

Voice and valency alternations in Kadorih

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1. Overview

Kadorih is a dialect of Ot Danum (West Barito, Austronesian), spoken in the upper reaches of Kahayan River in south Borneo, especially in the west of Tumbang Miri.

In this paper, I will examine voice in Kadorih based on the text frequency, and conclude that: (i) N- is the most frequent actor voice prefix which takes an Actor subject, (ii) -Vn- is the second most frequent undergoer voice infix which takes an Undergoer subject, (iii) voice selection is moderately sensitive to topicality and definiteness of arguments in narratives; if undergoer voice is selected, then the topicality of Undergoer argument is high; if there is an indefinite argument in actor voice, then it is likely to be Undergoer. Subsequently, I will argue that other verbal affixes have a significant impact on valency, providing evidence based on their frequencies and functions.

2. Introduction

The provisional linguistic affiliation of Kadorih is given in (1). (2) and (3) list the information about the language and Kadorih. The main previous studies are listed in (4).

- (1) Linguistic affiliation
 - a. Austronesian — Malayo-Polynesian
 - b. West Malayo-Polynesian — West Barito (Borneo)

- (2) Language identification (*Ethnologue* 2009)
 - a. language code: otd
 - b. language name: Ot Danum, Dohoi (Hudson 1967), Malahoi
 - c. region: large area south of Schwaner Range
 - d. speakers: 78,800 (2007)
 - e. dialects: Ot Balawan, Ot Banu'u, Ot Murung, Ot Olang, Ot Tuhup, Sarawai (Melawi), Dohoi, Ulu Ai' (Da'an), Sebaung, **Kadorih**, Kuhin

- (3) Kadorih — a dialect of “Ot Danum”
 - a. region: upper reaches of Kahayan River
 - b. speakers: 5,000???
 - c. prestige: Ngaju (Kahayan), Indonesian
 - d. literacy: literate at around 50 years old or younger; Indonesian alphabet (Ngj./Ind.)
 - e. bilingualism: Ngj. all persons ; Ind. approximately half of the people
 - f. language use: Ngj./Ind. in school, assemblies; Kad. only with Kadorih people

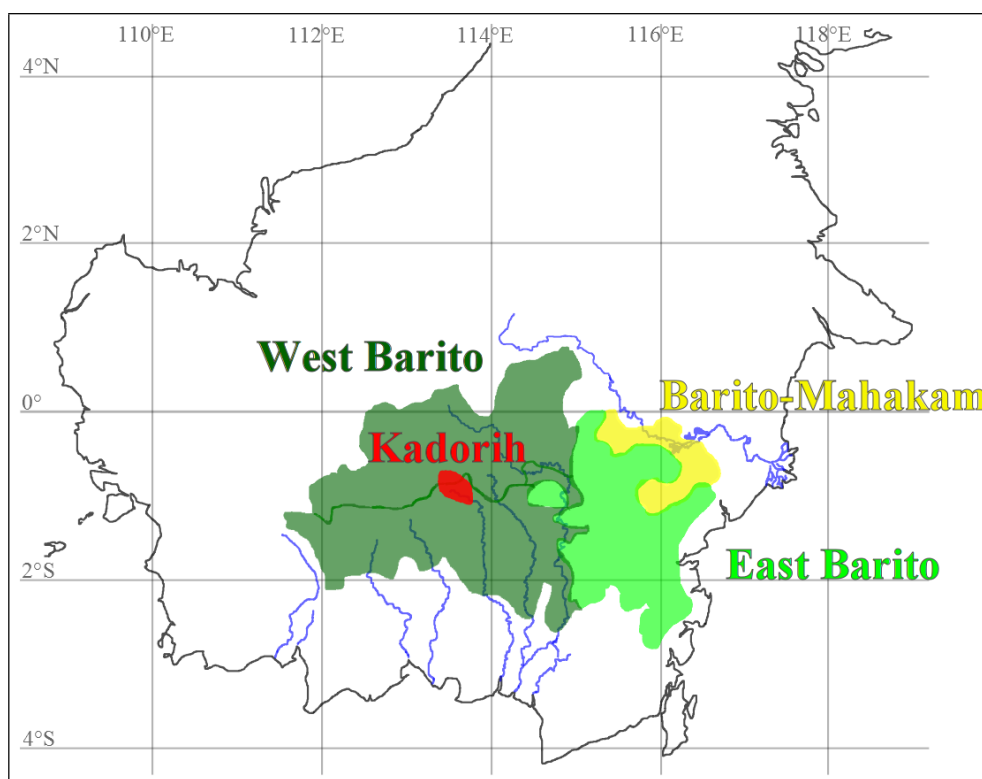


Fig. 1 Distribution of Kadorih and Barito languages

- (4) Main previous studies
- a. a wordlist by H. P. Loing (1916–17) (Stokhof 1986: 3–16)
 - b. a comparative study by Hudson (1967)
 - c. a grammar sketch by Santoso *et al.* (1985)
 - d. a morphosyntactic sketch by Taib *et al.* (1990)
 - e. a sociolinguistic study by Meyers *et al.* (2003)
 - f. texts (Kad. - Ind.) and a small dictionary (Kad. - Ind. - Eng.) by Inagaki (2006a)
 - g. a grammar and a small dictionary (Kad. - Ind. - Eng.) by Inagaki (2008)

Kadorih has 18 consonants and 5 vowels as shown in (5). Each alphabet in italic and bold face represents the orthographic letter for each phoneme. The bracketed symbols are the transcribed sounds in IPA.

- (5) Kadorih phonemic inventory: 18 consonants; 5 vowels

CONSONANTS	bilabial	alveolar	alveolo-palatal	velar	glottal									
stop	<i>p b</i>	<i>t d</i>	<i>c j</i> [t̚ d̚]	<i>k g</i>		<table border="1"> <thead> <tr> <th colspan="2">VOWELS</th> </tr> </thead> <tbody> <tr> <td><i>i</i></td> <td><i>u</i></td> </tr> <tr> <td><i>e</i></td> <td><i>o</i></td> </tr> <tr> <td colspan="2" style="text-align: center;"><i>a</i></td> </tr> </tbody> </table>	VOWELS		<i>i</i>	<i>u</i>	<i>e</i>	<i>o</i>	<i>a</i>	
VOWELS														
<i>i</i>	<i>u</i>													
<i>e</i>	<i>o</i>													
<i>a</i>														
nasal	<i>m</i>	<i>n</i>	<i>ny</i> [ɲ]	<i>ng</i> [ŋ]										
fricative	<i>w</i> [β]		<i>s</i> [s̺]		<i>h</i>									
trill		<i>r</i>												
flap		<i>l</i> [ɾ]												
approximant			<i>y</i> [j]											

3. Morphophonology

The morphophonological alternations relevant to this paper are listed in (6), (7), and (8).

