free pronoun	bound pronoun	demonstrative	total
Undergoer	85%	2%	0%	12%	100% [41]
Actor	13%	4%	83%	0%	100% [47]

**Table 4: Differently encoded participants in undergoer voice**

(32) 3rd pron. Undergoer (2%) -Vn-Verb 1st/2nd pron. Actor (4%)  
undergoer voice

Second, Indefinite entities may be Actor or Undergoer in undergoer voice. There is no significant difference in frequency between indefinite Undergoer (53% = 8/15) and indefinite Actor (47% = 7/15).

(33) Indefinite Undergoer (53%) -Vn-verbs Indefinite Actor (47%)  
undergoer voice

Third, in clauses with -Vn-verbs, Actor arguments are less likely to be elided. Approximately 32 percent of Undergoer arguments (= 19/60) and 22 percent of Actor arguments (= 13/60) are elided in my text corpus. This means that, in undergoer voice, non-subject constituents (denoting Actor) are slightly less elided than subject constituents (denoting Undergoer).

(34) [UNDERGOER] (32%) -Vn-verbs [ACTOR] (22%)  
undergoer voice  
([ ] indicates an ellipsis site.)

These characteristics in argument encoding make it clear that the undergoer voice is distinct from the actor voice in discourse. However, it should be noted that, from a grammatical point of view, subject arguments are more likely to be elided than non-subject arguments in both voices (compare (27) with (34)).

-Vn- verbs have a variety of pragmatic and/or structural characteristics listed in (35).

(35)a. Aspectual indication (perfect): (36)

b. Paragraph recapitulation: (37)

c. Descriptive supplementation: (38)

d. Relativization: (39)

e. Sequential verb serialization: (40)

Kadorih has no morphological aspect. Although it is not obligatory, perfect aspect can be indicated by auxiliary-like words<sup>9</sup> and possibly -Vn-verbs. In (36a), the first clause *amun tanowong* ‘if it has been felled’ is recapitulated as the following clause in which the auxiliary-like word *umbot* ‘finish’ indicates perfect or perfective aspect.

(36) Undergoer voice: aspectual indication (perfect)

a. *jadi, amun t<an>owong, umbot towong=ah,*  
then top <UV>fell finish fell=3SG.POSS

‘Then, if [it (= tree)] has been felled, (I mean) after having finished its felling’

b. *amun t<an>owong* ‘if it has been felled’

c. *umbot towong(=ah)* ‘after having finished felling’

d. *amun jadi towong* ‘after felling has been done’

Inagaki (2011:109) shows that perfect aspectual indicator *jadi* and perfective indicator *umbot* share the property of conjunction. The phrase *umbot towong(=ah)* ‘after having finished felling’ (36c) can be paraphrased with *amun jadi towong* ‘after felling has been done’ in (36d). Thus *t<an>owong* [<UV>fell] in (36b) is equivalent to *jadi towong* [PF fell] in (36d). More specifically, the function of -Vn- is similar to that of *jadi*.

However, the -Vn-verbs themselves are insufficient to indicate perfect aspect. This is probably why the speaker of the sentence in (36a) paraphrased the -Vn-verb clause using *umbot* ‘finish’.

The second characteristic of -Vn-verbs is that they can summarize a paragraph as a whole event. In this paper, I will call this function ‘paragraph recapitulation’.

(37) Undergoer voice: paragraph recapitulation

[After three day wandering in the jungle without food, I caught two tortoises. And then, I gathered firewood. After a one-hour hand drill, the firewood caught fire. I blew on it until a flame was produced. And I roasted the tortoises until they were ready to be eaten. Then, it began to heal my tiredness.]

*kolop duo=dih ohpah p<an>ahpui=ku.*  
tortoise two=ANAPH run.out <UV>burn=1SG

‘The two tortoises, I had finished roasting them.’

[Then, I began to walk again.]

In (37), there are two topics throughout the paragraph, i.e. the ‘two tortoises’ and the ‘fire’. The sentence including the -Vn-verb *p<an>ahpui* works as a good summary of the two topics. Note that the first bare verb *ohpah* ‘run out’ and the second -Vn-verb *panahpui* are bound together to construct a sequential serial verb, which will be introduced in (40) below.

