Time in East Asian Endangered Languages

Grammar, History, and Society

edited by
Elia Dal Corso and Elisabetta Ragagnin

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Time in East Asian Endangered Languages
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Abstract

This book is based on a selection of papers presented at the Second Conference on the Endangered Languages of East Asia (CELEA2), hosted by the Department of Asian and North African Studies at Ca' Foscari University of Venice on 3-5 May 2022. In each chapter, the authors discuss the topic of 'time' in relation to different aspects of a number of East Asian languages that are rarely represented in typological studies (Nivkh, Nighvng, Chalkan, Khitan, Ainu, Sakizaya, Kaxabu, Ryukyuan languages, Hachijō, Manchurian, and Yu). The volume will appeal to scholars with an interest in the endangered languages of East Asia, and, more generally, will serve as a reference work in descriptive, historical and comparative linguistics, sociolinguistics, discourse studies, and lexicography.

Keywords Endangered languages. East Asia. Time. Descriptive linguistics. Historical linguistics. Lexicography. Sociolinguistics.

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Grammar, History, and Society

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Introduction

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This book is based on a number of selected papers presented at the Second Conference on the Endangered Languages of East Asia (CELEA2) hosted by the Department of Asian and North African Studies at Ca' Foscari University of Venice on 3-5 May 2022.

CELEA was launched in 2020 with the main objective of gathering scholars working on indigenous, minority, or endangered languages spoken in East Asia and specifically in the territories of Japan, China, Korea, Eastern Russia, Mongolia, Taiwan, and Vietnam. Attendees to the three-day meeting in 2022 presented on the topic of "time in endangered languages and endangered languages through time" by giving various interpretations to the concept of 'time' while embracing different disciplines, like descriptive, historical, and comparative linguistics, sociolinguistics, discourse studies, and lexicography. This volume contains a total of eleven papers that deal with languages that are rarely represented in the literature – Nivkh and Nighvng (Amuric), Chalkan (Turkic), Khitan (Para-Mongolic), Hokkaido Ainu and Sakhalin Ainu (Ainuic), Sakizaya and Kaxabu (Formosan), Ryukyuan languages and Hachijō (Japonic), Manchuric (Tungusic), and Yu (Sinitic). This book adds to the extant body of publications on endangered and non-endangered languages of East Asia, hoping to provide more input to further research on less-investigated languages of the area and a useful reference for cross-linguistic comparison.

The first part of this volume (Chapters 1 to 3) includes descriptive works that focus on how time, understood as tense, interacts with aspect and mood. In "Non-Finite Time in the Amuric Languages" (Chapter 1), Gruzdeva looks at temporal converbs in Nivkh and Nighvng taking both a synchronic and diachronic stance on their formal and functional diversification. Eventually, the author argues

that the semantics of these forms cannot be fully captured in purely temporal terms but rather needs to take into account the boundedness of the two situations linked through a certain converb as well as their completed, processive, durative, or iterative aspectual contour. "Competing Intraterminals in the South Siberian Turkic Language Chalkan" by Nevskaja (Chapter 2) discusses Chalkan intraterminal forms, employing the Johansonian aspecto-temporal/viewpoint model, in a comparative perspective by taking into account neighboring Turkic languages. Chalkan intraterminal forms showcase a paradigm that collates tense and aspect together, whose emergence the author ascribes to a competition of macro- and micro-areal patterns of analytical aspect-tense formations in the south of Siberia and in Republic of Altay. In "Time in Khitan" (Chapter 3), Rizzi provides an insightful overview on the state of the art on the verbal system of Khitan, an extinct language whose aspect-tense domain and its formal expression via converbs is still under-researched. In doing so, the author addresses important methodological issues that arise when working on a minority language that is also no longer spoken.

The second part (Chapters 4 and 5) includes two descriptive works that explore the relation between tense and evidentiality and discourse. Dal Corso focuses on inferential expressions of Sakhalin Ainu in his paper "Sakhalin Ainu Inferentials as Indicators of Relative Tense" (Chapter 4), and on how they provide relative tense specification for the predicate under the scope of evidentiality. The author argues that derivation of either a present or past tense reference is determined on the inner semantics of inferential forms, the lexical contour of the scope predicate itself, and the phases that characterize the process of information acquisition through inference. In "Temporal Flow in Sakizaya Discourse: Mapping Transitivity to Rhetorical Relations" (Chapter 5), McNaught investigates the expression of temporal relations among clauses within discourse. Inference of relative tense depends on the intricate interaction of overt aspectual marking, the inherent lexical aspect of the predicate, and entailing morphosyntactic and semantic transitivity of clauses, which are in their turn conditioned by the pragmatic inference of discourse relations.

Part three (Chapters 6 to 8) is dedicated to historical linguistics and specifically to the diachronic change of endangered Japonic languages. "Space in Time: Diachrony of Goal-Participant Marking in Ryukyuan Languages" (Chapter 6) by Jarosz provides a diachronic study of participants that encode semantic and syntactic notions typically associated with indirect object, such as recipient, passive agent, and causee. The author concludes that the dative-locative, including historical dative-locative, and dative-allative syncretism we witness in Ryukyuan languages is prompted by conceptualizations of goal-participants as 'spaces' in which an event is taking place or toward which an action is directed. The following paper by Baudel,

"How Conservative is the Morphology of Hachijō? A Few Comparative Reflections on the *rentaikei/shūshikei* Distinction in Japonic Languages" (Chapter 7), is a comparative study of two verbal inflections in Hachijō and other Japonic languages, which show notable archaisms, very close to what can be reconstructed for Proto-Japonic, but also a number of innovations that only partially adhere to the more general tendency observed in Japonic languages. "A Typology of the Deictic Day Name System in Manchuric" (Chapter 8) by Hölzl discusses the evolution of deictic day names in Manchuric and how they apparently form an unusually asymmetric system. On the basis of cross-linguistic evidence and through revision of previous studies, the author shows that this system may in fact be not so exceptional, while it still distances itself quite strikingly from those attested in other Tungusic languages.

Finally, the fourth and last part of the book (Chapters 9 to 11) is a collection of miscellaneous papers on phonetics, phonology, and language landscape. In light of diachronic and synchronic evidence, in her paper "Tonal Change in Yu" (Chapter 9), Jia argues that internally driven tonal change is currently underway in Yu. This is chiefly the result of tone *sandhi* constrained by the Obligatory Contour Principle that has led to the merger of high-low and high-mid falling tones. In "Metrical Stress in Kaxabu Revisited: A Corpus-Based Approach" (Chapter 10), Lin analyses metrical stress in Kaxabu in connection to prosody and provides an overview of the general distribution of stress in the language as well as of the irregularities and their indirect causes that may be found in morphological elements affecting prosody. "Linguistic Landscapes in Sapporo – 'When' is Ainu Situated?" by Santalahti and Ijas examines *when* the Ainu language is situated in tourism spaces in Hokkaido and its implications for the contemporary use and revitalisation of the Ainu language. The authors focus primarily on the overall decorative use of Ainu in the language landscape, which however coexists with examples of creative language use and neologisms that suggest the adaptation of the language to modern needs.

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Non-Finite Time in the Amuric Languages

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Abstract The aim of this paper is to discuss how temporal relations are expressed by non-finite forms (= converbs) marking adverbial subordination in the Amuric languages (Nighvng and Nivkh). At present, there are 15 temporal converbs attested in Nighvng and 13 temporal converbs reported in Nivkh. The paper examines the historical origin of different converbal components and investigates the morphological structure of Amuric temporal converbs. It also provides a semantic analysis of the temporal relations that can be established between two successive verb forms and the ways of expressing these relations by specialised converbs in the Amuric languages.

Keywords Temporal converbs. Historical reconstruction. Temporal semantics. Amuric. Nighvng. Nivkh.

Summary 1 Introduction. – 2 Morphological Structure of Temporal Converbs. – 2.1 Structural Components. – 2.2 Types of Structure. – 3 Semantics of Temporal Converbs. – 3.1 Posteriority. – 3.2 Simultaneity. – 3.3 Anteriority. – 4 Conclusion.

1 Introduction

The Amuric language family is located in the Lower Amur basin and on the island of Sakhalin in the Russian Far East. The family represents a continuum of several distinct varieties which can be grouped into two closely related languages: Nighvng and Nivkh. Both languages are critically endangered and are heavily influenced by the dominant Russian language.

Typologically, the Amuric languages are (poly)synthetic, they have a rather complex phonology and are characterised by predominant suffixation. At the level of the simple clause both languages display

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some features of isolating structure, especially with respect to core arguments (subject, primary object, and secondary object), which are in most cases unmarked. The canonical word order in a simple clause is 'subject-object-verb' (SOV). All modifiers, except for numerals / quantifiers, precede the head nominal.

The absolute time is typically marked only on the sentence-final finite verb form which establishes a real temporal domain (non-future vs. future). Non-future is unmarked, whereas future tense is marked by the suffix PA *-*inə*- > Nighvng -*i*- = Nivkh -*nə*-, cf. Nighvng *ŋi vi-d.* <1SG go-IND> 'I go/went.' vs. *ŋi vi-j-d.* <1SG go-FUT-IND> 'I shall go.' The minimal verb form is represented by a root and a mood suffix. Amuric verbs have several moods (indicative, imperative, categorical, dubitative, preventive, etc.) and aspects (inchoative/progressive, completive/intensive, resultative).

In a complex sentence, subordinate clauses are represented by complement, relative, or adverbial clauses. Adverbial clauses form a chain marked by non-finite forms (= converbs) and are linked with other clauses by various semantic relations (temporal, conditional, concessive, cause, purpose, manner, etc.). The main clause typically occurs sentence-finally and is built around a clause-final finite form.

As the title of the article suggests, the goal of the present paper is to discuss how temporal relations are expressed by non-finite forms (= converbs), which mark adverbial subordination in the Amuric languages. I started to explore this topic already in my PhD dissertation (Gruzdeva 1995) where I focused on the synchronic analysis of Nighvng temporal converbs. Since that time, I have been able to collect more extensive data on various Amuric idioms and to clarify some relevant details concerning the structure, semantics, functioning, and diachrony of these non-finite forms. Currently, there are attested 15 temporal converbs in Nighvng and 13 temporal converbs in Nivkh, which in this article will be analysed and compared from structural, historical, and functional perspectives. The study is based on the data collected during my fieldwork on Sakhalin and the Amur area of Russia since 1989, and on existing published sources.[1]

The first part of the article (§ 2) explores the historical origin of various converbal components and investigates the morphological structure of Amuric temporal converbs. These topics have not yet received sufficient attention in previous studies. The second part of the article (§ 3) is devoted to the semantic analysis of temporal relations which can be established between two subsequent verb forms and the ways of expressing these relations by specialised converbs in the Amuric languages. The final section 3 summarises the results of the study.

1 Including Krejnovich 1934; 1979; Panfilov 1962; 1965; 1968; Otaina 1978; Nedjalkov, Otaina 1987; 2013.

2 Morphological Structure of Temporal Converbs

The Amuric converbs have been formed at different historical periods and display various degrees of grammaticalisation. This part of the article explores various components (2.1) and different types (2.2) of morphological structure of temporal converbs.

2.1 Structural Components

Many temporal converbs are rather transparently derived from nominalised verbs forms and comprise easily identified elements, whereas the origin of other converbs is less clear.

Two nominalisers are involved in the derivation of temporal converbs. The nominaliser *-*N* > -*ŋ* is used for creating nominalised (participial) forms of verbs, which modify the head nouns. In both Amuric languages this nominaliser has already been lost, cf. Nighvng/Nivkh *pil-* 'be big' > **pila-ŋ* > *pila* 'big', but the historical nasal still triggers the voicing of the initial stop of the following head noun, cf. Nighvng *taf* 'house' > *pila+daf* 'big house'. The same nominaliser is attested in some lexicalised forms which have undergone substantivisation. In this function, the nominaliser has been retained in Nighvng, but has been lost in Nivkh: *fuv-* 'saw (sth)' > Nighvng *pʰuv-ŋ* > Nivkh *puf* 'saw'. The nominaliser **-PV* > *-v/-f* is one of the most productive derivational suffixes with a locative meaning,[2] cf. *ler-* 'play' > *ler-f* 'place for playing'. The weak (voiced) variant *-v* is used before a vowel within the same phonological word, whereas in all other cases the strong (voiced) variant *-f* occurs.

The maximal Amuric paradigm comprises seven marked cases, of which four, i.e. ablative, perlative, terminative, and dative are used in the formation of temporal converbs **[tab. 1]**.[3] Due to variation in the shape of case suffixes and as a result of various diachronic processes, converbs derived with case suffixes in Nighvng and Nivkh may look rather different.

2 Capital letters in the reconstructions indicate phonetically and/or phonemically unspecifiable segments. Thus, **N* stands for a generic (archiphonemic) final nasal, while **P* indicates a segment that may technically have been either **p* or **pʰ*. An unspecified vowel is marked as **V*. The reconstructions presented here are tentative, approximate, and 'shallow', and they do not consider the deeper-level vowel distinctions postulated for Proto-Amuric by Zhivlov (2023). In the synchronic data, capital letters indicate variable morphophonemes, e.g. *T* = *t* ~ *r* ~ *d* depending on the segmental environment. For a more detailed description of the underlying morphophonology, see Gruzdeva 1997; 2024.

3 Additionally, the dative and instrumental case suffixes are employed in derivation of other converbs, see Gruzdeva 2024.

Table 1 Amuric case suffixes used in the formation of temporal converbs

Case	PA	Nighvng	Nivkh
ablative	**-ukV* > **-uɣV* > **-uɣ* > *-ux*	*-ux*	*-ux*
perlative	**-uke* > *-uɣe*	*-uɣe*	*-uɣe*
terminative	**-toko* > **-toqo* > *-Toʁo*-tʰVka* > **-tʰVqa* > **tʰVʁa* > *Tʰχa*-tʰäkkä* >*tʰəkkə* > *Tʰəkə*	*-Toʁo-Thχa*	*-Toʁo-Thχa-Thəkə*
dative	**-tokV* > **-toqV* > **toʁV* > **toʁ* > *-Toχ*	*-Toχ*	*-Toχ*

The ablative case usually specifies a spatial/temporal location or a spatial/temporal starting point, cf. Nighvng/Nivkh *tol-ux* 'in/from the water space', Nighvng *palŋ-ux* = Nivkh *pal-ux* 'in/from the forest', Nighvng *tʰatŋ-ux* = Nivkh *tʰət-ux* 'in/since the morning'. The perlative case displays obvious formal and semantic similarities with the ablative. It can be also used for expressing a spatial/temporal starting point, but it also marks movement 'through', 'across', or 'along' the referent of the inflected noun, cf. Nighvng/Nivkh *vo-uɣe* 'from the village', Nighvng *tʰatŋ-uɣe* = Nivkh *tʰət-uɣe* 'since morning', Nighvng/Nivkh *civ-uɣe* 'along the road'. The terminative case marks spatial and temporal destinations and displays a strong dialectal variation, cf. Nighvng/Nivkh *vo-roʁo* 'up to the village', Nighvng/Nivkh *parf-toʁo* 'until evening'. The dative case has an array of semantic functions, such as the stimulus, patient, recipient, source of information, purpose/goal, spatial destination and location, reason, temporal duration, etc. In converbal formation it is used only in Nivkh as an element of a negative form.

Another group of elements engaged in converbal formation is represented by relational nouns (= postpositions). These are partly grammaticalised words, mostly with a rather concrete spatial or temporal meaning, which can occur unmarked or take spatial case suffixes, cf. Nighvng *ɲəŋ+anke* <1PL.EXCL+ahead> 'ahead of us'; Nivkh *ciɣr+tʰa:r-ujn* <tree+interval-LOC> 'between the trees'.

One type of Nighvng converbs makes use of the iterative clitic **=ŋata* > *=ŋara*, which is widely used for deriving iterative adverbs from reduplicated noun stems, cf. *aɲ~aɲ=ŋara* 'every year', *loŋ~loŋ=ŋara* 'every month'.

Some converb markers obligatorily comprise the element **-inə-*, which in Nighvng synchronically appears as *-inə-* ~ *-jnə-* and functions as a modal suffix with the desiderative meaning, cf. *vi-jnə-d* '(sb) wants/intends to go'. In Nivkh, the corresponding converbal element is *-nə-* < **-inə-*, which is otherwise used as a future tense marker, cf. *vi-nə-ɟ* '(sb) will go'.

Finally, one type of converbs is built as a negative form.

2.2 Types of Structure

The morphological structure of Amuric converbs is rather diverse. The following review of seven structural types proceeds from the least complex and the most grammaticalised forms till the most complex and the least grammaticalised ones. A special type 8 is represented by the negative converbal form.

Type 1: Verbal Stem-(*Nominaliser)-(Converbal) Suffix

The first type, which includes the verbal stem, (possibly) a historical nominaliser, and a final suffix, is the most common one **[tab. 2]**.

Table 2 Temporal converbs of type 1

NMLS	CVB (TEMP)			
PA	PA	Nighvng	Nivkh	
*-N	*-pa	-ba	-ba	'as soon as'
*-N	*-tatta	-data	(-data-r: data-t)	'while'
*-ŋ	*-Vn	-ŋ-ə	-ŋ-an	'when'
*-PV	*-l(V)	-vu-l	–	'when'
?	*-ipV	-ivo	-ivo	'while'
?	*-tʰajko-tVkkV	-tʰajʁo-ɻk, -tʰajʁo-sk	–	'while'
?	*-tʰakV-sVkkV	–	-tʰa:sk	'while'
?	*-VkVta	-ɣra	–	'while'
?	*-VkkVto	-kro	–	'while'
?	*-totV	-roɻ: -tot : -non	-ror : -tot	'after'

The converbal suffixes *-*pa* > -*ba* and *-*tatta* > -*data* are clearly attached to the nominalised (nasal-final) verb form, as synchronically the suffixes begin with the voiced stops, cf. *-*N-pa* > **N-ba* > -*ba*, *-*N-tatta* > *-*N-data* > -*data*, e.g. Nighvng/Nivkh **vi-N-pa* > **vi-N-ba* > *vi-ba* 'as soon as (sb) went', Nighvng **vi-N-tatta* > **vi-N-data* > *vi-data* 'while (sb) goes/went'. The nominaliser *-*N* itself has been lost from both Amuric languages. The etymology of *-*pa* is unknown, whereas the suffix *-*tatta* apparently goes back to the verb **tatta-* > *tata-* 'be intact' (Panfilov 1965, 145).

The suffix *-*ŋVn* > Nighvng *-ŋə* = Nivkh *-ŋan*,[4] possibly also contains the nominaliser *-*N* > *-*ŋ*, though other hypotheses on the structure of this marker are conceivable. The origin of this suffix (with or without the nominaliser) is not established. In a similar vein, the Nighvng suffix *-vul* may comprise the nominaliser *-*PV*. If this is so, the second component *-l* can be compared with the interrogative suffix *-l*(*a*).

As for all other converbs listed in Table 2, the historical presence of the nominaliser in their structure is not confirmed by any linguistic evidence and is strictly hypothetical. In both Amuric languages, the converbal suffix *-*ipu* > *-ivu* ~ *-ivo* coincides synchronically with the progressive suffix, cf. Nighvng *vi-jvo* 'while going' vs. *vi-jvu-d* <go-PROGR-IND> '(sb) is going'. The Nighvng suffix *-tʰajʁo-r̥k* would seem to go back to the verb *tʰajʁo-* 'not know'. The Nivkh suffix *-tʰa:sk* can possibly have the same origin. The suffix *-ɣra* < *-*VkVta* is possibly connected with the completive suffix *-ʁar̥* < *-*Vkät*(*V*). The etymologies of the other converbal suffixes are undetermined.

Type 2: Verbal Stem-(*Nominaliser)-(Converbal) Suffix-Converbal Suffix

The second type of converb structure, which includes a historical nominaliser and two (converbal) suffixes, is attested only in Nivkh. The composite suffixes presented in Table 3 consist of the elements *-data* or *-durŋu* and the narrative converbal suffix *-r*: *-t*, which indicates agreement with the subject in person and number.[5] Historically, both converbs are derived from the nominalised verb stem, as signalled by the initial voiced stops of the following suffixes, cf. **vi-N-tatta-TV* > **vi-N-data-r* > *vi-data-r* 'while (sb) goes/went' and **vi-N-tutVŋu-TV* > **vi-N-durŋu-r* > *vi-durŋu-r* 'while (sb) goes/went'. The suffix *-data*, whose etymology was discussed above, functions as an independent temporal converbal suffix in Nighvng **[tab. 2]**. However, the element *-durŋu*, whose origin Otaina (1978, 102) traces to the noun Nivkh *tur* 'figure, form', is not attested in any Amuric variety as a separate suffix.

4 One of the most prominent phonological features that distinguishes the two Amuric languages from each other is the frequent correspondence between *a* in Nighvng vs. *ə* in Nivkh, e.g. Nighvng *tamk* = Nivkh *təmk* 'hand'. In the reconstructions contained in the present paper I indicate this correspondence by using the symbol **ä*, as proposed in Gruzdeva, Janhunen 2023. The correspondence observed in the converbal suffix Nighvng *-ŋə* = Nivkh *-ŋan* is, however, the opposite and remains without an explanation.

5 The issue concerning the agreement of converbs with the subject in person and number was first examined in Krejnovich 1983, and has more recently been discussed in Gruzdeva 2022. This topic remains outside the scope of the present article.

Table 3 Temporal converbs of type 2

NMLS	CVB (TEMP)	CVB (NAR)	CVB (TEMP)	
PA	PA	PA	Nivkh	
**-N*	**-tatta*	**-TV*	*-data-r* : *-data-t*	'while'
**-N*	**-tutVŋu*	**-TV*	*-durŋu-r* : *durŋu-t*	'while'

Type 3: Verbal Stem-(*Nominaliser)-Perlative Case Suffix

In Nighvng, two temporal converbs are derived with the perlative case suffix *-(*u*)*ke* from the locative nominalisations in *-*PV* **[tab. 4]**. The diachronic development of converbal suffixes looks as follows: *-*PV-uke* > *-v-uɣe* and *-*PV-uke* > *-*v-ke* > *-*f-ke*. The converbs with these suffixes have the meanings resembling perlative case functions, cf. e.g. *vi-vuɣe* 'since (sb) left' and *vi-fke* 'when going'.

As for Nivkh, it has two temporal converbs with the same structure, one of which is apparently of the same origin as the Nighvng converb in *-fke*, but with the additional loss of the nominaliser: *-*PV-uke* > *-*v-ke* > *-ke*, e.g. *vi-ke* 'when going'. Another converb is also derived with the perlative case suffix, but in this case from the nominalisation in *-*N*, which is confirmed by the voicing of the initial stop of the converbal suffix: *-*N-uke* > *-*N-ke* > *-*N-ge* > *-ge*, cf. *vi-ge* 'while going'.

Table 4 Temporal converbs of type 3

NMLS	CASE (PERL)	CVB (TEMP)		
PA	PA	Nighvng	Nivkh	
**-PV*	**-(u)ke*	*-v-uɣe*	–	'since'
**-PV*	**-(u)ke*	*-f-ke*	*-ke*	'when'
*-N	**-(u)ke*	–	*-ge*	'while'

Type 4: Verbal Stem-Modal/Temporal Marker-Nominaliser Terminative Case Suffix

Another temporal converb (or, dialectally, group of converbs) is derived from a locative nominalisation with the terminative case suffix **[tab. 5]**. The nominaliser *-PV* is synchronically present in all forms. The converb with the corresponding 'terminative' meaning always comprises the suffix *-*inə-*, which has become a part of the converbal marker, cf. e.g. Nighvng *vi-jnə-f-toʁo*, Nivkh *vi-nə-f-tʰəkə* 'until (sb) left'.

Table 5 Temporal converbs of type 4

M/T	NMLS	CASE (TERM)	CVB (TEMP)		
PA	PA	PA	Nighvng	Nivkh	
*-inə-	*-PV	*-toko	-inə-f-toʁo	-nə-f-toʁo	'until'
*-inə-	*-PV	*-t^häkkä		-nə-f-t^həkə	'until'
*-inə-	*-PV	*-t^hVkV		-nə-f-t^hχa	'until'

Type 5: Verbal Stem-Modal/Temporal Marker-(*Nominaliser)-Relational Noun

The next temporal converb is derived from the nominalised form in *-*N* with the relational noun **änke* > Nighvng *anke* = Nivkh *ənke* 'ahead, before', which goes back to the verb Nighvng *j-anke-* = Nivkh *j-ənki-* 'get ahead (of sb)' **[tab. 6]**. The nominaliser is preserved in the Nighvng variant. This converb, which has the corresponding meaning of posteriority, also obligatorily contains the suffix *-*inə-*, which can be synchronically treated as a part of the compositional converbal marker, cf. e.g. Nighvng *vi-jnə-ŋ-anke* = Nivkh *vi-nə-ənke* 'before (sb) came'.

Table 6 Temporal converbs of type 5

MOD/TEMPEMP	NMLS	REL. NOUN	CVB (TEMP)		
PA	PA	PA	Nighvng	Nivkh	
*-inə-	*-N	*-änke	-inə-ŋ-anke	-nə-ənke	'before'

Type 6: Verbal Stem-(*Nominaliser)-Relational Noun-Ablative Case Suffix

The converbs of this type are derived from nominalisations in *-*N* in combination with a relational noun and the ablative case suffix **[tab. 7]**. The relational noun Nighvng *ərŋ* = Nivkh *ər* 'time, period' is a loan from the Tungusic languages, cf. PT **erVn* (Cincius 1977, 463-4). The Nivkh converbal suffix -t^h*a:r-ux* comprises the relational noun *t^h*akVr* > *t^h*aɣVr* > *t^h*aɣr* > t^h*a:r* 'interval, period'. The nominaliser is preserved only in the Nighvng form, cf. Nighvng *vi-ŋ-ərŋ-ux* 'while going', Nivkh *vi-t^ha:r-ux* 'when going'.

Table 7 Temporal converbs of type 6

NMLS	REL. NOUN		case (ABL)	CVB (TEMP)		
PA	PA		PA	Nighvng	Nivkh	
*N	*ərVŋ	'time'	*-ukV	-ŋ-ərŋ-ux		'while'
*N	*t^hakVr	'interval'	*-ukV		-t^ha:r-ux	'when'

Type 7: Verbal Stem-(*Nominaliser)-Relational Noun-Iterative Clitic

This type of converbs is attested only in Nighvng **[tab. 8]**. The corresponding converb is also derived from the nominalised verb form in *-*N*, which has been synchronically preserved. The composite converbal suffix comprises the relational noun *ərŋ* 'time' and the iterative clitic =*ŋara*, cf. *vi-ŋ-ər-ŋara* 'when going (repeatedly)'.