- (6) prefix N- : phonologically conditioned allomorph; *m- n- ny- ng-*
- | | | | | |
|----|----------------------------|----------------------------|---|-----------------|
| a. | <i>mahtoi</i> ‘to die’ | (<i>pahtoi</i> ‘death’) | — | bilabial |
| b. | <i>naang</i> ‘to fly’ | (<i>taang</i> ‘flying’) | — | alveolar |
| c. | <i>nyihoi</i> ‘to roast’ | (<i>sihohi</i> ‘roasted’) | — | alveolo-palatal |
| d. | <i>ngahit</i> ‘to urinate’ | (<i>kahit</i> ‘urine’) | — | velar |
- (7) vowel within affixes: free variation; *a ~ o*
- | | | | |
|----|-------------------------------------|-----------------------|-----------------------------|
| a. | <i>baluhpak</i> ~ <i>boluhpak</i> | ‘to blister’ | (<i>luhpak</i> ‘blister’) |
| b. | <i>hasombang</i> ~ <i>hosombang</i> | ‘to meet’ | (<i>sombang</i> ‘meeting’) |
| c. | <i>pataang</i> ~ <i>potaang</i> | ‘to fly (transitive)’ | (<i>taang</i> ‘flying’) |
| d. | <i>tatiruh</i> ~ <i>totiruh</i> | ‘to fall asleep’ | (<i>tiruh</i> ‘to sleep’) |
| e. | <i>kaduon</i> ~ <i>koduon</i> | ‘ability’ | (<i>duon</i> ‘to get’) |
- (8) vowels within complex affixes: obligatory restriction; *CaCa* or *CoCo*
- | | | | |
|----|---------------------------------------|----------------------|--------------------------|
| a. | <i>batasahpou</i> ~ <i>botosahpou</i> | ‘(roof) to be fixed’ | (<i>sahpou</i> ‘roof’) |
| b. | <i>kanaluhca</i> ~ <i>konoluhca</i> | ‘to be spat on’ | (<i>luhca</i> ‘saliva’) |
| c. | <i>pakadoni</i> ~ <i>pokodoni</i> | ‘nearest’ | (<i>doni</i> ‘near’) |

4. Morphosyntax

4.1 Agreement and subject

The alignment system in Kadorih is accusative-type which groups together agentive arguments (A) in transitive predicates and sole arguments (S) in intransitive predicates. These A=S arguments can be cross-referenced on ‘operators’ of clauses such as auxiliaries, subordinators or adverbs.

(9) and (10) shows pronominal suffixes and enclitics used for person/number (P/N) agreement. In (9), the P/N suffixes *-k* [1SG] and *-i* [3SG] are marked on the auxiliary *duon* ‘can’. These suffixes agree with A arguments *ahku* ‘I’ and *inai Yoga* ‘Yoga’s mother’ respectively.

- (9) a. *ahku duo-k pokalah io.*
 1SG can-1SG.A to.defeat 3SG
 ‘I can defeat him.’
- b. *inai Yoga ya= duo-i honong kuman sahang.*
 mother PSN NEG can-3SG.A IPFV to.eat red.pepper
 ‘Yoga’s mother cannot eat red peppers at the moment.’

In (10), the P/N enclitic *=(n)do* [3PL] is marked on the same auxiliary *duon*. This enclitic agree with *iroh* ‘they’ in inflectional person/number categories.

- (10) *iroh eam duon =do balima lohpuo ijo mahcam orih.*
 3PL NEG can =3PL.A to.imagine house REL like DEM.ANAPH
 ‘They cannot imagine that kind of house.’

P/N agreement is obligatorily required for auxiliaries such as *duon* ‘can’, *harun* ‘just now, finally’ and *yataan* ‘cannot’.

Another auxiliary such as *eam* [NEG] or *tou* “can” often involves P/N agreement, but it is optional as indicated in (11).

- (11) *ahku eam (=ku) ngoni-u.*
 1SG NEG 1SG.A to.bring-3.P
 “I will not bring it.”

In many sentences in Kadorih, there may be no overt argument with which a suffix or an enclitic agrees in person/number. (12) shows such a case in which lacks the 1st singular free pronoun.¹

- (12) *eam =ku taa-i.*
 NEG 1SG.A to.know-3.P
 “I don’t know it.”

As is obvious from the examples in (9)–(12), agreement markers can be encoded as a suffix or enclitic. In other words, both suffix and enclitic in the same P/N function are allomorphs of an agreement marker. Their allomorphy is conditioned phonologically, that is, the suffixation (and substitution) process is restricted to bases/hosts which have alveolar nasal *n* at their ends as *duon* does. Bilabial nasal *m* does not allow the suffixation, neither **ea-k* [NEG-1SG] nor **ea-i* [NEG-3SG] cannot thus be allowed.

Table. 1 shows the P/N markers in Kadorih.

Table. 1 Person/number (P/N) markers

	pronoun	suffix	enclitic
1SG	<i>ahku</i>	<i>-k</i>	<i>=ku</i>
2SG	<i>ihko</i>	<i>-m</i>	<i>=ko</i>
3SG	<i>io</i>	<i>-i/-u</i>	<i>=ah/=oh</i>
1PL.INCL	<i>ihto</i>		<i>=to</i>
1PL.EXCL	<i>ihkai</i>		<i>=kai</i>
2PL	<i>ihkam</i>		<i>=kam</i>
3PL	<i>iroh</i>		<i>=(n)do</i>

The P/N agreement can also be done by suffix/enclitic double-marking as in (13). The enclitic *=ku* [1SG] is added to the auxiliary *harun* “just now, finally” even though the auxiliary is in inflected form suffixed with *-k* [1SG]. This double-marking is observed characteristically in 1st person singular.

- (13) *haru-k =ku soleng =ah.*
 at.last-1SG.A 1SG.A to.understand 3.P
 “Now I just understood it.”

The P/N agreement is not restricted to agentive (A) arguments in transitive clauses. (14) and (15) show the P/N agreement of sole (S) arguments in intransitive clauses.

¹ In Kadorih, an overt free pronoun denoting speaker or hearer may be uttered for the purpose of putting an emphasis on the Actor of an event.

- (14) a. *haru-m* *lombut* =*hom*.
at.last-2SG.S to.come just(visible)
“You have just come here.”
- b. *amun nyaro bahiu, ihto yataan =to nahasong*.
if there.is.no wind 1PL.INCL cannot 1PL.INCL.S to.breathe
“If there was no air, you and I would not be able to breathe.”
- c. [*eam puji*] =*ku tiruh mahcam orih*.
NEG EXP 1SG.S to.sleep like DEM.ANAPH
“I have never slept like that.”

Each intransitive predicate in (14abc), *lombut* “to come”, *nahasong* “to breathe” and *tiruh* “to sleep” requires only one argument (S). The S argument is encoded as a suffix *-m* [2SG] in (14a), a pronoun and enclitic *ihto/=to* [1PL.INCL] in (14b), and an enclitic *=ku* [1SG] in (14c)² respectively. All of the S arguments in (14) are animate entities and bear Actor role. Compare (14) with (15):

- (15) a. *katihka haru-i bolum*,
time at.last-3SG.S to.live
“When it (= tree) is starting to grow,”
- b. *ukur io eam =ah tou baduruh*,
so.as.to 3SG NEG =3SG.S can to.collapse
“In order for it (= pole of working bench) not to be broken,”
- c. *yataa-i leket =ndai lisan kabain danum =rih*.
cannot-3SG.S cling already epoxy owing.to water ANAPH
“The epoxy resin bond cannot adhere (to it) any more because of the moisture.”

Both of the intransitive verbs in (15a, 15b) are middle bV- forms, especially *baduruh* “to collapse” in (15b) can be analysed as anticausative which suppresses Actor arguments. — The semantic role of the S argument *io/=ah* [3SG] in (15b) is not Actor but Undergoer.

The examples in (14) and (15) suggest that the P/N markers agree with S arguments irrespective of their semantic roles. This means that — taking into account the agreement of A argument described in (9)–(13) — there is a good reason to see the alignment system in Kadorih as a syntactic one, and to regard the A=S argument as the syntactic subject of a clause.

The A=S agreement can be observed in markers on subordinators as in (16), and on adverbs as in (17).