<sup>9</sup> Indicators of resultative perfect (state) are *jadi* ‘so, as a result’, *tohko* ‘exist’, and *(n)yaro* ‘not exist’; an indicator of existential perfect is *puji* ‘have V-ed’ (Inagaki 2011:103-106).

Third, -Vn-verb clauses are most frequently used for descriptive supplementation. The descriptions in (38) supplement Manner (=38a), Location (=38b), Instrument (=38c), Theme/Onomatopoeia (=38d, 38e), and an earlier utterance (=38f).

(38) Undergoer voice: descriptive supplementation

a. Descriptive supplementation for Manner:

[Sangumang's mother prepared a lot of food. Sangumang brought it (to the ghost).]

*k<an>ua-i=kai aang gayung hajo, ihco gayung hajo.*  
 <UV>make-3SG=by LOC pail big one pail big

'He/She had prepared a bucketful [of it].'

b. Descriptive supplementation for Location:

*ihuh=rilih t<an>atecek=kai doni tatukup*  
 DEM.PROX=ANAPH <UV>stick=1PL.EX near stem.post.(for boat)

*urung tutang lai=nai.*  
 nose/front and stern/rear=there

'We will fix [boat planks] with it (= wooden clamp) near the stem post at the front and back.'

c. Descriptive supplementation for Instrument:

[Because fish used to be very strong, he brought an oval fish trap and caught the fish.]

*embang tongang kuat segah, t<on>ali jaman lomoi,*  
 oval.fish.trap liana strong firm <UV>rope period former

'Oval fish traps were very strong [enough to catch the fish], they used to be woven.'

d. Descriptive supplementation for Theme/Onomatopoeia:

*"buk", s<on>ihoi=ah lohkup=ih aang isung pahawat jituh*  
 (onom.) <UV>roast=3SG wholly=just LOC high firewood.rack FOC.DEM.PROX

'"Pop", he just barbecued them (= the pig and deer) on the rack.'

e. Descriptive supplementation for Theme/Onomatopoeia:

*"pung", nyakah, s<an>akah nokuh booi, booi alut=ah*  
 (sound) throw <UV>throw toward downriver downriver boat=3SG.POSS

'"Plop", [Miskin] threw [driftwood], [it was] thrown in downstream direction, downstream of his boat.'

f. Descriptive supplementation for an earlier utterance:

['You are too stupid!' Mulau said]

*t<an>ahup Mulau=kai Uhko=tuh aang anan.*  
 <UV>beat PSN=by PSN=DEM LOC there

'Uhko got beaten by Mulau at that time.'

The description in (38a) supplements the manner of the 'food preparation' or 'food bringing' event. In (38b), the descriptive supplementation is for the location of the

‘clamp fixation’ event. Similarly, (38c) supplements the instrument for the ‘fish catch’ event. Sounds or utterances can also be supplemented by -Vn-verb clauses as in (38d)–(38f). The three descriptions in (38d)–(38f) imply that each sound or utterance happens in the same space and at the same time as the corresponding event: “Pop” with ‘roasting’ in (38d), “Plop” with ‘throwing’ in (38e),<sup>10</sup> and “Stupid!” with ‘beating’ in (38f).

Note that, in (38e), the N-verb *nyakah* ‘throw’ is paraphrased by the story teller with a -Vn-verb *s<an>akah* ‘be thrown’. This kind of paraphrasing involving N-verbs and -Vn-verbs is not rare. It is evidence that N- and -Vn- change the relation between subject and predicate in the same clause — in other words, they can mark voice categories.

Fourth, the function of supplementation is also expressed in the capacity of -Vn-verbs to form relative clauses. Kadorih uses the relative subordinator (*ijo*) to make a relative clause as in (39). There is a common argument *sungoi* ‘river’ in (39a), which is shared by main clause and relative clause.

(39) Undergoer voice: relativization

- a. *sungoi ijo s<on>ohu=ku, jo=nanai=rih,*  
 river REL <UV>**go.downstream**=1SG REL=just.then=ANAPH  
*sungoi Apa ara-i.*  
 river PLN name-3SG.POSS

‘The river I traveled down, which [I mentioned] earlier, is called “Apa” river.’

- b. *jorih=ih=ka jo=s<on>ihkah=ku.*  
 FOC.ANAPH=just=also REL=<UV>**extract.edible.soft.shoot**=1SG

‘They (= *sihkah* ‘edible soft shoots’) are also those taken out by me.’

