An Introduction to Ryukyuan Languages

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Ikema (Miyako Ryukyuan)

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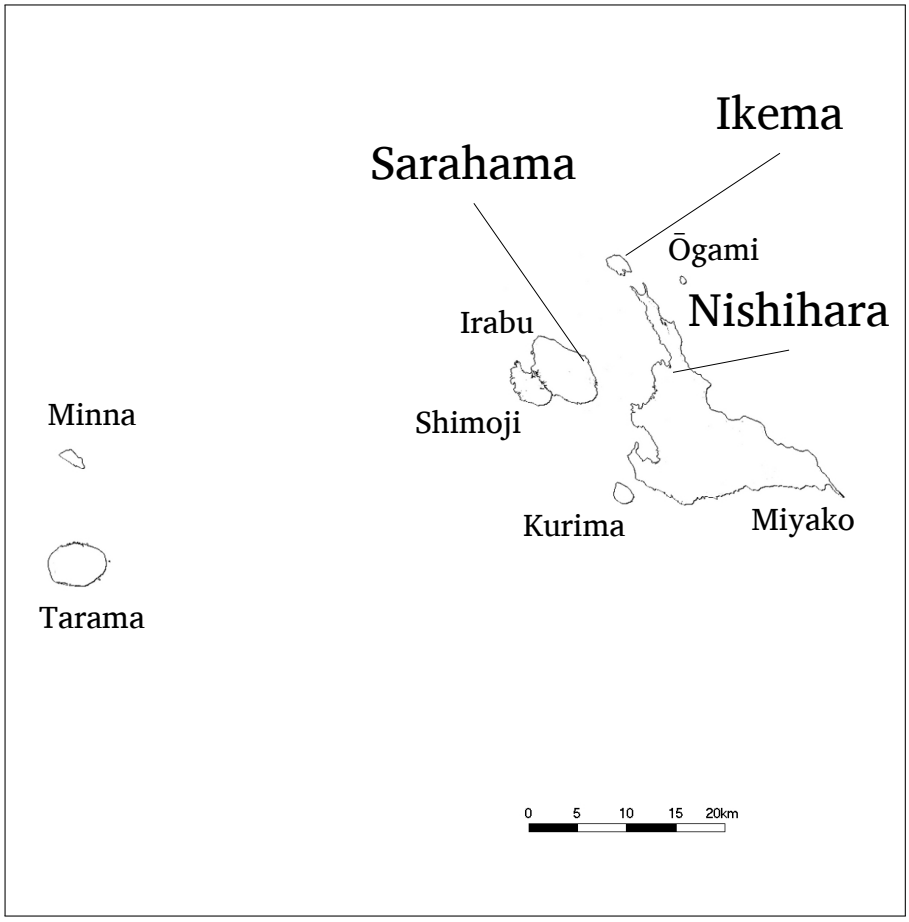

Figure 1: Miyako Islands

Introduction

Ikema is one of the varieties of Miyako Ryukyuan.[1] According to Pellard (2009b), it is one of the dialects which branched off from Common Miyako in an earlier

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[1]This paper is mainly based on data from Nishihara, one of the three areas of Miyako Islands on which Ikema is spoken.

period with the Irabu dialects described in Shimoji (2008a). Basic morpho-syntax of Ikema is that of a typical Japonic language, verb-final and modifier-head constituent order. Ikema shares some typologically distinctive features with other Miyako varieties such as Irabu and Ōgami. Prosodically, Ikema has tonal rhythm[2] as its basic melody just as Irabu does. Unlike Irabu, however, Ikema also has a lexical word-tone system which makes the tonal realization of Ikema rather complicated. Ikema also shares with other Miyako varieties the richness in class assignment in adjectival stems[3] (which cannot stand alone as a word), which is the basis of their "switch adjectival system" (Wetzer 1996). What is striking in this respect is that Ikema does not have the morphological strategy of reduplication typical of adjectives in Miyako Ryukyuan, which means that Ikema does not have adjective as a word class. As a language which has both topic and focus markers in its Information Structure (IS) coding system, Ikema (and some other Miyako varieties) can be also striking in that it has an extensive marking system related to IS, especially on direct objects. That is, it has four variations of accusative marking expressing different statuses in IS. Ikema also has what is called the *kakari-musubi*[4] construction observed in Old Japanese, which has been believed to be no longer active in other Miyako varieties.[5]

1 The language and its speakers

Ikema Ryukyuan is spoken on Ikema Island, Sarahama (Irabu Island) and Nishihara (main Miyako Island) in Miyako-jima City of Okinawa Prefecture. Like other Ryukyuan varieties, Ikema is generally not spoken by the younger generations. The number of the speakers of Ikema can be estimated at approximately two thousand if we assume that people over sixty all speak Ikema.[6] Ikema is still used in everyday language situations among native speakers at home and in gatherings within the community. Ikema is not systematically taught in schools, but some effort has been made to give the children an opportunity to get in touch with the language as part of extra-curricular programs.

[2]Rhythmic alternation is usually seen as a phenomenon of stress languages, but Ikema as well as Irabu have a rhythm which is clearly tonal.

[3]It is what is called "PC stems" in Shimoji (2008a), and "racines adjectivales" (lit. 'adjectival roots') in Pellard (2009b).

[4]A certain restriction between focus structure and the verb form of the predicate.

[5]For reasons of space, I omit the discussion about the *kakari-musubi* system in Ikema in this chapter. See Hayashi (in prep) for further information.

[6]As Iwasaki and Ono (2009) reported, however, there is a possibility that we can lower the youngest age of fluency at least to fifty-five. In fact, some speakers in their forties (in 2009) can be seen as native speakers of Ikema.

2 Phonology

2.1 Vowels

Ikema has four main vowels and two other vowels which appear in restricted lexemes. Table 1 shows the vowel inventory.