- (16) a. *ka-k tahtou sanang =ndai*,
for-1SG.S wealthy happy already
“In order for me to be rich/happy,”
- b. *ahka-m ngoruh ihkai jahawen =tuh*,
for-2SG.A to.take.wife 1PL.EXCL six DEM
“In order for you to take six of us to wives,”
- c. *kobai-k (ahku) ngorih susu*,
owing.to-1SG.A 1SG to.drink milk
“Because I drank milk,”

² Note that *=ku* in (14c) is cliticized grammatically to the auxiliary phrase *eam puji*, not to the auxiliary word *puji*.

- (17) a. *noin =ku nguan eku aro bara emu =tuh,*
 later 1SG.A to.make 1SG.POSS many from 2SG.POSS DEM
 “Later, I will increase mine than yours (= your fruits),”
- b. *holu-n =to masang =ah.*
 at.first-LINK 1PL.INCL.A to.put.on 3.P
 “At first, we install it (= plank) (on the bottom plate of a boat).”
- c. *tiok =ku nuhkat dolang bahtang lihat.*
 take.chance 1SG.A to.climb PL trunk *Lansium.domesticum*
 “I just happened to climb the trees of *Lansium domesticum*.”

4.2 Voice

Voice is the grammatical category governing the relation that the surface subject of a clause has to the predicate. Kadorih has Actor voice whose subject is Actor in most cases, and Undergoer voice whose subject is always Undergoer. The voice alternation in Kadorih can be characterised as a viewpoint alternation which does not affect the propositional meaning.

4.2.1 Argument-encoding in discourse

There are 3 word classes and 2 types of bound morphemes used for argument-encoding in Kadorih: nouns (or noun phrases), free pronouns, demonstratives; pronominal clitics and suffixes.

- (18) a. nouns: (9b 10 14b 15c 16c 17c)
 e.g. *inai Yoga* “Yoga’s mother”, *sahang* “red pepper”, *lohpuu* “house”, *bahiu* “air”,
lisan “epoxy”, *danum* “water”, *susu* “milk”, *lihat* “*Lansium domesticum*”
- b. free pronouns: (9a 10 14b 16b 17a)
 e.g. *ahku* “I”, *io* “him/her/it”, *iroh* “they”, *ihito* “we (inclusive)”, *ihkai* “we (exclusive)”,
eku “mine”, *emu* “yours”
- c. pronominal clitics: (12 13 17b)
 e.g. *=ku* [1SG], *=ah* [3], *=to* [1PL.INCL]
- d. pronominal suffixes: (11 12 13 14a 15a)
 e.g. *-u* [3], *-i* [3], *-k* [1SG], *-m* [2SG], *-i* [3SG]
- (19) demonstratives:
- 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
 “The perfect name for my child is this one.”
- c. *orih* *naing =ah.*
 DEM.ANAPH word 3SG.POSS
 “That is the story.”

In Kadorih discourse, there is a tendency for argument-encoding in two-participant clauses. That is, Actor of an event is usually encoded as 1st or 2nd person pronominal (= deictic expression for speaker/hearer, 70% = 392/560), and Undergoer of an event as 3rd person, mainly noun (= lexical expression, 94% = 666/710). Similarly, 1st/2nd pronominal in a clause tends to express Actor (90% = 392/436), and 3rd person in a clause Undergoer (80% = 666/834).

These statistical facts suggest that argument-encoding in two-participant clauses is moderately sensitive to well-known ‘animacy hierarchy’ (1, 2 > 3).

Table 2 Argument-encoding in two-participant clauses: N-, -Vn-, and bare forms

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

Table 2 shows the number of Actor/Undergoer arguments at each encoding (or of 1st/2nd person pronominals and 3rd person at each semantic role). These numbers were counted in my text corpus of spoken monologues which I recorded, transcribed and translated into Indonesian with native speakers’ cooperation. The texts include 22 stories (=2305 intonational units, Inagaki 2006a) told by 9 Kadorih (wo)men in their 20s to 80s. Ellipted arguments \emptyset were uncounted (for argument ellipsis, see §§ 4.2.2–4.2.3 below). The counted arguments are the ones accompanied by the verbs including N- forms, -Vn- forms and bare forms in predicate function.

The tendency noted above is stronger in the case of argument-encoding in -Vn- clauses. The Undergoer arguments in -Vn- form clauses are 3rd person in all 60 examples. This means that all subjects of -Vn- clauses are 3rd person. See § 4.2.3 for more detail.

4.2.2 Actor voice

This paper characterizes N- and bare verbal forms as predicates of actor voice. As for the allomorphy of N- forms, see (6) in § 3.

Generally, a morpheme should not be analyzed as zero morpheme, except for usually unmarked ones, e.g. 3rd person, non-past, etc. A possible problem of the morpheme analysis in this paper is that a bare form would be analyzed to consist of one voice-bearing morpheme \emptyset - plus a stem. On the contrary, the morpheme analysis of N- is partly supported by its overt form (=nasality).

This paper, however, does not stipulate the zero morpheme \emptyset -. Alternatively, the voice of bare forms is assumed to depend on the default voice in Kadorih, that is, the actor voice expressed by N- marked predicates. According to this assumption, it can be said that the voice of bare forms is underspecified in the lexicon. As a result, there is no need to analyze the zero morpheme \emptyset - for bare forms.

The evidence for actor voice can be obtained from the following examples.

The Agentive subjects in (20a, 20b) are the Actor arguments selected by the N-/bare forms (= *ngoniu/taai*).

- (20) Agentive argument = subject of transitive clause — Actor :
- a. N-form; *ahku eam =ku ngoniu*. (=11)
 1SG NEG 1SG.A to.bring-3.P
 “I will not bring it.”
- b. bare form; *eam =ku taa-i*. (=12)
 NEG 1SG.A to.know-3.P
 “I don’t know it.”

In (20a), the 1st singular *ahku* is the subject of the clause and denotes the Actor of the “bringing” event. In (20b), the 1st singular is the subject and denotes the Actor of the “knowing” event.

(21a) and (21b) list transitive N- and bare verbal forms which choose Actor as their subjects. These forms will function as actor voice predicates in a clause.

(21) a. Transitive N-forms which select Actor subject:

magi “divide”, *mahaman* “set adrift”, *mahkat* “invite”, *mahku* “nail”, *mahpui* “burn”, *mah-tot* “break (rope)”, *mahtuk* “put on”, *malih* “avoid”, *malutuh* “boil”, *mander* “say”, *masang* “put on”, *masap* “visit”, *matoi* “cook (by pot)”, *matu* “beat”, *mawak* “bite”, *menyou* “wash (dish/hair)”, *mihtah* “go to the other side”, *mihtik* “draw”, *mingat* “remember”, *misah* “separate”, *misit* “economize”, *mitih* “select”, *molah* “halve”, *moli* “buy”, *molok* “break”, *mopas* “sweep (spider’s web)”, *moros* “hurt”, *mosak* “crack”, *mota* “cut”, *muap* “open (cover)”, *muhca* “pound”, *muhi* “wash (dish/hair)”, *muhka* “open”, *muhpuk* “wash (clothes)”, *muluh* “cook (rice)”, *munda* “convey”, *munu* “kill”, *munying* “sharpen”, *musit* “shatter”, *mutung* “cut off”, *naah* “call”, *naha* “refine”, *nahak* “drop”, *nahan* “control”, *nahkou* “steal”, *nahkup* “beat”, *nakira* “deceive”, *nakung* “shoulder”, *nali* “twine”, *nambang* “welcome”, *nambit* “seize”, *napa* “make”, *napar* “slap”, *naposu* “suckle”, *napunan* “gather (fruit)”, *naput* “wipe”, *narik* “pull”, *natang* “weave”, *nawan* “catch”, *nawas* “cure”, *nawu* “tie”, *nembak* “shoot”, *ngahtang* “carry”, *ngahut* “bind firmly”, *ngakit* “gather (rubber)”, *ngakup* “carry (under the arm)”, *ngalai* “study”, *ngali* “dig”, *ngambot* “pull”, *ngarok* “sniff”, *ngarot* “feel”, *ngasono* “know”, *ngatam* “plane”, *ngatia* “force”, *ngaut* “prepare”, *ngawa* “carry (on the back)”, *ngawat* “help”, *ngesah* “tell a story”, *ngina* “preserve”, *ngindoi* “wait”, *ngindou* “throw away”, *ngihang* “dry (in the sun)”, *nginjam* “borrow”, *ngirim* “send”, *ngisai* “clean”, *ngisak* “roast”, *ngisok* “ask”, *ngitot* “accompany s.o. to a destination”, *ngohtom* “harvest (rice)”, *ngohtun* “carry (on the back)”, *ngomin* “bring”, *ngomo* “feel”, *ngomosai* “take a husband”, *ngonih* “hear”, *ngonin* “bring”, *ngorih* “drink”, *ngorong* “straighten, repair”, *ngoruh* “take a wife”, *ngotang* “carry (in a sarong)”, *nguan* “make”, *nguhat* “pull out”, *nguhcan* “rain on”, *nguh-pak* “take off (skins)”, *nguhut* “pull”, *ngumah* “carry (on the back)”, *nguna* “make use of”, *ngunyang* “check (fish trap)”, *ngupan* “slice (meat)”, *ngurah* “look for”, *ngurak* “peel”, *nguri* “peel”, *ngutat* “flatten”, *nihkas* “put down”, *nihpu* “deceive”, *nimang* “praise”, *nimba* “bail”, *nohto* “see”, *nohtok* “cut off”, *nolon* “swallow”, *nombok* “build”, *nonih* “keep in mind”, *nonga* “give”, *noon* “put on”, *norok* “chop”, *nosan* “forge”, *nosang* “knot”, *nosap* “whittle”, *nowong* “cut down”, *nucu* “push”, *nuhkan* “plant (make a hole)”, *nuhkan* “climb”, *nuhtu* “bend”, *nulak* “push forward, sell”, *numbu* “gather”, *nusuh* “let out s.t.”, *nutu* “cut”, *nutung* “link up”, *nutup* “cover”, *nutut* “pursue”, *nyaha* “burn”, *nyahpou* “put a roof on”, *nyakah* “throw away”, *nyakahpu* “carry (on the hip)”, *nyakakar* “endeavor”, *nyaki* “smear with blood”, *nyapur* “blend”, *nyari* “check”, *nyawot* “ask for”, *nyegah* “strengthen”, *nyembah* “worship”, *nyewut* “say”, *nyihoi* “roast”, *nyila* “split”, *nyolong* “go inside”, *nyombang* “find”, *nyoruh* “put on”, *nyuang* “fill”, *nyuduk* “slash”, *nyuhu* “command”, *nyuhuk* “hide”, *nyukui* “tie up”

b. Transitive bare forms which select Actor subject:

cuba “try”, *dinun* “get”, *dohop* “help”, *duon* “get”, *hapan* “use”, *hocok* “arrive”, *kuman* “eat”, *murik* “go upstream”, *rimit* “raise”, *sohu* “go downstream”, *soleng* “understand”, *taan* “know”, *talingau* “forget”, *tukun* “arrive”

The Sole subjects in (22a) and (22b) are Actor arguments selected by N- and bare forms, *mondui* [N-pondui] “to take a bath” and *lombut* “to come”.

(22) Sole argument = subject of intransitive clause — Actor :

- a. N- : *Sangumang mondui anan.*
 PSN(=S) to.take.a.bath there
 “Sangumang took a bath there.”
- b. bare : *haru-m lombut =hom.* (=14a)
 at.last-2SG.S to.come just(visible)
 “You have just come here.”

In (22a), the person name *Sangumang* is the subject and denotes the Actor of the “bathing” event. In (22b), the 2nd singular is the subject and denotes the Actor of the “coming” event.

(23a) and (23b) list intransitive N- and bare verbal forms which choose Actor as their subjects. These forms will function as actor voice predicates in a clause.

(23) a. Intransitive N-forms which select Actor subject

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

b. Intransitive bare forms which select 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”

It is not clear whether the arguments of intransitive N- and bare verbal forms in (24) are Actor or Undergoer. These verbal forms denote mental, natural or physiological phenomena.

(24) a. *nuhpi* “dream”, *nyalu* “lament”

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

c. *mani* “defecate”, *mondam* “have a fever”, *monyun* “wake up”, *nangih* “weep”, *ngahit* “urinate”, *ngotut* “fart”, *nguhta* “vomit”, *nohcot* “shiver”, *nuap* “yawn”, *nyokok* “cough”, *nyondu* “hiccup”

In addition to these verbal forms, intransitive N- forms in (25) will choose Undergoer arguments as their subjects as shown in (26).

(25) Intransitive N- forms which select Undergoer subject:

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

(26) a. *ko-poros kuhung =ku nihou.*

ABST-ache head 1SG.POSS to.be.lost

“My headache has gone away.”

b. *umbot =ndai mosak ukun panguman kanuan =do.*

ANT already cooked/ripe food eating to.be.made 3PL

“Meals have been cooked by them.”

c. *aang lowu =tuh jadi puji ulun mahtoi kana panyahkit,*
at/in/on village DEM PFV EXP human to.die hit disease

‘demam berdarah’ ara-i.

dengue.fever name-3SG.POSS

“In this village, people have died of a disease, its name is ‘dengue fever’.”

In (26a), the S subject *koporos kuhung=ku* denotes the Undergoer of “disappearing” event. In (26b) and (26c), the S subjects *ukun panguman* and *ulun* are also Undergoers, and even Actor arguments *=do* [3PL] and *panyahkit* “disease” are encoded as oblique elements.

Quite a few of the N- forms function as actor voice predicate as shown in (21a) and (23a), whereas several of them function as undergoer voice predicate as shown in (25, 26) and possibly in (24). These facts suggest that the prefix N- is not strictly categorical and that the prototypical function of N- forms seems to be best characterized as actor voice predicate based on the type frequency.

It was assumed at the beginning of this subsection that the voice of bare forms depend on the default (most frequent) actor voice, however, the bare form *ohpah* “be finished” takes Undergoer as its subject argument.

- (27) *kuma-i kuma-i kuma-i, ohpah ahtoi bawui jituh.*
 to.eat-3.P to.eat-3.P to.eat-3.P finished liver/heart wild.pig FOC.DEM.PROX
 “(He) was eating and eating and eating it, the heart of the wild pig was all gone.”

The bare form *ohpah* is used for undergoer voice predicate as in (27). Therefore its voice does not depend on the default voice but is exceptionally specified in the lexicon as “undergoer voice”. However, it should be noted that almost all bare forms (96% = 25/26: (21b) + (23b)) depend strongly on the default actor voice.

In addition to the voice described above, the bare forms have much in common with the N-forms in terms of argument-encoding in two-participant clauses.

