波照間祖語名詞アクセント体系の再建

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A Reconstruction of Hateruma Noun Accent*

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1. Introduction

This study is an attempt to reconstruct a Proto-Hateruma accent system for bimoraic and trimoraic nouns based on two varieties of the Hateruma dialect spoken in Kita and Minami hamlets, and also to account for the development of the modern dialects from the reconstructed proto-system. The data used for the study are mainly from Hirayama (1967:53-55, 193-505) for the Kita dialect and Sakimura (1987 and 2006:203-9) for the Minami dialect because they provide a large amount of data for the purposes of this study. In addition to these studies, there are also some others that look into Hateruma accent. These include Hirayama and Nakamoto (1964:86-87), Okinawa-ken Kyōikuiinkai (1975), Hirayama (1988:703-706), Kuno (2002), Aso (2010:193-194), and Aso and Ogawa (2011), among others.

Hirayama and Nakamoto (1964:86-87) discuss Hateruma Kita bimoraic noun accent; no discussion on longer words. Their analysis is basically the same as that of Hirayama (1967). Okinawa-ken Kyōikuiinkai (1975) gives a vocabulary list marked with accent. According to the list, there are, for example, four pitch patterns for bimoraic words when uttered in isolation (i.e., LL, HH, LH, and HL). It is not certain from the list whether or not they are phonemically distinctive. Furthermore, it is not known which variety of the Hateruma dialects that they describe. Hirayama (1988:703-706) also discusses Hateruma Kita accent. The accent described is more complex than the one in

Hirayama and Nakamoto (1964:86-87) and Hirayama (1967:53-55, 193-505). A comparison of the data with that of Hirayama and Nakamoto (1964:86-87) that Hirayama collected twenty five years earlier in the same hamlet gives valuable insights on how accent changes through time. Kuno (2002) discusses Hateruma mono- and disyllabic noun accent. According to her analysis, Hateruma has two distinctive classes: Flat and Rising[1], and it is the syllable that plays a role in accent. Mono- and disyllabic nouns in the flat accent class are either LF ~ LL-L[2], HF ~ LL-L, HL ~ LL-L, LL-L, or HL-L). For nouns in the rising class, they are basically either LH ~ LH-H, LH ~ LL-H, LH ~ HH-H, or HH ~ HH-H. Although it is mentioned that there are four hamlets on the island, it is not indicated in which hamlet this Hateruma dialect is spoken. Aso (2010:193-194) gives a short description about Hateruma accent by providing a few word examples. Aso and Ogawa (2011) analyze Hateruma accent by presenting their original data. In both studies the data are not large enough to be used our purpose of this study. Aso and Ogawa (2011) also touch upon diachronic changes in citing the analyses in Hirayama and Nakamoto (1964:86-87) and Hirayama (1988:703-706).

This current paper consists of three main sections. The Introduction is followed by a section on Hateruma Kita and Minami noun accent. Our discussion of the Kita dialect accent is based on the data and descriptions provided in Hirayama and Nakamoto (1964:86-87) and Hirayama (1967:53-55, 193-505), and the data on the Minami dialect accent is from Sakimura (1987 and 2006:203-9). The next section looks into accentual correspondences between the two dialects, establishes regular correspondences, and reconstructs a Proto-Hateruma accent system for bimoraic and trimoraic nouns. Finally, the last section considers how the modern dialects evolved from their proto-form through time. We investigate types of changes, and the effects of these changes in accent.

2. Description of Hateruma Kita accent

This section has two parts: 2.1 and 2.2. The former introduces accent patterns for Kita bimoraic nouns, and the latter trimoraic noun accent patterns for the same dialect.

2.1 Bimoraic noun accent

According to the description of the Hateruma Kita accent given in Hirayama and Nakamoto (1964:86-87) and Hirayama (1967:53-55), as shown in (1), there are basically two distinctive classes, Flat and Rising. Words in the Flat class are uttered with low pitch throughout the word in isolation as well as when followed by the particle *-nu*[3], a subject marker (Sub.): e.g., *paṇa* LL 'nose', *paṇa-nu* LL-L 'i.d. (Nom)' (Hirayama and Nakamoto 1964:86). Words classified in the other class, namely Rising, begin in low pitch and end in high pitch both in isolation and with a particle, i.e., LH-H or LL-H. For example, the word *paṇa* LH 'flower', *paṇa-nu* LH-H 'i.d. (Sub.)' (Hirayama and Nakamoto 1964:86).

(1) Kita accent system

Flat [LL-L], [LLL-L], [LLLL-L], etc.

Rising [LH ~ LH-H/LL-H], [LLH ~ LLL-H], [LLLL ~ LLLL-H], etc.

It needs to be pointed out that Hirayama and Nakamoto (1964:86) describe the Rising class as /OO1/ [LH], /OO-O1/ [LH-H] for bimoraic nouns. Based on their discussion, this simply means that a predicate directly following the noun is produced with low pitch. The following examples demonstrate the point—the particle *-nu* is often dropped in speech.

(2)	paṇa sakjaN	LH LLL	'A flower has bloomed'
	paṇa-nu sakjaN	LH-H LLL	'i.d.'

The description given in Hirayama (1967:53-55) is identical to the one above.