Table 1: Vowels in Ikema Ryukyuan

	Anterior	Central	Posterior
High	i	ɨ	u
	(e)		(o)
Low		a	

- /e/ and /o/ are only seen in lexemes of interjection or sentence final particles.
- /ɨ/ must be preceded by a consonant, restricted to /s, z, c, f/.[7]
- Length is distinctive for all vowels.

2.2 Consonants

Table 2 shows the consonant inventory in Ikema.

Table 2: Consonants in Ikema Ryukyuan

	Labial	Alveolar	Palatal	Velar	Glottal
Stops	p b	t d		k g	
Affricate			c [ts ~ tɕ]		
Fricatives	f v	s z [s ~ ɕ] [z ~ ʑ]			h [h^w ~ ç ~ h]
Nasals	m	n n̥			
Flaps		r [ɾ]			
Approximants	w		y [j]		

[7] It could be analyzed that /ɨ/ is an epenthetic vowel and that /s, z, c, f/ are syllabic consonants (like nasals) in the underlying structure.

- /n̥/ ([m̥/n̥ ~ m̤/n̤]) is a voiceless nasal that carries a mora by itself, as shown in § 2.3. It always precedes another nasal onset and its place of articulation assimilates to that of the following nasal.
- /n/ ([n ~ ɲ/n ~ ŋ ~ ɴ]) changes its phonetic value depending on its position in the syllable. It can be an onset immediately preceding a vowel and also functions as a syllabic consonant.
- /y/ is a semi-consonant which occupies a specail position in the syllable.

2.3 Syllable and mora

The possible syllable types and the constraints in combining the syllables into a word are shown in (1). As Ikema has a mora-timed rhythm and syllables do not take an important role in prosodic phonology, the concept of *syllable* is introduced mainly to explain the phonotactics of segments.[8]

(1) Phonotactics in Ikema[9]

i. Syllables in Ikema

a) (C_1)(C_2)(y)V(V)(C_3)

b) NN (N = syllabic nasal)

ii. Restriction on the members of each slot

a) C_1C_2: the consonants which can fill the slot C_1 are /t, c, k, f, v, s, z, m, n/.[10] C_1 and the following C_2 must be a geminate to C_1. In the case of /n/ or /n̥/ as C_1, partial gemination of the place of articulation is also allowed. (cf. /nta/ [nta] 'mud', /nkyaan/ [ŋkjaːɴ] 'past times'). As for word internal geminates, /p/, /b/, and /d/ are allowed in addition to the ones which can stand word initially.

b) C_3: Only N is allowed in word final position.

iii. Constraints in combining the syllables into a word

a) Phonotactics prohibits the following within a root

i. Sequences of more than two Vs consisting of the same vowel

[8]The CCV structure I mention here is a syllable which carries two morae. Usually, onsets are considered to be entities which do not have syllable weight (Hayes 1989). However, in Ikema (and other Miyako varieties) CCV is clearly a unit in terms of phonotactics.

[9](1) explains the phonotactics in Ikema found in the surface structure. See Hayashi (in prep) for further discussion.

[10]It is hard to conceive that these form some natural class. As for word internal CCs, approximants and a glottal cannot form a geminate, and for word initial CCs, bilabials and alveo-dental voiced stops are not allowed in addition to the approximants and a glottal.

ii. Sequences of more than three consonants

b) Sequences of Ns are only found at the initial position of a word[11]

2.4 Tone/accent

Ikema is a language with a word-tone system. Lexical tone appears at the right-most position of the lexical word. There are two patterns (α/β) in the system: the surface contour of Type α appears as a falling pattern and Type β appears as a rising/high level pattern. If there is a falling pattern at the right-edge of the lexical word, the word is Type α. We can assume that there is a floating L tone at the right-edge of Type α words.

Just like the neighboring dialect Irabu, Ikema also has a HL tone sequence as its basic melody in which H and L are assigned to each tonal foot[12] (consisting of two to three morae) iteratively (trochaic tonal rhythm).[13]

(2) *koozaburoo* + *-gama* + *=kara* + *=mai*
(boys'-name) + -DIM + =ABL + =also
(koo)$_{H}$ (zabu)$_{L}$ (roo)$_{H}$ (gama)$_{L}$ (kara)$_{H}$ (mai)$_{L}$
'also from Kozaburo' (Shimoji 2008a: 2-75d)

Unlike Irabu, however, Ikema has lexical tone in addition, which makes its tonal realization somewhat complicated. In Irabu, a HL pattern appears in each foot group (rhythmic unit) consisting of two or three feet. This HL pattern in Irabu is not lexically specified.

Tonal contour in Ikema is decided by the combination of both this non-distinctive melody and the lexical tone. Figure 2 shows an example of a four-mora (two-foot) word. The lowering can be seen in the middle of the lexical word in both the type α word and the type β word where there is a non-distinctive one. On the other hand, in the case of the same set of words with some postpositions attached, we can see both the non-distinctive lowering in the middle of the lexical word and the lexical tone at the right-edge of each

[11] Shimoji (2008a) calls this a "presyllable" in his study of Irabu with some more "resonants" (/r/, /v/) which fill the slot of the syllable that contains long consonants. In Ikema, only a nasal can fill this slot.

[12] It should be noted that this is a unit for a tonal event based on the mora length, but not the domain of stress.

[13] Shimoji (2008a) analyzed this contour as the presence of the marked prosodic feature /H/ at as regular intervals as possible, in accordance with the PRA (Principle of Rhythmic Alternation, Selkirk 1984), rather than as the presence of a specific tonal melody such as /HL/. That is, the HL pattern appears to result from the assignment of a marked tone (H) to the rhythmic head, in the same way a marked feature is assigned to the rhythmic head in languages with a stress-based rhythm.

lexical word. At the right-edge of the lexical word, we can see the falling pattern in type α words (*bakamunu* (•)) and the rising pattern in type β words (*sarahama* (x)).

For reasons of space, I only mention that there are two factors that decide the pitch contour for the word here. See Hayashi (2010) for further information.