- (28) Argument-encoding in two-participant clauses of actor voice (N-/bare)
- a. 3RD PERSON PRONOUN → ACTOR:
 3rd person free pronouns *io/iroh* are likely to be used for encoding of Actor rather than Undergoer.
 - b. INDEFINITE → UNDERGOER:
 An indefinite entity is likely to be Undergoer argument.
 - c. Undergoer arguments are more resistant to ellipsis than Actor arguments.
 (excluding imperative sentences)

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

- (29) 3RD PRON. ACTOR (72%) N-/BARE VERB 3RD PRON. UNDERGOER (28%)
 actor voice

An indefinite entity is encoded in a number of different ways. A generic noun phrase such as *ulun* in (30) is frequently used for the encoding of indefinites.

- (30) *eam puji ulun noon buwu aang taruk kacu.*
 NEG EXP **human** to.put fish.trap at/in/on upper wood
 “Nobody has ever set up a fish trap on a tree.”

Furthermore, the plural marker *dolang*, a numeral (plus a classifier), or an interrogative are also used for encoding of indefinites as shown in (31).

- (31) a. *turus nyari dolang komulan, dolang katimun.*
 then to.check PL crop PL cucumber
 “Then, (I will) check some crops and cucumbers (=check some fields of them).”
- b. *ahku nohto ihco bahtang kahat.*
 1SG to.see **one** CL:TRUNKLIKE betel
 “I saw a betel tree.”

- c. *kolou =ku nguan sandung, kolou =ku nguan narai.*
 like/as 1SG.A to.make kind.of.grave like/as 1SG.A to.make **what**
 “As I made ‘*sandung*’, as I made something.”

In actor voice, there is a tendency to deal with an indefinite entity as Undergoer. Actor indefinites illustrated in (30) is not so frequent, they occur in 15% (=26/169). In contrast, Undergoer indefinites illustrated in (31) occur in 85% (=143/169). Therefore, Indefinite entities are likely to be Undergoer arguments.

- (32) INDEFINITE ACTOR (15%) N-/BARE VERB INDEFINITE UNDERGOER (85%)
 actor voice

In non-imperative sentences consisted of N-/bare predicates, Undergoer arguments are less likely ellipted. Although Actor and Undergoer arguments are equally repeated and referred to in discourse, Actor arguments in actor voice are notably ellipted in my corpus. The Undergoer ellipses occur in 5% (bare in 7% = 6/88; N- in 5% = 32/619), while Actor ellipses occur in 28% (bare in 25% = 22/88; N- in 28% = 173/620). Thus, in actor voice, object constituents (=Undergoer) are less ellipted than subject constituents (=Actor).

- (33) [ACTOR] (28%) N-/BARE VERB [UNDERGOER] (5%)
 actor voice ‘ [] ’ indicates an ellipsis site

4.2.3 Undergoer voice

This paper assumes the contrast between actor and undergoer voice. A crucial difference between them is that the grammatical subject in undergoer voice is necessarily Undergoer argument, whereas the subject in actor voice is prototypically Actor argument.

The vowel V within the infix *-Vn-* represents /a/ and /o/. Therefore, *-an-* and *-on-* are in free variation (cf. (7) in § 3.). (34) lists some *-Vn-* forms and their bases. Note that the base of both *kanitot* and *ngitot* in (34a) is *KITOT* ‘deliver’, one of the bound bases in Kadorih morphology.

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

In *-Vn-* form clauses, Actor arguments seem to appear in the fixed position. For example, in (35), the Actor argument *Awo* marked by the postposition *kai*³ is postverbal, while the position of the Undergoer argument *pinjan* is not fixed.

- (35) a. *pinjan panuhi Awo =kai.*
 dish to.be.washed PSN by
 “The dishes were washed by Awo.”
 b. *panuhi Awo =kai pinjan.*
 to.be.washed PSN by dish
 “The dishes were washed by Awo.”

³ Kadorih mainly uses prepositions, but the postposition *kai* may be used for the purpose of marking Actor arguments. See also the example in (44a) where *kai* is postposed to the Actor argument suffix *-i* [3SG].

These two constituent orders given in (35a) and (35b), [Undergoer -Vn-form Actor] and [-Vn-form Actor Undergoer] are allowed without a difference in propositional meaning. But any other possible orders in (36) are ungrammatical in Kadorih syntax.

- (36) a. *[Awo (=kai)] [pinjan] [panuhi] (Actor Undergoer -Vn-form)
 b. *[Awo (=kai)] [panuhi] [pinjan] (Actor -Vn-form Undergoer)
 c. *[pinjan] [Awo (=kai)] [panuhi] (Undergoer Actor -Vn-form)
 d. *[panuhi] [pinjan] [Awo (=kai)] (-Vn-form Undergoer Actor)

These facts suggest that Actor arguments (plus the postposition) in undergoer voice must appear in postverbal position.

Interestingly, argument-encoding in undergoer voice is quite different from that of actor voice in terms of free pronouns, indefinites, and ellipsis. As for the shared characteristics of these two voices, see the description in § 4.2.1.

- (37) 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:
 An indefinite entity appears as either Actor or Undergoer argument.
 c. Actor arguments are more resistant to ellipsis than Undergoer arguments.
 (excluding imperative sentences)

Actor or Undergoer arguments are rarely encoded as free pronouns in undergoer voice. They are usually encoded as noun phrases, pronominal clitics/suffixes, or demonstrative. Only 3 free pronoun arguments are attested in my corpus.

Table. 3 Differently encoded arguments in undergoer voice

	Actor		Undergoer	
noun phrase	13%	[6]	85%	[35]
free pronoun	4%	[2]	2%	[1]
pronominal clitics/suffixes	83%	[39]	0%	[0]
demonstrative	0%	[0]	12%	[5]
total	100%	[47]	100%	[41]

- (38) 3RD PRON. UNDERGOER [1/41] -Vn- VERB 1ST/2ND PRON. ACTOR [2/47]
 undergoer voice

Indefinites in undergoer voice appear as either Actor or Undergoer arguments. There is no significant difference in frequency between indefinite Actors (47% = 7/15) and indefinite Undergoers (53% = 8/15).

- (39) INDEFINITE UNDERGOER (53%) -Vn- VERB INDEFINITE ACTOR (47%)
 undergoer voice

In non-imperative sentences consisted of -Vn- verbs, Actor arguments are less likely ellipted. About 22% (=13/60) of Actor arguments and 32% (=19/60) of Undergoer arguments are ellipted in my text corpus. This means that, in undergoer voice, non-subject constituents (=Actor) are less ellipted than subject constituents (=Undergoer).

- (40) [UNDERGOER] (32%) -Vn- VERB [ACTOR] (22%)
 undergoer voice ‘ [] ’ indicates an ellipsis site

The characteristics found in argument-encoding make it clear that, in discourse, the undergoer voice is distinct from actor voice. It should be noted that subject constituents are likely to be ellipted than non-subject ones in both voices. Compare (29) and (38) on (3rd person) free pronouns, (32) and (39) on indefinites, (33) and (40) on ellipsis.

-Vn- forms have a variety of pragmatic and/or structural characteristics listed in (41).

- (41) a. perfective aspect: (42)
 b. summarizing story lines: (43)
 c. contextual supplementation: (44)
 d. relativization: (45)
 e. sequential verb serialization: (46)

Kadorih has no perfective aspect category in its morphology. In most cases, perfective aspect is indicated by an auxiliary, or may be expressed by -Vn- forms. In (42), the 1st clause *amun tanowong* is paraphrased as the 2nd clause in which the auxiliary *umbot* indicates perfective aspect.