Table 8 Temporal converbs of type 7

NMLS	REL. NOUN		CLITIC (ITER)	CVB (TEMP)	
PA	PT → PA		PA	Nighvng	
*-*N*	*ərVŋ	'time'	*=ŋata	-ŋ-ər-ŋara	'when' (repeatedly)

Type 8: Negative Form of a Converb

The last type describes the derivation of a special 'negative' converbal form, which has a different structure in Nighvng and Nivkh.

Type 8a: Verbal Stem-*Nominaliser-Negative Verb-Converbal Suffix

In Nighvng, the basic negative synthetic forms are derived by compounding two verbal elements. The first element is the nominalised form of the negated lexical verb, which historically ends in the nominaliser *-*N*, whereas the following verbal element is the root of the negative verb **qawr-* > *Qavr-* 'not exist', cf. *vi-*(*ŋ*)*-ɢavr-d* '(sb) doesn't/ didn't go'. The corresponding converb is derived from the nominalised form of the negative verb with the converbal suffix **-tatta* > *-data* **[tab. 9]**.

Table 9 Temporal converbs of type 8a

NMLS	NEG	NMLS	CVB (TEMP)	CVB (TEMP)	
PA	PA	PA	PA	Nighvng	
*-*N*-	*-*qawr*-	*-*N*-	*-*tatta*	-*ɢavr-data*	'until'

Type 8b: Verbal Stem-*Nominaliser-Dative Case Suffix Negative Verb-Converbal Suffix

In Nivkh, standard negation is expressed by an analytical construction which comprises a nominalised lexical verb in *-*N*, which takes the dative suffix *-*tokV* > -*Toχ*, whose initial stop becomes voiced after the nasal. The resulting form is followed by the negative verb **qawr-* > *q*ʰ*aw-* 'not exist', cf. *vi-doχ q*ʰ*aw-ɟ* '(sb) does not/did not go'. The converbal marker *-ke* is attached to the negative verb, which apparently also had a nominalised form **[tab. 10]**.

Table 10 Temporal converbs of type 8b

NMLS	DAT	NEG	NMLS	CVB (TEMP)	CVB (TEMP)	
PA	PA	PA	PA	PA	Nivkh	
*-N-	*-tokV	*qawr-	?	*-(u)ke	-doχ qʰaw-ke	'until'

3 Semantics of Temporal Converbs

In this section, the semantics of temporal converbs is examined from a functional perspective. The analysis proceeds from the idea that temporal relations are established in a sequence of two verb forms so that the subsequent form defines a temporal reference point for the preceding form. In other words, the time of occurrence of the situation *P* denoted by the first form is determined relative to the time of occurrence of the situation *Q* expressed by the second form, regardless of the speech moment: $P \leftarrow Q$. The situation *P* is therefore seen as (temporally) dependent, whereas the situation *Q* as (temporally) independent.

In the Amuric languages, the temporarily dependent situation *P* can be referred to only by a converb, whereas the independent situation *Q* can be rendered either by a finite form or a converb (in a multiclausal construction). In example (1), the finite (and sentence-final) verb *vi-ɟ* '(they) went' (= *Q*) describes the situation which is presented as temporally independent. The absolute time (in this case zero-marked non-future) can be indicated only by this verb form. The situation rendered by the converb *oz-ŋan* '(after) getting up' (= *P*) is temporally dependent relative to *vi-ɟ* '(they) went' (= *Q*). At the same time, the situation expressed by the converb *q*ʰ*o-tot* 'after sleeping' (= *P*) is temporally dependent relative to *oz-ŋan* '(after) getting up' (= *Q*), which in this case is seen as independent. The chain of temporal relations in (1) can be described as $P \leftarrow Q = P \leftarrow Q$.

(1) *hoʁat* *q^{h}o-tot* *oz-ŋan* *mu-ɣir* *vi-ɟ.*
then sleep-CVB_DISANT.3PL get_up-CVB_UBANT boat-INSTR go-IND
'Then, after sleeping, (after) getting up, (they) went by boat.' (Krejnovich 1934, 215) (Nivkh)

Temporal relations can be classified into Posteriority (§ 3.1), Simultaneity (§ 3.2), and Anteriority (§ 3.3) The basic procedure for the further semantic analysis of temporal converbs includes the following steps: identifying and comparing the initial and terminal boundaries of the correlated situations *P* and *Q*; identifying relevant aspectual characteristics of the correlated situations *P* and *Q*; identifying other relevant characteristics of the correlated situations *P* and *Q*.

The relevant aspectual characteristics of the situations can be described with the following three features:[6] [+/–durative], [+/–processive], [+/–completed]. These features define several types of the situations: states [+durative, –processive, –completed], processes [+durative, +processive, –completed], achievements [+durative, –processive, +completed], completed processes [+durative, +processive, +completed] and punctual events [–durative, –processive, +completed]. Other relevant characteristics of situations include quantitative aspect [+/–iterative], absolute tense [+/–future], and evidentiality [+/–witnessed].

3.1 Posteriority

Temporal Posteriority implies that dependent situation *P* temporally follows the independent situation *Q*, so that '*P* (takes place) AFTER *Q*' = '*Q* (takes place) BEFORE *P*'.

Two basic types of Posteriority can be distinguished in the Amuric languages: Unbounded Posteriority (3.1.1) and Bounded Posteriority (3.1.2). Both relations are rendered by converbs which are derived from nominalisations with a relational noun or a suffix and comprise the element *-*inə*- with the desiderative/future meaning. The latter clearly marks the future status of the situation *P* relative to the situation *Q*. The situation *Q* is always a completed event. The markers of Posteriority are given in Table 11.

6 On aspectuality in the Amuric languages see Gruzdeva 2013.

Table 11 Markers of Posteriority in the Amuric languages

Posteriority	*P*	*Q*	**Nighvng**	**Nivkh**
Unbounded		[+completed]	*-inəŋanke*	*-nəənke*
Bounded		[+completed]	*-inəftoʁo*	*-nəftoʁo*, *-nəftʰəkə*, *-nəftʰχa*

3.1.1 Unbounded Posteriority

Unbounded Posteriority does not entail any indication of correlation between temporal boundaries of the successive situations *P* and *Q*.

This kind of relations is marked by the converb in Nighvng *-inəŋanke* = Nivkh *-nəənke* (of Type 5). The converbal marker contains the relational noun Nighvng *-anke* = Nivkh *-ənke* 'ahead, before' which rather straightforwardly defines the meaning of the whole construction, cf. (2)-(3). If the speaker wants to emphasise that the situation *Q* has been fully completed before the situation *P* begins, s/he can use the completive suffix *-ʁar-*, as in the finite verb *i-ɲ-ʁar-d-ɣun* 'have eaten' in (2). Alternatively, the situation *Q* can be presented as an aspectually neutral process, as *ŋəŋ-ɟ* 'look for' in (3).

(2) *qʰo-jnəŋanke (P)* *eʁlŋ-gun* *i-ɲ-ʁar-d-ɣun (Q).*
sleep-CVB_UBPOST child-PL 3SG-eat-COMPL-IND-PL
'The children have eaten before sleeping.' [Nighvng]

(3) *utkuo:la* *pʰi* *vi-nəənke (P)* *ŋajqnonq+ŋəŋ-ɟ (Q).*
boy REFL go-CVB_UBPOST puppy+look_for-IND
'Before going (away), the boy looked for the puppy.' (Nedjalkov, Otaina 1987, 310) [Nivkh]

3.1.2 Bounded Posteriority

In case of Bounded Posteriority, the final temporal boundary of the situation *Q* is defined by the initial temporal boundary of the situation *P*, so that the situation *Q* ends with the beginning of the situation *P*.

The marker of the corresponding converb (of Type 4) Nighvng *-inəftoʁo* = Nivkh *-nəftoʁo* / *-nəftʰəkə* / *-nəftʰχa* comprises different variants of the terminative case marker, which in this context specifies a kind of temporal destination (= situation *P*). In both following examples (4)-(5), the situation *Q* is seen as a process ended with the onset of the situation *P*.

(4) *ɲi* *cʰi* *pʰr̥ə-jnəftoʁo* *(P)* *cʰ-ŋarma-j-d=ra (Q).*
1SG 2SG come-CVB_BPOST 2SG-wait-FUT-IND=FOC
'I shall wait for you till you come.' [Nighvng]

(5) *o:la-gu* *ŋəw-nəftoʁo (P)* *kʰlə-x* *ler-ɟ (Q).*
child-PL be_dark-CVB_BPOST outside-ABL play-IND
'Children played outside till (it became) dark.' (Nedjalkov, Otaina 1987, 310) [Nivkh]

3.2 Simultaneity

Temporal Simultaneity presupposes that the dependent situation *P* takes place (at least partly) at the same time as the independent situation *Q*. The general definition of this temporal relation is '*P* (takes place) WHEN *Q*'.

Four types of Simultaneity can be differentiated in the Amuric languages: Unbounded Simultaneity (3.2.1), Left-bounded Simultaneity (3.2.2), Right-bounded Simultaneity (3.2.3), and Bounded Simultaneity (3.2.4). Various markers of Simultaneity are listed in Table 12.

Table 12 Markers of Simultaneity in the Amuric languages

Simultaneity	*P*	*Q*	**Nighvng**	**Nivkh**
Unbounded			*-vul*	–
	[+durative, –completed]		*-ŋə*	*-ŋan*
	[+processive, –completed]		*-ivo*	*-ivo*
	[+durative, –completed]	[+durative]	*-fke*	*-ke*
	[–durative]		*-ŋərŋux*	–
	[+iterative]	[+iterative]	*-ŋərŋara*	–
Left-bounded			*-vuɣe*	*-fke*, *-ge*
Right-bounded			*Qavr-data*	*-Toχ qʰaw-ke*
Bounded	[+durative]		*-data*	*-datar*: *-datat,-durŋur*: *-durŋut,-tʰa:rux*
	[–witnessed]		*- tʰajʁosk,-tʰajʁor̥k*	*-tʰa:sk*
	[+future]	[+future]	*-kro*	–

3.2.1 Unbounded Simultaneity

Unbounded Simultaneity suggests that the dependent situation *P* temporarily overlaps with the independent situation *Q*, but there is no indication of the correlation between temporal boundaries of *P* and *Q*. The Amuric languages have several converbs which mark this type of temporal relations between different types of situations.

The Nighvng converb in *-vul* (of Type 1, not attested in Nivkh) has the most neutral temporal meaning of Simultaneity and is used in constructions, that do not pose any limitations on the type of situations *P* or *Q*, cf. (6):

(6) *ɲi* *cʰχa+iv-vul (P)* *mu+ɣe-d (Q).*
1SG money+have-CVB_UBSIM boat+take-IND
'I bought a boat, when I had money.' [Nighvng]

The converb with the suffix Nighvng *-ŋə* = Nivkh *-ŋan* (of Type 1) conveys Simultaneity only when *P* refers to durative situations. If *P* is a completed situation or a punctual event, this converb indicates Unbounded Anteriority (3.3.1). The situation *Q* can be of any type and the whole construction is neutral with respect to quantitative aspectuality, cf. the durative state *pʰosq-nt* 'was sad' in (7), and the iterative event *pʰr̥ə-r̥a-ɟ* 'comes (repeatedly)' in (8). In addition to the temporal relation, this converb often marks a causal connection between dependent and independent situations,[7] see (7), which can be alternatively translated as 'Because the child was sick, his mother was sad'.

(7) *eʁlŋ* *qo-ŋa (P)* *j-əmk* *pʰosq-nt (Q).*
child be_sick-CVB_UBSIM 3SG-mother be_sad-IND
'When the child was sick, his mother was sad.' [Nighvng]

(8) *ŋarla:+ləɣi* *cilvət-ŋan (P)* *phr̥ə-r̥a-ɟ (Q).*
be_fat+salmon be_autumn-CVB_UBSIM come-ITER.3SG-IND
'The fattest salmon comes (repeatedly) in autumn.' (Panfilov 1962, 13) [Nivkh]

The converb in Nighvng/Nivkh *-ivo* (of Type 1) is employed only when the situation *P* refers to a process that is not surprising in view of the fact that the related suffix *-ivu-* marks a progressive aspect. Thus, the situation *P* referred to by the converb *pil-ivo* in (10) can be interpreted only as a process, not a state. The situation *Q* can be of any type. In (9) *cʰuxcʰux-tʰa-d-χun* 'made a sacrifice (repeatedly)' represents an iterative event, whereas in (10) *um-ɟ* is either a state 'is angry' or the achievement of a state 'becomes angry'.

7 Note that both Amuric languages have specialised converbs for expressing causal relations.

(9) *ɲin* *cʰawvlat-f+lazi-t* *vi-jvo (P)*
1PL.EXCL lift-NMLS+go_past-CVB_NAR.1PL go-CVB_UBSIM
cʰuxcʰux-tʰa-d-ɣun (Q).
make_sacrifice-ITER.3PL-IND-PL
'Going past the place, where [the bear] lifted [a man], we made a sacrifice [every time].' [Nighvng]

(10) *ŋajk* *pil-ivo (P)* *um-ɟ (Q).*
puppy be_big-CVB_UBSIM be_angry-IND
'Growing, the puppy becomes angry.' [Nivkh]

The converb with the suffix Nighvng *-fke* = Nivkh *-ke* (of Type 3) indicates Simultaneity only when both *P* and *Q* are associated with durative situations (processes or states). In general, the durativeness is the most essential semantic feature of this converb, which is often emphasised by lengthening of the final vowel of the suffix, cf. Nighvng *vi-fke:* = Nivkh *vi-ke:* 'when going (for a long time)'. The aspectual restriction is illustrated by (11), where both *uɣmu-fke* 'are fighting' (=*P*) and *kʰə-jvu-d-ɣun* (=*Q*) 'are winning' refer to processes, and (12), where *mu-jnə-ke* 'is going to die' (=*P*) is a process and *kʰe-li:-ɟ* 'is very thin' (=*Q*) is a state. If *Q* is a non-durative event, this converb marks Contact Anteriority with the additional meaning of interruption (3.3.2.1).

(11) *mi̥rn+ŋafq-ɣun* *uɣmu-fke (P)* *kʰə-jvu-d-ɣun (Q).*
1PL.INCL+friend-PL fight-CVB_UBSIM win-PROGR-IND-PL
'When our friends are fighting, (they) are winning.' [Nighvng]

(12) *if* *mu-jnə-ke (P)* *kʰe-li:-ɟ (Q).*
3SG die-DES-CVB_UBSIM be_thin-QUAL-IND
'Because he is ill (lit. is going to die), he is very thin.' (Otaina 1978, 66) [Nivkh]

Only Nighvng has a converb in *-ŋərŋux* (of Type 6, not attested in Nivkh), which is used when the situation *P* is not durative and represents a punctual event. The converb has a rather transparent meaning 'at the time', which results from the meaning of its components: the noun *ərŋ* 'time' and the ablative suffix *-ux*, which specifies spatial/temporal locations. It is possible that this verb form arose as a calque from the corresponding Russian phrase. In the constructions with the given converb, the situation *Q* often also constitutes a punctual event, cf. *pʰlavla-d* 'flashed' in (13), but other types of situations are also possible, cf. (14), where *Q* is a durative state *huɽ̥ke-ʁar-t hunv-nd*[8] 'was sad'.

8 Formally, this is a complex analytical resultative-continuative verb form.

(13) *ɲi* *pʰaχ + cosq-ŋərŋux (P)* *tʰlə-wx* *pʰlavla-d (Q).*
1SG window + break-CVB_UBSIM sky-ABL flash-IND
'When I broke the window, there flashed in the sky.' [Nighvng]

(14) *nanx* *j-uɣ-ŋərŋux (P)* *ɲi* *huɽ̥ke-ʁar-t*
sister 3SG-come_in-CVB_UBSIM 1SG be_sad-COMPL-CVB_NAR.1SG
hunv-nd (Q).
be-IND
'When the older sister came in, I was sad.' [Nighvng]

Finally, in Nivghng there is a converb in *-ŋərŋara* (of Type 7, not attested in Nivkh), which is used only in the iterative context. This is in line with the fact that the converbal marker comprises the iterative clitic *=ŋara*. In the constructions with this converb, the finite verb always comprises the iterative suffix cf. (15):

(15) *jaŋ* *pʰɽ̥ə-ŋərŋara (P)* *hud+ɽ̥o-ɽ̥*
3SG come-CVB_UBSIM that_one+carry-CVB_NAR.3SG
pʰɽ̥ə-ɽ̥a-d[9] *(Q).*
come-ITER.3SG-IND
'When he comes, (he always) brings that thing.' [Nighvng]

3.2.2 Left-Bounded Simultaneity

Left-bounded Simultaneity indicates that the dependent situation *P* temporarily overlaps with the independent situation *Q*, so that the initial (= left on the time scale) boundary of *P* sets the initial (= left on the time scale) boundary of *Q*.

In Nighvng, this subtype of Simultaneity is marked with the converb in *-vuɣe*, whereas in Nivkh it is rendered by the converbs in *-fke*[10] and *-ge* (all of Type 3). The difference between the Nivkh markers, which are derived from different nominalised stems, seems to be dialectal. All these converbs comprise the perlative case suffix with the meaning of spatial/temporal starting point, which defines the meaning of the whole construction. The situation *P* can be a durative state or a process, as *qʰor-vuɣe* 'since (became) rich' in (16), which can be interpreted as 'became rich and continues to be rich'. The analogous constructions in Nivkh are given in (17)-(18).

9 *ɽ̥o-ɽ̥ pʰɽ̥ə-ɽ̥a-d* can be analysed as a single 'serial' verb form.

10 Note the difference in the meanings of Nighvng converb in *-fke* (3.2.1) and Nivkh converb in *-fke*.

(16) *jaŋ* *qʰor-vuɣe (P)* *pʰ-maʁo~maʁo-d (Q).*
3SG be_rich-CVB_LBSIM REFL-like-IND
'Ever since he (became) rich, (he) is arrogant.' [Nighvng]

(17) *if* *pil-fke (P)* *tukr-toχ* *pʰrə-jsu-ɟ (Q).*
3SG be_big-CVB_LBSIM here-DAT come-NEG_USIT-IND
'Ever since he (became) an adult, (he) does not come here.' (Otaina 1978, 91) [Nivkh]

(18) *tom* *χa-ge (P)* *ɲi* *i-ɲ-jiki-ɟ (Q).*
fat be_bitter-CVB_LBSIM 1SG 3SG-eat-cannot-IND
'Since the fat has become bitter, I cannot eat it.' [Nivkh]

However, *P* can also refer to punctual or completed events, in which case the whole situation *P* fixes the initial boundary of *Q*, cf. (19)-(20). This subtype of Left-bounded Simultaneity can be alternatively analysed as Contact Anteriority (3.3.2.1).

(19) *mam* *mu-vuɣe (P)* *əcx* *caj*
old_woman die-CVB_LBSIM old_man again
mam+ɣe-gavr-d (Q).
old_woman+take-NEG-IND
'Since (his) wife died, an old man didn't marry again.' [Nighvng]

(20) *pʰrə-fke (P)* *tutʁa* *cʰoŋəŋ-ɟ (Q).*
come-CVB_LBSIM until_now fish-IND
'He has been still fishing since he came.' (Nedjalkov, Otaina 1987, 309) [Nivkh]

3.2.3 Right-Bounded Simultaneity

Right-Bounded Simultaneity suggests that the dependent situation *P* temporarily overlaps with the independent situation *Q*, so that the final (= right on the time scale) boundary of *P* sets the final (= right on the time scale) boundary of *Q*. The dependent situation *P* always represents a durative state or a process.

As in many other languages, both in Nighvng and Nivkh this type of temporal relations is marked by a converb with a negative marker (of Type 8), cf. English 'until'. In such constructions the situation *P* is viewed as 'negative' with respect to some event, which fixes the final boundary of *Q*. Interestingly, in Nighvng and Nivkh there is a difference both in marking of negation and in the choice of the converbs that are involved in expressing Right-bounded Simultaneity.

In Nighvng, this converb represents the negative form of the converb in *-data* with the basic meaning of Bounded Simultaneity (3.2.4), cf. (21).

(21) *kʰeŋ* *mar-ɢavr-data (P)* *ɲ-ətk* *qʰo-d (Q).*
sun rise-NEG-CVB_BSIM 1SG-father sleep-IND
'My father slept until the sun rose.' [Nighvng]

In Nivkh, the corresponding converb is built on the negative form of the converb in *-ke* which is used for marking the temporal relations of Contact Anteriority (3.3), cf. (22)

(22) *cʰi* *napa* *pʰrə-doχ* *qʰaw-ke* *ɲəŋ* *tujn*
2SG yet come-DAT NEG-CVB_CANT 1PL.EXCL here
hum-t (Q) *kʰrəw-ɟ=ra.*
be-CVB_NAR.1PL rest-IND=FOC
'We rested here until you came.' (Nedjalkov, Otaina 1987, 311) [Nivkh]

3.2.4 Bounded Simultaneity

Bounded Simultaneity signals that the dependent situation *P* sets both initial and final boundaries for the independent situation *Q*. The basic meaning of the construction presupposes that the dependent situation *P* is always durative. There are several converbs, rendering this temporal meaning.

The most neutral converb is marked with the suffix *-data* in Nighvng and one of the compositional markers *-datar*: *-datat* or *-durŋur*: *durŋut* in Nivkh. All markers emphasise the durativeness of the described situation, cf. *qʰo-data* 'while (you) were sleeping' in (23) and *vi-datar / vi-durŋur* 'while going' in (24). The resulting converbs (of Types 1 and 2) bring in the meaning of temporal background, against which the independent situation *Q* takes place. The latter can be of any type.

(23) *cʰi* *napə* *qʰo-data (P)* *ɲi* *cʰ-zaqo + ɲr̥ə-d (Q).*
2SG still sleep-CVB_BSIM 1SG 2SG-knife + see-IND
'While you were sleeping, I found your knife.' [Nighvng]

(24) *kʰeq* *vi-datar / vi-durŋur (P)* *mu-ɟ (Q).*
fox go-CVB_BSIM.3SG die-IND
'The fox [fell] dead while going.' (Nedjalkov, Otaina 2013, 331) [Nivkh]

The Nivkh converb in *-tʰa:rux* (of Type 6, not attested in Nighvng), is basically used in the same context, cf. (25). The temporal meaning it conveys is based on the meanings of its components, i.e. the relational noun *tʰa:r* 'interval, period' and the ablative suffix *-ux* which indicates spatial/temporal locations.

(25)	*pʰ-ŋafq-xu*	*qʰo-tʰa:rux / qʰo-tʰa:sk* (*P*)	*if*
	REFL-friend-PL	sleep-CVB_BSIM	3SG
	kʰe+lu-r	*tʰvi-ɟ* (*Q*).	
	net+knit-CVB_NAR.3SG	stop-IND	
	'While his friends were sleeping, he finished knitting the net.' (Nedjalkov, Otaina 1987, 309) [Nivkh]		

If the situation *P* is not witnessed by the participant(s) of the situation *Q*, the converb in Nighvng *tʰajʁosk* / *-tʰajʁor̥k* = Nivkh *-tʰa:sk* (of Type 1) can be used, cf. (25)-(26). The meaning of the converb is determined by the underlying verb *tʰajʁo-* 'not know', to which *-tʰa:sk* possibly relates too.

(26)	*azməcɲiɣvŋ*	*ŋa+ŋanɣ-tʰajʁor̥k* (*P*)	*tur̥+he-ŋ-ɢavr-ve* (*Q*).
	male	seal+look_for-CVB_BSIM	meat+cook-NMLS-NEG-IMP.2PL
	'While men are hunting the seals, do not cook the meat!' [Nighvng]		

The Nighvng converb in *-kro* (of Type 1, not attested in Nivkh) is used only when both situations *P* and *Q* take place in the future. In Nighvng, the absolute future tense is rendered by the suffix *-i-* ~ *-j-*, which is attached to the finite verb, cf. *ta-j-d=ra* 'will drink' in (27).

(27)	*cʰi*	*napə*	*kʰəmlə-kro* (*P*)	*ɲi*	*cʰaχ+ta-j-d=ra* (*Q*).
	2SG	still	think-CVB_BSIM	1SG	water+drink-FUT-IND=FOC
	'While you are thinking, I will drink water.'				

3.3 Anteriority

Temporal Anteriority entails that the dependent situation *P* temporally precedes the independent situation *Q*, so that '*P* (takes place) BEFORE *Q*' = '*Q* (takes place) AFTER *P*'.

Similarly to Posteriority (3.1), two basic types of Anteriority can be distinguished in the Amuric languages: Unbounded Anteriority (3.3.1) and Bounded Anteriority (3.3.2). The markers of various types of Anteriority are listed in Table 13.

Table 13 Markers of Anteriority in the Amuric languages

Anteriority		*P*	*Q*	**Nighvng**	**Nivkh**
Unbounded		[+completed]		*-ŋə*	*-ŋan*
Bounded	Contact	[+durative, –completed]	[–durative]	*-fke*	*-ke*
	Proximal	[+completed]		*-ba*	*-ba*
	Close	[+completed]		*-ɣra*	–
	Distal	[+completed]		*roɻ : tot: non*	*ror : tot*

3.3.1 Unbounded Anteriority

In case of Unbounded Anteriority, there is no indication of the correlation between temporal boundaries of *P* and *Q*, but it is implied that the situation *P* had been completed before the situation *Q* started.

This type of relations is marked by the converb in Nighvng *-ŋə* = Nivkh *-ŋan* (of Type 1), cf. (28)-(29). If *P* refers to a durative uncompleted situation, the same converb marks Unbounded Simultaneity (3.2.1).

(28) *kʰeŋ* *mar-ŋa* (*P*) *ɲin* *vi-d-ɣun* (*Q*).
sun come_up-CVB_UBANT 1PL.EXCL go-IND-PL
'We left, after the sun came up.' [Nighvng]

(29) *ɲi* *təf-toχ* *təvʁa-ŋan* (*P*) *aŋ=hakisk* *ɢavr-ɣəɻ-c* (*Q*).
1SG house-DAT come_in-CVB_UBANT who=EMPH NEG-COMPL-IND
'When I came into the house, there was nobody (there).' [Nivkh]

3.3.2 Bounded Anteriority

Bounded Anteriority implies that the initial temporal boundary of the situation *Q* is defined by the final temporal boundary of the situation *P*, so that the situation *Q* starts with the ending of the situation *P*.

This type of temporal relations can be divided into two subtypes: Contact Anteriority (3.3.2.1) and Distant Anteriority (3.3.2.2).