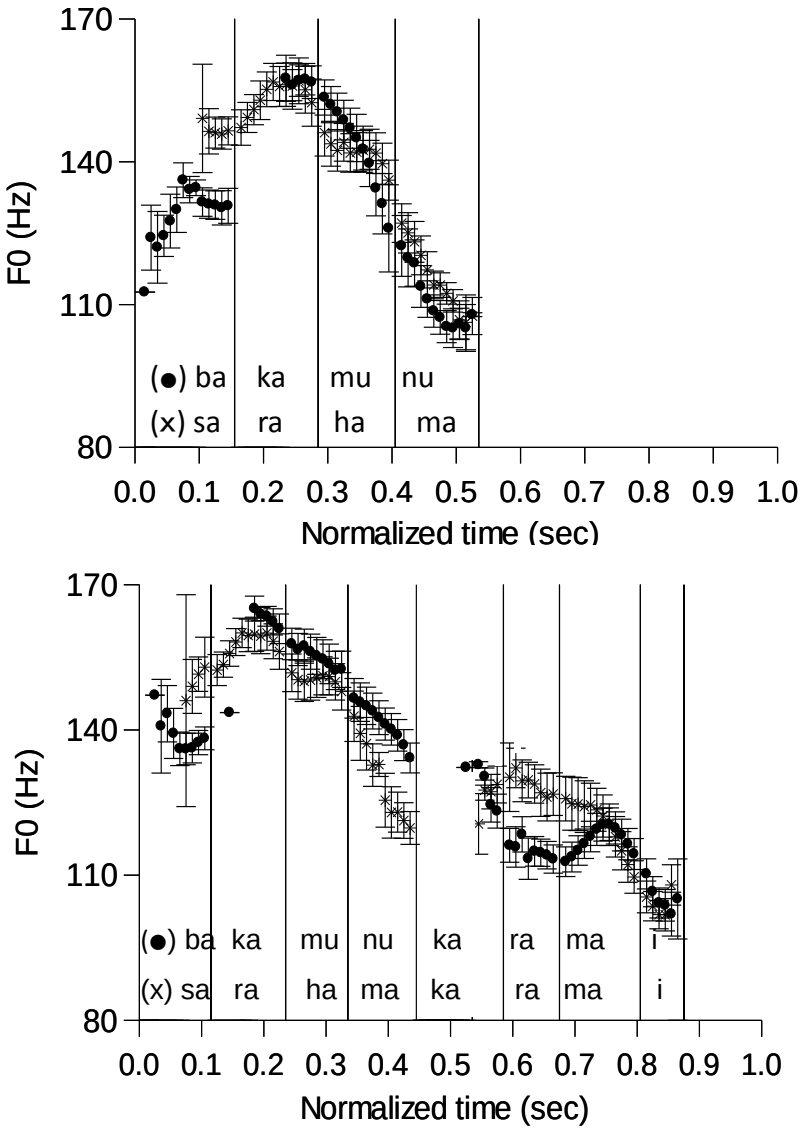

Figure 2: Normalized F0 contours for four-mora (two-foot) words, Type α *bakamunu* (•) and Type β *sarahama* (x). Error bars indicate SE.[14]

[13]Figures by Yōsuke Igarashi (Hayashi et al. 2008).

3 Basic clause structure and phrase structure

3.1 Basic clause structure

Ikema is a verb final-language. Like many other verb-final languages (Dryer 2007: 61), Ikema has SOV word order. While verbs are strictly fixed at the last position, the order of arguments (and adjuncts) is somewhat variable according to pragmatic factors. (3)-(6) represent clauses of the different speech act categories. The difference in speech acts does not change the word order of the clause. Specific speech acts are often indicated by final particles and intonation[15] (for the interrogatives) or inflection (for the imperative). As for the interrogatives indicated in (4) (5), the Yes-No interrogative and WH interrogative have different particles respectively.[16]

(3) *husi=nu=du mii-rai ui*
star=NOM=du look-POT CONT.NPST
'We can see the stars.'

(4) *husi=nu=du mii-rai ui na ?*
star=NOM=FOC look-POT CONT.NPST Q.Y
'Can you see the stars?'

(5) *nau=nu=du mii-rai ui ga ?*
what=NOM=FOC look-POT CONT.NPST Q.W
'What can you see?'

(6) *uru=u mii-ru*
it=ACC see-IMP
'Look at it.'

As I discuss in § 5.3, a dependent clause which is syntactically dependent on the main clause is indicated by different verbal forms from those of a main clause (7). Another construction for dependent clauses is the noun clause headed by formal nouns which function as adverbial clauses (8).

(7) *kansi* mutagi-tigaa *uti-i* *hai-gamata*
that.way hold.up-COND fall.CVB-i go.away-FUT
'If you hold it up like that, you will drop it.'

(8) *myaaku=n ui* tukya=*n*=*na* *nnaagyaa yarabi=du a-tai*
Miyako=DAT be.NPST time=DAT=TOP1 still child=FOC COP-PST
'I was still a child when I was in Miyako.'

[15]The intonational pattern for interrogatives seems to occur within the final particles. If there is no final particle, the Yes-No interrogative can be the same as the declarative either in morpho-syntax or intonation.

[16]Ikema has another question marker =*da,* which only attaches to the topic marker and express the meaning 'how about ~ ?'. Ex: *vva=a=da* (2.SG=TOP1=Q) 'How about you?'

3.2 Basic phrase structure

The basic structures of two canonical phrases, namely the noun phrase and the verb phrase, are shown in (9) and (10) respectively. There are three strategies to make a noun phrase. As for the verb phrase, auxiliary verb constructions are often employed to express meanings such as aspect, benefactive and so on.

(9) Noun phrase structure

i. N = [Genitive marker] N <possessive construction>
kai = *ga ffa* (3.SG = GEN child) 'his child'

ii. Adnominal N <modified by adnominal>
kanu ffa (that child) 'that child'

iii. [Adnominal phrase] N <modified by adnominal phrase>
kama = *n tacyu* = *ui ffa* (there = DAT stand = CONT.NPST child) 'the child who is standing there'

(10) Verb phrase structure: [Converb.Absolutive] [Auxiliary verb]
hus = *su* = *du mii ui* (star = ACC = FOC look.CVB be.NPST)
'(I'm) looking at the stars.'