- (42) perfective aspect: *jadi, amun tanowong, umbot towong =ah,*
 then if **to.be.felled** ANT felling 3SG.POSS
 “Then, if it (=tree) has been felled, (I mean) if the felling is finished,”

However, the -Vn- forms themselves are insufficient to express perfective aspect. The speaker of the sentence in (42) paraphrased the 1st clause because of this insufficiency.

Looking at context, it will be found that -Vn- form clauses can summarize a story line. This summarizing function works either anaphorically (=43a) or cataphorically (=43b).

- (43) summarizing story lines
 a. anaphorically summarize:
 [After 3-day wandering in the jungle without food, I caught two tortoises. And then, I gathered firewood. After 1-hour hand drill, the firewood caught fire. I blew it until a flame was produced. And I roasted the tortoises until it was fit to eat. Then, it began to heal my tiredness.]
kolop duo =dih ohpah panahpui =ku.
 tortoise two ANAPH finished **to.be.burnt** 1SG
 “The two tortoises were finished, roasted by me.”
 [Then, I began to walk again.]
- b. cataphorically summarize:
 [The next stage of boat-making is working on the outside of a boat.]
hinda luar ah =rih tanapa =to, tanosap
 part/side outside 3SG.POSS ANAPH **to.be.made** 1PL.INCL **to.be.flatten**
 =to,
 1PL.INCL
 “The outside of the boat is made by us, flatten by us,”
 [We make it look sharp. If we don’t make it look sharp, it won’t avoid a strong current. Then, it will get water inside. This is because the outside of the boat isn’t sharp enough. That’s why we make the outside of a boat look sharp.]

In (43a), the topics throughout the paragraph are the fates of the tortoises and of the fire. The sentence including the -Vn- form *panahpui* works as a good summary of the two topics. The 1st bare verb *ohpah* and the 2nd -Vn- verb *panahpui* are bound together to construct a sequential serial verb, which will be introduced in (46) below.

In (43b), the topic throughout the paragraph is how to make the outside of a boat. The summary sentence in question just includes general actions of boat-making which are denoted by *tanapa* and *tanosap*. And the subsequent action *ngunyun* “sharpen” is the subset of the general (=superset) actions.

The most frequent use of -Vn- forms is contextual supplementation. (44) illustrates (44a) manner, (44b) location, (44c) instrument, (44d–44e) theme/onomatopoeia, and (44f) utterance supplementation.

(44) contextual supplementation

a. supplementation for the manner of an event:

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

kanua-i kai aang gayung hajo, ihco gayung hajo.
to.be.made-3SG by at/in/on pail big one pail big

“(It was) brought/prepared bucketful by him/her”

b. supplementation for the location of an event:

ihuh =rih tanatecek =kai doni tatukup urung
 DEM.PROX ANAPH **to.be.stuck** 1PL.EXCL near (boat)stem.post nose/front
tutang lai =nai.
 and stern/rear a.moment.ago

“It (= wooden clamp) will be fixed by us near the front and back stem post.”

c. supplementation for the instrument of an event:

[Because fish were very strong, he brought oval fish trap and netted them.]

embang tongang kuat segah, tonali jaman lomoi,
 oval.fish.net liana strong firm **to.be.twined** period in.the.past

“Oval fish traps were very strong, formerly woven.”

d. supplementation for the theme/onomatopoeia of an event (1):

‘buk’ soniho =ah lohkup =ih aang isung pahawat
 (sound) **to.be.roasted** 3SG wholly just at/in/on high firewood.rack
jituh.

FOC.DEM.PROX

“ ‘Pop’, they (=pig and deer) were just barbecued by him (=old man) on the rack.”

e. supplementation for the theme/onomatopoeia of an event (2):

‘pung’ nyakah, sanakah nokuh booi, booi alut
 (sound) to.throw **to.be.thrown** toward downriver downriver boat
 =ah.

3SG.POSS

“ ‘Plop’, (he = Miskin) threw (it = driftwood), it was thrown in the downstream direction, downstream of his boat.”

f. supplementation for the earlier utterance:

[‘You are too stupid!’ Mulau said.]

tanahup Mulau =kai Uhko =tuh aang anan.
to.be.beaten PSN by PSN DEM at/in/on there

“Uhko got beaten by Mulau at that time.”

Note that the N- form *nyakah* is paraphrased with -Vn- form *sanakah* in (44e). This paraphrase is common between N- and -Vn- forms.

(44a) supplements “food preparation” event or “food bringing” one, (44b) “clamp fixation” event, (44c) “fish catch” event, (44d) “game roasting” event, (44e) “driftwood throwing” event, (44f) the previous utterance, by means of each -Vn- form with its arguments/obliques.

This kind of supplementation is also found in relativization. Kadorih uses a relative marker (*ijo*) to make a relative clause as in (45). There is a common argument *sungoi* stated in (45a), which is shared by the main and relative clause. But the common arguments in (45b–45c) are not stated because of the high topicality of the argument and of interrogative focusing.

(45) relativization

a. *sungoi ijo sonohu* =ku, *jo= nanai* =rih, *sungoi*
 river REL **moved.downstream** 1SG REL a.moment.ago ANAPH river
Apa ara-i.
 PLN name-3SG.POSS

“The river traced downstream by me, which (I said) earlier, its name is ‘Apa’ river.”

b. *jorih ih* =ka *jo= sonihkah* =ku.
 FOC.ANAPH just also REL **(edible.soft.shoot)to.be.taken.out** 1SG

“(So,) they (=edible soft shoot of coconut tree) are also those taken out by me.”

c. *boh, inon ijo konurah* =mu *poh= anak.*
 Oh what REL **to.be.looked.for** 2SG PTCL child

“Oh, what was looked for by you, my child?”

The supplementations in (45) are more local in that the relative clauses do not supplement whole events as shown in (44), but just noun phrases.

In Kadorih, possible grammatical functions for the common argument in a main/relative clause is not so restricted that an argument in oblique function can be relativized. However, in undergoer voice, the accessibility for the common argument in a relative clause seems to be restricted to Undergoer subject.

-Vn- forms can appear in the 2nd position of a serial verb construction (SVC). When the sole argument of the 1st intransitive predicate denotes Undergoer, the subsequent 2nd transitive predicate must be a -Vn- form which require Undergoer subject. The subject of a SVC must be shared.

(46) sequential serial verb construction:

'tohkön =ku bapölok,' hio-i 'tanutung =ku,
 bamboo.stick 1SG.POSS **to.be.broken** QUOT-3SG **to.be.linked.up** 1SG
beseu =ku basipak tanambing =ku, alut =ku
 oar 1SG.POSS **to.be.split** **to.be.repaired** 1SG boat 1SG.POSS
batutus kanutap =ku'.
to.be.pierced to.be.patched 1SG

“ ‘My bamboo stick broke,’ he said ‘it got linked up by me, my oar split and got repaired by me, my boat got a hole and got patched by me.’ ”

The three Undergoer subjects in (46) *tohkön=ku*, *beseu=ku*, *alut=ku* are shared by serial verbs [*bapölok tanutung*], [*basipak tanambing*], [*batutus kanutap*] respectively. Note that the bond between the 1st and 2nd predicates is not so tight that the 3rd person quotative marker *hioi* can interrupt the sequence as the first sentence in (46).

In a relative clause and a serial verb construction, Undergoer voice might have to be required to satisfy the structural constraint of ‘subject sharing’.