- c. *boh, inon ijo k<on>urah=mu=poh, anak.*  
 Oh what REL <UV>**look.for**=2SG=PTCL child

‘Oh, what did you look for, my child?’

However, the common arguments in (39b) and (39c) are not stated. In (39b), this is possibly because the topicality of the argument is high, or the identity of the argument (= *sihkah* ‘edible soft shoot’) can be recovered by the verbal form *s<on>ihkah* ‘extract *sihkah*’. On the other hand, in (39c), it is because of the existence of the interrogative pronoun *inon* ‘what’.

The target domain of relative clauses shown in (39) is more local than the descriptive supplementation demonstrated in (38) since the former may not work on a whole event, while the latter usually works on a whole event. From this point of view, the target domain of paragraph recapitulation in (37) is broader than these two functions since it works on a paragraph (Their target domains are: broad – (37) > (38) > (39) – local).

Fifth, -Vn-verbs can occur as the second verb in a serial verb construction (SVC). The subject of the first and second verbs in a SVC must be shared. Therefore, when the first verb is intransitive and its subject is an Undergoer argument, the subsequent two-participant predicate must be a -Vn-verb, which always requires an Undergoer subject.

<sup>10</sup> Alternatively, in (38d) and (38e) the descriptions supplement themes of ‘(game) roasting’ and ‘driftwood throwing’ events.

## (40) Undergoer voice: sequential serial verb construction

“*tohkön=ku bapölok*”, *hio-i* “*t<an>utung=ku*,  
bamboo=1SG.POSS **be.broken** quot-3SG.POSS <UV>**link.up**=1SG

*beseu=ku basipak t<an>aming=ku*,  
oar=1SG.POSS **be.split** <UV>**repair**=1SG

*alut=ku batutus k<an>utap=ku*.  
boat=1SG.POSS **be.pierced** <UV>**patch**=1SG

“My bamboo stick broke off” he said, “and I stuck it back together, my oar split and I repaired it, my boat got a hole and I patched it.”

There are three Undergoer subjects in (40), i.e. *tohkön=ku* ‘my bamboo stick’, *beseu=ku* ‘my oar’, and *alut=ku* ‘my boat’. They are obligatorily shared by each serial verb [*bapölok tanutung*] ‘be broken and stuck back together’, [*basipak tanaming*] ‘be split and repaired’, and [*batutus kanutap*] ‘be pierced and patched’ respectively.<sup>11</sup>

Recall that the common arguments are obligatorily shared by the main and relative clauses. Thus, if necessary, in relative clauses and SVCs, undergoer voice is used to satisfy the structural constraint of ‘argument sharing’.

## 4.3. Voice and valency changing

It should be noted that the functional loads of N- and -Vn- are respectively the first and second highest among verbal affixes. These two affixes are used in a high type/token frequency in Kadorih discourse. In my text corpus, there is approximately ninety three percent token frequency of these affixes among overt verbal markers (See Table 5 below). Furthermore, the fact that it is easy to paraphrase N- verbs with -Vn- verbs as shown in (38e) suggests that N- and -Vn- play no role in changing propositional meanings. For these reasons, this paper concludes that the main functions of both N- and -Vn- are to change the viewpoint on an event.

	function	form	token frequency	paraphrasability
voice	actor	N-	84.5% [620]	yes
	undergoer	-Vn-	8.2% [60]	yes
valency- changing	middle	bV-	3.5% [26]	no
	spontaneous	tV-	1.6% [12]	no
	causative	pV-	1.0% [7]	no
	reciprocal	hV-	1.2% [9]	no
			100.0% [734]	

**Table 5: Verbal affixes in Kadorih and their token frequency/paraphrasability**

Generally, valency changing (or participant changing) affixes are less frequent than viewpoint changing voice affixes. Table 5 illustrates this tendency well. The valency changing affixes in Kadorih include four prefixes (already briefly introduced in (2)

<sup>11</sup> Note that the bond between the first and second predicates is not so tight that the 3rd person quotative marker *hioi* can interrupt the sequence as the first clause in (40).

above), i.e. middle *bV-*, spontaneous *tV-*, causative *pV-*, and reciprocal *hV-*. In my text corpus, the token frequency of these prefixes is relatively low.