4 Word classes

Ikema has the following word classes: Noun, Verb, Adnominal, Adverb, Final Particle, Conjunction, Interjection.

Each word class exept Adnominal holds a syntactic position which is not dependent on other word classes. The criteria to distinguish the different classes are mainly based on the morpho-syntax of the major categories (Noun and Verb) shown in §3.2.

(11) Criteria for the word classes.[17]
(A) Heads an NP
(B) Directly fills the dependent slot of an NP
(C) Inflects

The class for which (A) upholds is Noun, (B) for Adnominal, and (C) for Verb. The other classes can be identified by their unique distribution in the syntax or their function.

There are two other categories that should be mentioned here. One is adjectival stems and the other is postpositions.

[17] These are three out of the four criteria in Shimoji (2008a: 3–33). Another one is "(D) Is a reduplicated form with the input-stem-final phoneme lengthened", which can not be applied to Ikema because it does not have the reduplication system as in Irabu.

Adjectival stems are a group of stems which describe certain property concepts and do not stand alone as a word. Instead, verbs, nouns and adverbs are derived from adjectival stems. Taking *zyau* 'good' as an example, nouns are formed by nominal compounding (*zyau*+*munu*), verbs and adverbs are formed by affixes (*zyau-kai, zyau-ɦi*). The two types of predicates formed from adjectival stems exemplify the so-called "switch-adjectival system"[18] (Wetzer 1996).

(12) a. *ura*=*a* *zyau*+*munu*
3.SG=TOP1 good+thing
'This is good.'

b. *kui*=*ga*=*du* *zyau-kai*
this=NOM=FOC good-VZ
'This one is better/the best.'

c. *zyau-ɦi* *nai*
good-AZ become.NPST
'It gets better.'

Postpositions in Ikema do not form a word class but take an important role in the phrase organization. I define them as function words which attach to each word and express grammatical relations, pragmatic salience and so on. Typical "postpositions" in descriptive studies are usually case markers attached to nouns (Evans 2000), but what I call postpositions here are not restricted to case markers of nouns.[19] Postpositions in Ikema also do not form a postpositional phrase as they do in other languages.

5 Basic morphology

5.1 Morphological typology

A word can be a simple root or complex form in Ikema. Major morphological strategies are affixation and compounding. As for affixation, all the functional affixes are suffixes extensively employed in verbal morphology and lesser in nominal morphology. Compounding is more common in nominal morphology, though it is also a common strategy in verbal morphology, too. In compounding, usually two roots are just serialized to be combined and the latter part becomes a head. Compounding can occur between noun and noun, verb and verb,

[18] Shimoji (2008a) as well as Koloskova and Ohori (2008) claim that the nominal strategy is used when the predicate is in the focus domain while the verbal strategy is used when the predicate is presupposed.

[19] In languages in which function words follow content words agglutinatively, it is sometimes hard to distinguish adpositional clitics from case affixes, as is shown in Dryer (2007). As for the case of Miyako Ryukyuan, there is a detailed discussion in Pellard (2009b) on Ōgami.

adjectival stem and noun, verb and adjectival stems. As noted in the introduction to this chapter, Ikema does not have a productive reduplication strategy within its morphology, unlike other Miyako Ryukyuan varieties.

5.2 Basic nominal morphology

In nominal morphology, some suffixes are attached directly to the right edge of the noun. Table 3 is a list of nominal suffixes. The followings are examples of compounding between noun and noun (13a) and also adjectival stem and noun (13b).

Table 3: Nominal derivational suffixes

Suffix	Gloss
-gama	Diminutive
-mmi	Plural 1
-ta	Plural 2
-nagi	Approximative

(13) a. *midun* + *ffa*
woman + child
'a girl'

b. *imi* + *ffa*
small + child
'a small child'

5.3 Basic verbal morphology

Verbs have a rich and complex morphology compared to other classes in Ikema. Inflected verb forms can be categorized into finite verbs and converbs, which head dependent clauses. Converbs are not marked for mood/tense but head dependent clauses and indicate the relational meaning between a dependent and a main clause (Causal, Conditional, etc.). Suffixes of each verb form are shown in table 4 and table 5.

Two classes of verbs can be identified according to the pattern of morphological process. Class 1 verbs do not involve a stem change while Class 2 verbs change their stem along with the inflectional form they take. Class 2 verbs may also undergo suppletion in their stem formation in addition to suffixation. If the root-final segment is a consonant, a thematic vowel will be added to complete the stem. Figure 3 is the schema of verbal morphology. Derivational suffixes also appear within the stem, just after the root. Each suffix specifies the verb class of the derived stem. The different derivational suffixes are shown in table 6.

Table 4: Suffixes of finite verbs

Label	Suffix	Example	
		Class 1 *idi-i* 'go-out'	Class 2 *kuz-i* 'row'
Hortative	*-baa*	*idi-baa*	*kug-a-baa*
Volitional	*-di*	*idi-di*	*kug-a-di*
Negative Volitional	*-zyaan*	*idi-zyaan*	*kug-a-zyaan*
Negative	*-n*	*idi-n*	*kug-a-n*
Negative Past	*-ddan*	*idi-ddan*	*kug-a-ddan*
Imperative	*-ru / -Ø*[20]	*idi-ru*	*kug-i-Ø*
Non-past	*-i / -Ø*	*idi-i*	*kuz-i-Ø*
Past	*-tai*	*idi-tai*	*kuz-i-tai*
Prohibitive	*-na*	*idi(-i)-na*	*kuz-i-na*
Future[21]	*-gamata*	*idi-gamata*	*kuz-gamata*
Speculative	*-n*	*mii-n*	*kuz-i-n*