N- and -Vn- are used in higher type and token frequencies in Kadorih grammar and discourse. In my text corpus, there is an 92% token frequency of these affixes among verbal markers (N- 84% = 620/734; -Vn- 8% = 60/734). It should be noted that the functional load of N- and -Vn- is the first and second highest among overt verbal markers. Furthermore, the fact that it is easy to paraphrase N- forms with -Vn- forms as shown in (44e) suggests that N- and -Vn- play no role in changing propositional meaning.

For these reasons, this paper assumes that both N- and -Vn- are voice affixes whose main function is to change the viewpoint of an event.

4.3 valency changing

Generally, valency-changing (or participant-changing) affixes are less frequent than viewpoint-changing voice affixes.

Table 4 Verbal affixes in Kadorih and their frequencies / paraphrasabilities

	function	form	frequency	paraphrasability
voice	actor	N-	84.5% [620]	
	undergoer	-Vn-	8.2% [60]	
valency- changing	middle	bV-	3.5% [26]	×
	spontaneous	tV-	1.6% [12]	×
	causative	pV-	1.0% [7]	×
	reciprocal	hV-	1.2% [9]	×
			100.0% [734]	

Valency-changing prefixes in Kadorih include middle bV-, spontaneous tV-, causative pV-, and reciprocal hV-. In my text corpus (=2305 intonational units), the frequency of bV- is 3.5% (=26/734), tV- 1.6% (=12/734), pV- 1.0% (=7/734), hV- 1.2% (=9/734) as summarized in Table 4.

Moreover, the prefixed forms of valency-changing cannot be paraphrased with other affixed forms. So far any evidence to regard these prefixes as voice affixes has not yet been obtained.

5. Conclusion

In this paper, starting an introduction of Kadorih morphophonology, I described Kadorih morphosyntax and discourse with focuses on agreement, argument-encoding, and voice. I clarified that N- and -Vn- can be seen as voice affixes based on the evidences of their highest token frequency and of paraphrasability of their verbal forms, combined with the probabilities for subject ellipses. In addition, I revealed (i) argument-encoding in two-participant clauses is moderately sensitive to ‘animacy hierarchy’; (ii) if there is an indefinite argument in actor voice, then it is likely to be Undergoer; (iii) if undergoer voice is selected, then the topicality of Undergoer argument is high or the sentence structure requires its predicate to satisfy ‘subject-sharing’ constraint.

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Appendix A: Abbreviations

1 1st person	ABST	· abstract nominalizer	PFV perfective
2	..... 2nd person	ANAPH	..... anaphor	PL	..... plural
3	..... 3rd person	ANT	..... anterior	POSS	..... possessive
A	··· Agentive argument in a transitive clause	CL	..... classifier	PRON	..... free pronoun
P	··· Patientive argument in a transitive clause	DEM	..... demonstrative	PROX	..... proximal
P/N	..... person/number	EXCL	..... exclusive	PSN	..... person name
S	··· Sole argument in a intransitive clause	EXP	..... experience	PTCL	..... particle
SVC	..... serial verb construction	FOC	..... focus	QUOT	..... quotative marker
		INCL	..... inclusive	REL	..... relativizer
		IPFV	..... imperfective	SG	..... singular
		LINK	..... linker		
		NEG	..... negative		

Appendix B: Argument encoding in my text corpus; N-, bare, -Vn- verbs

1/2/3 ... referential distance	ind indefinite argument	pos possessed
I 1st person	k kanuan/kai-phrase	s pronominal suffix
II 2nd person	kin kinship term	x .. referential distance $x > 3$
c pronominal clitic	n noun phrase	z zero
d demonstrative	p free pronoun	

N- Actor:Undergoer	n1:n1, n1:n1, s1:s1, pI:sx, n3:nx, n1:n1, p1:n3, c2:nx, nx:n2, s1:sx, zII:nx, zII:n3, ind:nx, cI:s3, p2:n2
	n2:npos1, pII:pI, z1:ind, n2:cpos1, px:ind, zx:n3, zx:ind, pI:s2, n2:sx, pII:nx, zII:d1, pII:cx, cI:pposI, zII:ind, nx:cx, cI:cx, cI:cx, zII:pI, zI:npos1, n2:nx, cI:pposI, zII:pI, cII:c?, pI:pII, pII:ind, p1:ind, z2:nx
	pII:ind, pII:s1, n1:ind, z1:ind, pI:nx, zII:nx, zII:ind, zII:z1, pI:n2, zII:ind, zII:z1, zII:nx, nx:s1, n1:s2, z1:zx
	p3:npos, px:npos, zx:n2, nx:ind, cII:pI, sI:npos, cI:ind, cI:ind, nx:npos, cI:nx, nx:n1, pI:nx, cI:nx, nx:nx, zII:d1, nx:pI, n2:npos, nx:nx, nx:pI, p3:pI, cI:ind, z1:n3, pI:ind, nx:p1, z3:ind, pII:ind, cI:nx, n1:nx, nx:s1, zI:ind, n1:npos, pII:ind, cI:s1, n2:kin1, n1:kin1, cII:cI, n1:ind, sII:pI, pII:nx, sII:pI, pII:kinx, sII:kinx, sII:nx, nx:n3, ind:ind, nx:npos, zind:ind, zind:ind
	pI:npos, n2:pI, nx:pI, n1:ind, n2:ind, cI:ind, pI:n1, zind:ind, n2:pI, cI:ind, n1:pI, pII:pI, px:pI, pI:cx, pI:nx, pI:ind, pI:cII, cI:c1, pI:c1, zII:n1, cI:c2, zI:zx, zI:cx, zI:n2, pII:z3, zII:dpos, n1:c1, zII:ind, sII:n1, zI:n2, sI:n1, cI:pII, cI:pII, zII:n1, cII:c1, zII:n1, pII:n2, pI:n1, cI:d1, zI:ind, zI:n1, pI:zx, pII:npos, pII:n1, pII:pI, nx:pI, pI:n2, zII:ind, pI:nx, pI:nx, cI:ind, cI:ind, pI:ind, cI:cind, zI:n1, cI:c3, cI:sind
	n1:ind, n1:n1, pI:pII, zI:ind, zI:ind, n1:npos, nx:npos, pI:cII, ind:s1, nx:ind, nx:c1, pI:ind, z1:nx, cI:npos
	pI:ind, px:ind, px:n2, px:nx, zx:z1, zx:nx, pI:nx, nx:n2, px:nx, px:sx, pI:sx, zII:sx, px:nx, nx:npos, p2:nx, px:s3, npos:p1, zI:nx, pI:sx, z2:nx, z1:ind, pI:ind, pI:nx, zI:sx, pI:sx, cII:sx, pI:sx, zII:cx, pII:sx, nx:sx, pI:n1, p2:cind, cII:n2, pII:sx, pI:sx, pII:pI, pIcI:sx, zII:npos, zII:npos, px:nx, pI:c3, zII:npos, cII:pI, kin:pI, z1:npos, pII:nx, pI:n3, pI:s3, pII:sx, pII:sx, nx:nx, zII:ind, p2:s1, pII:npos, zx:nx, pI:npos, pII:cx, p1:c2, p2:s3, px:cx, px:ind, n1:sx, pI:nx
	zind:ind, cI:s1, pI:ind, zI:ind, pI:c3, zI:zx, zI:nposx, zI:s2, zI:sx, pI:s1, cI:ind, zI:cx, zI:cx, pI:n1, pI:s2, pI:ind, zI:ind, zI:z1, zI:z1, zI:z2, cI:c1, zI:c2, cI:s3, pI:cx, zI:ind, zI:nx, zI:s2, zI:npos3, zI:sx, cI:zx, zI:c1, pI:ind, cI:n1, cI:ind, pI:n1, pI:c1, zI:ind, zI:cx, zI:n1, zI:c1, zI:n2, zI:z1, zI:ind, zI:ind, pI:sind, pI:c1, zI:n2, zI:n1, pI:c3, zI:nx, cI:c1, pII:ind, pI:c1, zI:c2, zI:c3, zI:ind, zI:nx, zI:c1, zI:z3, cI:ind, cI:c1, zI:nx, zI:cx, pI:nx, cI:c1, pI:cx, cI:npos, zI:dx, cI:nx, cI:n1, cI:z1, zI:npos, zI:npos, zI:n1, cII:n1, cI:zx, zI:npos, zI:p1, pI:zx, zI:cx, pI:cx, zI:n1, zI:nx, zI:z1, zI:c2, zI:nx, cI:c1, zI:z1, zI:n1, zI:nx, cI:c1, cI:c3, zI:cx, zI:cx, cII:cx, cI:n2, zI:nx, zI:npos, cI:c1, zI:c2, cI:n1, pI:n1, pI:ind, ind:c1, zI:n1, cI:d1, pI:c2, cI:nx, cI:n1, cI:z3, zI:n2, pI:nx, pI:s1, zI:zx, zI:npos, zI:n1, cI:z2, zI:npos, zI:zx, pI:n1, kI:z1, pI:s1, pI:ind, zI:n3, zI:z1, pI:ind, cI:n3, zI:ind, cI:npos, cI:n2, cI:npos, pI:zx, zI:ind, pI:n3, cI:n2, zI:n1, cI:zx, cI:zx, cI:zx, pI:nx, cI:nx, cI:s1, cI:c2, pI:cx, pI:cx, pI:ind, pI:c2, ind:c3, ind:z2, zI:n1, cI:z3, zI:c2, zI:c3, zI:cx, cI:n1, zI:npos, cI:npos, pI:n1, cI:ind, cI:c1, px:ind, px:cind, pI:cx, cI:cx, zI:c3, ind:cx