3.3.2.1 Contact Anteriority

In case of Contact Anteriority, there is no temporal interval between the final boundary of the situation *P* and the initial boundary of the situation *Q*.

In the Amuric languages, this correlation of situations is attested, when the durative situation *P* is uncompleted and interrupted by the punctual situation *Q*. This type of relations is marked by the converb with the suffix Nighvng *-fke* = Nivkh *-ke*, cf. (30)-(31). If the situation *Q* is durative, the same converb expresses Unbounded Simultaneity (3.2.2).

(30) *ɲi* *ɽ̥ə-roχ* *vi-jvu-fke* (*P*) *qar-d* (*Q*).
1SG door-DAT go-PROGR-CVB_CANT stop-IND
'Going to the door, I stopped.' [Nighvng]

(31) *oɣla* *qan+t^{h}u-ke* (*P*) *pol-ɟ* (*Q*).
child dog+chase-CVB_CANT fall-IND
'The child fell down chasing the dog.' [Nivkh]

3.3.2.2 Distant Anteriority

Distant Anteriority suggests that there is a temporal interval between the final boundary of the situation *P* and the initial boundary of the situation *Q*. The choice of the corresponding converb depends on the length of the interval between *P* and *Q*.

A minimal temporal interval between *P* and *Q* (= Proximal Anteriority) is marked in both Amuric languages by the converb in *-ba* (of Type 1).

(32) *nana* *jaŋ* *j-uɣ-ba* (*P*) *ŋaɣŋaɣ-ja* (*Q*).
just 3SG 3SG-come-CVB_PRANT scold-IMP.2SG
'As soon as he comes, scold him!' [Nighvng]

(33) *oz-ba* (*P*) *p^{h}u-r* *vi-ɟ* (*Q*).
get_up-CVB_PRANT go_out-CVB_NAR.3SG go-IND
'As soon as (he) got up, (he) went out.' (Nedjalkov, Otaina 1978, 90) [Nivkh]

The Nighvng converb in *-ɣra* (of Type 1, not attested in Nivkh) expresses a short temporal interval between *P* and *Q* (= Close Anteriority), cf. (34).

(34) *ɲin* *vi-ɣra* (*P*) *oɽ̥korux* *vo* *u-d* (*Q*).
1PL.EXCL go-CVB_CLANT soon settlement burn-IND
'As soon as we left, the village burned down.' [Nighvng]

The longer temporal interval between the situations *P* and *Q* (= Distal Anteriority) is expressed in the Amuric languages by the same converb (of Type 1), which in Nighvng has three suffixal variants, *roṛ* : *tot*: *non*, cf. (35), but in Nivkh only two suffixal variants, *ror*: *tot*, cf. (36). The example (35) comprises two converbs with the same suffix, which describe subsequent events: *maṛk-tot* 'after pouring' and *laz-tot* 'after mixing'. The example (36) contains two coordinated clauses, each of which comprises the converb rendering Distal Anteriority.

(35) *seta* *kurusk+maṛk-tot* (*P*) *luvṛ-kis*
sugar mug+pour-CVB_DISANT.1SG spoon-INSTR
laz-tot (*P=Q*) *ra-d* (*Q*).
mix-CVB_DISANT.1SG drink-IND
'After pouring sugar into the mug (and) after mixing (it) with a spoon, (I) drink (tea).' [Nighvng]

(36) *hot* *q^{h}or-tot* (*P*) *c^{h}ola-ta* (*Q*)
so be_rich-CVB_DISANT.3PL be_poor-COORD.3PL
c^{h}ola-tot *q^{h}or-ta* (*Q*)…
be_poor-CVB_DISANT.3PL be_rich- COORD.3PL
'So, after (becoming) rich (they) became poor, after (becoming) poor, (they) became rich.' (Otaina 1978, 101) [Nivkh]

4 Conclusion

As has been shown in the article, Amuric temporal converbs represent a heterogeneous group both from structural and semantic perspectives. Most of temporal converbs are obviously of a recent origin and some of them clearly differentiate Nighvng and Nivkh. A comparison with the neighbouring languages of Altaic typology demonstrates that the Amuric system follows the areal patterns of converbal formation but is much more diversified.

The description of temporal semantics, which was put forward in the study, includes consideration of interacting parameters characterising both of the two compared situations *P* and *Q*. As has been shown, it is not always possible to describe the relations between these situations in pure temporal terms, which means that the proposed classification of temporal relations should be seen only as a skeleton serving as a general framework of the analysis.

Table 14 summarises and compares the meanings of temporal converbs and their main distinctive characteristics in Nighvng and Nivkh.

Table 14 The semantics of temporal converbs in the Amuric languages

Nighvng	Nivkh	Temporal relation
-inəŋanke	*-nəənke*	Unbounded Posteriority [+completed *Q*]
-ftoʁo	*-ftoʁo*	Bounded Posteriority [+completed *Q*]
-vul	–	Unbounded Simultaneity
-ŋə	*-ŋan*	Unbounded Simultaneity [–completed *P*]
		Unbounded Anteriority [+completed *P*]
-ivo	*-ivo*	Unbounded Simultaneity [+processive P]
-fke	*-ke*	Unbounded Simultaneity [–completed *P*, +durative *Q*]
		Bounded Contact Anteriority [–completed *P*, –durative *Q*]
-ŋərŋara	–	Unbounded Simultaneity [+iterative]
-vuɣe	*-fke*	Left-bounded Simultaneity
	-ge	
-data	*-datar:* *-datat*	Bounded Simultaneity [+durative *P*]
	-durŋur: *durŋut* *tʰa:rux*	
-tʰajʁosk, *-tʰajʁork̥*	*tʰa:sk*	Bounded Simultaneity [+durative *P*, –witnessed *P*]
-kro	–	Bounded Simultaneity [+durative *P*, +future]
-ŋərŋux	–	Bounded Simultaneity [–durative *P*]
-ba	*-ba*	Bounded Distal Proximal Anteriority [+completed *P*]
-ɣra	–	Bounded Distal Close Anteriority [+completed *P*]
-roɾ̥: -tot : non	*-roɾ̥ : tot*	Bounded Distal Distant Anteriority [+completed *P*]

Abbreviations

1	first person
2	second person
3	third person
ABL	ablative
BPOST	Bounded Posteriority
BSIM	Bounded Simultaneity
CANT	Contact Anteriority
CLANT	Close Anteriority
COMPL	completive
COORD	coordinated
CVB	converb
DAT	dative
DES	desiderative
DISANT	Distant Anteriority
EMPH	emphatic
EXCL	exclusive
FOC	focus
FUT	future
IMP	imperative
INCL	inclusive
IND	indicative
INSTR	instrumental
ITER	iterative
LBSIM	Left-bounded Simultaneity
NAR	narrative
NEG	negative
NMLS	nominaliser
PL	plural
PRANT	Proximal Anteriority
PROGR	progressive
QUAL	qualitative
REFL	reflexive
SG	singular
TEMP	temporal
UBANT	Unbounded Anteriority
UBPOST	Unbounded Posteriority
UPSIM	Unbounded Simultaneity
USIT	usitative

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Competing Intraterminals in the South Siberian Turkic Language Chalkan

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Abstract This article describes mixed paradigms in the viewpoint (aspect) forms in Chalkan, a highly endangered northern Altay variety spoken in the Republic of Altay where the southern variety *Altay kiži* 'Altay people' serves as the basis for Standard Altay. It had affected all Chalkan language levels. Chalkan is switching to employing the auxiliary verb *tur-* 'stand', typical for Standard Altay, instead of *t'at-* 'lie' in the most recent intraterminal viewpoint forms going back to biverbal constructions. Both types are used in parallel at present, which leads to their merging and existence of allomorphs belonging to different harmonic types.

Keywords Standard Altay. Chalkan. Viewpoint forms. Auxiliary verbs. Mixed aspect-tense paradigms.

Summary 1 Introductory Remarks. The Position of the Chalkan Language Within South Siberian Turkic and Its Intraterminal Forms. – 2 Semantics and Functions of the Non-Finite Chalkan Intraterminal Forms. – 2.1 Intraterminal Form 1 {-y/A+tAn ~ -y/ḷ+tḷn < -y/A tur-ɣan}. – 2.2 Intraterminal Form 2 {-(p)trAn ~ -(p)tAn ~ -(p)tḷn}. – 2.3 Intraterminal Form 3 {-(p)ten}. – 2.4 Contamination and Overlapping of the Intraterminal Forms. – 3 Conclusion. Areal Patterns of Intraterminals.

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1 Introductory Remarks. The Position of the Chalkan Language Within South Siberian Turkic and Its Intraterminal Forms

Southern Siberia is a home of various Turkic idioms that build several dialect continua. Formation of a number of Turkic republics in this area (the Republics of Altay, Tyva and Khakassia) in the framework first of the Soviet Union and later of the Russian Federation, has led to the present situation where administrative borders, often drawn rather voluntarily, do not coincide with areas of distribution of certain linguistic varieties. Thus, six Turkic idioms, spoken in the Republic Altay, prove to belong to two different areal and genetic subgroups: Northern Altay (Chalkan, Tuba and Kumandy) and Southern Altay (Altay kiži, Teleut and Telengit) (Baskakov 1985; Schönig 1999).

In the Altay Republic, the dialect of the most numerous ethnic group *Altay kiži* 'Altay people' serves as the basis for Standard Altay, the language of republican administration and mass media. It is taught as a school subject the native language. However, the northern Altay varieties are linguistically much closer to Shor Turkic (with the varieties Mras and Kondoma) and Abakan Turkic (Standard Khakas and its dialects Kača, Sagay, Kyzyl, Beltir, Koybal, etc.), as well as to some other South Siberian Turkic idioms spoken in the valley of the river Ob (e.g. Chulym varieties).[1]

This article presents a case study of some intraterminal forms in Chalkan, a highly endangered Altay variety (Baskakov 1985; Baskakov, Seljutina 2010; Erdal et al. 2013). Until 2000, Chalkan was considered to be a dialect of the Altay language and was unwritten. In 2000, it received the official status of a separate language. This has fostered research on this language. In the beginning of this century, a documentation of Chalkan funded by the DFG has been carried out under the supervision of Ajana Ozonova and Marcel Erdal and the coordination of Irina Nevskaya. It resulted in an electronic Chalkan database and enabled publication of a row of scientific articles, monographs, books in Chalkan.[2] We have used the database and the publications for our research on Chalkan aspect forms.

Being under a strong influence of Standard Altay, Chalkan has many lexical, phonetic and grammatical contact induced features. Among the latter, we encounter mixed paradigms of practically all categories combining native Chalkan and Standard Altay forms used

1 They also share some areal features with further languages belonging to diverse language families united with them by their areal affiliation in the posited linguistic area delimited by the Ob and Yenissei river basins in Western Siberia (Fil'chenko et al. 2011; 2012; 2013; 2016).

2 Kokošnikova et al. 2003; JANS 2003a; 2003b, 2004a; 2004b; 2005; Erdal et al. 2013.

in parallel. This causes much confusion and serves as a source for false conclusions. In particular, it has been claimed that Chalkan intraterminal aspect forms do not follow the so-called vowel harmony.[3]

This article describes three competing Chalkan intraterminal aspect forms and undertakes an attempt to explain their emergence as a result of an interaction of macro- and micro-areal patterns of analytical aspect-tense formations in the south of Siberia and in Republic of Altay.

Numerous publications show that Turkic aspect systems are largely based on grammaticalisation of postverbial constructions. South Siberian Turkic languages demonstrate cyclic renewals of such grammaticalisation, which have been objects of special attention since the nineteenth century. The structural types of postverbial constructions grammaticalised as aspect operators can be used as classification criteria for defining areal patterns in South Siberian Turkic languages.[4] In their turn, South Siberian postverbial constructions grammaticalised as aspect operators go back to various actional types expressing habituality, durativity, dynamics, intensity, etc. In the process of grammaticalisation their actional content becomes blurred to different degrees (Nevskaya 2014).

The original analytic postverbial constructions might undergo phonetical reduction and get synthesised. These processes are still vital in Siberia. The contraction might be extreme in some idioms, especially in non-written and endangered ones. Not even literary norms hinder the contraction processes that are going on in different ways even in closely related and/or neighbouring varieties, or even in local subvarieties of the same language. Last, but not least, pitch accent patterns are different in actional postverbial constructions and aspect markers (Csató, Johanson, Karakoç 2019).

Such newly coined aspect forms constitute the core of the finite verb systems of West and South NE languages. They are often mistakenly defined as tense forms in grammatical descriptions. In grammars

3 Turkic languages belong to the agglutinative language type with right-branching agglutination. The lexical stem takes the outer left position. Their phonology is characterised by progressive vowel assimilation (so called vowel harmony) that distinguishes two main types – palatal and labial harmony. The palatal vowel harmony leads to the fact that one Turkic word normally contains only front vowels, or only back ones. The stem vowel determines the row of all the vowels in the suffixes. The labial harmony means that rounded vowels must be used after rounded vowels in the stems in some cases. Violations of vowel harmony are rare. They mostly occur in loans and in combined words that have stems belonging to different harmony classes. Progressive assimilation processes also affect consonants, mainly in affixes.

4 See Verbickij 1869; Dyrenkova 1940; 1941; Tybykova 1966; Birjukovič 1981; Kurpeško, Širobokova 1991; Čeremisina 1995; Šamina 1995; Šencova 1997; Tazranova 2005; Petrušova 2005; Fedina 2006; Lemskaya 2010a; 2010b; Borgojakova 2013; Ooržak 2014; Ozonova 2017; Ozonova, Fedina 2018; Urtegešev et al. 2021, and others.

we constantly encounter misleading designations of the type present-future tense, present-past-future tense, atemporal, and the like (e.g. see Čispijakov 1992 (79-90) where the author characterises the Shor form {-J̌Aŋ} as a past-future tense form also expressing a present tense reference). We should also mention that practically all South Siberian tense forms refer their action to more than one temporal zone.

In South Siberian Turkic, recursive cycles of renewal of focal intraterminality have occurred through the grammaticalisation of postverbial constructions with the auxiliary verbs meaning 'to stand', 'to lie' 'to sit' and 'to go' (Johanson et al. 2024). A few cycles of renewal of Siberian focal intraterminals can be distinguished (Nevskaya, Ozonova, Tazranova 2022). They partially overlap in time and space; some processes are still ongoing. Effects of contacts with other Turkic languages and with non-Turkic languages complicate the picture.

In South Siberian Turkic, all modern intraterminal forms, often defined as present tense forms, intraterminal and postterminal perception forms as well as a vast periphery of near future (prospective) forms are former postverbial actional constructions (Nevskaya 2014; Nevskaya, Ozonova, Tazranova 2022; Johanson et al. 2024). E.g. the Khakas and Shor present tense form {-(p)ča}goes back to the synthesised progressive *Aktionsart* form {-(p) čat-} (*čat-* 'to lie, to live') with the aorist marker {-(V)r}: *par-ča* < *par-ịp čad-ịr* 's/he goes, s/he is going'. Having started as a highly focal intraterminal form (Johanson 1971), it has lost its focality by now and is defined as actual or general present tense in traditional grammar descriptions. The rests of the actional form {-*ịp čat-*} are found only in some marginal markers, e.g. in the Shor progressive conditional form *par-ịp čat-sa* [go-CV lie-COND] 'if he is going' where *-ịp čat-* expresses the action 'going' as a process observed at the reference moment.

Postverbial constructions in Chalkan, preliminary described in Ozonova, Tazranova 2004 and Fedina 2005; 2006, have produced a number of intraterminal markers. The core of the intraterminal forms constitute two finite entities: {-y/At} and {-(p)t}. The first one is going back to the postverbial construction with the converb {-y/A} and the auxiliary verb *tur-*. Apparently, it is the oldest Chalkan intraterminal form synthesised from a postverbial construction (Johanson et al. 2024). Accordingly, it has a non-focal semantics with a drift towards a habitual entity with various prospective and modal functions (Nevskaya 2014). Chalkan has also developed a focal intraterminal marker {-(p)t} from the {-(Ị)p} converb form of lexical verbs and the auxiliary *d'at-* 'to lie' in the aorist form: *men par-t-ïm* < *par-ïp d'at-ar-ïm* [I go-PRES-1SG go-CONV lie-AOR-1SG] 'I am walking'. This form has a primarily present tense reference. It expresses both focal (actual) and non-focal (general) semantics.

Here, we concentrate on three further intraterminal forms that have a phonetic shape and functions that are very close to each other:

intraterminal 1 {-y/A+tAn ~ -y/Ị+tỊn}, intraterminal 2 {-(p)trAn ~ -(p)tAn ~ -(p)tỊn}, and intraterminal 3 {-(p)ten}.[5] They all have both finite and non-finite functions. Because of contractions on the morpheme borders, which are very typical for all South Siberian languages, and because the converb {-(Ị)p} is regularly omitted after stem ending in consonants and is present only after stems ending in vowels, some of their allomorphs coincide. This has led to the fact that all of them were considered to be one and the same form in Chalkan, and were not distinguished from each other by earlier researchers. Thus, N. Baskakov refers only to the form {-y/A+tAn} as the present-future participle[6] without mentioning the rest of them (Baskakov 1985, 44). Later, Natalia Fedina has described the Chalkan present-future participle and listed the allomorphs of all the three forms under discussion as its allomorphs, noting that not all of them obey the vowel harmony (Fedina 2010).

2 Semantics and Functions of the Non-Finite Chalkan Intraterminal Forms

The Chalkan intraterminal forms under study go back to actional postverbial constructions with auxiliary verbs *t'at-* and *tur-* with the original lexical meaning respectively 'to lie, to live' and 'to stand'. The lexical verbs are marked by the vowel converb form {-y/A} or the converb {-Ị)p}. All these forms have finite and non-finite functions.

2.1 Intraterminal Form 1 {-y/A+tAn ~ -y/Ị+tỊn < -y/A tur-ɣan}

This form is the result of a contraction of the postverbial construction *V-y/A tur-* with the postterminal (perfect) marker used also as a finite form of remote past {-GAn} in modern Chalkan. In the converb segment, the palatal glide is used after stems ending in a vowel; the vowel is used after stems ending in a consonant. The vowel of the converb and of the contracted auxiliary verb can be narrowed from *A* to *Ị*. This is a typical phonetic process in Chalkan. As a result, a two-fold vowel harmony with the vowel *a* in stems with back vowels and *e* in stems with front vowels gets replaced by a four-fold

5 In the Chalkan database and in the publication of selected texts from that database in Erdal et al. 2013 the respective forms have been defined and glossed as follows: intraterminal 1 {-y/A+tAn ~ -y/Ị+tỊn} as habitual (HAB), intraterminal 2 {-(p)trAn ~ -(p)tAn ~ -(p)tỊn} as imperfective I (IPFI), intraterminal 3 {-(p)ten} as imperfective II (IPFII). We made a first description of these forms in Nevskaya 2014.

6 In the turcological tradition in Russia, the term participle is used to define a class of verb forms that can have both finite and non-finite functions.

vowel harmony with the vowels symbolised by the capital character *Ị* with the following allomorphs: *i* (after front unrounded vowels), *ị̈* (after back unrounded vowels), *u* (after back rounded vowels), *ü* (after front rounded vowels). In addition, we also observe direct borrowings from Standard Altay with a four-fold harmony represented by the character *A* presupposing *o* and *ö* after a low rounded back vowel *o* or a low rounded front vowel *ö* respectively.

Earlier researchers of Chalkan have defined this form as the Present-Future tense form (Baskakov 1985; Fedina 2010), which contradicts the rule that a form expresses only one semantics of a category it represents; in this case, it is supposed to be the category of grammatical tense. Our analysis of examples in the database has shown that this form expresses intraterminality as its basic semantics, often referring to habitual actions. In the terminology of Johanson (1971), it could be defined as a non-focal intraterminal form, meaning that it expresses an action in its progress in a broader period of reference, but not obligatory focusing on the moment of reference, which is the semantics of focal intraterminal forms. It expresses habitual actions, permanent states, i.e. actions, not located on the time scale, thus being close to the Present Indefinite form in English. Since it denotes actions taking place always, in the past and in the present, we expect that they could also take place in the future, i.e. that they must/should happen. Such prospective projections are very typical for non-focal intraterminal forms in Turkic languages. This is what has also happened to the pan-Turkic form *-Ar* which is a non-focal intraterminal form in Turkish, but the only prospective (future) tense form in Chalkan.

The form {-y/A+tAn} can be used as the predicate of a relative clause with a head noun (1)-(2) or without it (3), as the predicate of object, subject, predicative or adjunct dependent clauses (see (4) for an object clause). It also functions as a finite form; cf. *al-ịtị̈n ton* [buy-HAB coat] 'the coat that someone (usually) buys/bought/should buy/can buy' – the predicate of a relative clause, and *ton al-ịtị̈n* [coat buy-HAB] 's/he (usually) buys/bought/should or can buy a coat' – the finite predicate; see also (7). The aspect semantics of habituality is the most dominant component in the semantics of this form, see (4)-(5). It is often used in riddles, proverbs and sayings; see (3).

In relative clauses, the semantic subject of the dependent action is expressed by nominals in the nominative or genitive case, and by the possessive marker on the head noun, see (1) and (2).

(1) *men* *al-ị̈tị̈n* *ton-ị̈m.*
I take-**INTRA1** coat-**POSS1SG**
'coat(s) that I buy/will/can/should buy.'

(2) *ulaŋ* *al-ï̈ṭï̈n* *ton-ï̈.*
he/she.gen take-**INTRA1** coat-**POSS3**
'coat(s) that s/he buys/will/can/should buy.'

(3) *Kir-eten-i* *pir* *šï̈ɣ-atan-ï̈* *üš'.*
enter-**INTRA1-POSS3** one get.out-**INTRAl-POSS3** three
'There is one entrance and three exits. Lit.: Where one can enter is one (place), where one can get out is three (places).' This is a riddle, the answer is 'Shirt'. (Erdal et al. 2013)

(4) Ḳurut sal-ɣan paliḳ-tï̈ ḳayde et t'i-yten-i
dry.**V** lay.**AUX-PF** fish-**ACC** how do eat-**INTRA1-POSS3**
ḳanduɣ *la* *kiži* *poy-u* *oŋno-pt'it.*
which **PTCL** person self-**POSS3** know-**PRS**
'How to eat dried fish every person himself knows.' (Erdal et al. 2013)

This form has habitual meaning also in the finite function, see (5).

(5) *Uvraḳ-tï̈n* *aš* *et* *t'i-yten.*
uvraḳ-**ABL** soup do eat-**INTRA1**
'One (always) makes soup with *uvrak* (*uvrak* is 'small fish', a mass noun) and eats (it).' (Erdal et al. 2013)

In questions or sentences containing negation, the form {-y/A+tAn} often expresses obligation or possibility, see (6) and (7).

(6) *Sel'sovet-te* *spravka* *t'oḳ*, *pir* *de* *t'er* *par-atan* *t'oḳ.*
village.administration-**LOC** certificate no, one **PTCL** place go-**INTRA1** no
'If there is no certificate from the village administration, there is no place where one can go to.' (JANS 2003, 142)

(7) *aɣï̈š ara-zï̈n-de* *pir-de* *pasude* *d'oḳ*,
tree between-**POSS3-LOC** one-**PTCL** cooking.tool no
ḳaydet *š'ay* *ḳaynï̈t* *iš'-iten*?
how tea cook drink-**INTRA1**
'In the forest (lit.: between the trees), there are no cooking utensils, how can one make tea?'

The form {-y/A+tAn ~ -y/I+tIn} is also often found on the lexical verb in analytical TAM forms with the existential verb *pol-* 'be' in a finite verb form as their second component (8). The semantics of non-achieved result in spite of many attempts has transformed in this sentence into the semantics of impossibility of the action.

(8) …oolaš-tị̈ tap-(p)i-yten pol-tị̈r.
boy-**ACC** find-**NEG-INTRA1** be-**IND**
'… he (devil) could not find the boy (The context: Although he was looking for the boy everywhere, he did not find him anywhere).' (From a fairy tale) (Erdal et al. 2013)

This intraterminal form is very frequent in Chalkan; it has a wide range of semantics and syntactic functions. Its predominant semantics is non-focal intraterminality that has developed in the direction of habituality (1)-(5), often with prospective and modal projections, especially well detectable in (6)-(8).

2.2 Intraterminal Form 2 {-(p)trAn ~ -(p)tAn ~ -(p)tḲn}

The intraterminal form {-(p)trAn ~ -(p)tAn ~ -(p)tḲn < -(I)p tur-ġan} also functions as a finite form and as a non-finite one with various non-finite functions similar to those of the intraterminal form 1. It omits the converb marker after stems ending in consonants; compare *de-pten* [say-INTRA2] and *ḳorïḲ-tan* [be.afraid-INTRA2] 'being afraid'. Its primary function is to denote an action that takes place at the reference moment, see (9).

(9) *Sen ḳïra kile-pten kiži ḳayt uurl-ij-ire*!
you field plough-**INTRA2** man how steal-send**.AUX-INF**.
'How can/will you, a person who (earns the living by) ploughing your field, steal?!' (JANS 2004a, 145)

As the predicate of a dependent clause, this form expresses an action which is simultaneous with the action of the main clause. See (10) for an example of a relative clause and (11) for a temporal construction.

(10) *Anị̈ ḳaynad-arɣa t'epsen-ten-i, pir uɣlan kiži pas t'et-tir.*
it.**ACC** cook-**INF** intend-**INTRA2-POSS3** one young man go reach-**IND**
'When they intended to cook it (a bird), one young man came.'

(11) *Kös ḳorị̈ḳ-tan ḳol ḳorị̈ḳ-pas.*
eye be.afraid-**INTRA2** hand be.afraid-**NEG.AOR**
'The eyes are afraid, but the hands are not afraid (and do the job).' (Erdal et al. 2013)

It can be used for actions, non-located on the time scale expressing actions that happen regularly; itis also often used in riddles, proverbs and sayings, see (12) and (13). In (13), a prospective projection of the action is feasible.

(12) *Ḳi̇ynaš-ḳan* *kiži* *ḳi̇r* *aš-tan.*
move-**PF** person mountain traverse-**INTRA2**
'A person who moves (forward) (always) traverses/will traverse mountains.' (Erdal et al. 2013)

The habitual semantics can develop into the semantics of traditions and rules that prescribe certain behaviour, thus, expressing obligation, see (13).

(13) Taš tašta-an t'er-de t'at-tan;
stone throw-**PF** place-**LOC** lie-**INTRA2**
ḳi̇s par-ɣan t'er-de t'at-tan.
girl go-**PF** place-**LOC** live-**INTRA2**
'A stone that was thrown lies on the place (where it fell to); a girl that got married (lit.: went) lives/should live at (her husband's) place.' (Erdal et al. 2013)

Together with the auxiliary verb *pol-* 'to be' in a finite form, it forms analytical tense forms, see (14).