Bimoraic words can be made up of either two syllables (e.g., *ʔusi*[4] LL 'cow', *ʔusi* LH 'mortar') or one syllable (e.g., *ki:* LL 'hair', *ki:* LH 'tree'; *naN* LL 'name', *naN* LH 'wave'; and *ssu* LL 'soup', *nta* LH 'soil'). As shown in the table below, some of the words in the Rising class are HH in pitch (e.g., *paN* HH 'foot/leg' and *piN* HH 'fart'). They share the CVN word-internal structure.

(3) Accentual patterns of bimoraic nouns

Phonemic	Phonetic	Example[5]
Flat	LL-L	ʔusɨ 'cow', paɲa 'nose', ki: 'hair', juda 'branch', kaʈʃi 'wind', fuɴ 'nail', fuʦi 'mouth', kuri 'this'[6], sɨɱi 'nail, claw', tuɽɨ 'bird', nunu 'cloth', paɲi 'wing', pɨɲi 'mustache; beard', midzɨ 'water', pe: 'fly', pɨɽu 'garlic', ʔiri 'west', ʔiʃi 'stone', paʦi 'bridge; ladder', pɨtu 'person', nitsɨ 'chest', dzi: 'blood', pu: 'sail', ju: 'fish', naɴ 'name', pa: 'leaf', pe: 'ash', dzi: 'land', du: 'oneself', po: 'sail', si: 'nest', me· 'rice', tu: 'ten', ka: 'well', ɲa: 'you', ssɨ 'fog', ssu 'soup', kaɴ 'god', dʒiɴ 'sky', tuɴ 'wife', jumi 'bride', ʃɨpi 'buttock, rear end', maju 'cat', ʔari 'east', butu 'husband', banu 'I', kuʦɨ 'loins', naga 'middle, inside', puʦu 'navel', bui 'nephew', bui 'niece', nisi 'north', duku 'poison', ʔama 'older sister', paku 'snake', ʔutu 'sound', puʦu 'star', muge 'stomach', ʔadzɨ 'taste', ʔobɨ 'yawn', etc.
Rising	LH ~ LH-H/LL-H	ʔusɨ 'mortar', paɲa 'flower', ki: 'tree', ʔaɴ 'net', ʔaɴ 'millet', ʔinu 'dog', ʔiru 'color', ʔudʒi 'arm', mma 'horse', fuʦa 'weed', naɴ 'wave', siɲa 'rope'[7], nuɴ 'flea', puɲi 'bone', jama 'mountain', kaɱi 'turtle', kaɱi 'jar', ʔiɴ 'sea', kata 'shoulder', paɽi 'needle', fuɲi 'boat', muɴ 'wheat', ʔiʃi 'breath', ʔitu 'thread', me: 'front', ʔaʃi 'sweat', ʔami 'rain', kui 'voice', jusu 'dew', juru 'night', ʔuki 'bucket', mugu 'bridegroom', miɴ 'eye', ki: 'tree', ke: 'shade', ku: 'powder', ʃi: 'hand', na: 'green vegetable', ni: '(plant) root', pi: 'fire', pu: 'ear of grain', ju: 'hot water', buba 'aunt', mami 'bean', bata 'belly; intestine', puɲi 'bone', tsi: 'breast; milk', sako 'cough', jadu 'door, lodging', kë: 'egg', paɴ HH 'foot/leg'[8], piɴ HH 'fart'[9], maju 'eyebrow', mutʃi 'face; cheeks', ʔija 'father', dusɨ 'friend', siɲu 'garment', ma: 'grandchild', buja 'grandfather', pa: 'grandmother', fuʦa 'grass', nitsɨ 'heat', miɴ 'hole', ʃi: 'house', jaɴ 'illness', siɱa 'island; hamlet', saɲe 'loincloth', ʔaɴ 'millet', duru

		'mud', pạta 'near by, beside', ʔaɴ 'net', ʔaba 'oil', fụka 'outside', ʔuja 'parent', ʔuwa 'pig', masu 'salt', tạn̩i 'seed', ke: 'shadow', ka: 'skin, peel, fur', nta 'soil', pe: 'south', sạta 'sugar', ʃin̩a 'sun', nudu 'throat', sịta 'tongue', pa: 'tooth', ʔatu 'trace', etc.

2.2 Trimoraic noun accent

Just like bimoraic nouns, there are two accent classes for trimoraic nouns: Flat and Rising. Words in the former class are LLL pitch and the latter LLH or LHH and LLL-H when uttered with the particle *-nu*. Notice that the domain of the accent is not a word, but a phrase—more specifically, a word with the particle. Whether a word is LLH or LHH cannot be predicted as far as the given data are concerned. In our list there are four with LHH: *ʔattsa* LHH 'tomorrow', *fụm̩oɴ* LHH 'cloud', *ʔabo^{w}a* LHH 'mother', and *sịn̩u:* LHH 'yesterday'.

Trimoraic words are either trisyllabic or disyllabic with three moras. Trisyllabic examples are *kịpụsi* LLL 'smoke' and *pịtegi* LLH 'cultivated field'. The internal word structure of disyllabic trimoraic nouns varies. Examples are *ʔu:bi* LLL 'yawn', *ʔissi* LLH 'five', *n:tsi* LLL 'six', *tạr̩e:* LLH 'washtub', and *gusaɴ* LLL 'cane'.