N- Actor:Undergoer	<p>n1:n1, pI:ind, z1:n1, cII:cI, nx:c1, pII:nx, pII:npos, px:nx, pI:ind, cI:ind, zx:n1, nx:ind, z1:ind, zII:pI, nx:px, n1:px, n2:p1, n2:n3, p1:n2, p2:npos, z3:npos, px:ind, p3:ind, px:n1, px:ind, sx:ind, px:n3, px:ind, pI:npos, zx:nx, zx:n2, pI:zx, px:nx, cI:pII, cI:pII, zx:ind, zx:c1, n2:npos, n1:npos, n2:npos, n1:npos, pI:nx, pI:nx, n3:npos, nx:npos, pI:nx, px:ind, px:ind, px:ind, ind:px, pI:nx, pI:n1, pI:n3, pI:p1, n1:npos, pI:ind, pI:n2, pI:pII, pI:pII, pII:c1, pII:s2, pI:pII, pII:n1, pI:npos, pI:npos, pI:npos, cI:c1, pI:ind, pI:npos, zI:ind, pI:npos, z1:n3, p2:cI, nx:npos, px:pI, pI:npos, px:ind, p1:cind, pI:p1, z1:npos, cI:c1, pI:npos, pI:n2, ind:p1, pI:n2, pI:ind, p1:nx, p1:ind, pI:nx, pI:p1, px:p1, pI:px, pI:px, pI:npos, pI:npos, pI:cx, pI:npos, zind:nx, zind:ind, zind:ind, ind:ind, pI:npos, pI:npos, pI:ind, pI:n1, pI:npos, zI:n1, pI:npos, pI:npos, cI:c1, pI:npos, pI:ind, pI:n1, pI:npos, pI:n1, pI:c1, pI:ind, p1:c2, p1:c3, z1:pI, zI:c1, pI:n2, pI:npos, pI:npos, ind:s1, zI:n1, pI:ind, cI:c1, zI:nx, cI:nx, zI:c1, zI:c2, pI:npos, pI:p2, pI:n2, pII:npos, pI:ind, p1:p2, pI:cx, pI:npos, pI:npos, zI:ind, pI:nx, z1:ind, pI:ind, cI:n1, zI:n1, pI:npos, pI:n2, kin:npos, p2:cI, pI:npos, cI:c1, pI:nx, zI:nx, pII:s1, pI:s3, pI:n3, pI:npos, pI:n1, pI:n2, pI:nx, pI:n1, sIcI:n3, pI:ind, pI:p3, pI:c1, pI:npos, zI:ind, pI:ind, pI:p1</p> <p>pI:n3, ind:ind, pI:ind, zI:c1, zI:c2, pI:c3, pI:px, pI:cx, zI:ind, pI:cx, pI:npos, zI:ind, pI:npos, zI:nx, pI:ind, cI:c1, pI:n1, cI:n1, zI:ind, zI:ind, pI:s1, z1:ind, pI:n1, cI:c1, pI:c1, pII:ind, pII:c1, zI:npos, pI:nx, pI:nx, pI:c1, zI:nx, pI:n2, pI:n1, pI:n1, pI:npos, cI:nx, n3:cI, p1:pI, zI:n2, p2:pII, zI:nx, pI:c2, zI:n1</p>
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bare Actor:Undergoer	<p>z3:n2, zx:s1, n2:sx, px:nx, z2:d1, cII:pI, sx:ind, px:d1, cI:z1, sI:z1, sI:z1, zII:zI, c2:nx</p> <p>cI:ind, zind:z1, zI:ind, zI:ind, zI:ind, pind:ind, pind:ind, ind:ind, zI:ind, pI:sind, zI:n1, zI:nx, p1:nx, cI:c1, zI:nx, pII:s3</p> <p>zII:pI, pII:nx, zx:sx, cI:pII, cI:s1, pI:s1, pI:nx, cI:n1, pI:nx, pI:nx, pI:n1, cI:s1, zII:c1, zII:z2, cI:s1, pII:dind, zI:s1, cI:s2, cI:nx, cI:n1, zI:nx, ind:s1, ind:s1, sI:ind, px:ind, sI:ind, cI:p1, px:c1, pI:sx, px:ind, sx:ind, p1:ind, pI:px, sI:npos, nx:ind, pI:n3, zI:nx, p1:nx, pI:c2, pI:cx, pI:n2, zI:nx, z2:ind, sI:ind, pI:px, sI:ind, sI:ind, pI:ind, cI:s1, sI:ind, sI:ind, pI:sind, pI:n1, ind:s1, cI:s1, zI:n1, pI:ind, pI:npos, k1:ind</p>
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-Vn- Actor:Undergoer	<p>cI:z1, n1:nx, c3:n2, cI:nx, s1:z2, cI:npos, cI:npos, cI:npos, ind+ind:ind, ind+ind:ind, zI:z1, cI:zx, zI:n1, zind:dx, cI:z1, cI:ind, cI:n1, cI:d3, zI:n1, zI:n1, zI:z1, cI:n1, cI:npos, cI:n1, cI:n2, cI:npos, cI:nx, pI:zx, pI:d2, cI:d1, cI:nx, cI:n2, cI:z1, cI:z1, zI:n3, cI:n1, zind:px, c2:nx, cx:z1, cx:z2, cind:z1, cI:z1, ind:ind, cI:ind, z3:z1, zx:z2, cII:ind, zx:z2, zind:z1, z1:nx, cI:z3, s3:z1, cI:d1, c3:ind, kx:n1, cI:n1, cI:n1, cI:n1, cI:ind, cI:n1</p>
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