(14) *Anarḭ̈* *ḳi̇mḭ̈sḳayaḳ* *de-pten* *pol-tḭ̈n.*
there ant name.**V-INTRA2** be-**INTRA2**
'There (in Ulagan), they call (this insect) an ant.' (JANS 2003, 150)

Along with *-(p)tAn ~ -(p)tIn*, our database has a few examples of the use of the fuller form of this intraterminal: *-(p)trAn*: *ište-ptran̈ ferma* 'the farm where one is working' from *ište-* 'work', see also (15). The converb affix *-p* is omitted after consonants, and *turġan* contracts to *-tran* and further to *-tan*.

(15) *Ol* *anḭ̈* *de-ze*, *anḭ̈* *Ḳi̇zḭ̈rvuḳ* *de-p*
that er.**ACC** say-**COND** er.**ACC** **N.PERS** say-**CV**
ay-tran-lar.
say-**INTRA2-PL**
'What concerns him, they call him Ḳi̇zḭ̈rvuḳ. (lit.: if to speak about him …)' (JANS 2003, 155)

Summing up, we can say that the predominant semantics of this form is a non-focal intraterminality (11)-(15) with prospective (12) or modal (13) projections, although focal intraterminality is also possible (10).

2.3 Intraterminal Form 3 {-(p)ten}

This form is used in finite and non-finite functions. It has two allomorphs: *-pten*, and *-ten*. They coincide with some allomorphs of the form {-(p)tAn ~ -(p)tIn}. In instances of stems with front vowels, it is not possible to say which form is used; e.g.: *kör-ten* could be [see-INTRA2] 's/he usually sees/usually saw' and [see-INTRA3] 's/he is seeing / sees // saw / was seeing'. However, in the case of stems with back vowels, we can definitely say which form is used because the intraterminal form *-(p)ten* is non-harmonic, e.g.: *t'aat-(t)en* [lie-IPF2] 's/he lies/is lying//lay/was lying'. The form can refer to actions with both actual and general present tense semantics, as well as past and prospective tense semantics. We see that the aspect semantics of intraterminal clearly dominates in this form.

The fact that this form is non-harmonic should be explained. We suppose that this form is a synthesised postverbial construction *V-(I)p t'at-ḳan* consisting of the {-(I)p} converb of the lexical verb and the auxiliary verb *t'at-* in the postterminal (perfect) form {-GAn}. Analogous forms are found in Shor, Chulym, and Khakas Turkic in South Siberia. They tend to synthesise, e.g.: Shor *parïp čat-ḳan* 'he was going/ went' > *par-čat-ḳan* > *par-čït-ḳan* > *parčïġan* > *par-čïn* > *par-čït*. The strongly palatalised consonant of the Chalkan verb *t'at-* could have influenced the vowel: *V-(p)t'at-ḳan* > *V-(p)t'et-ken* > *V-(p)t'en* > *V-(p)ten*.

This form can be used in all the functions that the intraterminal forms 1 and 2 described above have: as a finite predicate ((16) and (17)), as the predicate of a relative clause ((18) and (19)), as dependent predicate in a temporal clause (20), etc. There are also analytical aspect temporal forms with *pol-*: *oyno-pten pol-tïr* [play-INTRA3 be-IND] 'it turned out that he was playing'. However, we see considerable semantic differences between this form and the intraterminal forms 1 and 2. Its predominant semantics is focal intraterminality; see (16), (18), and (20). We observe non-focality in (17), which a proverb, and (19) referring to a way of living of the character. However, we do not find any prospective or modal projections of its semantics.

(16)	*Pay*	*kel-gen-kel-gen*,	*kör-ze*,	*pir*	*t'ap-t'aa*
	rich.person	come-**PF**-come-**PF**	see-**COND**	one	completely
	ŋay	*püdün sapok*	*t'ol-nïŋ*	*ḳïy-ïn-de*	*t'at-ten*.
	new	whole shoe	road-**GEN**	side-**POSS3-LOC**	lie-**INTRA3**

'The rich man went and went and saw: near the road a completely new undamaged shoe was lying.' (JANS 15, 147)

(17)	*külünči-niŋ*	*kül-i*	*tos-ten*.
	jealous-**GEN**	ash-**POSS.3**	disperse-**INTRA3**

'(Even) the ashes fly away from an envious person.' (Tazranova 2016, 162)

(18) *… ayt-t'it* *men* *ol* *pay-nï̈* *t'edin*
say-**PRS** I that rich-**ACC** lead
par-ten *puɣa-zï̈-nï̈* *uurla-p* *al-aŋ*!
go.**AUX-INTRA3** ox-**POSS3-ACC** steal-**CV** take.**AUX-IMP1SG**
'… he says, "Let me steal the ox that the rich person is leading!"' (JANS 2004a, 147)

(19) *Ol* *sï̈ɣan-ï̈-la* *azï̈ra-n-ten* *kiži* *pol-tï̈r.*
s/he stealth-**POSS3-INS** feed-**RFLX-INTRA3** man be-**IND**
'He was a person who lived by his stealth.' (JANS 2004a, 144)

(20) *An-dï̈n* *arï̈* *par-ten-de*, *paḳtan* *t'ooḳton-t'it …*
there-**ABL** further go-**INTRA3-LOC** boast say-**PRS**
'When he was going further, he said, boasting …' (JANS 2004a, 146)

2.4 Contamination and Overlapping of the Intraterminal Forms

All the three Chalkan intraterminal forms have originated from post-verbial constructions with existential and positional auxiliary verbs. In them, the lexical verbs get a converb form {-y/A} or {-(Ị)p}. Taking into account the phonological processes at morphemes' junctions, reduction*s* and contractions of the original analytical constructions, leaving out the converb marker *-(Ị)p* after stems ending in a consonant, one can state that these forms cannot be identified in texts for sure in all the cases. From the point of view of their material markers, especially at the level of their allomorphs, these forms fall together in the allomorphs *-tan* and *-ten*. Factors that could have led to this development are as follows: (1) their phonetic closeness, (2) their semantic closeness, (3) the dominance of the form {y/A+tAn} in the literary Altay variety which is imposed on other varieties spoken in the Republic Altay through mass media and school education and, consequently, its frequency. We can only identify the intraterminaly form 3 (from *-(Ị)p t'at-ḳan*) through its non-harmonic allomorphs *-pten* and *-ten*. In fact, even Chalkan language researchers mix up these three forms and consider all of them to be identical with the Standard Altay form {-y/A+tAn}.

Nevertheless, the semantics of these forms considerably differs although they all are intraterminal ones.

- The only form that expresses focal intraterminality as its core function is the intraterminal form 3 with the marker *-(p)ten*. In fact, if we have the allomorphs *-pten* and *-ten* after a verb stem with front vowels, as in (10), we cannot be sure whether it is intraterminal form 2 or 3 because their allomorphs are identical in this environment. However, if the respective form has

the semantics of focal intraterminality, we may suppose that this is probably an instance of the intraterminal form 3; cf. (10).

- The intraterminal forms 1 and 2 are opposed to the focal intraterminal form 3 as non-focal ones.
- The intraterminal form 1 has developed the semantics of habituality, with clear prospective and modal semantic shifts.
- The intraterminal form 2 is going the same way as the form 1, finally, they both have developed from postverbial constructions with the same auxiliary verb, but with different converb forms of the lexical verbs. The pattern with the converb –*y*/*A* is older and the intraterminal form 1 has gone the way to habituality, prospectivity and modality much farther than the intraterminal form 2.

Thus, these forms are not interchangeable in their core functions. However, some areas of their semantics overlap: they all can express non-focal intraterminality, which is especially clearly shown by their use in proverbs and sayings.

3 Conclusion. Areal Patterns of Intraterminals

During almost two hundred years of the written history of NE Turkic languages postverbial constructions have been the source for renewing focal intraterminal forms. In Khakas, Shor, Kumandy, and Chulym, the most grammaticalised and desemanticised auxiliary for various types of intraterminal aspect forms was the verb *d́at-* / *čat-* / *čịt-* / *t́ịt-* 'to lie', whereas in Tuvan and Tofan, this verb was on the last place to be grammaticalised. In Tuvan, and, until recently, in southern Altay, the leading role has been played by the auxiliary *tur-* 'to stand'.

The North Altay variety Chalkan is an intermediate case. It has a number of intraterminal forms, for instance {-y//-A + tAn ~ -y//-Ị + tỊn} < {-y//-A tur-ɣan} and {-(p)trAn} ~ {-(p)-tAn} ~ {-(p)-tỊn} < {-(Ị)p tur-ɣan} going back to constructions with 'to stand' along with the non-harmonical form {-(p)ten} going back to {-(Ị)p *t́at-ḳan*} based on the auxiliary verb *t́at-* 'to lie'. Compare a similar Shor development of the corresponding postverbial construction to a focal intraterminal form *Par-ịp čat-ḳan* 'X is / was going' > *Par-čat-ḳan* > *Par-čịt-ḳan* > *Par-čị-ġan* > **Par-čị-n* > *Par-čịt*. The Chalkan intraterminal forms combine both structural types, but tend to get influenced by the more frequent form {-y//-A + tAn}. Chalkan thus belongs to both isoglosses: the use of the auxiliary *t́at-* is determined by its genealogical closeness to Khakas and Shor, and the use of *tur-* 'to stand' is due to the influence of Standard Altay in the Republic of Altay.

North Altay varieties serve as a bridge between the Ob-Yenisei linguistic area and the South Altay idioms. This is a result of the

intensive influence of the Altay literary language, the superstratum language in the Republic of Altay. We are witnessing spreading of Altay literary norms in Chalkan on all language levels.[7] Even the Chalkan analytical aspect-tense formations are greatly influenced by Standard Altay forms, which leads to their contamination and rearrangement of the whole system of Chalkan functional verb forms (Nevskaya 2014). One of the results of this influence is that Chalkan has switched to employing the auxiliary verb *tur-* 'stand' instead of the original verb *t'at-* 'lie' for formation of intraterminal tense-aspect forms. Both types of formations exist in parallel at present, which leads to their merging and existence of allomorphs belonging to different harmonic types. Thus, Chalkan is getting assimilated by Standard Altay, the mixed tense-aspect paradigms being, probably, an intermediate stage of the Chalkan language decay. Combined with further sociolinguistic factors, e.g. the social and linguistic dominance of the Russian language, this contact situation has a devastating effect on the Chalkan vitality.

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(Grammaticalized Analytical Constructions with the Auxiliary Verb D'at- 'to Lie' (on the Material of the Altay Language). *Soxranenie I Razvitie Jazykov I Kul'tur Korennyx Narodov Sibiri. Materialy Iv. Meždunarodnoj Naučno-praktičeskoj Konferencii,abakan, Respublika Xakasija, 19–20 Maja 2016 Goda* (Preservation and development of languages and cultures of indigenous peoples of Siberia. Proceedings of the Fouth international science and practice conference, Abakan, Republic of Khakasia, May 19–20, 2016). Abakan: Khakas State University, 157-63.

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Time in East Asian Endangered Languages
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Time in Khitan

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Abstract Khitan was the language of the homonymous people who founded the Chinese Liao dynasty. It is a Para-Mongolic language, mainly attested by sources in Khitan Small Script and Khitan Large Script. Most verbal suffixes identified so far are inflectional suffixes marking finite predicate forms, participles, and converbs. The aspecto-temporal values of inflectional suffixes are underexplored. So far, only generic and tentative labels, like *past* and *perfective*, were given. In my paper, I will share some thoughts on methodology, and then focus on selected critical issues concerning tense in Khitan.

Keywords Khitan. Para-Mongolic. Verb. Tense. Aspect.

Summary 1 Methodological Remarks. – 2 Aspecto-temporality in Mongolic Languages. – 3 Khitan Inflectional Verbal Markers. – 4 Khitan Finite Predicate Markers. – 4.1 Simple Markers. – 4.2 Complex Markers. – 5 Further Issues.

1 Methodological Remarks

In this paper, I am going to address issues on aspecto-temporality in the Para-Mongolic language Khitan, on the base of Khitan Small Script texts.

The methodological questions emerging in this field of studies concern the terminology to use in treating KSS texts, and the theoretical framework to use in treating aspecto-temporal categories.

Basic KSS characters are called **graphs**, while characters composed of 1[1] to 8 graphs are called **blocks**. Romanisation of KSS follows Wu and

1 Single graphs can occur independently in texts. In this case they are counted as blocks.

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Janhunen (2010), and is quoted between angle brackets. In romanisation, full stops indicate the boundaries of graphs that compose a block. Colons connect separate single graphs that are to be read together as if they were one block. Examples from KSS texts include five lines:

- KSS original;
- Romanisation;
- Dotless romanisation: full stops and colons are removed, and hyphens are inserted in order to give a reference for the glosses;
- Glosses;
- Translation.

Nominal and verbal grammatical **suffixes**, or **markers**, are often recognised as belonging together in **series**. That is to say, series contain several variants that represent allomorphs of one morpheme. Allomorphs may depend on the vowel harmony of the verbal base, on gender, and on phonotactical phenomena occurring at morpheme boundaries. Series will be indicated by means of one of their members in italics, according to the following conventional rules:

- in case of vowel harmony contrast the representative member will be the posterior non-labial variant;
- in case of gender contrast the representative will be the feminine variant, in that feminine appears to be the functionally unmarked gender;
- in case of fortis/lenis onset contrast the representative will be the lenis onset variant;
- in case of series including only one member, this will be obviously the representative;
- in case of series including phonotactic variants beginning variously with graphs <l>, <al>, <il> or <ul>, the representative will be the <l> variant.

According to the aforementioned conventions the Khitan verbal inflectional series are:

- *ai*: <ai>, <y>, <ii>, <oi>, <ui>
- *al*: <al>
- *án*: <án>, <én>, <ón>, <ar>, <er>, <or>
- *b.ñ*: <b.ñ>, <b.ún>, <bun>
- *hu*: <hu>, <ho>, <g>
- *ji*: <ji>, <ci>
- *l.ñ*: <l.ñ>, <l.ún>, <al.ún>, <il.ún>
- *ñ*: <ñ>, <ún>
- *s.ii*: <s.ii>

The only clearly established derivational series is the causative-passive *l.ha* including <l.ha>, <al.ha>, <ul.ha>, <ha>, <l.ge>, <ul.ge> and <ge>.

Tense is a grammatical category of the verb that locates a situation in time.

Aspect is the interaction between viewpoint markers and the internal phase structure (IPS) of a situation. IPSs categories are defined by parameters such as transformativity [± t], dynamicity [± dyn], and duration [± mom].

Transformative IPSs have a crucial limit. Finitransformative IPSs have a crucial limit as their ending point, i.e. when attaining that boundary, a situation naturally ends bringing to a transformation in the state of things. Finitransformative IPSs are inherently dynamic and can be momentaneous or non-momentaneous. Non-momentaneous finitransformative IPSs have a salient cursus before the final transformation. Initiotransformative IPSs have a crucial limit as their beginning point, i.e. they begin with a transformation that is followed by a resulting state. Non-transformative IPSs do not have any crucial boundary, i.e. their limits (the beginning and the end) are arbitrary. They are inherently non-momentaneous, and they can be dynamic or static. Non-transformative dynamic IPSs need a constant input of energy in order to continue, while non-transformative static IPSs do not.

The definitions of IPSs and their parameters are based on Johanson (2000, 58-66).

Viewpoint categories are intraterminality [+INTRA], postterminality [+POST], and adterminality [+AD]. Intraterminality presents a situation as comprised between its limits. Postterminality presents a situation after the attainment of its relevant limit. Adterminality presents a situation at the attainment of its relevant limit (Johanson 2000, 29). When markers are described by means of a negative value it means that their meaning is neutral with respect to the parameter in question. Intraterminal and postterminal categories can contrast in focality. Focality is the concentration of psychological interest on the situation obtaining at the orientation point (O), "the core of *nunc*" (Johanson 2000, 85). Focality is scalar, and degrees of focality expressed by markers depend on language-internal contrasts and are language-specific. In the realms of intra- and postterminality there can be one or more focal items. Thus, there can be contrast between a focal and a non-focal item, or there can be degrees of focality, i.e. relatively high-focal, low-focal and non-focal items. High-focal intraterminals include items that under the traditional terminology are called progressives. Low-focal and non-focal intraterminals include items like Romance imperfects, general presents and habituals. High-focal postterminals include traditional statives and resultatives. Low-focal postterminals include traditional perfects. Non-focal postterminals include general pasts.

The definitions of viewpoint categories are based on Johanson (2000, 28-33).

2 Aspecto-Temporality in Mongolic Languages

In order to address research questions on Khitan aspecto-temporality, an overview of how these categories are expressed in Mongolic languages is in need. That is because Khitan and Mongolic lineages are – albeit it is not clear yet how closely – related, and as a consequence, we might expect to find in the Khitan verbal system features that are present in Mongolic verbal systems. This naturally does not exclude that features not found in Mongolic may be observed in Khitan.

Generally speaking, Mongolic languages have a main tense contrast between past and non-past.

As for aspect, it is common to find three focal degrees of intraterminality in non-past, and one intraterminal viewpoint in the past. On the postterminal side it is common to find two focal degrees both in non-past and past. One past neutral to intra- and postterminality is observed. Often besides this neutral past there are two evidentially marked forms expressing the opposition firsthand/non-firsthand information.

In this paper I left aside considerations about aspecto-temporality of participles and converbs, while focusing on finite predicates, these being cross-linguistically the forms where aspecto-temporal categories are most fully fledged.

What follow are tentative descriptions of Middle Mongol and Khalkha Mongolian aspecto-temporal categories of finite predicates under the framework of Johanson (2000, 28-39, 76-135). The base sources are Poppe (1955, 260-86), Rybatzki (2003, 73-8), Janhunen (2012, 156-79) and Brosig (2014, 13-17). Any shortcomings are of course mine and criticism is well accepted in order to improve these attempts where it is necessary.

In Middle Mongol, on the non-past side there is a non-focal intraterminal *-yU*,[2] a low focal intraterminal *-mU*,[3] and a high focal intraterminal *-n buyu*. Whereas *-yU* is used for general statements, *-mU* occupies an area between habituality and progressivity, while *-n buyu* is a specialised progressive. A complex structure parallel to *-n buyu*, formed by modal converb *-n* followed by copula *bü-* with a past suffix, expresses intraterminality in the past.

Low-focal postterminality is expressed by *-GsAn*[4] (COP-NPST) in non-past and *-GsAn* COP-PST in past. The element in brackets means that non-past copula may be omitted. High-focal postterminality is expressed by *-JU* COP-NPST or *-'A* (COP-NPST) in non-past, and *-JU* COP-PST

2 *-yU* has a functionally equal variant *-yi*.

3 *-mU* has functionally equal variants *-m*, *-mUi* and *-mi*.

4 Plural *-GsAd*.

or *-'A*[5] COP-PST in past. Past neutral to intra- and postterminality is represented by *-bA*.[6]

Evidential past markers are *-JU'U*[7] for non-firsthand information and *-lU'A*[8] for firsthand information. Specifically, the former is often used to report hearsay or inferred knowledge, while the latter is used for witnessed events or things about which the speaker is certain.

Khalkha Mongolian has three levels of focality in non-past intraterminals. Non-focal *-nA* expresses future tense when interacting with dynamic IPSs [+ dyn], while it refers to present when interacting with stative IPSs [– dyn]. Low focal *-dAg* expresses habitual situations and general statements. High focal *-J baina* is a progressive. There are two past intraterminals, i.e. non-focal *-dAg baisan* and focal *-J baisan*.

Low-focal postterminality is expressed by *-sAn baina* and *-sAn baisan* in non-past and past respectively, while high-focal postterminality is expressed by *-AAd baina/baisan* or *-sAAr baina/baisan*.

Past neutral to intra- and postterminality ends in *-sAn*. Evidential pasts descend directly from the MM forms, although they are less used. *-Jee* is used to report non-firsthand knowledge, while *-lAA* is used to emphasise one's certainty in a statement. In Khalkha, the latter's confirmative nature has developed implicational meanings such as propinquitivity ('to be about to V, soon I will V') and immediate past ('I have just V-ed'). When used in the last meaning, it is similar to a postterminal.

These two languages give us an example of diachronic development of Mongolic aspecto-temporal systems. The two systems are quite similar. The synthetic form *-yU* has been replaced by *-nA*, which emerged from the Classical Mongolian period on, originally in the form *-nAm*. This is the contraction of a formerly analytic marker whose structure is parallel to *-n bu-yu*, i.e. 'modal converb + COP-NPST': *-n a-mui*. After emerging as a high-focal intraterminal, it has progressively lost focality. New analytic markers are formed by means of the new copula *bai-*. While in MM it usually means 'to stand', in most modern Mongolic languages it has replaced MM copulas *a-* and *bü-*, that survive in just few fossilised forms. *-J bai-* is parallel to MM high-focal postterminal *-JU a-/bü-*, i.e. 'imperfective converb + COP', and has developed into a high-focal intraterminal. Low-focal intraterminality has been renewed by means of suffix *-dAg*, that in MM was a very rarely used action noun.

5 *-'A* has a functionally equal variant *-'Ai*.

6 *-bA* is masculine, and has a feminine counterpart *-bi*, and a variant neutral to gender agreement *-bAi*.

7 *-JU'U* is masculine, and has feminine counterparts *-Ji'i* and *-Ji'Ai* (f.), and variants neutral to gender agreement *-JU'Ui* and *-JA'Ai*.

8 *-lU'A* > *-lA'A* are masculine, and have a feminine counterpart *-li'i* (f.) and variants neutral to gender agreement *-lU'Ai* > *-lA'Ai*.

Low-focal postterminal *-sAn bai-* is parallel to MM low-focal postterminal construction *-GsAn a-/bü-*, whereas its form without copula has replaced neutral past *-bA*. High-focal postterminal *-' A* (+ COP) has become obsolete, Khalkha imperfective participle *-AA* being employed in finite use only on the copula or to form the negative neutral past. As mentioned above, the structure 'imperfective converb + COP' in Khalkha has shifted to intraterminality. As a consequence of these facts, new high-focal postterminals emerged in the form of perfective converb or abtemporal converb plus copula, i.e. *-AAd bai-* and *-sAAr bai-*.

In conclusion we can observe several shifts belonging to the common pattern of defocalisation of analytic high-focal markers, that are replaced by new analytic markers replicating the structure 'converb or participle + copula'. Analytic high-focals, along the process of defocalisation, may become synthetic markers.

There is a case of an analytic marker replicating the structure of a high-focal postterminal, but acquiring high-focal intraterminal meaning instead, i.e *-J bai-*. Probably *-dAg* action noun was directly grammaticalised into a low-focal intraterminal without passing through the high-focal stage. Whereas MM has only one past intraterminal, Khalkha has two: *-J baisan* for high-focal intraterminality and *-dAg baisan* for low-focal intraterminality.

3 Khitan Inflectional Verbal Markers

In this paragraph, I propose a brief overview of the system of Khitan inflectional verbal markers. The base sources are Kane 2009 (41, 53-4, 90, 94, 105-6, 110, 144-7, 149-58, 187, 201), Wu, Janhunen 2010 (68, 90-1, 99, 196), and Róna-Tas 2017 (149, 167).

Khitan inflectional series are classified according to syntactical categories as follows:

- Finite predicate series are *án*, *b.ñ*, *l.ñ* and *ñ*.
- Participial series are *án*, *b.ñ* and *hu*.
- Converbial series are *ai*, *al*, *ji* and *s.ii*.

Series *án* and *b.ñ* cover both finite and participial functions. Series *ñ* is relatively underexplored, and some occurrences suggest that it also may function as a participial marker. This possibility cannot be excluded for series *l.ñ* too. Participial suffixes are employed in adjectival use to determine nominal heads (relativised clauses), and in nominal use (content clauses). Participles in nominal use can take case suffixes just like nouns.[9]

9 E.g. <a.án.er>, a-**án-er**, be-**PTCP.F-INS** (Xiao Dilu 13-25); <a**.án.de.i**>, a-**án-dei, be-PTCP.F-ABL** (Xiangwen 28-40), WJ 196: "The block 为 a.án could, at least formally, be a

Possibly, some combinations of participial markers and case suffixes are analysable as quasi-converbs, i.e. converbs on their way to grammaticalisation.

4 Khitan Finite Predicate Markers

4.1 Simple Markers

Khitan, by the present state of the art, has four series of simple finite predicate markers: *án*, *b.ñ*, *l.ñ* and *ñ*.

Series *án* includes feminine gender markers <án>, <én> and <ón>, and masculine gender markers <ar>, <er> and <or>. Markers containing vowel /a/ are attached to verbal bases with posterior vocalism, those containing vowel /e/ to bases with anterior vocalism, and those containing /o/ to bases whose last vowel is /o/. Series *b.ñ* includes feminine marker <b.ñ>, masculine marker <b.ún> and marker <bun>. There are indications that the latter might be neutral with respect to gender, so that it might take both masculine and feminine subjects. Series *l.ñ* includes feminine marker <l.ñ> and masculine marker <l.ún>. Series *ñ* includes feminine marker <ñ> and masculine marker <ún>.

Below follow four examples, one for each series.

Series *án*: suffix <én_2>, allograph of <én>; anterior vocalism; feminine gender; feminine subject.

nominal form (participle) based on the copula-existential 为 a 'to be'". Interestingly, when taking case suffixes, participles are usually in the feminine form. Nevertheless, a comprehensive study of case-marked participles is needed in order to verify eventual exceptions to this 'rule'.

(1) 丞 兆村 母刊出 受 又 为夹芬

tai shï.en	b.hu.án	tau	GREAT	a.an.e
tai shï-en	bhuán	tau	GREAT	aane
grand.preceptor-GEN	child.PL	five.F	eldest.F	A.an.e

刂 为女 州余 丰村 今雨 杰 尔

ia deu.un	SMALL.qu	ai.en	s.in	ong:on
ia deu-un	SMALL-qu	ai-en	sin	ong-on
brothers-GEN	young-M	father-GEN	S.in	prince-GEN

曲芬村 劣 公及 丞 兆村 曲 今 及平杰与

go.er.en	tu n.u	tai shï.en	go:t	**u.ul.ge$_2$.én$_2$**
goer-en	tu nu	tai shï-en	go-t	u-ulge$_2$-én$_2$
house-GEN	Tu N.u	grand.preceptor-GEN	house-DAT	give-CAUS-PST.F

'The children of the Grand Preceptor were five. The eldest daughter was A.an.e. She **was given** to the house of Grand Preceptor Tu N.u of the house of Prince S.in of the Third Patriarchal Household.'