(4) Accentual patterns of trimoraic nouns

Phonemic	Phonetic	Example
Flat	LLL-L	mugadʒi 'centipede', sịkara 'strength', ʔu:bi 'yawn', kịpụsi 'smoke', sịrusi 'mark', pạn̩adʒi 'nose bleed', fụte: 'forehead', mugasi 'old days', kugani ~ kuŋgani 'gold', ma:ri 'around', ja:tsi 'eight', ju:tsi 'four', ne:ri 'right', ka:ra 'river', n:tsi 'six', mi:tsi 'three', ʔadzaɴ 'bruise, birthmark', gusaɴ 'cane', ʔiʃoɴ 'sand', mwa: 'here', pịn̩ari 'left', pịtutsi 'one', pịturi 'one person', kạtatsi 'shape', sịrusi 'sign', nusịturi 'thief', baima 'we', ḍaima 'you (pl.)', ʔututu 'younger sibling', sụkubi 'belt', etc.
Rising	LLH ~ LLL-H	midumu 'female', ka:ra 'roof tile', garasi 'crow', ʔissi 'five', kụtuba 'language', takara 'treasure', pịtegi

		'cultivated field', fụkuru 'bag', mussu 'straw mat', kụkuru 'heart', nanda 'tear', maffa 'pillow', ?usagi 'rabbit', kạṛadu 'naked', mimidzi 'earthworm', gudzira 'whale', fụtʃiri 'drug', tạṛe: 'washtub', nupạṛu 'field, plain', nanatsi 'seven', bidumu 'male', ?utama 'child', ?itʃịfu 'cousin', bututʃi 'day before yesterday', ?aʃịtu 'day after tomorrow', ?attsa LHH 'tomorrow', ?iragi 'fish scale', pụtʃiri 'lightning', ?ijagu 'oar', ?i:ni 'rice (as a crop), ma:ri 'rice bowl', tạṇaga 'rice field', budzama 'uncle', ?inaga 'sea', fụṃoN LHH 'cloud', ?abo^{w}a LHH 'mother', sịṇu: LHH 'yesterday', etc.

3. Description of Hateruma Minami accent

Our analysis of Hateruma Minami accent system is based on the data provided in Sakimura (1987). As Sakimura describes, two distinctive accent classes can be recognized in the system for monomoraic to trimoraic nouns. Let us call them atonic and tonic classes throughout this paper. Atonic nouns are uttered basically in either low-level pitch or rising pitch without a distinctive fall in pitch (e.g., *kata* LL 'shoulder' and *jama* LH 'mountain'). Nouns in the toinc class have a distinctive fall in pitch (e.g., *katʃi* HL 'wind'). A phonetic pitch height is indicated per mora by high (H), mid (M), or low (L) (e.g., *midumu* MLH 'female'). The pitch patterns for words when followed by the particle *-nu* are also given (e.g., *midumu-nu* LLH-H 'female (Sub.)').

As in the word *ki'* 'tree', there is a half-long mora indicated by '·'. It can be analyzed as a phonetic variant of a short vowel because a short vowel with a half-long mora simply becomes short, instead of lengthening the vowel, when followed by a particle. For example, the word *ki'* 'tree' is *ki-nu* when followed by the particle *-nu*. To distinguish a half-long mora from a 'full' mora, the pitch height of a half mora is indicated by the small cap letters H for high pitch, M for mid pitch, or L for low pitch in this paper. For instance, the phonetic pitch of *ki'* 'tree' is given as HL in isolation.

3.1 Monomoraic noun accent

In Sakimura's data, there are a few monomoraic words including ones with one and a half mora, as well. One-and-a-half-mora words are monomoraic when followed by a particle. As explained above, due to this phenomenon, they can be analyzed as monomoraic.

(5) Accentual patterns of monomoraic nouns

Phonemic	Phonetic	Example
Atonic	L/LL ~ L-L	ˢsɛ 'gray hair'[10], ⁽ʔ⁾maˑ 'grandchild'
Tonic	HL ~ H-L	ᵈziˑ 'blood', kiˑ 'tree', suˑ 'soup'[11], ᵈziˑ 'breast; milk', kiˑ 'hair', paˑ 'grandmother'

3.2 Bimoraic noun accent

There are two distinctive accent classes for bimoraic nouns: Atonic and Tonic. The former class of words does not have a distinctive pitch fall, and the latter does—a pitch falls immediately after the first mora. Examples are *katʃi* HL 'wind', *hun* HL 'nail', and *pa:* HL 'leaf'. The phonetic pitch patterns of atonic nouns vary. They are [LL/LLL/LLL ~ LL-L], [LH ~ LL-H/LH-H], [LHL ~ LL-H], and [LHH ~ LH-H].

When it comes to the word-internal structure, bimoraic words are either disyllabic (i.e., (C)V(C)V) or monosyllabic with two moras (i.e., (C)V: and CVN). Examples are *katʃi* HL 'wind', *du:* LH 'oneself', *an* LL 'net', and so on.