Table 5: Converb suffixes

Label	Suffix	Example	
		Class 1 *idi-i* 'go-out'	Class 2 *kuz-i* 'row'
Concession	*-ban*	*idi-ban*	*kug-a-ban*
Negative Absolutive	*-da*	*idi-da*	*kug-a-da*
Negative Conditional	*-dakaa*	*idi-dakaa*	*kug-a-dakaa*
Absolutive	*-i*[22]	*idi-i*	*kug-i-i*
Circumstantial	*-utui*	*idi-utui*	*kug-i-utui*
Simultaneous	*-ccyaan*	*idi-ccyaan*	*kuz-ccyaan*
Immediate anterior	*-tuu*	*idi-tuu*	*kuz-i-tuu*
Purpose	*-ga*	*idi-ga*	*kuz-i-ga*
Conditional 1	*-tigaa*	*idi-tigaa*	*kuz-i-tigaa*
Conditional 2	*-ttaa*	*idi-ttaa*	*kuz-i-ttaa*

[20]I put the zero marker here just for notational convenience. I do not assume the zero marker as a suffix.

[21]The *-gamata* form shows highly nominal features with its syntactic behavior. However, I tentatively put it in the list of verbal suffixes because its function and morphological distribution show a certain extent of grammaticalization as a verbal suffix.

[22]The Absolutive Converb often appears in its bare stem form without this additional *-i*. There are some rules as to when it is lengthened and when it is not, but the whole problem has not been solved yet. In this paper I glossed the two versions in the same way, putting '*-i*' after the functional label if it is lengthened.

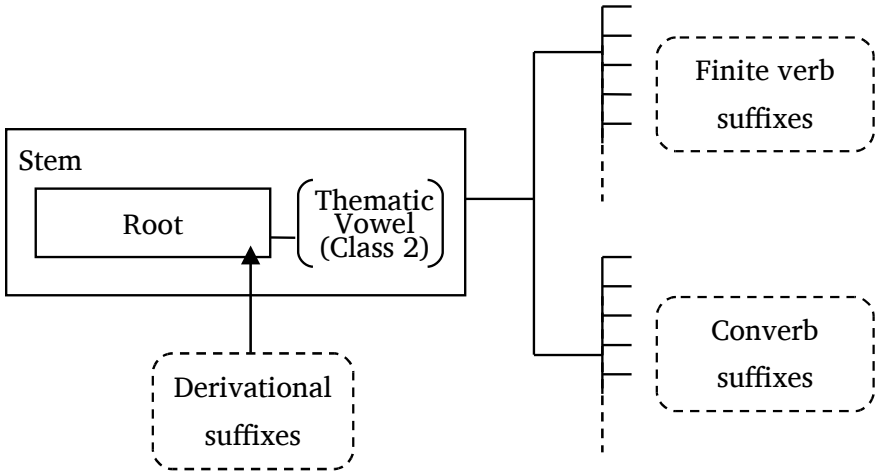

Figure 3: Components of verbal inflection

Table 6: Derivational suffixes

Function	Original stem class		Derived stem class
	Class 1	Class 2	
Causative	*-ssas*	*-as*	→ Class 2
	-simi	*-(asi)mi*	→ Class 1
Passive/Potential	*-rai*	*-ai*	→ Class 1
Honorific	*-sama*	*-ama*	→ Class 2

6 Argument marking

6.1 Case marking

Case is indicated by postpositions following an NP, as noted in § 4. Table 7 shows the list of case markers in Ikema. Subjects are usually marked by the nominative marker, and objects are usually marked by the accusative marker.

Table 7: Case markers

Marker	Label	Marker	Label
=*ga* / =*nu*	Nominative/Genitive	=*taahii*	Limitative
=*u*	Accusative	=*kara*	Ablative
=*n*	Dative	=*hii*	Instrumental
=*nkai*	Allative 1	=*tu*	Commitative
=*nki*	Allative 2	=*ncikyaa*	Comparative

6.2 Information structure marking

Like all other Ryukyuan varieties, Ikema has both topic and focus marking postpositions. They can be attached to most of the phrases from noun to clause, but here I will show only the case when they are attached to arguments. For reasons of space, I cannot explain the whole phenomena related to information structure in detail, so I will just discuss a difference between my analysis for Ikema and the analysis done in a previous study on a neighboring dialect.

Topic and focus markers can co-occur with other postpositions with some exceptions. Table 8 shows the possible combinations of each case marker and topic/focus markers. The core nominative and accusative markers are differentiated from other cases in that they have some different restrictions and options with topic/focus markers. It should be noted that the accusative marker has four different combinations marking information structure.

Table 8: Co-occurrence restrictions of focus/topic markers and case markers

		=Focus	=Topic 1	=Topic 2
Nominative	=*nu/ga*	=*nu/ga*=*du*	=*a*	—
Accusative	=*u*	=*u*=*du*	=*a*	=*u*=*gyaa*
Obliques	=*n* (DAT)	=*n*=*du*	=*n*=*na*	—

Topic 2 is the special topic marker for the accusative case, though it can also be used as the so-called contrastive marker, especially with the quantifiers.[23] Topic 1 can also appear with a noun in the accusative case (direct object). A similar pattern has been discussed for Irabu by Shimoji (2008a) who calls it the "second accusative". This second accusative only appears as a direct object in dependent clauses and indicates "low-transitivity" on the object in the terminology of Hopper and Thompson (1980)'s transitivity parameters. According to Shimoji, it mostly appears in dependent clauses in clause chaining constructions. (14) is an example from Irabu.

(14) *kasa*=*a* *par-i-i*=*du* *niv-vi*+*u-tar*=*ca*
mosquito.net=ACC2 hang-THM-MED=FOC sleep-THM+PROG-PST=HS
'Hanging a mosquito net, (they) were sleeping.' (Shimoji 2008a: 197, ex:4-62)

A similar strategy for marking low-transitivity can also be observed in Ikema. However, unlike Irabu, the "second accusative" phenomenon is not necessarily restricted to the accusative marker (direct object). In Ikema, it can even appear in a main clause (15b) or with a subject in a dependent clause (15a).