Xiao Dilu 24-1/19[10]

Series *b.ñ*: suffix <b.ún>; masculine gender; masculine subject.

(2) 丞 伞杏 戈岑 兆 丸平只火 仆凡

tai z.ï$_2$	sh.iau shï	mó.ul.û.ui	l.iúng
tai zï$_2$	shiau shï	móulû-ui	liúng
crown.prince	junior.preceptor	concurrently (?)	dragon

兆 必 戈兔 今孖 几亦 业及子母及

xu	ui°	sh.ang s.iang g.ün	p.o.ju.b.ún
xu	ui°	shang siang gün	poju-bún
tiger	guard	senior.general	become-PST.M

'The crown prince *taizi* 太子, junior preceptor *shaoshi* 少師, **was** concurrently **appointed** senior general of the dragon and tiger brigade 龍虎衛上将军.'

Xiao Zhonggong 20-42/53[11]

10 Cf. WJ 102 '[T]he Grand Preceptor had five children. [T]he eldest [child was] A.an.e. [S]he **was given** in marriage to the house of Grand Preceptor Tu N.u of the house of Prince S.in of the junior uncles'.

11 Translation from K 147.

Series *l.ñ*: suffix <l.ñ>; feminine gender; feminine subject.

(3) 父 令火 年令 汋村 丙 业及子屮伏

HEAVEN t.ud	ai.s	ji_3.en	iu	p.o.ju.l.ñ
HEAVEN tud	ai-s	ji_3en	iu	poju-lñ
Xianyong	year-PL	among	not.existing	become-PST.F

'She passed away during the Xianyong period.'
Xiangwen 14-22/27[12]

Series *ñ*: suffix <ñ>; feminine gender; inanimate subject.

(4) 未本 乃令 兎为夭 火 与伏

ci.ar	am.s	REGION.a.an	ui	eu.ñ
ciar	ams	REGIONa-an	ui	eu-ñ
past	border (?)	region	matter	not.exist-PST.F

'For a long time there weren't matters in the region.'
Langjun 2-1/5[13]

All the verbs in the preceding examples are translatable in English with a past simple. They report events happened before the moment when the scribe composed the text of the inscription. At the current state of the art, the only aspecto-temporal category that we can assign to finite predicate forms is past. Neither aspectual, nor modal, nor evidential differences between the forms have been identified. They all seem to be used for narrations of happened situations. Thus, with respect to modality, they all look like modally unmarked, i.e. indicative forms. Generally, in KSS inscriptions finite predicates report unproblematic historical facts without intraterminal perspective. The reported situations are distant events, so that postterminality may be excluded as well. For the current knowledge, Khitan finite predicates are definable as past forms neutral to intra- and postterminality, similarly to MM *-bA* and Khal. *-sAn*.

Tentatively, these synthetic finite predicate forms might be distinguished by evidential categories, similarly to what happens in MM and in Khalkha. As it was mentioned in § 2, in MM and Khalkha, three past markers differ with respect to evidential values. We have

12 Cf. WJ 169-70 "'[she] passed away during the years of HEAVEN t.ud'. [...] The sequence 父 令 HEAVEN t.ud [...] is known to correspond to the Liao reign title Xianyong 鹹雍 (1065-75)". The subject is mentioned before in the text: <t.ie.ên.e pu.is.ñ> (Xiangwen 13-30/31) Lady T.ie.ên.e. She was the first wife of the tomb owner Field Marshal L.ie.ên.ñ.

13 Cf. K 187; Langjun 2-4/5 in RT 149 'the matters [of the region] were neglected, did not exist'.

an evidentially unmarked morpheme (MM *-bA*, Khal. *-sAn*), and two contrasting marked morphemes, one indicating indirect evidentiality, i.e. reported and inferred knowledge, and the other one indicating direct evidentiality, i.e. witnessed knowledge (respectively MM *-JU'U*, Khal. *-Jee* and MM *-lU'A*, Khal. *-lAA*).

Given the shared presence of fixed segments /b/ and /l/, after which follow other segments that vary depending on gender agreement, one research question that emerges from these considerations is whether suffixes of series *b.ñ* and *l.ñ* descend from the same morphemes that yielded MM *-bA* and *-lU'A*.

The existence of verbal forms marked for non-past is another underexplored field. So far, three forms that are possibly marked for non-past may be identified.

(5) 受 丞伏 九用 弟 曲丞村 共九矣

tau	is.ñ	g.ing	jau	go.er.en	us.g.de
tau	is-ñ	ging	jau	goer-en	usg-de
five	nine	classic	hundred	house-GEN	letter-DAT

刂丞方为 才祭 丙夬平刂 丙今刂 乂关 冈今北

hu.as.al.a	ia.LUCK	y.au.ul.hu	mo.t.hu	x.i	307.s.ii
huasala	iaLUCK	yauulhu	mothu	xi	307sii
disaster	luck	?	?	is.said	?

'In the writings of the five classics, the nine classics and the hundred schools of thoughts it is said that disaster and good fortune [alternate?].'
Nu 35/36[14]

In KSS inscriptions, there are several instances of quotations from Chinese Classics and other Chinese works, that end with the word <x.i>. In example (5), the quotation begins with <us.g.de> 'in the writings'. A more common quotation model is "source-DAT <t.gu> quotation <x.i>". KSS quotations of Chinese sources have been surveyed in Ōtake (2015b). <x.i> must be a quotative verb meaning 'to say'. It does not display any of the well known past finite predicate suffixes, and it is quite plausible that the scribe reported to the reader a passage of a book by means of quotative verb in a present form, yielding a sentence like "this book says...".

Another verbal form used after quotations is <k.ii.g>, see example (6).

14 Cf. K 93 'In the writings of the five classics 五經 and the nine classics 九經, and the hundred schools of thoughts 百家, disaster and good fortune [alternate?]'.

(6) 兄金犬兴 劳夾谷与 曲令 仲

sh.em.qú.i	cu.úr.ge.én	go.t	ü
shem-qú-i	cúr-ge-én	go-t	ü
good-F-ACC	accumulate-CAUS-PTCP.F	house-DAT	?

丙文 业仕非 刄祭 叔北九

y.ie	p.mu.282	ia.LUCK	k.ii.g
yie	pmu282	iaLUCK	kii-g
?	?	luck	say-PTCP

'It is said that to families that have accumulated good deeds … luck.'
Xiao Zhonggong 4-29/36[15]

Compare example (6) with example (7).

(7) 父 本廾及扎 尤夾 丰 东 艾

HEAVEN ar.ó.o.ho	ud_3.úr	ai	SIX	MONTH
HEAVEN aróoho	ud_3úr	ai	SIX	MONTH
Qiantong	first	year	six	month

丁 包 夭 东 刄祭

TWENTY	THREE	DAY	121	ia.LUCK
TWENTY	THREE	DAY	121	iaLUCK
twenty	three	day	eternal	luck

刘及用 丞生坐 力冬业为出 兮 叔北穴犸

hu.o.304	qa.bu.359	na.as.ha.a.án	SEAL	**k.ii.û.ji**
huo304	qabu359	naas-ha-aán	SEAL	kii-ûji
?	?	lie.to.rest-CAUS-PTCP.F	ritual	say-NPST?

'On the twenty-third day of the sixth month of the Qiantong period at the Yongfu tomb …, this was (is?) called the ritual of laying to rest.'
Xuanyi 5-18/30, 6-1/3[16]

The verbal form at the end in example (7), <k.ii.û.ji>, is attested several times in KSS inscriptions, and has been analysed as meaning 'this was called' (Kane 2009, 87, 89, 155) and 'it is called' (Kane 2009, 216). In example (7) from Xuanyi and in Daozong 6-31, <k.ii.û.ji> corresponds to the copula of Classical Chinese 也 *yě* in the correspective

15 Cf. Ō 4 '「善行を積んだ家には必ずある，多くの福が。」と云うのは'.

16 Cf. K 88 'On the twenty-third day of the sixth month of the Qiantong period, she was laid to rest together [with the emperor Daozong] in the Yongfu 永富陵 tomb with (appropriate) rituals'.

epitaphs in Chinese (ChXuanyi 6-7, ChDaozong 6-7). Comparison between <k.ii.g> and <k.ii.û.ji> points at a verbal base <k.ii.> 'to say' with different suffixes. The former is a participle in <g>, the anterior vocalic variant of participial series *hu*, while the latter points at a suffix <û.ji>. This suffix could be an ulterior variant of converbial series *ji*. The fact that <k.ii.û.ji> here functions as a finite predicate, could imply that series *ji* covers both converbial and finite predicate functions. Alternatively, <û.ji> could be an independent suffix of its own series. The taxonomy of <û.ji> inside inflectional series, as well as its tense value, have to be tested by surveying the several attestations of verbs carrying this ending.[17] A noteworthy fact that may give an interesting direction to future research on this matter, is that some forms carrying this ending are possibly deverbal actor nouns (Kane 2009, 41, 201).[18] Moreover, the model "V-PTCP ritual V-FIN"[19] interestingly recalls the frequent phrase model of the Secret History of the Mongols "V-*GsAn yosu teyi-mü*" 'this is how X happened'. MM *yosu(n)* means 'rule, custom, law, way of doing',[20] and the finite verb carries the low-focal intraterminal present marker *-mU*.

4.2 Complex Markers

In KSS texts there are instances of converbs followed by the copula. The copula can occur itself in a converbial form, or in a finite predicate form. An instance with a finite copula is shown in the following example.

(8) 关 舟力 舟冬 国万刘 个卡穴火 为本

HEAVEN	b.qo	b.as	hó.y.hu	**pu.su.û.ui**	a.ar
HEAVEN	bqo	bas	hóyhu	pusuû-ui	a-ar
heaven	child	also	?	celebrate-CVB	be-PST.M

'Also the son of heaven was celebrating.' ?
(Xingzong 9-3/8)

Example (8) is a sentence where the only uncomprehensible block is <hó.y.hu>. The sentence occurs in the poetic section of the Eulogy for Emperor Xingzong, and it must be recalling an occasion when Emperor Xingzong – here called "the son of heaven" – celebrated a

17 The variant <u.ji> is also attested.

18 E.g. <MANAGE**.u.ji.de** o.oi>, MANAGE**-uji-de** o-oi, manage**-PTCP?-DAT** become-CVB, 'becoming an administrator' (Dilie 20-11/12).

19 This model is attested also in Dilie 28-6/11, Zhixian 22, Daozong 6-30/31.

20 Cf. Haenisch 1939, 171; Lessing 1960, 435.

certain event. A converb immediately followed by a copula is reminiscent of the complex aspecto-temporal markers of Mongolic. Series *ai* + <a.> occurs other times, like for instance in Xiangwen 39-31/33 (<gi t.em.y a.ai> 'having not been conferred') and in Xiao Dilu 11-5/8 (<tau.su.ó.ul.ha.ai a.ar.ún s.em.ii.er t.ge.er> 'having been advanced to the post, fell ill and died').[21] It is possible that such constructions have some specific intraterminal or postterminal values similarly to MM *-n bü-* or *-JU bü-/a-* respectively. Identification and analysis of more of such predicates in Khitan may help to clarify this matter.

(9) 令夾母及 尿 共九村 盂九今北 为出 今化九

t.oi$_2$.b.u	MOUNTAIN	us.g.en	RECORD.g.s.ii	a.án	s.ri.g
toi$_2$bu	MOUNTAIN	usg-en	RECORDg-sii	a-án	srig
?	tomb	letter-GEN	record-CVB	be-PST.F	?

'being recorded in letters/by letters'
(Xiangwen 46-17/22)[22]

Example (9) is harder to interpret. The interpretation of <us.g.en RECORD.g.s.ii a.án> given in Róna-Tas (2017, 140) makes sense, and is probably correct. There are nevertheless some problematics which are probably due to our scarce knowledge of Khitan grammar. The noun 'letter' is likely the object of the verb 'to record', however the reason why does 'letter' take the genitive form remains unexplained. The subject is hard to identify, even among the words that precede the example and are not reported here. It is also possible that the verb is not a finite predicate, but rather works as a participle and determines the unknown word <s.ri.g>. Leaving aside for the moment being the several interpretative problems, <RECORD.g.s.ii a.án> may contain a complex marker made of converb marker <s.ii> and copula <a.>. Like the construction exemplified under example (8), this too opens a question to be addressed in future research.

21 Translation from RT 141.

22 Translation of blocks 19 to 21, from RT 140

5 Further Issues

Investigation on the grammatical categories of the Khitan language is in its young phase. Many questions are to be answered and little systematic research has been done in this field so far. The aim of this paper was to introduce some of the questions to be addressed in future research. During the course of my PhD project, I will try to answer at least some of these questions through a systematic survey of sources. As a complete survey of all 41 KSS inscriptions would be too extensive to be accomplished in a PhD project, for the time being I am planning to survey 11 inscriptions, namely – in order of dating – Xingzong, Yelü Jue, Renyi, Xiangwen, Dilie, Daozong, Xuanyi, Taishuzu, Xiao Dilu, Gu Yelü and Langjun. Relevant examples from other inscriptions will be included when necessary.

In this paper I decided to focus on aspecto-temporality of finite predicates. Further questions to be addressed in future research include aspecto-temporal values of participles, and circumstantial relations expressed by converbs.

In the present paper, examples of issues that could be resolved in the short term were hinted at, namely, the role of finite/participial marker <bun> in the system of gender agreement between verbs and subjects/nominal heads, and the syntactical categories of series *l.ñ*, *ñ* and suffixes <ji> and <û.ji>. The suffixes at issue are relatively frequent, and a survey of the syntactic relations between these forms and other parts of speech may help to answer these questions.

On the other hand, issues related to TAME categories, that were the core of the present discussion, will probably need more time to be clarified. My aim in this paper was that of proposing some starting points for further discussions on the grammatical meaning of Khitan verbal suffixes.

In summary, thanks to previous research, series ascribable to the syntactical categories of finite predicates, participles and converbs were recognised. There is at least partial overlap between finite forms and participles, and investigation of suffixes <ji> and <û.ji> may reveal other kinds of overlaps, such as between finite forms and converbs or between participles and converbs. The most frequent and best studied finite predicate series (*án*, *b.ñ*, *l.ñ* and *ñ*) probably encode past tense categories, and are possibly contrasting with respect to aspectual, modal or evidential categories, that are to be defined yet. At the present state of the art, forms ascribable to non-past tense are few. The ones mentioned here point at the existence of non-past suffixes <û.ji>, <g> and <i>. Nevertheless, several problems emerge. The taxonomy of <û.ji> in the series is not clear, as it could be part of a new series, or belong to series *ji*. Its syntactic categories need clarification as well. The eventual belonging to series *ji* would imply that it is a converbial marker, or that series *ji* merges

converbial and finite predicate functions. Moreover, case-marked instances suggest that forms in <û.ji> may cover participial function. The possibilities are that <û.ji> marks:

- converbs;
- converbs and finite predicates;
- participles and finite predicates;
- participles, finite predicates and converbs.

In previous research <g> has been classified as belonging to the participial series *hu*, where it is the variant occurring on stems with anterior vocalism. Its use in quotative forms suggests that it was possibly used also as a finite predicate marker, and that its tense value may pertain to the non-past realm.

In previous research, <i> has been classified as belonging to the converbial series *ai*. In the present paper, this suffix has not been included in the *ai* series because its occurrences on verbal bases are relatively rarer than the other members of the series, and actually the categories of <i> as a verbal inflectional suffix[23] are still obscure. The quotative verb <x.i> suggests that <i> marks finite predicate forms with non-past tense value. Future research shall clarify whether other verbal forms carrying this suffix can be analysable as encoding the same categories.

There are indications that Khitan, like it is common for Mongolic languages, besides simple finite predicate markers also had complex finite predicate markers. Here two possible complex markers composed by converb plus copula have been mentioned. In the future, identification of more examples of these two markers and of other possible complex markers, may help to understand the aspecto-temporal categories encoded by constructions composed of non-finite forms plus copula.

In conclusion, many questions remain to be answered with regard to the aspecto-temporal system of Khitan, but the notable advancement of the last decades in the decipherment and translation of inscriptions is offering more and more hints that can be used in order to solve at least some of these questions. Some preliminary proposals on how to analyse Khitan aspecto-temporality have been offered in the present paper, and will be further elaborated in my PhD project, with the hope of contributing to a better understanding of Khitan grammar, language and texts.

23 <i> is attested also as a nominal inflectional suffix. In this use, it was given tentative definitions as accusative, genitive and pertinentive.

Abbreviations

Chinese Liao inscriptions

ChDaozong = *Hanzi Daozong huangdi aice* 汉字道宗皇帝哀册 *Chinese Eulogy for Emperor Daozong* (1101)
ChXuanyi = *Hanzi Xuanyi huanghou aice* 汉字宣懿皇后哀册 *Chinese Eulogy fo Empress Xuanyi* (1101)

Grammar

ACC = accusative
AD = adterminal
CAUS = causative
COP = copula
CVB = converb
DAT = dative
dyn =dynamic
F = feminine
FIN = finite
GEN = genitive
INS = instrumental
INTRA = intraterminal
IPS = internal phase structure
M = masculine
mom = momentaneous
NPST = non-past
PL = plural
POST = postterminal
PST = past
PTCP = participle
t = transformative
V = verb

Khitan studies

K = Kane 2009
Ō = Ōtake 2015
RT = Róna-Tas 2017
WJ = Wu, Janhunen 2010

KSS Inscriptions

Abbreviations of KSS inscription titles are according to Apatóczky and Kempf (2017)
Daozong = *Daozong huangdi aice* 道宗皇帝哀册 *Eulogy for Emperor Daozong* (1101)
Dilie = *Nanzhanbuzhou Da Liao guo Gu Dilie wang muzhiwen* 南瞻部洲大遼國故耶律迪烈王墓誌文 *Epitaph of Yelü Dilie* (1092)
Gu Yelü = *Gu Yelü shi mingshi* 故耶律氏銘石 *Epitaph of the Late Mme. Yelü* (1115)
Langjun = *Da Jin huang di dutong jinglüe langjun xingji* 大金皇弟都統經略郎君行記 *Record of the Journey of the Younger Brother of the Emperor of the Great Jin Dynasty* (1134)
Renyi = *Renyi huanghou aice* 仁懿皇后哀册 *Eulogy for Empress Renyi* (1076)

Taishuzu = *Huang taishuzu aice* 皇太叔祖哀册 *Eulogy for the Imperial Grand Uncle* (1110)
Xiangwen = *Yelü Xiangwen muzhi* 耶律詳稳墓誌 *Epitaph for Yelü Xiangwen* (1091)
Xiao Dilu = *Xiao Dilu muzhiming* 蕭敵魯墓誌銘 *Epitaph for Xiao Dilu* (1114)
Xiao Zhonggong = *Xiao Zhonggong muzhiming* 蕭仲恭墓誌銘 *Epitaph of Xiao Zhonggong* (1150)
Xingzong = *Xingzong huangdi aice* 興宗皇帝哀册 *Eulogy for Emperor Xingzong* (1055)
Xuanyi = *Xuanyi huanghou aice* 宣懿皇后哀册 *Eulogy for Empress Xuanyi* (1101)
Yelü Jue = *Yelü Jue muzhiming* 耶律玦墓誌銘 *Epitaph for Yelü Jue* (1071)
Yelü Nu = *Yelü Nu mizhiming* 耶律奴墓誌銘 *Epitaph of Yelü Nu* (1099)

Languages

Khal. = Khalkha Mongolian
KSS = Khitan Small Script
MM = Middle Mongol

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Sakhalin Ainu Inferentials as Indicators of Relative Tense

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Abstract This paper investigates inferential evidentiality in Sakhalin Ainu with a specific focus on the pragmatic use of inferential forms to bring out the tense reference of the predicate that is under the scope of evidentiality. It will be argued that what derives either a present or past tense reference for the scope predicate is the interplay of the telicity and aspectual values of the scope predicate itself, and the inner semantics of the inferential form used. Together with these two semantic variables, another pivotal element involved in the derivation of tense reference is the very cognitive process that is entailed by acquisition of information through inference. As it is chiefly concerned with tense and aspect, this study contributes to the description of the tense-aspect-mood-evidentiality (TAME) system of Sakhalin Ainu and Ainu more generally, which has traditionally been described as a 'tenseless' language.

Keywords Ainu. Sakhalin. Evidentiality. Aktionsart. Tense reference.

Summary 1 Introduction. – 2 Typological Profile of Sakhalin Ainu, Dialects, and Language Vitality. – 3 Grounding for the Analysis. – 3.1 The Sakhalin Ainu Verb System. – 3.2 Overview of the Sakhalin Ainu Evidential System with a Focus on Inferentiality. – 3.3 *Aktionsart* and Telicity. – 4 The Semantics of Inferential Forms. – 4.1 Ontological Status of the Sensorial Source. – 4.2 The Aspectual Contour of *an*. – 5 Inferentiality Beyond Source of Information. – 6 Conclusions.

1 Introduction

This paper presents a first revision of the analysis of inferential evidentiality in Sakhalin Ainu, an endangered unclassified (or Ainuic, Janhunen 2022) language of Russia and Japan, contained in Dal Corso 2018. Evidentiality, though often not explicitly with this name, has been surveyed to different extents in a number of dialects of the Hokkaidō

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variety. The function related to source of information or the speaker's stance towards an event, which is entailed by post-verbal elements such as *ruwe ne* or *hawe ne*, was recognised as early as Kindaichi (1931), but it was Shibatani (1990, 83-4) the first to discuss these forms properly as "evidentials". More recent accounts on Ainu evidentiality include Tamura (2000), on the Saru dialect of south-western Hokkaidō, Bugaeva (2012) who notably is the first to discuss the category within Aikhenvald's (2004) typological framework. Next to Bugaeva's work that focuses on the Chitose dialect of Hokkaidō Ainu other notable accounts are Satō (2008, 178-9), again on the Saru dialect, and Takahashi (2013) on the Tokachi dialect of central-eastern Hokkaidō. Evidential expressions of Sakhalin Ainu (henceforth SA), have been surveyed less in comparison with their Hokkaidō counterparts. An account of the morphosyntax and semantics of evidentiality in Sakhalin Ainu can be found in Dal Corso (2018, 126-38, 147-55, 176-86, 236-303), which adds to previous observations and descriptions on this variety such as Murasaki (1979, 97-8) and Takahashi (2009). A large part of Dal Corso's (2018) analysis focused on inferentiality, which is the kind of evidentiality that has to do with information acquired indirectly through a sensorial stimulus or through logical reasoning based on tangible evidence (see § 3.2). The semantic analysis of SA evidentiality revealed that evidential forms pertaining to different domains within this category have specific pragmatic extensions – in the case of inferentiality, this pragmatic extension is that of specifying the present or past tense reference for the predicate under the scope of evidentiality in relation to the moment of speech or, if inferentiality is employed in folklore, to the reference narrative time. Indication of tense reference as a byproduct of inferentiality is particularly relevant for a language like SA that has no formal means dedicated to marking tense, be it absolute or relative (§ 3.1). In what follows, I return on the semantics and pragmatics of inferentiality and refine the discussion of aspect and temporality through Reichenbach's (1947) Reference Tense Theory, which is employed in Dal Corso (2018), with a consideration of *Aktionsart* and telicity as in Dal Corso (2022). By presenting the case of inferential evidentiality, the main aim of this paper is to bring the focus on lexical aspect (i.e. *Aktionsart*) and its relation to relative tense, thus adding to our understanding of the still underdescribed TAME category of SA and setting the stage for more in-depth future investigations. This study only takes into account inferentiality used in narration. My reference sources are a corpus of 27 folktales collected from speakers living in four settlements on the Sakhalin east coast, published in Piłsudski (1912), and 11 folktales narrated by two speakers native of the Sakhalin west coast, originally published in Murasaki (1976) and re-edited in Dal Corso 2021 (§ 2).

The paper is organised as follows. Section 2 provides a typological profile of SA, with some notes on its dialectal subdivision and vitality

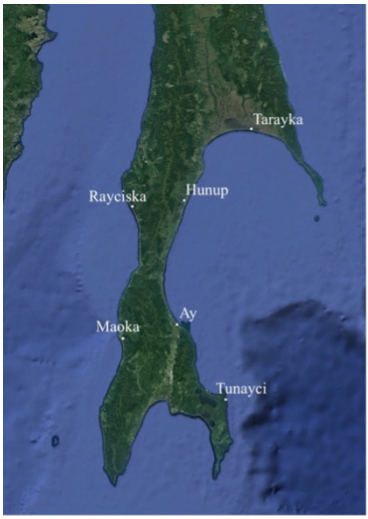
status. Section 3 presents some general information on the SA verb system, a brief overview of the morphosyntax of inferential expressions, and my assumptions with regards to *Aktionsart* and telicity. In section 4, I discuss the core semantics of inferential forms, while section 5 is dedicated to the discussion of the pragmatic use of inferentials as markers of relative tense. Section 6 concludes.

2 Typological Profile of Sakhalin Ainu, Dialects, and Language Vitality

The canonical word order of Ainu is SV/AOV. Ainu is a polysynthetic, agglutinating language, it is strongly head-marking and right-headed with a rich but largely non-productive morphology. There is no grammatical agreement of gender while number may be non-obligatorily distinguished on nouns and verbs. Ainu shows great dialectal variation, with three main varieties that are defined geographically and correspond each to the language once spoken on Hokkaidō, Sakhalin, and the Kuril Islands.[1] Of these three varieties only Hokkaidō Ainu survives today in some of its central-eastern and south-western dialects, which are all regarded as critically endangered. Both the Sakhalin and Kuril varieties are extinct, the last known native speaker of the former variety having died in 1994 (Murasaki 2001, 2) and the most recent record of active speakers of the latter variety dating back to the beginning of the twentieth century (Satō, Bugaeva 2019, 67-8). However, this stance towards the vitality status of SA is controversial since at least the Rayciska dialect of this variety is presently still spoken as a second (heritage) language by a number of Ainu descendants in Japan who are actively involved in its revitalisation.