(6) Accentual patterns of bimoraic nouns

Phonemic	Phonetic	Example
Atonic	LL/LLL/LLL ~ LL-L	kutsi 'loin'[12], ʃi: 'hand', ju: 'hot water', an 'net', igi 'pond', inu 'dog', iɲu 'color', ⁽ʔ⁾uja 'parent', kan 'god', hutsa 'weed'[13], siɲa 'island', siɲa 'rope', tuki 'time', tusi 'year; age', nan 'wave', paka 'tomb', paɲa 'flower', mamiˑ 'bean', imi 'dream', bata 'cotton', isi 'breath', ita 'board', usi 'mortar', kaᵈzu 'number', kata 'shoulder', suɲ 'corner; edge', naga 'middle;

		inside', paɽi 'needle', mɛ: 'front'[14], (taˑɽa 'straw bag')[15], aba 'oil; fat', paɴ 'leg', ʃama 'older brother', amaˑ 'older sister', sisɨ 'soot'[16], ija 'father', ᵈzi: 'soil', nudu 'throat', bata 'belly', bomaˑ 'older sister'
	LH ~ LL-H/LH-H	hu̥tsɨ 'mouth'[17], tuɽi 'bird', hu̥i[(ʔ)] 'winter'[18], jumi 'bride', muɽa 'village', (miˑɴ 'eye'), munu 'thing', jama 'mountain', itu 'thread', ᵖFu̥ɲi 'boat', kui 'voice', nabi 'pan; pot', maju 'eyebrow', mugu 'bridegroom', nutsɨ 'life', jadu 'door; lodging', du: 'oneself', bunɷ 'axe', mutʃi 'face', masu 'salt', buja 'grandfather', duɽu 'mud', sisɨ 'meat; flesh', juɽu 'rope; thread', juɽu 'night', adu 'heel', si̥ɲu 'garment', muni 'language', sata 'sugar', banɷ 'I', si̥ɲa[(ʔ)] ~ si̥ɲa[(ʔ)] 'sun'
	LHʟ ~ LL-H	kạpiˑ 'paper', tạpiˑ 'travel', pataˑ 'flag', uᵈʒiˑ 'arm', atuˑ 'trace', tạɲiˑ 'seed', [(ʔ)]aʃi 'sweat', sapaˑ 'wrestling', kạɲaˑ 'plane', si̥ɲɷˑ 'yesterday', minaˑ 'garden, yard'
	LHʜ ~ LH-H	pạɲaˑ 'nose', kamiˑ 'jar', [(ʔ)]amiˑ 'rain', hute[ʔ] 'forehead'[19]
Tonic	HL-L	aɽi ~ aɽʲi 'ant', usɨ 'cow', katʃi 'wind', huɴ 'nail'[20], takị̀ 'bamboo', ʃimi[(ʔ)] 'nail; claw', pɛ: 'fly'[21], pakụ̀ 'box', pata 'beside; edge', patsị̀ 'bee', pi̥ɲi 'beard', putsụ̀ 'navel', putsị̀ 'star', miᵈzɨ 'water', mitsị̀ ~ miˈsị̀ 'path', naɴ 'name', pa: 'leaf', i̥si 'stone', uta 'song', utu 'sound', natsị̀ 'summer', hutsɨ 'comb'[22], sita 'tongue', kɛ: 'shade'[23], butu 'husband', ki̥ɛ: 'well'[24], pɛ: 'hoe'[25], mɛ: 'rice'[26], buʃa 'oldest brother', tu̥ɴ 'wife', [(ʔ)]masɨ 'chopsticks', pi̥sa 'elbow; knee', nɛɽi 'right'[27], ni̥tsɨ 'chest'[28], da: 'you'

3.3 Trimoraic noun accent

Trimoraic nouns can be also classified into two accent classes: Atonic and Tonic. When compared to the pitch patterns of bimoraic nouns, those of trimoraic nouns vary greatly. For atonic words, the following patterns can be observed in the data in (7): [LLL/LLLʟ ~

LLL-L], [LLH ~ LLL-H/LLH-H], [LLHʟ ~ LLL-H], [LLHʜ ~ LLH-H], and [MLH ~ LLL-H]. It can be said that in general atonic nouns are phonetically low-flat pitch or final rising.

(7) Accentual patterns of trimoraic nouns

Phonemic	Phonetic	Example
Atonic	LLL/LLLʟ ~ LLL-L	ɱmaɴ 'horse', hūm̥ōɴ 'cloud'[29], katatsi 'shape', patsaɴ 'scissors', pikaɽi 'light', pi̥n̥aɽi 'left', hutʃiɽi 'drug'[30], ʔutama 'child', (buˑisi 'rock'), buzamaˑ 'uncle', gusaɴ 'cane', sikeɴ 'moon'[31], abua 'mother', ʃimbi 'finger', nakaʃaˑ '2nd oldest brother', bunaɽi 'sisters', piteː 'cultivated field'[32], bigiɽi 'brothers', ututu 'younger sibling'
	LLH ~ LLL-H/LLH-H	siɽusi 'mark', naɴda 'tear', pottsi 'broom', mi̥mi̥^{d}zi 'earthworm', ɻu^{d}ziɽa 'whale', guˈteː ~ ɻuˈteː 'body; oneself'[33], guʃiɴ 'sake; alcohol', naubi 'yawn'[34], kitsibja 'little finger', (takaˑbi 'index finger')
	LLHʟ ~ LLL-H	ʔattsaˑ 'tomorrow'
	LLHʜ ~ LLH-H	inagaˑ 'sea'
	MLH ~ LLL-H	kaɽaˈta 'body', midumu 'female', buːbi 'thumb'
Tonic	HLL/HLLL ~ HLL-L	buFaˑ 'nephew; niece', itʃihuˑ 'cousin', agaɽi 'light', judaɽi 'drool', usi̥ta 'elder'[35], bupitu 'adult' [HLM ~ HLL-L]
	LHL-L	ki̥pusi 'smoke', hu̥taɽi 'grime'[36], hḁkɷtsi 'jaw', si̥kubi 'belt', hu̥ku^{d}zi 'trash'[37], bidumū 'male' [LHL ~ LML-L], kḁtsiɽa 'vine, bine', takabu 'cigarette', sḁkɷsi 'oldest brother', sḁn̥eː 'loincloth'[38]

Words with the pitch patterns LLHʟ and MLH behave in the same way when followed by a particle, namely LLL-H. The pitch pattern LLHʟ can simply be analyzed as a phonetic variant of the LLH pitch. Interestingly, words with LLHʜ are pronounced as LLH-H when followed by a particle.