[23] Ex: *tuka*=*gyaa mut-i-i du*=*ui* (ten.days=TOP2 hold.out –THM.CVB-i FOC=CONT.NPST) 'It holds out at least ten days.'

(15) a. *midun-ta=a muitu kicigi=n=ti=du*
woman-PL=TOP1 so.much beautiful=DAT=QUOT=FOC
kiree=n=ti=du [cin=na ccyu=u-tai]
beautiful=DAT=QUOT=FOC dress=TOP1 wear=CONT-PST
'The women were trying so hard to be nicely dressed.'

b. *amya=a ffi-i undookai=ya hirai-ddan*
rain=TOP1 fall-CVB athletic.festival=TOP1 do-NEG.PST
'We could not hold the athletic festival because of the rain.'

Regarding the evidence in Ikema, I would analyze this marker as identical to TOP1, although it is not restricted to typical "topics". I analyze it as a marker which indicates the information is "backgrounded"[24] or not important in terms of its informative value. That is, the TOP1 in Ikema can express both "topicalized" entities and entities which do not carry any important information for the hearer. See Hayashi (in prep) for further evidence and discussion.

7 Predicate categories (finiteness; tense, mood, and aspect)

7.1 Negation

Negation is mainly realized within verbal morphology. As for the nominal predicate phrase, copula verbs carry negation. Adjectival stems are exceptions in that they have a different construction to express negation. They employ adverbalization plus a verb *nyaa-n*,[25] 'non-existent'. (16) and (17) show examples of each type of negation.

(16) *ba=a uug-ai-n*
1.SG=TOP1 swim-POT-NEG.NPST
'I cannot swim.'

(17) *ura=a mma-f=fa nyaa-n*
it=TOP1 tasty-AZ=TOP1 no.to.be-NEG.NPST
'It is not tasty.'

7.2 Tense, aspect and mood

Ikema has PAST/NON-PAST distinction expressed in the verbal morphology as in (18).

[24]This can be also seen in Shimoji's description: "chained clauses in which a second accusative appears tend to encode descriptive states (they are 'backgrounded' in Hopper and Thompson (1980)'s terms) rather than temporally sequential ('foregrounded') events." (Shimoji 2008a: 198)

[25]*nyaa-n* "no.to.be-NEG.NPST" only appears in negative form.

(18) a. *bas=sa kuma=kara=du idi-i*
bus=TOP1 here=from=FOC go-NPST
'(lit.) The bus departs from here.' (Non-Past)

b. *bas=sa kuma=kara=du idi-tai*
bus=TOP1 here=from=FOC go-PAST
'(lit.) The bus departed from here.' (Past)

Aspect is carried mainly by the auxiliary verb in the verb phrase. Like Japanese, verbs of "existence" are used for expressing aspect.[26] (19) shows the three representative verbs which carry the aspectual meaning.[27]

(19) a. *mizi=nu nagari-i ui*
water=NOM stream-CVB CONT.NPST
'Water is streaming.' (Continuous)

b. *nn=nu nii=du ai*
potato=TOP1 cook.CVB=FOC RES.NPST
'I have cooked potatoes.' (Resultative)

c. *miz=zya itaki-i nyaa-n*
water=TOP1 spill-CVB not.to.be-NEG.NPST
'I spilled water.' (Perfect)

As for modality, it is expressed by verbal morphology, a clausal postposition or final particles. Taking the broader sense of "modality" where all kinds of relationships between proposition and agent/speaker's attitude/status are involved (evidentiality, mirativity etc.), final particles in Ikema have a rich system of a kind of modality in which speakers maintain the knowledge status between speaker and hearer. For example, in (20a) the speaker assumes that the fact 'it is beautiful' is not shared with the hearer, and in (20b) the speaker assumes they are sharing the fact that 'it is beautiful.'

(20) a. *ura=a kagi+munu* doo
it=TOP1 beautiful+NZ FP
'It is beautiful.'

b. *ura=a kagi+munu* i
it=TOP1 beautiful+NZ FP
'It is beautiful, isn't it?'

From a typological perspective, it should be noted that Ikema has an inflectional suffix which expresses agent-oriented modality (table 4, Volitional

[26]The difference is that Ikema (and other Ryukyuan varieties) has a verb meaning 'non-existence', while Japanese does not.

[27]These auxiliary verbs are often cliticized in connected speech.

-di). According to Bybee et al. (1994), speaker-oriented modality tends to be closer to verbs and appearing within inflectional morphology of verbs, while agent-oriented modality tends to appear outside of the verb. There are a few exceptions to this trend, and *-di* in Ikema would be one clearly exceptional case.

7.3 Voice

Voice is expressed by derivational morphology as indicated in table 6, *-as/-ssas* and *-simi* for causative and *-(r)ai* for passive marker. As for valency operations, a demoted NP is marked by a dative or allative marker (*=n, =nkai*) as in (21) (22).

(21) *zza=a kai=n ffa=u dumi-ssasi-tai*
father=TOP1 3.SG=DAT child=ACC punch-CAUS-PST
'Father made him punch his child.' (Causative)

(22) *ba=a zza=n dumi-ssasi-tai*
1.SG=TOP1 father=DAT punch-CAUS-PST
'I was punched by my father.' (Passive)

Sample text: the Pear story

(T.1) *gaabaa nasi+gii=ya mmya sɨdati=du mmya*
big pear+tree=TOP1 DSC raise.CVB=FOC DSC
'A man has grown a big pear tree'

(T.2) *nasi=nu nusɨ=nu <kago>=mai miicɨ muc-i tti*
pear=GEN owner=GEN basket=also three have-THM.CVB come.CVB
nasi mur-a-d=di huu=kyaa
pear gather-THM.IRR-VOL=QUOT do.CONT.NPST=while
'and he came to pick up the pears with three baskets.'