Figure 1 shows the location of the four Ainu villages (Tarayka, Hunup, Ay, and Tunayci) along the Sakhalin east coast where the folktales in Piłsudski (1912) were collected and the native villages (Rayciska and Maoka) of the speakers who provided the language data on western dialects contained in Murasaki 1976 **[fig. 1]**. The data in the two corpora were collected roughly 60 years apart – those in Piłsudski (1912) between 1903 and 1904 and those in Murasaki (1976) between 1960 and 1971. The fast decline of language vitality that occurred for SA in this time span is evident from the informants'

1 It is reported already in eighteenth century travelogs, among which Krasheninnikov (1755), that the language spoken on the southernmost islands of the Kuril chain was hardly comprehensible to the Ainu living on Paramushir and Onekotan, in the north of the chain. On the basis of linguistic evidence coming from a Kuril Ainu glossary later collected by Captain Vasily Michailovich Golovnin in 1811, Bugaeva and Satō (2021) argue that Northern Kuril Ainu and Southern Kuril Ainu were in fact two distinct dialects of the Kuril Ainu variety.



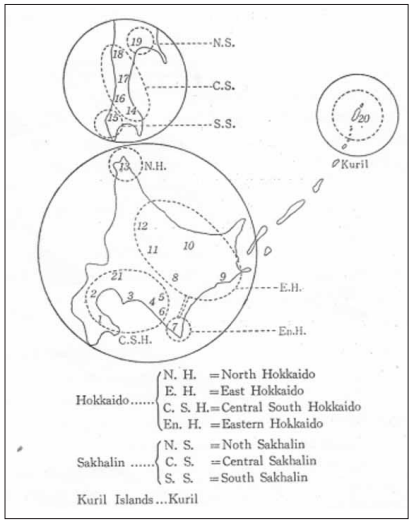


Figure 1 West Sakhalin Ainu settlements of data collection. Source: Google Earth

Figure 2 Dialectal subdivision of Ainu from Asai 1974, 100

metadata provided by the two collectors. In fact, if Piłsudski's informants were aged 28 to 53 years old and were (for the most part) monolingual speakers of Ainu, Murasaki's informants (Haru Fujiyama and Yuk Ōta) were both almost in their seventies at the moment of data collection and were considered to be the last native speakers of SA.[2] Haru Fujiyama and Yuk Ōta had also been living in Hokkaidō for a long time after being relocated there from Sakhalin following Japan's defeat in World War Second, which resulted in their Ainu having much more influences from Japanese than what we see in the language spoken by Piłsudski's informants.

Figure 2 shows the renown dialectal subdivision of Ainu varieties on the basis of variations in the lexicon first proposed by Hattori and Chiri (1960) and later re-elaborated and amended in Asai (1974) and Ono (2015) among others **[fig. 2]**. According to this subdivision, the four dialects recorded in Piłsudski (1912) would be included in the north Sakhalin group (Tarayka) and central Sakhalin group (Hunup,

2 Murasaki found out about the existence of Asai Take, who was later declared to be the last known native speaker of the Sakhalin variety, only in the 1980s.

Ay, and Tunayci), with this latter group also including the Rayciska and Maoka dialects recorded in Murasaki 1976.

The SA variety remains largely underdescribed to this day and, as research in different areas of linguistics proceeds, new parameters of comparison for the classification, which extend beyond lexicon, are provided. These new parameters may eventually prompt a revision of earlier classifications. In this study, I will operate a distinction between eastern (Tarayka, Hunup, Ay, and Tunayci) and western (Rayciska and Maoka) dialects, which is supported by the analysis of inferentiality to come. Therefore, this paper also aims at contributing to a refined classification of SA dialects beyond the differences in lexicon.

3 Grounding for the Analysis

3.1 The Sakhalin Ainu Verb System

Like nouns (§ 2) verbs have no agreement of gender. Person agreement is marked with inflectional affixes characterised by a singular-plural formal distinction in number and three persons. SA (and Ainu in general) displays mixed nominative-accusative, tripartite, and direct morphological alignment depending on person. In addition to the canonical three persons, the language has one more set of person agreement affixes whose function is to mark shifts in participant referentiality (see Dal Corso 2023 for details). Third person or action plurality may be optionally specified via dedicated morphology (e.g. the collective suffix *-(a)hci*) or morphosyntactic processes (e.g. stem reduplication). Verbal morphology also includes a number of affixes that encode applicative, antipassive, and other valency-changing strategies, beside deixis and speaker evaluation. There is no dedicated marking for tense, but the language exhibits synthetic and analytic constructions to express mood, aspect, and evidentiality. Morphosyntactic constructions within the aspect-mood-evidentiality domain showcase different stages of grammaticalisation, which raise important (and mostly still unanswered) questions with regards to their diachronic development. Standard negation is most commonly expressed with analytic constructions and it appears more often marked synthetically via the verbal proclitic *ham* = attached directly on the negated verb in sources dating up to the early twentieth century, among which Piłsudski (1912) (Dal Corso 2020). This proclitic is diachronically present in all the negative constructions of the language.

3.2 Overview of the Sakhalin Ainu Evidential System with a Focus on Inferentiality

I define evidentiality in SA as a conceptual category. This definition stems from the architectural approach to cognitive processes in Levinson (2003), which is in its turn rooted in earlier studies on language and cognition by Whorf (1956) and is therefore named "neo-whorfianism" by the author himself. Levinson's neo-whorfianism postulates a three-level structure, where primitive semantic concepts (units of the human knowledge also called 'semantic primes') are the grounding elements found at deep level and the formal encoding of these concepts through a linguistic output represents the third and most superficial level. Within Levinson's architecture, conceptual categories constitute the mid level and are conceived of as unitary and cohesive groupings of primitive semantic concepts, similar or related in terms of content, that are encoded in language via a defined set of forms. How semantic primes are grouped to form semantic categories is a chiefly cultural process that mirrors the unique organisation of the semantic conceptual space in the speakers' mind. This eventually entails that conceptual categories within this framework are to be understood as purely language-specific. This essentially denotational approach, according to which to a certain linguistic form corresponds a unitary set of semantic concepts, accounts for cross-linguistic categorial diversity in terms of semantic resemblance without necessarily entailing grammatical similarity. In the specific case of evidentiality, Levinson's cognitive approach avoids the otherwise problematic understanding of categorial status in terms of grammaticality, adopted in typological studies such as Aikhenvald (2004), which have the major pitfall of tending to exclude from the discussion of evidentiality all those strategies that, though expressing source of information, are not fully grammaticalised. Given that most of the SA evidential forms are in fact not fully grammaticalised, such a grammaticalisation-oriented approach would easily overlook what is a cohesive and semantically pertinent domain of the language. On a theoretical basis, I keep evidentiality separate from epistemic modality, which has to do with the evaluation of a statement on the speaker's part (de Haan 1999). The two categories may intersect, with possible limitations to their co-occurrence within the same statement due to conceptual incompatibility.

Within my framework, formally different evidential encodings are therefore considered to mirror directly conceptual subdivisions within the evidential category – that is, they define the semantic domains and subdomains of evidentiality. Dal Corso (2018) proposes that the overall organisation of the SA evidential category rests on source

reliability.[3] This concept has to do with how reliable a means of acquisition the speaker perceives the available source to be and should not be confused with the speaker's vouching for the truthfulness of information content, which pertains to epistemic modality. Together with inferentiality, the other two domains of evidentiality of SA are personal knowledge evidentiality (expressed via clausal nominalisation marked either via the nominaliser *-hi* or zero-nominalisation) and reportative evidentiality (which includes hearsay and quotative marked via the final particle *manu*).[4]

Inferentiality in SA indicates that the speaker acquires information through a sensorial stimulus (sight, hearing, touch, taste, smell, or some kind of sixth sense or 'gut feeling') or through inference based on tangible (usually visual) evidence.[5] That is, in the case of inferentiality sensory perceptions always mediate the acquisition of information. Conceptually speaking, inferential evidentiality is distinguished into four subdomains according to the kind of stimulus involved in information acquisition, with this distinction being expressed formally. Table 1 summarises the four inferential forms and their attested phonological alloforms. The evidential function of each form is also given in the table and is illustrated by the examples below. I will return in detail on the inner semantics of inferential forms in § 4.

3 Different levels of reliability are encoded into language with different formal means. Clausal nominalisation, marked either via the nominaliser *-hi* or zero-nominalisation, is used to mark personal knowledge evidentiality, the most reliable kind of evidentiality. Inferentiality follows, with forms entailing a visual source (i.e. *ruwehe an* and *sirihi an*) found to encode higher reliability than forms entailing a non-visual source (i.e. *humihi an* and *hawehe an*). Within these two subgroups of evidentiality, a further distinction in reliability is made according to whether the stimulus is processed (as with *ruwehe an* and *humihi an*) or not (as with *sirihi an* and *hawehe an*) (see Table 1 below). The organisation of inferential forms according to reliability is therefore *ruwehe an* > *sirihi an* > *humihi an* > *hawehe an*. Finally, reportative evidentiality is the least reliable kind of evidentiality, encoded by the final particle *manu*.

4 As to not widen too much the scope of the investigation, Dal Corso (2018) intentionally excludes from the analysis all lexical expressions of evidentiality attested in SA, which still remain to be addressed.

5 SA inferentiality loosely corresponds to the "inferred" type discussed by Aikhenvald (2004, 373), with some important exceptions: 1) Aikhenvald's label does not entail any difference in the sensorial stimulus at the basis of inference and 2) reasoning in the case of SA is always based on sensorial (namely, visual) evidence. Therefore, the term as used here unites characteristics that Aikhenvald (2004, 63) recognises proper of "inference" and "assumption". The same distinction is also argued for by Willett (1988), who separates "result" from "reasoning" within the domain of inferring evidentials.

Table 1 SA inferential forms[6]

main form	alloforms	function
ruwehe an	*ruhe an, ruuhe an, tuhe an*	Inference through reasoning based on a processed visual stimulus
sirihi an	*sirhi an*	Inference based on an unprocessed visual stimulus
humihi an	*humhi an, umhi an, humorokehe an*	Inference based on a processed tactile, gustative, auditive stimulus, or 'gut-feeling' sensation
hawehe an	*hawhe an, hauhe an, haorokehe an*	Inference based on an unprocessed auditive stimulus

6 The evidential *ruhe ne* (< **ruw-he ne* trace-POSS COP), not included in this table, appears a couple of times in the idiolect of an informant from the village of Tunayci. This form resembles the evidential *ruwe ne/ru ne* attested in many Hokkaidō dialects and its presence in the SA corpus is most probably to be ascribed to the fact that this informant had spent a long time in Hokkaidō (Piłsudski 1912, 191).

(1)	*Nii*	*kayki*	*[…]*	*kehke-wa*	*cokoko-wa isam*	***ruwehe 'an.***
	tree	even		3S.A/3P.O/break-CVB.SIM	3S.A/3P.O/fell-CNCL	**INF.RSN**
	'[The monster] must have ended up breaking and felling even the trees.' (Murasaki 1976, 99; Dal Corso 2021, 396)					
	[Context: The speaker cuts open the belly of a monster from the inside, after having been swallowed whole. Once he gets out, he notices how the surroundings look after the monster has been squirming during their fight. Processing through reasoning of this visual stimulus provides the basis for making an inference.]					
(2)	*Tuhso*	*nee-no*	*'an*	*puy*	*ahun*	***sirihi 'an.***
	cave	COP-ADV	3S.S/exist.PC	hole	3S.S/open.PC	**INF.VIS**
	'It seemed a hole like a cave opened [in the mountain side].' (Murasaki 1976, 95; Dal Corso 2021, 389)					
	[Context: The sentence is uttered by the speaker as he climbs a mountain and gets closer to the dwelling of the monster he is going to kill.]					
(3)	*Soy-ta*	*asin*	*tura-no*	*oponi*		
	3S.O/outside-LOC	3S.S/go.out.PC.NMLZ	3S.O/together-ADV	3S.O/from.behind		
	ayn[u]	*asin*	***humhi an.***			
	person	3S.S/go.out.PC	**INF.FLT**			
	'While going outside, it seemed a person came out behind him.' (Piłsudski 1912, 100)					
	[Context: After turning his back to an evil spirit to escape from it, the speaker feels a presence following him out of the house.]					
(4)	*Ta*	*ohacisuye*	*seta*	*humpa*	***hauhe an.***	
	that	empty.house.spirit	dog	3S.A/3P.O/crush	**INF.HRN**	
	'It seemed that that empty-house-spirit killed the dogs crushing them.' (Piłsudski 1912, 79)					
	[Context: Escaping from his control, the speaker's dogs enter a house possessed by an evil spirit. The speaker hears from the outside the dogs barking and howling as the spirit kills them.]					

Inferential forms follow the predicate over which they have semantic scope and they all have developed from a noun-verb phrase, whose nominal element semantically pertains to the domain of sensorial perceptions or physical manifestations – *ruu* (<*ruw**)[7] 'trace, path', *siri* 'appearance, looks', *hum* 'sound', and *haw* 'voice'. These nouns appear in the possessive form, which is obtained with the addition of the suffix *-(i)hi*. The underlying vowel *i* in the suffix, as well as the optional epenthetic vowel added before *h* on consonant-final stems, respond to vowel harmony (Dal Corso 2021, 31-7).[8] The verbal element within inferential forms is always the intransitive paucal verb *an* 'exist'. In most instances, inferential forms exhibit unitary stress (i.e. they constitute a unitary phonological word), which may be taken as

7 I argue that the underlying form of this noun root is *ruw**, in contrast with Tangiku (2022, 335). The segment *uw**, not allowed as the rhyme by SA phonotactic rules (Murasaki 1979, 4), is resolved in the non-possessive form with the assimilation of *w* to the preceding vowel, which results in a long *u* (i.e. *ruu*). The assumption of *ruw** as the underlying form is supported by the fact that the vowel(s) in the possessive suffix is realised as *e*, which is a prerogative of stems ending in an approximant (i.e. either *y* or *w* in Ainu) – restoration of the underlying *w* is possible in the possessive form thanks to resyllabification from the mono-syllabic *ruw** to *ru.we.he*, which avoids *uw** as the rhyme.

8 On the alloforms *humorokehe an* and *haorokehe an* **[tab. 1]** the vowel harmonises not with the vowel of the nouns *hum* and *haw* but with that of the locative noun *oro* 'place' (in its partitive form *oroke*) that follows it. The semantic contribution of *oro* to the inferential expression in these instances is not clear.

piece of evidence of noun incorporation (Bugaeva 2004, 29-30) – for the case at hand, of the sensorial noun into the intransitive *an*. However, the fact that sensorial nouns are not morphologically bare due to the presence of the possessive suffix and that syntactic material may be inserted between the sensorial noun and the verb *an* (see *oro-ke* 'place-PTV' in (5) and fn. 4) is clearly indicative of the syntactic freedom the sensorial noun retains with respect to *an* (Dal Corso 2018, 149-53). This structural behaviour led us to analyse inferential expressions of SA as an instance of pseudo-noun incorporation, as defined in Borik and Gehrke (2015).

(5) *An_-yup[i]-utar-hi* *makapa*
PRM.PSR-older.brother-COLL-POSS 3P.S/go.uphill.PL
***ha**-oro-k[e]-**he an**.*
INF.HRN<-place-PTV->**INF.HRN**
'It seemed my older brothers were coming up [along the trail].' (Piłsudski 1912, 182)

On the syntactic side, inferential expressions are recognised as possessive constructions in which the sensorial noun that hosts possessive morphology is the possessee and the preceding clause containing the predicate under the scope of evidentiality functions as the possessor. In (6) the clause spanning from *utara* to *tohseno* acquires nominal status having undergone clausal nominalisation through zero-nominalisation, while the noun *hum* is the possessee. The resulting possessive noun phrase (within curly brackets in (6)) then functions as the S argument of the intransitive verb *an*, to which it is pseudo-incorporated.[9]

(6) *{[Utara* *teekoro* *tohse-no]$_{psr}$* *[hum]$_{pss}$-hi}i* *Ø-an.*
people really 3P.S/lie.down-INTS 3.PSR/sound-POSS 3S.S-exist.PC
'It seemed [those] people were really sound asleep.' lit.: 'There was the sound of [those] people really sleeping deeply.' (Piłsudski 1912, 184)

3.3 *Aktionsart* and Telicity

When dealing with telicity and aspect of SA predicates I refer to the preliminary analysis in Dal Corso (2022). *Aktionsart* is not a fixed property of verbs, but rather it is to be determined at the predicate level, for each individual case, by taking into account the semantic properties of a verb's arguments and following a construal approach as in e.g. Verkuyl (1993) and van Lambalgen and Hamm

9 For further discussion on the morphosyntax of inferential expressions and the structural implications of incorporation of the sensorial noun specifically see Dal Corso 2018.

(2005). Depending on the context, a single verb can therefore be assigned to different *Aktionsarten*. Each *Aktionsart* class is also assumed to naturally head either a telic or atelic predicate, as postulated by Vendler (1967), with semelfactives (absent in the Vendlerian classification but included in van Lambalgen, Hamm 2005) heading telic predicates (Rothstein 2004, 185). This assumption eventually makes telicity a defining feature of *Aktionsarten*. Predicate telicity, on the other hand, is determined on the basis of the incrementality properties of the patient-like argument[10] (PLA) and on the presence of a natural culmination for the event depicted by the predicate in relation to the PLA. For the present purpose, the existence of a verb argument that is incremental with regards to its atomic composition is established on whether some of the argument's (sub-)parts may not undergo the event without compromising the truth conditions of the event itself. Consider (7) and (8).

(7) ***Neera*** ***'an_-pe*** *ne*
how **3p.s/exist.pc-thing** COP
[y]ahka *cinke-_utara-'oro-wa* *nu-hci.*
though ancestor-COLL-place-ABL/ELA 3S.A/3P.O/hear-COLL
'She [had] heard whatever kind of things (= tales) from the ancestors.' (Murasaki 1976, 38; Dal Corso 2021, 304)

(8) *Kotan* *'e-sis* ***'aynu*** ***emuyke*** *'isam.*
village APPL-3S.A/3P.O/be.full **person** **all** 3P.S/not.exist
'The people who filled up the village all died.' (Murasaki 1976, 12; Dal Corso 2021, 242-3)

In (7) the PLA *-pe* 'things', here referring to folklore tales narrated by ancestors, is incremental in the sense that, at any point of the listening event, there may be parts of a tale or full tales the subject 'she' may have not heard and yet the event 'hear tales' would subsist. On the contrary, there cannot be sub-parts of the PLA *'aynu emuyke* 'all people' in (8) that may not undergo the event of dying without compromising the truth conditions of the event 'all people died', which would subsequently become false. That is, *'aynu emuyke* is not an incremental argument. As for natural culmination, I understand it as a minimal change of state associated with the endpoint of an event (Rothstein 2004, 105). Again, in (7) even once the incremental argument has been 'used up' and the event cannot continue further or be

10 The patient-like argument in Dal Corso (2022) is essentially analogous to Dowty's (1991) incremental theme, but it also includes the S argument of intransitive verbs with patient-like thematic functions, primarily that of experiencer.

reiterated, there is no change of state that concerns the PLA 'tales', so the event has no culmination. Example (8) presents a different situation, where the culmination of the event coincides with a change of state for the PLA (i.e. 'all the people' being now dead). The features of incrementality and event culmination correspond to two of the four defining elements of *Aktionsart* classes that are postulated by Lambalgen and Hamm (2005, 88-90), respectively referred to as f_2 (a fluent) and *e* in their discussion. As a result, this treatment of incremental arguments and culminations allows us to include SA predicates into van Lambalgen and Hamm's categorisation of *Aktionsarten* and assign them to a specific class.

One limitation of the analysis in Dal Corso (2022) is that it does not specify the values for the other two fluents f_1 and f_3 that constitute the contour of *Aktionsarten*, so that those classes whose f_2 and *e* values are identical turn out to be indistinguishable (e.g. states and activities (strict)). Table 2 resumes the *Aktionsart* classes of SA predicates and their corresponding telicity values.

Table 2 *Aktionsart* classes of SA predicates, adapted from Dal Corso (2022, 70)

	f_2	*e*	*telicity*
States	–	–	atelic
Activities (strict)			
Activities (wide)	+	–	
Accomplishments	+	+	telic
Achievements	–	+	
Semelfactives			

4 The Semantics of Inferential Forms

4.1 Ontological Status of the Sensorial Source

As it was discussed in § 3.2, inferential forms of SA developed from a noun-verb phrase that features a noun in the possessive form and the intransitive paucal verb *an* 'exist'. The four nouns that appear within inferential forms semantically pertain to the domain of sensorial perceptions or physical manifestations – *ruu* (<**ruw*) 'trace, path', *siri* 'appearance, looks', *hum* 'sound', and *haw* 'voice'. In the remainder of the analysis, I will refer to these nouns as 'sensorial nouns'. Since inferential expressions are structurally recognisable as possessive constructions, they can be translated literally as "there exists the trace/appearance/sound/voice of *e*" (where *e* stands for the inferred event expressed by the scope predicate). Example (1), repeated here as (9), can then be rendered as follows (see also (6) in § 3.2).

(9)	*Nii*	*kayki*	*[…]*	*kehke-wa*	*cokoko-wa isam*	***ruwehe 'an.***
	Tree	even		3S.A/3P.O/break-CVB.SIM	3S.A/3P.O/fell-CNCL	**INF.RSN**

lit.: 'There was the trace of [the monster] having ended up breaking and felling even the trees.' (Murasaki 1976, 99; Dal Corso 2021, 396)

This part-whole relation between the sensorial noun and the scope predicate, marked as a possessive construction, is nothing but a formal representation of the logical dependency that subsists between information source and information content. Since inferentiality as intended in SA (§ 1) entails that a sensorial stimulus be present in order to access the content of information, we must assume whatever kind of perception be expressed by the sensorial noun to be tightly dependent on an event. For instance, in the case of inferentiality expressed via *humihi an*, the sound (*hum*) that is available (*an*) to the speaker to make their inference must somehow be linked to an event that originated it. It is, therefore, easy to realise that there is a crucial contrast in the existential properties of the stimuli subsumed by the different sensorial nouns. In order to capture this contrast we need to distinguish between *siri* 'appearance', *hum* 'sound', and *haw* 'voice', on the one hand, and *ruu* 'trace' on the other hand. With regard to the former three forms, we can say that, as long as the event (or the circumstances in which the event takes place) is preserved, the 'looks', 'sound', or 'voice' that is the source to access it also subsists. However, the moment this event (or the relative circumstances) ceases to exist, the 'looks', 'sound', or 'voice' linked to it are bound to end as well. In other words, taking again the form *humihi an* as an example, there can be no perceivable sound of something if that something does not exist any more. A different situation stands for *ruu*. Again we can assert that, as long as the event (or its circumstances) is preserved, the 'trace' that is connected to it also subsists, and so in this sense *ruu* is no different from the other three sensorial nouns. However, differently from what holds true for 'looks', 'sound', or 'voice', the 'trace' contingent upon an event can still hold even when the event ends. That is to say that *ruwehe an* may indicate that there is still a (visible) trace of a concluded event, which allows the speaker to infer that event from its resultant state. Therefore, what separates *ruu* from the other sensorial nouns is the ontological status of the stimulus it subsumes – the physical endurance of the stimuli entailed by *siri*, *hum*, and *haw* is intrinsically dependent on the presence of a contingent event, while that entailed by *ruu* has its own independency.

4.2 The Aspectual Contour of *an*

In order to conclude my consideration of the inner semantics of inferential forms, I briefly address the telicity value of the verb *an* 'exist'. As an intransitive verb, *an* has only a single argument that can be analysed as the PLA – the possessee sensorial noun (see § 3.2). The sensorial perception entailed by any of the four sensorial nouns subsists at any point of the *existing* event and cannot disappear or be partially involved without compromising the truth conditions of said event. This means that the PLA is not incremental. Also, the event of *existing* does not entail any change for the PLA, which in its turn indicates that the event has no culmination. According to my understanding of *Aktionsart* and telicity (§ 3.3), *an* classifies as an atelic predicate which can be either a state or an activity in the strict sense.

5 Inferentiality Beyond Source of Information

In this section, I move on to discussing the derivation of relative tense for the predicate under the scope of inferentiality. The two pivotal features in the derivation are the ontological status of the source through which information is accessed (§ 4.2) and the telicity value of the scope predicate (§ 3.3). Another crucial element is the very cognitive process entailed by acquisition of information through inference (see below).

In order to systematically derive the scope predicate's reference tense, I rely on Reichenbach's (1947) Reference Tense Theory (RTT), according to which the relative tense of a predicate can be determined on the temporal relation existing among the event depicted by the predicate, a reference time, and the moment of speech. Reichenbach refers to the three moments in time that he postulates as E, R, and S respectively. When schematising the various types of reference tense, Reichenbach employs a comma to indicate temporal concomitance or an underscore to indicate temporal non-concomitance among these three moments; the same symbols will be used here. When non-concomitant, the chronological succession of E, R, and S is mirrored by their linear order. The application of the RTT in this study rests on a process of analogy by which I compare the three fundamental components of information acquisition through inferentiality to Reichenbach's three moments in time. First, the content of information, represented by the scope predicate, corresponds to E. Second, the sensorial stimulus corresponds to R, in that the stimulus at the base of inference is the gateway through which the speaker accesses the content of information. Third, the moment in which the speaker perceives the sensorial stimulus that allows access to information corresponds to S. A clarification is necessary at this point. Although it is beyond doubt that speaking takes time and that, therefore, the moment of speech should

be conceived more as an *interval* than an *instant* (Desclés 2016, 44-5), for the case at hand I will be concerned only with the instant of perception of the sensorial stimulus. This instant coincides with the first instant (or also the left temporal boundary) of the speech act interval during which the speaker utters the inferential statement.

The next step is to assume a fixed ordering relation for the three moments in time, which logically follows from the cognitive process subsumed by acquisition of information through inference. In fact, inferentiality requires a sensorial stimulus to either coexist with or follow chronologically the event that it represents the source of (see discussion on stimulus ontology in § 4.1), since there cannot be perception of a yet non-actualised event. This anteriority relation of E to R can be preliminarily formalised as E ≥ R. Also, the pertinence of an inferential statement is dependent on the presence of both an inferable event and a sensorial evidence necessary to access it. Since it would be impossible to utter an inferential statement about an event that has yet to occur or to assume *a priori* the presence of a sensorial source connected to a non-actualised event, the moment of speech may never come before the event has happened. Therefore, we derive E-R ≥ S. When we collate these two relations of logical dependency into Reichenbach's RTT, the result is a relation of posteriority by which E precedes R that precedes S (or E ≥ R ≥ S).