The mid pitch (i.e., M) in the data seems to be a variant of a low pitch, not of a high pitch. Words with MLH become LLL-H when uttered with a particle. Similarly, words with HLM turn into HLL-L when pronounced with a particle; a mid pitch becomes low in a phrase (e.g., *bupitu* HLM 'adult', *bupitu-nu* HLL-L).

Trimoraic tonic words are basically HLL or LHL in isolation; a particle follows in low pitch. When a vowel in the initial syllable is devoiced, words are normally LHL (e.g., *kipusi* LHL 'smoke').

The words *bubama* 'aunt' and *gaɽasi* 'crow' are HLH in isolation and HLL-H with a particle. The pitch falls immediately after the first mora and rises on the final mora. From the data given in Sakimura (1987 and 2006), it can hardly be determined whether they behave as atonic or tonic. Thus, we leave this aside for the time being.

4. Reconstruction of Proto-Hateruma noun accent

This section is made up of two parts. The first part of the section presents regular correspondence sets between Hateruma Kita and Minami noun accent. On the basis of these sets of accent correspondences, a reconstruction of Proto-Hateruma accent system is pursued. In the latter section, development of modern Hateruma Kita and Minami dialects is investigated.

4.1 Accentual correspondence

In the Kita and Minami dialects, there are two accent classes—Rising and Flat in Kita, Atonic and Tonic in Minami. However, their phonetic pitch patterns are not identical. When we look into the correspondences between the two systems, there are four regular correspondence sets for both bimoraic and trimoraic words. For convenience, we label them 'A' – 'D' for bimoraic, and 'E' – 'H' for trimoraic correspondence sets as shown in (8).

Correspondence set A shows that some of the Kita bimoraic words with a rising pitch correspond to atonic words in Minami. Let us point out that the list contains words with high flat pitch, namely *paN* HH 'foot; leg', as well. In Hirayama's data (1967),

nouns with HH are hardly found. This is one of the rare cases. It seems word-internal structure has nothing to do with this irregular pitch since many other words with CVN structure are LH: *muɴ* LH 'wheat', *ʔaɴ* LH 'net', *ʔaɴ* LH 'millet', *miɴ* 'eye', etc.

In correspondence set B, some other group of rising-accent words in Kita also regularly correspond to tonic words in Minami. Correspondence sets C and D demonstrate two other sets of regular correspondence in accent between Kita and Minami dialects. Some of the Kita words with a flat pitch correspond to atonic ones in Minami, and some other Kita flat words to Minami tonic ones.

Trimoraic correspondence sets in E – H are parallel to the bimoraic ones just discussed. That is, Kita rising accent corresponds to Minami atonic in E, Kita rising to Minami tonic in F, Kita flat to Minami atonic in G, and Kita flat to Minami tonic in H.

(8) Correspondences between Hateruma Kita and Minami accent classes

(a) Bimoraic

	Kita		Minami
A.	Rising		Atonic
'dog'	ʔinu LH	:	inu LL
'horse'	mma LH	:	m̥maɴ LLL
'shoulder'	kạ̊ta LH	:	kata LL
'foot; leg'	paɴ HH	:	paɴ LL
'garment'	si̥̱nu LH	:	si̥̱nu LH
'hand'	ʃiː LH	:	ʃiː LL
B.	Rising		Tonic
'breast; milk',	tsiː LH	:	ᵈziˑ HL ~ H-L
'tree	kiː LH	:	kiˑ HL ~ H-L
'shade'	kɛː LH	:	kɛː HL
'tongue'	si̥̱ta LH	:	sita HL
'near by, beside'	pạ̊ta LH	:	pata HL

C.	Flat		Atonic
'bride'	jumi LL	:	jumi LH
'nose'	pa̤na̤ LL	:	pa̤na̤· LHH ~ LH-H
'mouth'	fṳtsi LL	:	hṳtsi LH
'older sister'	ʔama LL	:	ama· LLL
'loins'	kṳsi LL	:	kutsi LL

D.	Flat		Tonic
'chest'	nitsi LL	:	ni̤tsi HL
'water'	midzi LL	:	mi^{d}zi HL
'navel'	pṳsu LL	:	putsṳ HL
'leaf'	pa: LL	:	pa: HL
'name'	naN LL	:	naN HL

(b) Trimoraic

	Kita		Minami
E.	Rising		Atonic
'drug'	fṳtʃiri LLH	:	hutʃi̤ri LLL
'tomorrow'	ʔattsa LHH	:	$^{(ʔ)}$attsa· LLHL ~ LLL-H
'cloud'	fṳmo̤N LHH	:	hṳ̄mō̤N LLL
'sea'	ʔiN LH	:	inaga· LLHH ~ LLH-H
'female'	midumu LLH	:	midumu MLH ~ LLL-H