(T.3) *tui-gama=nu kui=mai cɨk-ai mata hinzya=nu kui=mai*
bird-DIM=GEN voice=also hear-POT.CVB also goat=GEN voice=also
cɨk-ai ui=suga are nzya=n=du hinzya=nu ui
hear-POT.CVB CONT.CVB=but ah where=DAT=FOC goat=GEN be.NPST
ga cyau=kyaa
Q.W say_so.NPST=while
'He could hear the birds singing and also a goat bleating but he was wondering where the goat was.'

(T.4) *naugara hinzya=nu nusɨ=nu ffugara+hinzya ssabik-i-i*
DSC goat=GEN owner=GEN black+goat take_along-THM.CVB-i
maar-u=u-tai
hang_out-THM=CONT-PST
'Then he noticed that the owner of the goat was taking along his goat.'

(T.5) *hasigo=o kak-i-i mmya ba=a mmya nasyu=u*
ladder=ACC write-THM.CVB-i DSC 1.SG=TOP1 DSC pear=ACC
mur-i-i mmya
gather-THM.CVB-i DSC
'I (the owner of the pear tree) put the ladder on the tree and was picking up the pears.'

(T.6) *naugara <kago>=nu ttic=cya mur-i-i mata*
DSC basket=GEN one=TOP1 gather-THM.CVB-i also
mur-i tti mata mmya ikkai=mai mata nuur-i-i
gather-THM.CVB come.CVB also DSC once=also also climb-THM.CVB-i
ik-i-i nankai=mai nuur-i-i
go-THM.CVB-i number_of_times=also climb-THM.CVB-i
'He picked up the pears and filled a basket and went back to the tree again and again'

(T.7) *mmya unu kii=nkai nuui tɨkya=n=na bata=hii hukuru=nu*
DSC the tree=ALL climb time=DAT=TOP1 stomach=INST bag=GEN

mmara=a hii simar-i yaa munu=nkai uma=nkai
similar=TOP1 do.CVB tie-THM.CVB RES.NPST thing=ALL there=ALL
iri-i
put_in.CVB-i

'When he climbed the tree he put the pears in a bag he tied around his body.'

(T.8) *[x..x] mata uri tti mata <kago>=nkai iri-i*
[x..x] also step_down.CVB come.CVB also basket=ALL put_in.CVB-i
nankai=mai urahi-i naugara mur-i-i
number_of_times=also put_down.CVB-i DSC gather-THM.CVB-i
mur-i-i ai mur-u=u=kyaa
gather-THM.CVB-i this_way gather-THM=ACC=while

'Again he climbed down, put the pears in the basket. While he was doing so repeatedly,'

(T.9) *yarabi=nu <zitensya>=kara tti mmya*
child=GEN bicycle=ABL come.CVB DSC

'A child was coming on a bicycle.'

(T.10) *naugara unu ozisan=na ss-a-n=suga nus=sa*
DSC the old_guy=TOP1 know-THM.IRR-NEG.NPST=but owner=TOP1
ss-a-n=suga saami
know-THM.IRR-NEG.NPST=but FP

'Well, the man didn't know (that the child was coming).'

(T.11) *mur-u=u=kyaa mmya yarabi=nu mmya <zitensya>=kara*
gather-THM=ACC=while DSC child=GEN DSC bicycle=ABL
mmya tti mmya
DSC come.CVB DSC

'While he was picking up the pears a child came on a bicycle.'

(T.12) *agai nasi=nu ar-u-utui=du unu hitici=nu <kago>=o mmya*
oh pear=GEN be-CIRC=FOC the one=GEN basket=ACC DSC
hiyasa=ti <zitensya>=nkai mutagi-i mmya
INTJ=QUOT bicycle=ALL hold_up.CVB-i DSC

'Oh, the child picked up one of the full baskets and put it on the bicycle,'

(T.13) *nusumi-i mmya <zitensya>=u kug-i-i mmya*
rub.CVB-i DSC bicycle=ACC row-THM.CVB-i DSC
hing-i-i ui=kyaa
get_away-THM.CVB-i CONT=while

'stole the basket full of pears, and he ran away on a bicycle.'

(T.14) *midun + yarabi = nu izya-i ura = a ui = tu*
woman + child = GEN encounter-THM.CVB it = TOP1 be = COM
izya-i ui = kyaa
encounter-THM.CVB CONT = while
'On the way, he encountered a girl and as they passed by each other'

(T.15) *naugara <zitensya> burakairah-i-i mii-tigaa mmya*
DSC bicycle turnover-THM.CVB-i look-COND DSC
'the child fell down with his bicycle.'

(T.16) *nasi = mai mmya <kago> [x..x] har-i-i mmya*
pear = also DSC basket [x..x] go_away-THM.CVB-i DSC
sɨkyaar-i-i
mess_up-THM.CVB-i
'The pears in the basket dropped out and scattered'

(T.17) *naubai hu-di ga = ti hazɨ = mai yam-i ui mmya*
how do-VOL Q.W = QUOT leg = also ache-THM.CVB CONT.NPST DSC
naubai hu-di ga cyau = kyaa
how do-VOL Q.W say_so.NPST = while
'"How can I do. And my leg is also aching. How can I do"'

(T.18) *aa mmya yarabi-mmi = nu mata micyaai tti*
INTJ DSC child-PL2 = GEN also three_people come.CVB
'Then three children came.'

(T.19) *nasi = mai, <kago> = nkai zenbu iri-i fii*
pear = also,basket = ALL all put_in.CVB-i give.CVB
'They kindly gathered the scattered pears and put them back to the basket,'

(T.20) *mata <zitensya> = mai ukk-ah-i-i naugara hii fii*
also bicycle = also put-CAUS.CVB-i.CVB-i DSC do.CVB give.CVB
ai-ba
RES-CSL
'and they helped him raise up the fallen bicycle.'

(T.21) *unu nusum-i yaai yarabya = a mmya <zitensya> kug-i-i*
the rub-THM.CVB RES child = TOP1 DSC bicycle row-THM.CVB-i
mmya har-i-i nyaa-ddan = suga = du
DSC go_away-THM.CVB-i not_to_be-NEG.PST = but = FOC
'The thief child went away on a bicycle.'