Next we need to establish whether there is temporal concomitance among E, R, and S. On a theoretical basis, we can easily argue for the overlapping of R and S since, if no stimulus were available at the moment of speech (i.e. the instant of stimulus perception), there would be no basis for any inference. From this we derive the contemporaneity relation R,S. A first step towards determining the temporal relation between E and R,S is to consider the ontological status of the source. In § 4.1, we saw how the sensorial stimulus entailed by *sirihi an*, *humihi an*, and *hawehe an* is contingent upon a perceivable event. When we translate this dependency into the RTT, we once again obtain a contemporaneity relation (i.e. E,R). Derivation of relative tense for a predicate under the scope of *sirihi an*, *humihi an*, or *hawehe an* then follows naturally – concomitance of all three moments in time (i.e. E,R,S) corresponds in fact to a present tense reference. The scope predicate's telicity becomes irrelevant in this instance, the only difference between atelic and telic predicates being that in the former case the instant of stimulus perception (s_0) is included within the event's time interval (*e*), while in the former case s_0 coincides with the event's final instant (i.e. its culmination, e_{cul}). Concomitance of the event's culmination with the instant of perception is necessary to ensure speaker's access to the content of information encoded by the telic event. Example (10), featuring the atelic event of 'an evil spirit killing the dogs', and (11), featuring the telic event of 'a person exiting a house', provide an illustration of both cases **[figs 3-4]**.

(10) *Ta* *ohacisuye* *seta* *humpa* ***hauhe an.***
that empty.house.spirit dog 3S.A/3P.O/crush **INF.HRN**
'It seemed that that empty-house-spirit killed the dogs crushing them.'
(Piłsudski 1912, 79)

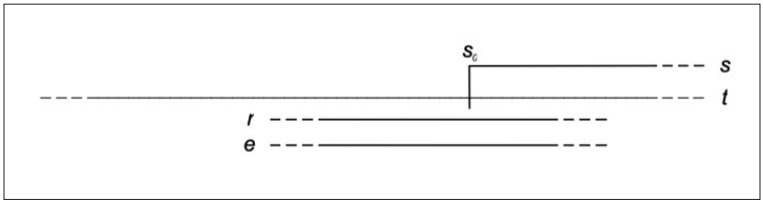


Figure 3 Temporality of *hawehe an* with atelic predicate

(11) *Soy-ta* *asin* *tura-no* *oponi*
3/outside-LOC 3S.S/go.out.PC.NMLZ 3S.O/together-ADV 3S.O/from.behind
ayn[u] *asin* ***humhi an.***
person 3S.S/go.out.PC **INF.FLT**
'While going outside, it seemed a person came out behind him.' (Piłsudski 1912, 100)

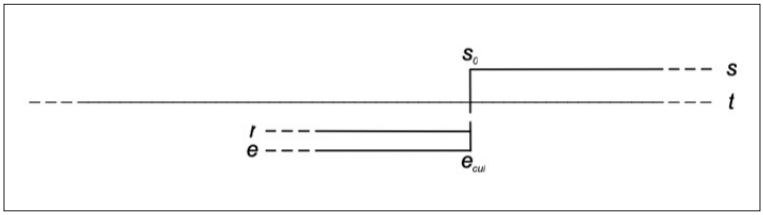


Figure 4 Temporality of *humihi an* with telic predicate

On the contrary, the particular ontological status of the sensorial stimulus subsumed by *ruwehe an* can entail either concomitance or non-concomitance of E and R. The discriminant in this case is the scope predicate's telicity. With an atelic predicate, the instant of perception is included within the event's time interval *e*, which means that the speaker makes their inference on the basis of a presently unravelling event – in (12) that of 'a box being present'. Therefore, the derivation of relative tense has the same outcome as above, with concomitance of E,R,S indicating a present tense reference.

(12)	*Tan*	*husko*	*karauto*	*an*	***ruhe an.***
	this	be.old	box	3S.S/exist.PC	**INF.RSN**

'There was this old box.' (Piłsudski 1912, 200)

With a telic predicate, the instant of perception is included within the time interval *r*, during which the sensorial stimulus subsists, that includes both the event's time interval *e* and its subsequent phase (i.e. the resultant state). Therefore, here inference is made on the basis of the perceivable (visual) trace of an already concluded event. In (13) the telicity of 'breaking and felling the trees' is further underlined by the presence of the (optional) conclusive aspect *-wa isam*. Provided the fixed ordering E ≥ R ≥ S discussed above, the non-concomitance of E with R,S derives a past tense reference, formalised in Reichenbach's RTT as E _ R,S **[fig. 5]**.

(13)	*Nii*	*kayki*	*[…]*	*kehke-wa*	*cokoko-wa isam*	***ruwehe 'an.***
	tree	even		3S.A/3P.O/break-CVB.SIM	3S.A/3P.O/fell-CNCL	**INF.RSN**

'[The monster] must have ended up breaking and felling even the trees.' (Murasaki 1976, 99; Dal Corso 2021, 396)

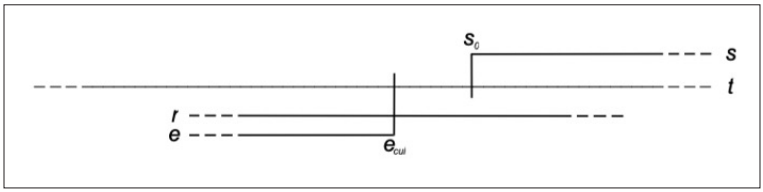


Figure 5 Temporality of *ruwehe an* with telic predicate

As a way to conclude this, I argue that the use of inferential forms provides systematic indication of tense reference for the scope predicate with respect to the temporal time frame of narration. This derivation is semantically determined and results in a relative present tense for predicates headed by *sirihi an*, *humihi an*, or *hawehe an*, regardless of telicity, and for atelic predicates headed by *ruwehe an*, while it results in a relative past tense for telic predicates headed by *ruwehe an*. Similar observations regarding the correlation between evidential form and reference tense have been made by Satō (2008, 178-9), with respect to *ruwe ne* and *siri ne* in south-western Hokkaidō Ainu, and by Takahasi (2013), with respect to *ru ne* and *sir ne* in the Tokachi dialect of central-eastern Hokkaidō. However, both studies argue for a one-to-one correspondence, according to which a present tense reference is always borne out by the use of *sir*-based forms while a past tense reference is always borne out by the use of *ruw**-based forms. While the first half of this conclusion

applies to SA as well, I have shown that telicity is decisive in specifying the either present or part tense reference with *ruwehe an*, for which therefore I do not recognise a one-to-one correspondence between form and reference tense. Table 3 summarises the steps and outcomes of the derivation.

Table 3 Derivation of relative tense

Form	Superimposed E-R-S relations	Stimulus ontology	Scope predicate telicity	E-R-S concomitance	Relative tense
ruwehe an INF.RSN	E > R > S R,S	E_R / E,R	telic	E_R,S	past
			atelic		
sirihi an INF.VIS *humihi an* INF.FLT *hawehe an* INF.HRN		E,R	(irrelevant)	E,R,S	present

6 Conclusions

In this paper I focused on inferential expressions in narration and on the indication of relative tense for the predicate under the scope of evidentiality as a byproduct of the use of inferential forms. Derivation of either a present or past tense reference is determined on a semantic and cognitive basis, by taking into account the inner semantics of inferential forms, the lexical contour of the scope predicate itself, and the phases that characterise the process of information acquisition through inference, and it is formalised within the framework of Reichenbach's (1947) Reference Tense Theory. As a study that deals primarily with tense and aspect, my analysis of SA inferentials adds to the still few investigations made on the tense-aspect-mood domain of the language and aims at providing a starting point for future more comprehensive research on this topic and on verbal and nominal semantics more generally.

Abbreviations

3	third person
3P	third person plural
3S	third person singular
A	subject of transitive verb
ABL/ELA	ablative/elative
ADV	adverbial
APPL	applicative
CNCL	conclusive aspect
COLL	collective
COP	copula
CVB.SIM	simultaneous temporal converb
INF.FLT	non-visual inferential
INF.HRN	auditive inferential
INF.RSN	reasoning inferential
INF.VIS	visual inferential
INTS	intensive
LOC	locative
NMLZ	nominaliser
O	object
PC	paucal
PL	plural
POSS	possessive
PRM	participant referentiality mismatch agreement
PSR	possessor
PTV	partitive
S	subject of intransitive verb

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Temporal Flow in Sakizaya Discourse: Mapping Transitivity to Rhetorical Relations

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Abstract In Sakizaya (Formosan), basic clauses are interpreted as perfective or imperfective according to their morphosyntactic alignment, which is conditioned by the telicity of the event and degree of affectedness of the patient. This has implications for the distribution of such clauses in a discourse in terms of the foregrounding and backgrounding of information. This paper investigates the correlation between transitivity, voice marking and Rhetorical Relations, indicating that transitive undergoer clauses and dynamic actor clauses correlate with coordinating relations that signify temporal change while intransitive clauses correlate with subordinating relations that do not introduce new temporal reference points.

Keywords Sakizaya (Formosan). Transitivity. Voice marking. Rhetorical Relations. Temporal interpretation.

Summary 1 Introduction: The Voice System, Transitivity and Temporal Interpretation in Sakizaya. – 2 Lexical Aspect and Temporal Flow. – 3 Rhetorical Relations and Temporal Flow in Discourse. – 3.1 Interpreting the Correct Relations. – 4 Applying Rhetorical Relations to Sakizaya: Methodology and Findings. – 4.1 Coordinating Relations. – 4.2 Subordinating Relations. – 4.3 Some Generalisations on Voice Marking and Relation Types. – 5 Conclusion.

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1 Introduction: The Voice System, Transitivity and Temporal Interpretation in Sakizaya

The Sakizaya language is an Austronesian (Formosan) language spoken in Hualien County, Taiwan. It is most closely related to Nataoran (Northern) Amis, with an ethnic population of around 1000, though the number of fluent speakers is estimated to be around 350 with the majority of those above the age of 50. Like other Formosan languages, Sakizaya grammar is defined by the Philippine-type voice (or 'focus') system, which is a morphosyntactic alignment system whereby verbal affixes mark the topic argument (i.e. agent, patient, location, instrument, etc.), which is then promoted to the syntactic subject via nominative case marking (Kroeger 2010). This is exemplified in the following paradigm with the focused argument underlined in the translation:

	Actor voice (AV)					
(1)	mu-kan	k-aku	t-u	buting		
	AV-eat	NOM-1SG	OBL-CN	fish		
	'I am eating a fish.'					
	Patient voice (PV)					
(2)	kan-en	aku	k-u	buting		
	eat-PV	GEN.1SG	NOM-CN	fish		
	'I ate the fish up.'					
	Locative voice (LV)					
(3)	kan-an	aku	k-u	buting		
	eat-LV	GEN.1SG	NOM-CN	fish		
	'I ate (part of) the fish.'					
	Instrumental voice (INV)					
(4)	sa-pi-kan	aku	t-u	buting	k-u	atip
	INS-INF-eat	GEN.1SG	OBL-CN	fish	NOM-CN	chopsticks
	'I eat the fish with chopsticks.'					

There is a marked difference between the actor-focused (AV) clauses (example (1)) and the undergoer-focused (UV) clauses (examples (2-4)), which are subdivided into patient (PV) and locative voices (LV) (the instrumental (INV) is regarded by the author as an applicative construction, see: McNaught (2022) for more details), both morphosyntactically and semantically. Sakizaya (according to the author's analysis) is an ergative language, whereby the sole argument of an actor-aligned (extended) intransitive clause (S) is marked in the same way as the patient argument (O) of an undergoer transitive clause: in example (1) the actor is marked in the nominative case (*k-*) (with the extended object (E) as oblique (*t-*) (the same marking used for adjuncts such as temporal adverbs)), as is the patient object of a transitive clause

(examples (2-4)). Conversely, the actor (A) of a transitive clause is marked with the genitive case (*n-*). The alignment patterns along with their respective verbal (voice) markers are shown in Table 1 below:

Table 1 Alignment (case) patterns and verbal (voice) markers in Sakizaya

Transitivity type		Voice marking	A	S	O	E
Canonical/plain intransitive	AV	*Ø*-(stative), *ma*$_1$- (stative), *ma*$_2$(activity), *mu-*		k-		
Extended intransitive		Mainly *mi-*, but also *mu-* and *ma*$_2$-		k-		t-
Canonical/plain transitive	UV	*ma*$_3$-, *-en*, *-han*, *-an* (LV)	n-		k-	
Extended intransitive		*sa-(pi/pu/ka)* (INV)	n-		k-	t-

As shown in Table 1, the differences between AV and UV are not limited solely to case marking, but also in the selection of voice markers attached to the verbal predicate. In AV clauses, the choice of such markers is conditioned by the semantics of the predicate (i.e. by degree of volition on the part of the agent, and by the dynamicity of the action). Starting from lowest degrees of (semantic) transitivity, stative verbs of a more permanent nature take zero *Ø-* marking (e.g. *kalamkam* 'fast', *haymaw* 'slow', *balaki* 'old', *lumeni'* 'black', *tabaki* 'big') while those of a more transient nature take *ma*$_1$- (*mabalucu'* 'angry', *mabusuk* 'drunk', *mangelu'* 'tired') as do verbs of emotion and cognition (*manamuh* 'love', *maidih* 'want', *matineng* 'know'). Verbs of a less dynamic or non-volitional nature are affixed with *mu-* (e.g. *muangic* 'cry', *muisi'* 'urinate', *mueneng* 'sit'), while more dynamic activity verbs that are syntactically intransitive (that is they typically do not take extended objects) take *ma*$_2$- (e.g. *maduba'* 'run', *mapalaw* 'dance', *makatukuh* 'arrive', *mabi'* 'sleep'). Finally, verbal predicates with extended intransitive objects that are more dynamic and volitional in nature are typically prefixed with *mi-* (e.g. *miti'ik* 'hit', *minanam* 'learn', *mibanaw* 'wash', *micikcik* 'cut').

For transitive UV clauses, patient (PV) *ma*$_3$- is used for result states as is PV *–en*; The difference between them is typically one of animacy and volition: the agent or cause of the result state in *ma*$_3$- clauses is typically inanimate or the action was non-volitional, whereas in PV *–en* clauses the agent is always animate and the action typically volitional (though UV *–en* is more complex and is also used to express a variety of other moods and constructions including imperative, contemplative, conditional etc.). The locative voice typically highlights a patient that has been moved or only partly affected. The instrumental applicative construction highlights a wide range of semantic roles including the instrument, purpose/reason, and beneficiary of an action.

While affectedness of object is the most defining feature for the switch in morphosyntactic alignment, there is also a semantic correspondence between case marking and definiteness, i.e. oblique theme arguments in AV clauses are typically (but not always) indefinite,

while nominative patient arguments in UV clauses are definite. This is primarily contextual when the oblique theme is a bare noun argument (e.g. '(a) tree', '(a) book' etc.) and other kinds of indication are unavailable (i.e. when the patient argument is not a pronoun (e.g. 'him', 'her') or preceded by a demonstrative ('this tree', 'that book' etc.)). This highlights the fact that the differences between AV and UV clauses not only lie in morphosyntax, but in the semantics of the clause, namely (i) the degree of affectedness on the sentential object, (ii) the definiteness of the object, and (iii) the telicity and perfectivity of the event. Previous research into Amis (Chen 1987; Zeitoun et al. 1996; Wu 2007) and Sakizaya (Tsukida 1993; Shen 2008; 2016) shows that voice marking plays a role in providing temporal inference for the clause when no other temporal information (adverbs, aspectual markers etc.) is present, though how and to what extent these inferences are generated by the various interactions mentioned above has not been investigated in great depth. The author believes that this temporal inference and the degrees of semantic and morphosyntactic transitivity are intricately linked. While transitivity traditionally refers to the property of verbs relating to their (in)ability to take direct objects, Hopper and Thompson's (1980) influential paper emphasises the importance of various semantic notions on determining the degree of transitivity even in two-participant clauses. These are given in Table 2 below:

Table 2 Hopper and Thompson's (1980) Transitivity Scale

		High	**Low**
A	Participants	2 or more participants (agent and object)	1 participant
B	Kinesis	action	non-action
C	Aspect	telic	non-telic
D	Punctuality	punctual	non-punctual
E	Volitionality	volitional	non-volitional
F	Affirmation	affirmative	negative
G	Mode	realis	irrealis
H	Agency	agent high in potency	agent low in potency
I	Affectedness of object	object totally affected	object not affected
J	Individuation of object	object highly individuated	object non-individuated

Hopper and Thompson (1980, 253) state that a sentence like 'Jerry likes beer' is much lower in transitivity than a sentence like 'Jerry knocked Sam down', in that the patient argument of the second sentence is affected to a much greater degree than the first. This is due to a number of factors including aspect (i.e. telicity: the event 'knocked Sam down' is telic, while 'likes beer' is not), kinesis (the act of knocking someone down involves the transfer of action, while

the act of liking does not), and affectedness of object (Sam is affected by the action, while the beer is not). Considering the Sakizaya examples (1-4), one can see that the AV clause is interpreted as atelic (e.g. on-going), the patient is indefinite, and the degree of affectedness is unknown. Conversely, UV clauses are typically telic with a definite patient that has been affected, giving rise to a result state. While Hopper and Thompson's semantic notions of kinesis, volitionality and agency are typically provided by or reflected in the particular voice markers attached to the predicate in Sakizaya, other notions like telicity, affectedness of object and (to a lesser degree) individuation of object trigger a switch in syntactic alignment:

AV aligned - (extended) intransitive

(5)	mi-ti'ik	ci-niza	t-u	wacu
	AV-hit	NOM-3SG	OBL-CN	dog

'He is hitting a dog.'

Theme of IE clause: oblique marking, (usually) indefinite, level of affectedness undetermined, atelic, imperfective reading.

UV aligned - transitive

(6)	ti'ik-en	niza	k-u	wacu
	Hit-PV	GEN.3SG	NOM-CN	Dog

'He hit the dog.'

Patient of transitive clause: nominative marking, definite, fully affected patient, telic, perfective reading.

This therefore has ramifications for our understanding of how temporal information is relayed in Sakizaya: although there are various ways to express aspectual information (e.g. temporal adverbs, clitics, reduplicative strategies etc.), the differences in transitivity between AV and UV clauses also give rise to inherent temporal interpretations, namely AV clauses are interpreted as ongoing or stative, while UV clauses are interpreted as perfective and complete.

Hopper and Thompson (1980, 251) affirm that "the grammatical and semantic prominence of Transitivity is shown to derive from its characteristic discourse function: high Transitivity is correlated with foregrounding, and low Transitivity with backgrounding". The foregrounding and backgrounding of information is something that is normally associated with pragmatic issues of topicality and focus and, as the Philippine-type voice system highlights the privileged argument, the majority of studies on transitivity and discourse analysis within Philippine-type languages are concerned with topicality and the backgrounding / foregrounding of information. This has been confirmed through studies in other Austronesian languages: Davies (2005) claims that Madurese follows Classical

Malay in using the undergoer voice for foreground information (the storyline) and the actor voice for background information (descriptive support for narrated events). Other studies that have looked at similar phenomena in related languages include Tagalog,[1] as well as in Formosan languages such as Bunun (De Busser 2014; 2015), Puyuma (Karlsson, Holmer 2011), Seediq, and Tsou (Huang 2002) amongst others. These studies generally focus on various methods to measure topic-continuity, which address (but are not limited to) (i) Topic Persistence, that is the number of neighbouring subsequent clauses where the participant NP remains a semantic argument of the clause) (e.g. Nagaya 2007), (ii) High-continuity NP marking devices, including zero-anaphora and overt pronominal forms (used to refer to participants that are highly topical or salient at that point of the discourse) (e.g. Kroeger 1993), and (iii) Referential Distance, that is the measurement of the distance in terms of the number of clauses since the last mention of the current topic, with lower values indicating higher topicality) (e.g. Huang 2002). These methods are often used for tracking discourse referents and for anaphora resolution. This is illustrated by the following example from Asher and Lascarides (2003, 461):

(7) a. The teacher asked the students to look for the lost cat.
b. John looked under the table.
c. Mary looked in the garden.
d. Max searched all the cupboards.
e. Eventually, they found it.

In (7a) the cat is tropicalised and, although other (locative) referents can be introduced over successive clauses, the pronoun can still be referred back to the antecedent with relative ease. It may be redundant to state here that pronouns are deictic. There are, however, problems around the issue of anaphoric resolution. The locative referents introduced in examples (7a-e) are semantically incompatible with the cat, thus making it easy for us to understand which antecedent the pronoun it referred to. However, in example (8) below (from Schilder 1998, 1188), the referents are more closely related semantically, thus allowing for ambiguity:

(8) a. Several students organized a dinner for Peter.
b. Some students wrote a fancy invitation card.
c. Some other students brought exotic food.
d. But Peter didn't like *it.

1 Kroeger 1993; Katagiri 2005; 2006; Nagaya 2007.

Importantly for this study, timeframes within a discourse work in much the same way as discourse referents. Although past studies have focused very little on the impact of transitivity on tense-aspect and modality (TAM), Huang (2002) does address this in her study on Tsou and Seediq, though the voice systems of these languages do not interact with TAM in the same way as Sakizaya and, in the case of Tsou, TAM markers have been highly grammaticalised. This paper therefore takes a new approach to investigating the relationship between such foregrounding/backgrounding and temporal flow in discourse.

2 Lexical Aspect and Temporal Flow

Like any new information that is introduced in a discourse, timeframes can also be deictic in that they determine temporal relations with reference to the time of the speech act (Lyons 1977; Comrie 1981), acting in much the same way as reference tracking. Consider the following example from Kamp, Van Genabith and Reyle (2011, 214):

(9) Luigi was writing to the Department Chairman $_{S1}$. He had applied for a job without much hope $_{S2}$. But the Committee had invited him for a talk $_{S3}$, he had given a perfect presentation $_{S4}$, they had offered him the job $_{S5}$ and he had accepted $_{S6}$. Now he was worried $_{S7}$ about what he was going to teach.

In example (9) above, while the main clause (S1) uses the past progressive, those marked with the past perfect (S2-S6) allow us to flashback to an earlier time frame, which provides background information. However, when we switch back to the past simple in (S7) we return once again to the original time frame without losing track of our position in the narrative. This switch in grammatical aspect therefore acts like a discourse tracker but for timeframes. However, in a similar fashion to example (8) above, there can also be temporal ambiguity within a discourse. Take a look at the following examples:

(10) a. John opened the door.
b. He was tired.
c. It was late.
d. The door was red.

(11) a. John opened the door.
b. He entered.
c. He went upstairs.
d. *The door was red.

Although all the sentences are in the same tense-aspect (past simple), the narrative in example (10) seems more cohesive and acceptable than that of example (11). The difference can be explained by the lexical aspect (*Aktionsart*) of the verb phrases as per Vendler (1957; 1967), which refers to the aspectual distinctions inherent in the clause as conditioned by the relationship between the predicate and its arguments.

Unlike morphological aspect, semantic theories of lexical aspect stress that verbs can be grouped into various classes depending on their "inherent aspectual meaning" or "*Aktionsart*" (Dahl 1985, 26) regardless of their grammatical form. This implies that the aspectual classes of verbs are possibly a universal feature (Bach 2004; Van Valin 2006; Filip 2012) and therefore serve as a useful tool for analysing temporal interpretations in Sakizaya. These verb classes express different 'eventuality types' (Bach 1986; Filip 2012), which represent ways in which languages categorise states of affairs according to the semantic representation of verbs, verb phrases and whole sentences. Vendler (1957) categorises verbs into four classes: states, achievements, activities and accomplishments, while a fifth, 'semelfactives', was later added (Comrie 1981, 142). The difference between the classes relies largely on the notions of (i) telicity, i.e. whether or not a situation can be conceived of as having a natural endpoint (Comrie 1981, 44), and (ii) change (Dowty 1979). Dowty's (1979) interval-based semantics extends *Aktionsart* to include semantic, pragmatic and discourse related motivations. On the other hand, Bach (1986) proposes that there is a strong relationship between the structures of nominal and verbal predicates, i.e. a process predicate (or sentence) is to an event predicate (or a sentence) as a mass noun is to a count noun (Filip 2012). Elements of both these theories have clear links to transitivity, particularly the notion of definiteness and affectedness (i.e. change), which is a core factor in conditioning alignment patterns in Sakizaya. One can see the progress of the action and chart its degree of completion (whether it has not yet started, is halfway done, or close to completion) by examining the extent to which the object has been affected. This is generally more applicable with definite and countable (i.e. measurable) patient arguments. Van Valin (1990, 224) provides the logical forms for each *Aktionsart* category, which explains their interactions with the notion of 'change' in more depth **[tab. 3]**.

Table 3 Logical structures for Vendler's *Aktionsart* categories (van Valin 1990, 224)

STATE	**Predicate'** (x) or (x, y)
ACHIEVEMENT	BECOME **predicate'** (x) or (x, y)
ACTIVITY (± Agentive)	(DO (X)) [**predicate** (x) or (x, y)]
ACCOMPLISHMENT	ϕ Cause ψ, where ϕ is normally an activity predicate and ψ an achievement predicate

These structures illustrate that initially we have states involving a predicate that can either take one argument (x) e.g. 'Peter is happy', or two (x, y) 'Peter loves Jane'. Achievements are events that express some sort of change whereby one state BECOMEs another, which can include one argument (x) e.g. 'Peter arrived' or two arguments (x, y) as in 'Peter reached the summit'. Activities involve an agent who 'does' (DO) the predicate as an action either alone (x) 'Peter runs' or with a second argument (x, y) 'Peter drew pictures (for an hour)'. Although activities can be syntactically transitive by taking a patient argument, they do not introduce result states: the degree of effect on a (usually plural/uncountable) patient argument cannot be measured and so activities are considered semantically intransitive. An accomplishment, however, is an event that CAUSEs a transfer from an activity predicate (φ) to an achievement predicate (ψ) e.g. 'Peter built a house' where the activity of building leads to the achievement of there being a completed house. Accomplishments therefore introduce an element of change and so are both syntactically and semantically transitive. Importantly, the *Aktionsart* of the clause can influence the temporal flow of discourse. Kamp, Van Genabith and Reyle (2011, 80) state that:

> An event sentence in a narrative introduces not only the event it describes into the discourse context but also a "reference point" which follows this event and acts as the (default) location time for the eventuality of the next sentence. However, stative sentences do not introduce such a subsequent point but instead inherit their 'reference point' from the context in which they are interpreted, passing it on to the next sentence. This is one reason why event sentences propel the story forward but stative sentences do not.

In example (10a) above, John opening the door (an accomplishment) is followed by two stative sentences (10b-c), which do not introduce any new event into the narrative and so are temporally inclusive and do not obscure the flow of time between (10a) and (10d). This allows the interlocutor to easily infer the first and final clauses as being temporally sequential. However, in example (11) John opening the door (11a) is followed by two achievements (11b-c), which instead do introduce new events into the narrative and, thus, add temporal barriers that constrain each events' immediate access to the most recent temporal antecedent. Asher and Lascarides (2003, 10) refer to this as a "right-frontier constraint", which they describe as "roughly, the proposition introduced by a prior clause and any propositions that dominate it". Temporally, this can be explained by the analogy that if one is reading a passage from left to right, the new constraint restricts one from being able to retrace one's steps to the left (i.e. back in time), keeping the reader (or listener) at the right frontier **[fig. 1]**.