F.	Rising		Tonic
'male'	bidumu LLH	:	bidumū LHL
'loincloth'	sa̤ne LH	:	sa̤ne: LHL
'cousin'	ʔitʃi̤fu LLH	:	itʃihu· HLLL ~ HLL-L

G.	Flat		Atonic
'finger'	ʃi:nubi LLLL	:	ʃimbi LLL
'cane'	gusaɴ LLL	:	gusaɴ LLL
'left'	pi̥n̥ari LLL	:	pi̥n̥aɾi LLL
'yawn'	ʔobi LL	:	naubi LLH
'younger (sibling)'	ʔututu LLL	:	ututu LLL

H.	Flat		Tonic
'smoke'	ki̥pu̥si LLL	:	ki̥pusi LHL
'belt'	su̥kubi LLL	:	si̥kubi LHL
'we'	baima LLL	:	baima: HLMM-L
'right'	ne:ri LLL	:	nəɾi HL
'adult'	bu:pi̥tu LLLL	:	bupitu HLM ~ HLL-L

Based on the correspondences discussed above, it is natural to say from a theoretical point of view that four accent classes for both bimoraic and trimoraic nouns in Proto-Hateruma need to be reconstructed. When it comes to pitch patterns for a proto-language, the number of possible patterns is fairly limited. For instance, there are eight for bimoraic words: HH-H, LL-L, LH-H, LH ~ LL-H, HL-L, HL ~ LH-L (or ~ HH-L), HH-L, and LH-L. Notice that the pattern HL-H is excluded because it is not common and it is often one of the allophonic variants for a distinctive class in an accent system.

For trimoraic nouns, the number of possible pitch patterns easily goes over ten, e.g., HHH-H, LLL-L, LHH-H, LLH-H, LLL-H, HLL-L, HHL-L, LHL-L, HHH-L, LHH-L, and LLH-L. More can be added to this when we consider the cases where the domain of accent is a phrase consisting of a noun and a particle, e.g., LLH ~ LLL-H, HHL ~ HHH-L, LHL ~ LLH-L, etc.

4.2 Reconstruction of Hateruma accent system

Taking the correspondences and possible changes that may have occurred in the course of

the development into account, we have reconstructed the following accent system that has four distinctive classes for both bimoraic and trimoraic nouns. The four distinctive classes are Rising, Penultimate-accent, Final-high accent, and Flat. For bimoraic nouns, as shown in (9a), they are phonetically *LH-H for the Rising class, *HL ~ LH-L for the Penultimate, *LH ~ LL-H for the Final-high, and *LL-L for the Flat. Similarly, for trimoraic nouns, the phonetic pitch shapes of the classes are *LHH-H, *LHL ~ LLH-L, *LLH ~ LLL-H, and *LLL-L as in (9b).

In the next section, the development of the modern Hateruma Kita and Minami dialects is discussed.

(9) Proto-Hateruma accent

(a) Bimoraic nouns

Proto-Hateruma		Kita		Minami
A. Rising	*[LH-H]	Rising	:	Atonic
B. Penultimate	*[HL ~ LH-L]	Rising	:	Tonic
C. Final-high	*[LH ~ LL-H]	Flat	:	Atonic
D. Flat	*[LL-L]	Flat	:	Tonic

(b) Trimoraic nouns

Proto-Hateruma		Kita		Minami
E. Rising	*[LHH-H]	Rising	:	Atonic
F. Penultimate	*[LHL ~ LLH-L]	Rising	:	Tonic
G. Final-high	*[LLH ~ LLL-H]	Flat	:	Atonic
H. Flat	*[LLL-L]	Flat	:	Tonic

5. Development of Hateruma Kita and Minami accent for nouns

In the previous section, we have proposed Proto-Hateruma accent system for bimoraic and trimoraic nouns. In this section, our focus is on an explanation for the development of the modern Hateruma Kita and Minami accent systems from our proposed

proto-language accent system.

At a glance of the correspondences shown in (9), it can be said that the rising accent in Kita dialect has resulted from a merger of PH[39] Rising *[LH-H] and Penultimate *[HL ~ LH-L], and it is also obvious that the other distinctive accent class in the dialect, namely the flat class, is a product of a merger of PH Final-accent *[LH ~ LL-H] and Flat *[LL-L]. This section offers an explanation for how the modern accent systems have evolved from their common source.

5.1 Development of Kita accent

In the development of Kita accent, it can be suggested that two changes occurred. These two changes are Final-H merger and Flat merger. As their names suggest, Final-H merger means that words sharing a characteristic of final-high pitch merge into one group or class. The other describes a change where words with a low-flat pitch are reclassified as one distinctive class. The order of these changes does not seem to play any role.

A merger of PH Rising *[LH-H] and Penultimate-accent *[HL ~ LH-L] results in LH-H for bimoraic nouns in the Kita dialect. Words with *HL ~ LH-L are HL in isolation, yet they are LH when followed by a particle. Sharing a characteristic of LH pitch triggered a merger of both accent classes into one.

One can argue that Class A can be phonetically *LH-L instead of *LH-H. Under this proposal, we would expect LH-L in Kita dialect because Class A *LH-L and the pitch pattern of Class B when uttered with a particle (i.e., LH-L) are identical.