Moreover, verbs with valency changing prefixes cannot be paraphrased with other affixed verbs. So far no evidence has not yet been obtained that these are voice affixes.

## 5. Conclusion

In this paper, I described Kadorih morphosyntax and discourse focusing on agreement, argument encoding, and voice. I demonstrated that N- and -Vn- are voice affixes based on the evidence of their high token frequency and the paraphrasability between N- verbs and -Vn-verbs, combined with the probability for subject ellipsis. In addition, I elucidated that (i) argument encoding in two participant clauses is moderately sensitive to ‘person hierarchy’, (ii) if there is an indefinite argument in actor voice then it is likely to be Undergoer, (iii) when undergoer voice is selected, it is required for the predicate to satisfy the subject sharing constraint, and as a result, paragraph recapitulation, descriptive supplementation or argument relativization will be implemented.

## Abbreviations

1	1st person	P/N	person/number
2	2nd person	PF	perfect
3	3rd person	PFV	perfective
ABST	nominalizer (abstract nouns)	PL	plural
ANAPH	anaphor	PLN	place name
C	consonant	POSS	possessive
CAUS	causative	PRON	free pronoun
CL	classifier	PROX	proximal
D	voiced obstruent	PSN	person name
DEM	demonstrative	PTCL	particle
EX	exclusive	QUOT	quotative
EXP	experiential perfect	REL	relativizer
FOC	focus	SG	singular
IN	inclusive	SVC	serial verb construction
IPFV	imperfective	T	voiceless obstruent
LINK	linker	TOP	topic marker
LOC	locative (preposition)	UV	undergoer voice
N	nasal consonant	V	vowel
N-	n-prefixed	-Vn-	-vn-infixed
NEG	negative		
S	sole argument in an intransitive clause		
A	agentive argument in a transitive clause		
P	patientive argument in a transitive clause		

## References

- Hudson, Alfred B. 1967. *The Barito Isolects of Borneo: A Classification based on Comparative Reconstruction and Lexicostatics*. Southeast Asia Program Data Papers No 68. Ithaca (NY): Department of Asian Studies, Cornell University.
- Inagaki, Kazuya. 2006. A sketch on the Morphosyntax of Kadorih (Dohoi: Austronesian). *Kyoto University Linguistic Research* 25:41–65.
- . (Unpublished). A Dictionary, Texts, and Papers on Kadorih. Kyoto: Graduate School of Letters, Kyoto University.

- . 2008. Kadorih: Description of an Austronesian Language of Borneo [in Japanese]. PhD thesis, Kyoto University.
- . 2011. Non-morphological devices for expressing TAM in Kadorih. In: *Proceedings of the Workshop on TAM and Evidentiality in Indonesian Languages (17–18 February, 2011)*. 93–120. Tokyo: Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies.
- Lewis, M. Paul. 2009. *Ethnologue: Languages of the world* (16th edition). Dallas (TX): SIL International.
- Meyers, Jim, Heather Meyers, Ben Rice, and Susan Rice. 2003. Report on the Seruyan river surveys in Central Kalimantan (Kohin, Keninjal and Sebaun (Dohoi) languages). SIL Electronic Survey Report 2003-017. SIL International: <http://www.sil.org/silesr/2003/silesr2003-017.pdf>
- Santoso, R. Budi, Surya Taib, and Dadang Lorida. 1985. *Struktur Bahasa Ot Danum*. Departmen Pendidikan dan Kebudayaan. (Proyek Penelitian Bahasa dan Sastra Indonesia dan Daerah Kalimantan Tengah).
- Siewierska, Anna. 2004. *Person*. Cambridge textbooks in Linguistics. Cambridge: Cambridge University Press.
- Stokhof, W. A. L. (ed.) 1986. *Holle Lists: Vocabularies in Languages of Indonesia Vol. 8, Kalimantan (Borneo)*, Pacific Linguistics, D 69 (Materials in Languages of Indonesia No.31). Canberra: Department of Linguistics, Research School of Pacific Studies, Australian National University.
- Taib, Surya, Ny. Anneke Erland, and Sumardi Saragih. 1990. *Morfosintaksis Bahasa Ot Danum*. Jakarta: Pusat Pembinaan dan Pengembangan Bahasa, Departmen Pendidikan dan Kebudayaan.