(T.22) *unu biki + yarabi = nu micyaai = ya aik-i-i*
the male + child = GEN three_people = TOP1 walk-THM.CVB-i
yuu = kyaa <boosi> = nu uti ar-u = u-ba
CONT.NPST = while hat = GEN fall.CVB be-THM = ACC-CSL

'While the three boys were walking they found a hat.'

(T.23) *ura=a kanu <zitensya> nuur-u=u-tai yarabi=nu <boosi>*
it=TOP1 that bicycle ride-THM=ACC-PST child=GEN hat
hazɨ i =ti taukyaa=ga ik-i-i
INFR FP =QUOT one=NOM go-THM.CVB-i
'They thought "this must be a hat of the boy with bicycle.'

(T.24) *naugara <kutibii> aa sɨbabii=ya fɨk-i-i*
DSC whistle INTJ whistle=TOP1 whistle-THM.CVB-i
'He whistled, '

(T.25) *sɨbabii=ya fɨk-i-i ooi=ti sɨbabii=ya*
whistle=TOP1 whistle-THM.CVB-i hey=QUOT whistle=TOP1
fɨk-i-i yurab-i-i namar-ah-i
whistle-THM.CVB-i call.CVB-i.CVB-i stop-CAUS.CVB-i
'He whistled and yelled to him "hey !" '

(T.26) *ura=a vva=ga <boosi> =na =ti=du [x..x]*
it=TOP1 2.SG=NOM hat =QY =QUOT=FOC [x..x]
ar-u=u-ba ik-i-i <boosya> =a tur-ah-i-i
be-THM=ACC-CSL go-THM.CVB-i hat=TOP1 take-CAUS-THM.CVB-i
ui=kyaa
CONT=while
'When they asked "is this your hat?" (he said yes) so they went to give it back to him.'

(T.27) *<boosi> =nu ssui ccya=a kaari=n nasi=u*
hat=GEN pick_up.CVB come.CVB=RES alternative=DAT pear=ACC
miicɨ fii ai-ba
three give.CVB RES-CSL
'The child gave them three pears in return for doing a nice thing for him.'

(T.28) *ura=a hitit+tama tui-i fau-ccyaan=na fɨi=kyaa mmya*
it=TOP1 oneportion take.CVB-i eat-SIM=TOP1 come=while DSC
'They take the pear and going on eating the pears.'

(T.29) *naugara <ozisan> =ga nasya=a <kago> =n nci-i*
DSC man=NOM pear=TOP1 basket=DAT fill_up.CVB-i
ur-u=u-tai=suu mmya ur-u=u-tai
be-THM=ACC-PST=but DSC be-THM=ACC-PST
'The man was filling up the baskets with pears.'

(T.30) *unu nasi=nu nusɨ=nu ozisan=na mmya*
the pear=GEN owner=GEN old_guy=TOP1 DSC
'The owner of the pear tree,'

(T.31) *mmya futaaci=n=na nti ai-ba mmya mmya hitici=n*
DSC two=DAT=TOP1 fill_up RES-CSL DSC DSC one=DAT
nti-di =ti mmya uri-i fii=kyaa
fill_up-VOL =QUOT DSC step_down.CVB-i come=while
'he already filled two baskets so he was trying to fill the other one and climbed doown the tree.'

(T.32) *naugara uri tti <kago> =o*
DSC step_down.CVB come.CVB basket=ACC
tara-a-n =ti hinna munu i
suffice-THM.IRR-NEG.NPST =QUOT strange thing FP
'When he climbed down and (he said) "it's weird, one of my baskets is missing."'

(T.33) *unaga miici muc-i t-tai=suga hitic=cya*
self.NOM three have-THM.CVB come-PST=but one=TOP1
tara-a-n nusumi-i har-i-i
suffice-THM.IRR-NEG.NPST rub.CVB-i go_away-THM.CVB-i
nyaa-n
not_to_be-NEG.NPST
'"I brought three baskets but one of them is missing. Someone must have stolen it."'

(T.34) *fituti kasamasi+munu=mai daai cyau=kyaa*
irritating frustrating+thing=also FOC.RES say_so.NPST=while
'"So irritating," he said.'

(T.35) *yarabi-mmi=nu nasi fau-ccyaan naugara micyaai fii-ba*
child-PL2=GEN pear eat-SIM DSC three_people come-CSL
'Then he saw three children comming eating pears.'

(T.36) *aa ura=a taruganaa=ga=du mmya*
INTJ it=TOP1 someone=NOM=FOC DSC
'He thought, "ah, that's maybe someone'

(T.37) *nusum-i ik-i-i kunu-kya=n mmya baki-i fii yaai*
rub-THM.CVB go-THM.CVB-i this-PL3=DAT DSC share.CVB-i give RES
=ti umu-i yuui
=QUOT think-THM.CVB CONT.NPST
'took it away and he might give them the pears.'

Abbreviations

<…>	Loanword from Japanese
[x…x]	Unclear text
ABL	Ablative
ACC	Accusative
ALL	Allative
AZ	Adjectiviser
CAUS	Causative
COM	Comitative
COND	Conditional
CONT	Continuous
CSL	Causal
CVB	Converb (Absolutive)
DAT	Dative
DIM	Diminutive
DSC	Discourse Marker
FOC	Focus
FP	Final Particle
GEN	Genitive
IMP	imperative
INFR	Inference
INST	Instrumental
INTJ	Interjection
IRR	Irrealis
MED	Medial verb
NEG	Negative
NOM	Nominative
NPST	Non-Past
NZ	Nominalizer
PL	Plural
POT	Potential
PROG	Progressive
PST	Past
QUOT	Quotation
Q.Y	Question Yes-No
Q.W	Question WH
RES	Resultative
SG	Singular
SIM	Simultaneous
THM	Thematic Vowel
CIRC	Circumstantial
TOP	Topic
VOL	Volitional
VZ	Verbalizer