Regarding Class B, it can be argued against our proposal PH *HL ~ LH-L by suggesting the much simpler form *LH-L. This claim is sound as far as the development of the Kita dialect accent is concerned. However, taking the Minami accent into account, our suggested form can give a more comprehensive explanation covering the changes both Kita and Minami underwent (see 5.2 below).

PH Final-high *[LH ~ LL-H] and Flat *[LL-L] merged as LL-L in Kita. It can be claimed that a shared characteristic, namely low-flat pitch, triggered the merger.

(10) Bimoraic accent

		Final-H merger	Flat merger
A.	*LH-H	> Rising LH-H	
B.	*HL ~ LH-L		
C.	*LH ~ LL-H		> Flat LL-L
D.	*LL-L		

The development of trimoraic accent is very similar to that of bimoraic accent because we assume that the same changes have effects on the system of the language as a whole when conditions for the changes are met. PH Final-high *[LHH-H] and Penultimate *[LHL ~ LLH-L] merged by Final-H merger. Kita rising accent words are basically either LLH or LHH in isolation. It is natural to assume that they are descended from Proto-accent classes E and F. A merger of PH Final-high *[LLH ~ LLL-H] and Flat *[LLL-L] occurred due to their shared characteristic, i.e., low-flat pitch.

(11) Trimoraic accent

		Final-H merger	Flat merger
E.	*LHH-H	> Rising (LLH, LHH)	
F.	*LHL ~ LLH-L		
G.	*LLH ~ LLL-H		> Flat (LLL)
H.	*LLL-L		

5.2 Development of Minami accent

This section gives an account for the development of the Hateruma Minami accent system by proposing the two changes: Final-H merger and Initial Rising. As explained in the development of the Kita accent above, Final-H merger also contributed to the development of the Kita accent system. As for Initial Rising (I-Rising), it turned words with low pitch (i.e., LL or LLL) into initial high pitch (i.e., HL or HLL).

Minami bimoraic noun accent has evolved through undergoing two mergers from the PH accent system. PH accent classes A and C merged by Final-H merger. Both classes

share the characteristic of ending with a rising pitch. The other merger was caused by implementation of Initial Rising on PH words with *LL-L. Going through the change, low-flat accent turned into initial high, and as a result merged with the already-existing initial high accent class.

(12) Bimoraic accent

		Final-H merger	I-Rising
A.	*LH-H	> Atonic (LL, LH)	
C.	*LH ~ LL-H		
B.	*HL ~ LH-L		> Tonic (HL)
D.	*LL-L		

The Minami trimoraic accent system evolved from PH in a very similar way as the bimoraic accent system did. The changes that took place in bimoraic nouns affected trimoraic nouns as well. The Final-H merger put PH *LHH-H (13E) and *LLH ~ LLL-H (13G) into one class. It is atonic in the modern dialect. The pitch shape of atonic nouns varies. They are either LLL, LLH ~ LLL-H, or LLH-H. It can be claimed that this is due to the inheritance of the PH pitch patterns.

(13) Trimoraic accent

		Final-H merger	I-Rising
E.	*LHH-H	> Atonic (LLL, LLH ~ LLL-H, LLH-H)	
G.	*LLH ~ LLL-H		
F.	*LHL ~ LLH-L		> Tonic (HLL, LHL)
H.	*LLL-L		

6. Conclusion

The goals of this study are to discuss the modern Hateruma Kita and Minami accent systems for bimoraic and trimoraic nouns, and also to reconstruct an earlier form of Hateruma accent based on the two dialects introduced in this paper. Explaining the

development of the modern dialects from the reconstructed form is also one of our aims.

The Kita variety has two distinctions for both bimoraic and trimoraic nouns: Flat and Rising. In the Minami dialect there are also two accent classes: Atonic and Tonic for both bimoraic and trimoraic nouns.

A comparison of the accent patterns of shared available vocabulary enables us to reconstruct four accent classes for both bimoraic and trimoraic nouns: Rising, Penultimate, Final-high, and Flat. Their phonetic pitch patterns are respectively *LH-H, *HL ~ LH-L, *LH ~ LL-H, and *LL-L for bimoraic; *LHH-H, *LHL ~ LLH-L, *LLH ~ LLL-H, and *LLL-L for trimoraic nouns. The development of the Kita accent involves two changes—Final-H merger and Flat merger. Due to these changes the four-way accent distinction in Proto-Hateruma turned into two in the modern Kita dialect. Similarly, the accent system of the Minami variety evolved from undergoing two changes: Final-H merger and Initial Rising. By these changes, four Proto-Hateruma accent classes underwent mergers to produce the two classes found in Minami.

Although the modern Kita and Minami accent systems are made up of two distinctions, they are phonemically different. This difference is attributed to the changes that each system underwent. It is natural to assume that different changes would give different results. Taking a look at the changes discussed above, it is easily noticed that they share the same change, i.e., Final-H merger. This change put PH Rising *[LH-H] and Penultimate *[HL ~ LH-L] into one (i.e., Rising accent) in Kita. On the contrary, in Minami the same change brought PH Rising *[LH-H] and Final-high *[LH ~ LL-H] into one (i.e., Atonic). In Kita, accent patterns with a particle have merged. On the other hand, in Minami the accent patterns in isolation have been put together as one. Therefore, they did not become identical—although it cannot be ignored that the other change in both is completely different. Flat Merger in Kita and Initial Rising took place in Minami.

In sum, the modern Kita and Minami accent developed through the mergers of Proto-Hateruma accent classes by two simple changes. One of the changes is shared by both varieties; however, the results that it brought about were different.

Notes

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[1] In her term, these classes are "heiban kata" and "kihuku kata" respectively.

[2] A pitch preceded by a hyphen indicates the pitch for a particle. 'L', 'H', and 'F' stand for low pitch, high pitch, and falling pitch respectively throughout this paper. A pitch followed by the symbol '~' is a pitch in isolation, and one preceded by the symbol is a pitch when uttered with a particle. For example, *pana* 'nose' is LF when uttered without a particle. However, it is LL when followed by a particle, i.e., *pana-nu* LL-L (Kuno 2002:4-5).

[3] Hirayama (1967:54) says that the particle *-nu* is often times dropped in speech.

[4] The glottal stop [ʔ] is phonetic.

[5] Examples are basically transcribed at the phonetic level.

[6] This is also listed as *kuɻi* 'i.d.' (Hirayama 1967:194).

[7] It is LH on p.53, but it is low flat on p.275 (Hirayama 1967:53, 275).

[8] It is HH (Hirayama 1967:370).

[9] It is HH (Hirayama 1967:382).

[10] Cf. *ʻsɜ* 'gray hair' in Sakimura (2006:207).

[11] It is labeled 'sweat' in Sakimura (2006:207).

[12] This is listed with a question mark in parenthesis, i.e., (?). The meaning of this is unknown. See Sakimura (1987:6 and 2006:207).

[13] Cf. *Futsa* 'weed' in Sakimura (2006:207).

[14] Cf. *mɜː* 'front' in Sakimura (2006:207).

[15] This word is given in parentheses (see Sakimura 1987:7 and 2006:208), so are the following words: *miʻɴ* 'eye', *buʻisi* 'rock', and *takaʻbi* 'index finger'. However, it is not clear why they are in parentheses.

[16] This is listed with a question mark in parenthesis, i.e., (?). The meaning of this is unknown. See Sakimura (1987:7 and 2006:208).

[17] Cf. *Fuɻsi* 'mouth' in Sakimura (2006:207). The consonant *ʦ* is not alveolar—which cannot be transcribed here. See Sakimura (1987:6 and 2006:207) for detail.

[18] Cf. *Fuɻi(?)* 'winter' in Sakimura (2006:207).

[19] Cf. *Futɜ?* 'forehead' in Sakimura (2006:207).

[20] Cf. *Fuɴ* 'nail' in Sakimura (2006:207).

[21] Cf. *pɜː* 'fly' in Sakimura (2006:207).

[22] Cf. *Futsi* 'comb' in Sakimura (2006:207).

[23] Cf. *kɜː* 'shade' in Sakimura (2006:207).

[24] Cf. *ʂɜː* 'well' in Sakimura (2006:207).

[25] Cf. *pɜː* 'hoe' in Sakimura (2006:207).

[26] Cf. *mɜː* 'rice' in Sakimura (2006:207).

[27] Cf. *nɜɽi* 'right' in Sakimura (2006:207).
[28] The consonant *ts* is not alveolar—which cannot be transcribed here. See Sakimura (1987:6 and 2006:207) for detail.
[29] Cf. *ɸũɱõɴ* 'cloud' in Sakimura (2006:208).
[30] Cf. *Futʃiɽi* 'drug' in Sakimura (2006:208).
[31] Cf. *sikɜɴ* 'moon' in Sakimura (2006:208).
[32] Cf. *pitɜ:* 'cultivated field' in Sakimura (2006:208).
[33] Cf. *guˈtʒ: ~ ɻuˈtʒ:* 'body; oneself' in Sakimura (2006:208).
[34] This is listed with a question mark in parenthesis, i.e., (?). The meaning of this is unknown. See Sakimura (1987:7 and 2006:208).
[35] The consonant *s* is not alveolar— which cannot be transcribed here. See Sakimura (1987:7 and 2006:208) for detail.
[36] Cf. *Fɻutaɽi* 'grime' in Sakimura (2006:208).
[37] Cf. *Fɻukuˈzi* 'trash' in Sakimura (2006:208).
[38] Cf. *sɑɳɜ:* 'loincloth' in Sakimura (2006:208).
[39] PH stands for Proto-Hateruma.

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論文要旨

波照間祖語名詞アクセント体系の再建

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本論文は波照間島の北集落と南集落で話されている２つの方言のアクセントを比較し，波照間祖語の２モーラ及び３モーラ名詞アクセント体系の再建を試みる。さらに，再建された祖語体系から北集落及び南集落方言のアクセント体系へ変化していった過程を説明する。基礎語彙のアクセントデータは主に，平山・中本 (1964)，平山・大島・中本 (1967)，崎村 (1987, 2006) を用いる。

祖語のアクセント体系は，北・南集落方言アクセントの規則的な対応関係に基づくと，２モーラ，３モーラ名詞両方とも４つの型が再建できる。祖語からそれぞれの方言への変遷過程には２つの変化が関わったと考えられ，これらの変化により，アクセントの型の統合が起こり，現在の北・南集落方言アクセントへと発達したと説く。