(i). John opened the door (accomplishment). / He was tired (state). It was late (state). The door was red (state).

(ii). John opened the door (accomplishment). / He entered (achievement). / He went upstairs (achievement). / *The door was red (state).

Figure 1 Illustration of the Right Frontier Constraint

Under such an approach, we can hypothesise a relationship between *Aktionsart* classes, the telicity features of Sakizaya verb classes and phrases, morphosyntactic alignment, and temporal flow; that is, atelic verbs (states, activities)[2] that embellish the narrative but do not introduce new timeframes, should be statistically more likely to fall into AV clause types or be lower in semantic transitivity (i.e. less likely to take dynamic marker *mi-*). Conversely, telic verbs (achievements and (particularly) accomplishments) that push the narrative forward by introducing new timeframes, should be more likely to be UV clauses or AV aligned predicates marked with the more dynamic *mi-*. Table 4 below shows how lexical aspect of Sakizaya clauses is closely linked to both voice marking and to morphosyntactic alignment, namely that accomplishments that express a change in a patient argument trigger a switch to UV alignment:

Table 4 *Aktionsart* categories and syntactic alignment in Sakizaya

Alignment	*Aktionsart*	Sakizaya Example			
AV	State	Ø-limulak	ci-niza		
		STAT-happy	NOM-1SG		
		'He is happy.'			
	Activity	*mu-culil*	ci-niza	i	putah
		AV-walk	NOM-1SG	PREP	courtyard
		'He is walking in the courtyard.'			
	Achievement	*ma$_2$-katukuh=tu**	ci-niza	i	kalingku
		AV-arrive=PRF	NOM-1SG	PREP	Hualien
		'He arrived in Hualien.'			
UV	Accomplishment	*ma$_3$-cepi'*	niza	k-u	sasingalan
		PV-break	GEN.1SG	NOM-CN	window
		'He broke the window (by accident).'			

2 Semelfactives may also be included here (although they do not correlate clearly with any particular voice marking pattern in Sakizaya) as while they are telic, they do not produce a result state and so no change is introduced into the narrative. They are therefore much more like states and activities in how they (do not) impact upon temporal flow in a discourse.

* The perfective suffix =*tu* is found in both AV and UV clauses and indicates either (i) the completion of an action when affixed to dynamic verbs (see achievement example in Table 4 above) or a change of state when affixed to stative predicates, e.g. *ma-busuk=tu* (STAT-drunk=PRF) '(has) become drunk'. However, the completion of an action marked by =*tu* in an AV clause does not infer a measurable effect on the patient argument, only that an action has been started and stopped. For example, (i) 'He ate (some) noodles' does not imply that all the noodles have been eaten, only that he started and then stopped. However, (ii) 'He ate the noodles' implies that the noodles have been wholly-affected. In Sakizaya, this difference would be reflected in the alignment pattern: (i) AV and (ii) UV.

Although achievement predicates are telic, they do typically do not affect an agent and are therefore more likely to be AV in nature. However, simply viewing lexical aspect as the main driver between temporal flow will lead us to certain problems. Take the following two examples:

(12) a. John opened the window. (accomplishment)
b. He entered the house. (achievement)

These two sentences are both telic events (i.e. not states) that can drive the narrative forward. They are therefore sequential both in their position in the discourse and in their temporal ordering in that (12b) follows (12a). If we reverse the same predicates, we indeed find that they too are sequential in the same way:

(13) a. John entered the house. (achievement)
b. He opened the window. (accomplishment)

However, if we take a different set of achievement and accomplishment phrases we can get a very different temporal interpretation:

(14) a. Mary pushed John. (accomplishment)
b. He fell down. (achievement)

(15) a. John fell down. (achievement)
b. Mary pushed him. (accomplishment)

While (14a-b) are similarly sequential both in discourse order and temporal order as examples (12) and (13) above, when we reverse the order as in (15a-b) we find that the two are not sequential temporally speaking. Although both clauses contain telic events, the accomplishment in (15b) is typically interpreted as occurring before the achievement in (15a). Asher and Lascarides (2003) explain this in terms of the *Rhetorical Relations* that exist between the two clauses. In example (14b) it is obvious that John falling down is a direct *result* of having been pushed by Mary and the temporal interpretation of cause and effect mirrors the order in which the information is

relayed to the interlocutor. However, in example (15b) we interpret 'Mary pushed him' as an *explanation* as to why John fell down. As such, the temporal interpretation of (15b) is one of precedence and therefore the reverse of the structural ordering. We understand this intuitively even though there are no clues from the syntax or the lexical semantics. This is possible due to our real-world experience and understanding of cause and effect, and so the relations that exist between these clauses maintain a cohesive discourse. Our hypothesis on the role lexical semantics and morphosyntactic alignment patterns may play in the temporal flow of discourse can therefore still be tested if we can find correlations between them and discourse relations. The hypothesis is therefore that AV predicates that are lower in semantic transitivity should correlate more closely with *subordinating* relations, while UV clauses and [dynamic+] AV should correlate more with *coordinating* ones.

3 Rhetorical Relations and Temporal Flow in Discourse

While there have been numerous theories regarding Discourse Relations,[3] Asher and Lascarides (2003) are perhaps the first to use such a framework to directly address temporal interpretation. Interpreting the appropriate rhetorical relation requires a "complex reasoning process involving both linguistic and non-linguistic information" (Asher, Lascarides 2003, 12), the description of which has been addressed by a number of scholars including Grice's (1975) Cooperative Principle and Sperber and Wilson's [1986] (1995) Principles of Presupposition and Relevance. However, Lascarides and Asher (1991) and Asher and Lascarides (2003) propose that discourse relations are derived via an axiomatic theory they call DICE (Discourse in Commonsense Entailment) that uses a nonmonotonic logic to model the interactions between Gricean pragmatic maxims and the world knowledge used to calculate temporal structure during interpretation. Their work on Segmented Discourse Representation Theory (SDRT) provides both a logic for representing and interpreting the logical forms of discourse, which define the pragmatic methods of resolving this semantic under-specification by encoding an interaction between semantics and pragmatics. This involves drawing upon common-sense reasoning from both linguistic and non-linguistic information, to build upon content generated by the grammar in order to construct a fuller semantic representation of the discourse. However, it is not necessary to elaborate on complexities of these logical

3 E.g. Fillmore 1974; Grimes 1975; Halliday, Hasan 1976; Longacre 1983; Hobbs 1985; Mann, Thompson 1988; Knott, Sanders 1998.

forms here as the conceptual notions of discourse relations are sufficient for the scope of this study. Asher and Lascarides' (2003) main relations are divided into coordinating relations, which introduce new timeframes, and subordinating relations, which do not. While the author has adopted Asher and Lascarides' (2003) relations for this study some have been discarded as, while some relations may differ in meaning (e.g. *continuation* vs *parallel*), they function similarly temporally and so can be merged for the purpose of this study. The relevant relations for this paper are therefore **[tab. 5]**.

Table 5 Rhetorical relations in SDRT (adapted from Asher, Lascarides 2003)

Coordinating relations (Introduce new timeframes)	Narration
	Result
	Parallel
	Contrast
Subordinating relations (Do not introduce new timeframes)	Background
	Elaboration
	Explanation
	Consequence (Condition)

Coordinating relations are temporally exclusive (separate) events. Among these are: *Narration*, which refers to a sequential event that follows on from the previous propositions, e.g. 'Bill opened the door. He stepped inside (*Narration*)'. Like *Narration*, *Result* is also sequential but entails a cause-and-effect relation, e.g. 'Mary pushed John. He fell over (*Result*)'. *Parallel* refers to two separate events that happen simultaneously, e.g. 'Bill couldn't find his keys. He searched his coat pockets. His wife looked under the sofa (*Parallel*)'. *Contrast* refers to two propositions that differ semantically but have a topic constraint or are linked by a particular theme, e.g. 'He ordered a big meal but he could not finish it (*Contrast*)'. Subordinating relations are temporally inclusive events. Among these are: *Background* relations, which introduce earlier timeframes which were previously ongoing at the time of the newly-introduced event, e.g. 'He opened the bedroom door. The light was off (*Background*)'. *Elaboration* relations provide information about the previously stated proposition and so are temporally inclusive, e.g. 'Tom ate the sandwich. It was delicious (*Elaboration*)'. *Explanation* is the converse of *Result* in that the cause follows the effect in the syntactic ordering, but remains temporally preceding as it provides information about why or how the event occurred, e.g. 'John fell over. Mary pushed him (*Explanation*)'. The *Consequence* (*Condition*) relation is not included in the SDRT, but does features in Mann and Thompson's (1988) Rhetorical Structure Theory. Although it has a cause-and-effect relation similar to *Result*, as a hypothetical situation with no real-world result, the protasis and

apodosis are temporally inclusive, e.g. 'If it rains tomorrow (*Condition*) (then) we will stay at home (*Consequence*)'.

To illustrate these relations, Asher and Lascarides (2003, 8) provide the following example:

(16) a. Max had a lovely evening.
b. He had a great meal.
c. He ate lots of salmon.
d. He devoured lots of cheese.
e. He won a dancing competition.

As sentences (16b-e) all elaborate on the initial statement that Max had a lovely evening, they are all temporally inclusive and contained within the timeframe of (16a). However, within (16b-e) there are also smaller time frames; although two sentences separate (16b) from (16e), we understand that (16e) is directly sequential to (16b) as a coordinating *Narration* relation while the others (16c-d) are not as they are all subordinating relations providing background or explanatory information about (16b). The effect of the coordinating/subordinating restrictions of these relations on the temporal flow of discourse can be visualised more clearly in the form of a diagram:

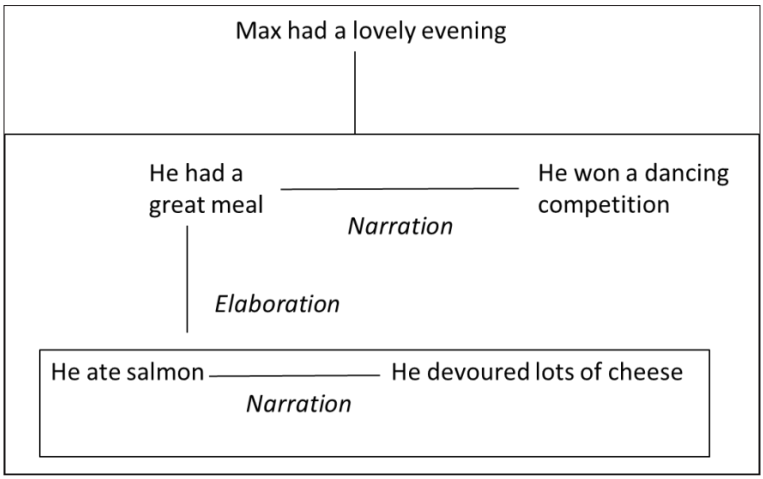

Figure 2 Representation of the discourse structure of a discourse (Asher, Lascarides 2003, 10)

In Figure 2, (16b) 'He had a great meal' and (16e) 'He won a dancing competition' are both coordinated with the *Narration* relation as they happened sequentially yet are still contained within the larger time frame of (16a) 'Max had a lovely evening'. However, as (16c) 'He ate salmon' further elaborates on the proposition (16b) 'He had a great

meal', this is subordinated further into a smaller time frame (the duration of the meal), which also restricts the *Narration* clause (16d) 'He devoured lots of cheese'. Just as these relations restrict the resolution of pronominal referents, so they too are able to constrain one's interpretation of temporal flow in a discourse. While SDRT's rhetorical relations have been applied to a variety of better-known languages like Arabic, French and English (Benamara, Taboada 2015), to the author's knowledge, the theory has not been widely applied to address phenomena found in minority or endangered languages, with the exception of Quechua (Faller 2007). The application of such an approach to Sakizaya should therefore break new ground in this area.

3.1 Interpreting the Correct Relations

Conjunctions (or 'connectives') that denote particular relations (e.g. but = contrast; because = explanation; therefore = result etc.) are helpful in checking the reliability of judgement of Rhetorical Relations, but these are not always used nor necessary given context. For example, the connective 'because' is typically used for *Explanation* relations. However, in the example 'I'm going inside. It's too hot out', the *Explanation* relation of 'It's too hot out' is obvious to the listener without the connective 'because' being needed to interpret the relation correctly. It is worth mentioning that Sakizaya makes use of very few connectives, and the majority of discourse relations are understood through context. However, small number of connectives for each relation (if applicable) in Sakizaya are provided **[tab. 6]**.

Table 6 Sakizaya connectives according to discourse relations

	English	**Sakizaya**
Narration	and; then; afterwards	*na=mahiza* ('afterwards')
Parallel	N/A	N/A
Contrast	but; however etc.	*nika* ('but')
Result	so; therefore	*kyu* ('so'; 'therefore')
Background	N/A	N/A
Explanation	because	*zayhan*
Elaboration	also; furthermore	*aca* ('also')
***Consequence* (also *Condition*)**	if…then…; therefore	*anu* ('if')…, …; *kyu* ('so'; 'therefore')

While there is always the possibility of there being ambiguity in language use, in most cases, interlocutors are able to interpret the correct relation in a discourse with ease if the speaker follows certain principles of conversation. These have been described, for example, in Grice's (1975) Cooperative Principle, namely: Quantity (making

your contribution as informative as is required; Quality (not saying what you believe to be false); Relation: (being relevant); Manner: (avoiding obscurity and ambiguity, being brief and orderly). Such an approach has subsequently been expanded upon in Sperber and Wilson's [1986] (1995) Relevance Theory, which combines the Cognitive and Reasoning Principle (human cognition is geared to the maximisation of relevance, that is, *presupposition*), and the Communicative Principle (utterances create expectations of optimal *relevance*). Building on these further, a defeasible causal knowledge and reasoning system termed *defeasible logic* has been outlined by by Asher and Lascarides (2003) and Lascarides and Asher (1991; 2007), where *I'* implies *φ* solely in cases where knowing that only *I'* would infer *φ*. This has important consequences for inferring the correct temporal ordering of clauses. Asher and Lascarides (2003) show that this provides a suitable system of inference for modelling the interactions between Gricean pragmatic maxims and the world knowledge used to calculate temporal structure during interpretation. SDRT provides both a logic for representing (and interpreting) the logical forms of discourse, and a logic for constructing logical forms. The former logic is known as the 'logic of information content'; the latter is the 'glue logic' (Lascarides, Asher 2007). This involves drawing upon commonsense reasoning from both linguistic and non-linguistic information, to build upon content generated by the grammar in order to construct a fuller semantic representation of the discourse. However, it is not necessary to elaborate on complexities of these logical forms here as the conceptual notions of discourse relations are sufficient for the scope of this study. Logical forms relevant for interpreting the correct temporal information will be given throughout the following sections where appropriate.

4 Applying Rhetorical Relations to Sakizaya: Methodology and Findings

The primary area of interest in the hypothesis for this study is that transitive UV clauses (*ma*$_3$- and *–en*) and dynamic AV (primarily *mi-*) clauses should align more closely with coordinating relations, while stative (*Ø-* and *ma*$_1$- affixed verbal predicates) and intransitive AV clauses lower in semantic transitivity (namely *mu-* and *ma*$_2$- affixed verbal predicates) should align more closely with subordinating ones. In order to test this, Sakizaya language texts collected by the author during fieldwork (2014-15; 2017) and an official Sakizaya translation

of President Tsai Ing-wen's formal apology to the Indigenous Peoples[4] were analysed: the author noted the rhetorical relationship between clauses within the texts and paired these with the verbal predicates of the main clauses, referencing their particular voice markers and alignment patterns. These were cross-referenced to check correlations between (i) relation type (coordinating vs subordinating) and alignment (AV VS UV), (ii) particular voice markers and coordinating vs subordinating relations, and (iii) voice markers and particular rhetorical relations.

With only 487 relation pairs examined, the data set is small and so results must be regarded as indicative rather than conclusive. However, as very little extended Sakizaya language corpus data exists, the small data set must suffice for the present study until more data can be examined in the future, perhaps as part of a larger study on this phenomenon. As this study is primarily interested in the *Aktionsart* of verb phrases and the role of voice marking in temporal inference and their relationship with rhetorical relations, nominal predicate clauses (i.e. equational sentences) were not included in the data. However, the author chose to include existential and causative sentences even though they do not take the same voice marking affixes[5] as they are still considered verbal predicates and are found frequently in discourse. Negative clauses were also included, but their voice markers were not specified as they are typically stative regardless of voice marking as negative clauses "describe a state in which the given frame interval does not include an eventuality described by the clause" (Kamp, Van Genabith, Reyle 2011, 104). The 487 relation pairs under examination were roughly evenly distributed across coordinating and subordinating relation types as Table 7 illustrates **[tab. 7]**.

Table 7 Distribution of coordinating vs. subordinating relations

	Occurrence	% of discourse
Coordinating relations	228	46.9
Subordinating relations	259	53.1

However, the distribution of alignment patterns did not evenly match the relation types as shown in Table 8: while over half of all occurrences were AV aligned, only 24% were UV aligned with the remainder being existential, causative or negative clauses at 22.3% **[tab. 8]**.

4 https://www.cip.gov.tw/zh-tw/news/data-list/D365AA6AAFF274D1/0C3331F0EBD318C2F8A828A1843C5E3D-info.html.

5 Existential clauses are formed via the verbal predicates *izaw* 'exist; have' and *inayi'* ('not exist; not have') but neither take overt voice marking. Causative clauses are formed by attaching the prefix *pa-* to the verb root, but this replaces the AV voice marker (though causative sentences can be both AV or UV aligned).

Table 8 Distribution of AV vs. UV alignment

	Occurrence	% of discourse
AV aligned clauses	261	53.7%
UV aligned clauses	117	24%
Other (existential/causative/negative)	109	22.3%

This indicates that AV clauses are spread out more evenly across coordinating and subordinating relations than was initially hypothesised. In fact, a more detailed breakdown of the occurrence percentage between AV and UV aligned clauses within each relation type (coordinating vs subordinating) in Table 9 shows very little statistical difference between their distributions: AV clauses occur roughly 27% of the time in both coordinating and subordinating relations, and UV clauses occur in roughly 12% of cases in both relation types. Other kinds of clauses (existential, causative and negative) appear roughly 11% in each type **[tab 9]**.

Table 9 Relationship between relation type and alignment type

	Alignment	Occurrences	% of total
Coordinating relations	AV	125	25.7%
	UV	64	13.1%
	Other	39	8.0%
Subordinating relations	AV	136	27.9%
	UV	53	10.9%
	Other	70	14.4%

However, a closer look at each rhetorical relation in Table 10 shows that the subordinating relations do correlate more closely with AV clauses as expected with *Background* at AV 56% vs UV 23%, *Explanation* at AV 39% vs UV 16%, and *Elaboration* at 51% vs UV 26%. Other predicate types (mainly negative and existential clauses) constitute the remainder of occurrences.

Table 10 Distribution of morphosyntactic alignment type for each rhetorical relation

	Relation	Occurrence (%)	AV aligned %	UV aligned %	Other %
Coordinating	Narration	141 (29%)	91 (65%)	34 (24%)	16 (11%)
	Parallel	32 (6.6%)	18 (56%)	9 (28%)	5 (16%)
	Contrast	11 (2.3%)	4 (36%)	0 (0%)	7 (64%)
	Result	44 (9%)	12 (27%)	21 (48%)	11 (25%)
Subordinating	Background	86 (17.6)	48 (56%)	20 (23%)	18 (21%)
	Explanation	56 (11.5%)	22 (39%)	9 (16%)	25 (45%)
	Elaboration	86 (17.6%)	44 (51%)	22 (26%)	20 (23%)
	Consequence	31 (6.4%)	7 (23%)	22 (71%)	2 (6%)

4.1 Coordinating Relations

While the initial hypothesis was that coordinating clauses would align more with undergoer clauses and subordinating with AV clauses, the distribution of voice marking across coordinating clauses was quite varied. Contrary to expectation, *Narration* and *Parallel* relations more commonly occurred in AV clauses (65% and 56% respectively) despite the assumption that they would more closely align with UV clauses. The only coordinating relation that had a clear UV preference was that of *Result*. A brief breakdown of each relation with examples taken from the data are described in the sections below.

4.1.1 Narration

The relation of *Narration* holds between two sentences if the second event begins when the first event ends. In SDRT, the relation *Narration* holds if things in space and time at the end of event α are where they are at the beginning of event β (Asher, Lascarides 2003, 462) The logical structure (LS) of this relation is therefore expressed as:

$$\varphi Narration\ (\alpha,\beta) \rightarrow e\alpha < e\beta$$

Narration is the most frequent relation in the dataset and takes a wide variety of voice markers across both UV (24% of occurrences in total with the primary voice markers being *–en* and the manner (adverbial) marker *–han*) and AV (primarily AV dynamic markers (AV *mi-*, root + *sa*, *mu-*, ma_2-) in 65% of occurrences, but not states (*Ø-*, ma_1-), which is in line with the initial hypothesis:

Narration – AV example

(17)	mi-cumud	ku-nuheni	ca-cacay-han	n-u	selal	n-u
	AV-enter	NOM-3PL	CA-one-MN	GEN-CN	youth	GEN-CN
	sakizaya	patay-en	k-u	mi-cudad-ay		
	Sakizaya	kill-PV	NOM-CN	AV-enter-AGT		
	a	hitay.	ma-katukuh	i	sananal	
	LNK	Soldier	AV-arrive	PREP	morning	
	Ø-tumes	sa=tu	k-u	kizu	n-u	
	STAT-full	MN=ASP	NOM-CN	corpse	GEN-CN	
	hitay	n-u	hulam.			
	soldier	GEN-CN	Chinese.			

'They entered, and one by one, those soldiers who entered were killed by the young Sakizaya. When the morning arrived, [the place] was filled with the corpses of the Chinese soldiers.' NARRATION

Narration – UV example

(18)	ma-katukuh	ci-niza	itini	i	nu-tip-an
	AV-arrive	NOM-3SG	here	PREP	GEN-west-LOC
	ta-amis-en	aca	=niza	ku	culil
	go-north-NMLZ	again	=GEN.3SG	NOM	walk

'She arrived in the west, [and then] she walked north again.' NARRATION

What seemed to be more important than specific voice markers was the predicate's co-occurrence with the aspectual clitic *=tu*, which indicates change of some kind e.g. perfective or change of state. In example (19b), the prefix *mala-* attaches to a nominal root to indicate that something has changed state (i.e. *mala-* 'become' *acawa* (husband/wife). Although there is no dynamic event to drive the narrative on, the aspectual clitic *=tu* signals a change of state, and therefore introduces a right-frontier constraint thus allowing the *Narration* relation to hold:

(19)	a.	ene[==]ng	sa=tu	ku-nuheni	itini	i
		stay[DUR]	MN=ASP	NOM-3PL	here	PREP
		tuma~tumay-an	hananay	a	pala	
		RED~bear-LOC	so.called	LNK	land	

'They stayed on here in "Tumayan" (the place of bears).'

b.	cay	ka-tenes	mala-acawa	sa=tu	ku-nuheni
	NEG	INF-long.time	become-partner	MN=ASP	NOM-3PL

'Not long after, they became husband and wife.' NARRATION

4.1.2 Parallel

Parallel clauses describe two states of affairs that happen at the same time and so temporally overlap. They also require a minimum of two topics. *Parallel* (α, β) and *Contrast* (α, β) are structurally very similar in terms of their constituents, but in terms of their semantics, *Parallel* requires that the two constituents are similar, while *Contrast* requires that they are semantically *dissimilar*. They are therefore scalar in that the more semantically similar (*Parallel*) or dissimilar (*Contrast*) the contents of the constituents are, the better the quality of the connection. Temporally, in both cases, as the two states/events occur at the same time and have the same temporal relation to one another, the way the verbs are marked for aspect is unimportant (i.e. the event could be something that has already happened, something that is habitual, or something in the future):

(20) a. John speaks French while Bill speaks German.b.c.
b. John went to bed while Bill went home.
c. John will go swimming while Bill will go to the cinema.

However, importantly, they should both be marked in the same way (as indicated by the underlined predicates in the examples above). This is also applicable to Sakizaya:

(21)	a.	ma-cakay	aku	k-u	walay	
		PV-buy	GEN.1SG	NOM-CN	Noodles	
	b.	ma-cakay	n-i	kacaw	k-u	hemay
		PV-buy	GEN-PN	Kacaw	NOM-CN	Rice

'I bought noodles and/while Kacaw bought rice.' PARALLEL

(22)	a.	ma-namuh	k-aku	t-ina	heci'	
		STAT-love	NOM.1SG	OBL-DEM	fruit	
	b.	ma-namuh	Aca	c-i	kacaw	t-ina	Heci'
		STAT-love	also	NOM-PN	Kacaw	OBL-DEM	Fruit

'I love this fruit, and Kacaw loves this fruit too.' PARALLEL

There is therefore no major correlation between this relation and specific voice marking preference. However, the majority (56%) of occurrences of the *Parallel* relation were found in AV constructions compared with just 28% for UV constructions.

4.1.3 Contrast

Like *Parallel*, *Contrast* is restricted to two constituents and can be subdivided into three types (Jasinskaja, Karagjosova 2015, 5), namely: (1) argumentative uses – 'the ring is beautiful but expensive'; (2) denial of expectation – 'John is tall, but he's no good at basketball'; (3) preventive uses – 'John started to run, but fell'. However, for Asher and Lascarides (2003) these can all be subsumed within a more general *Contrast* relation as the pragmatic function is secondary to the semantic quality of the degree of contrast, that is to say, how dissimilar the connected propositions are to one another (Asher, Lascarides 2003, 20). *Contrast* most heavily (but not always) aligns with 'other' (primarily negative) as negated clauses typically denote semantic difference, e.g. 'Bill likes tennis but he **doesn't like** football (*Contrast*)'. The dynamicity of the predicate in unimportant as negative clauses are inherently stative as no action occurred (i.e. 'He didn't go shopping' implies that no action took place, and so is considered temporally stative as the (lack of) event does not introduce a new temporal frame of reference). This was the case for 64% of occurrences:

(23) a. ta-luma' =tu k-aku
come-home =PFV NOM-1SG
'I came back home [from Taipei]'

b. nayi' ku sa-kawaw numaku itini i
NEG.EXIST NOM INS-work POSS.1SG here PREP
kalingku
Hualien
'[but] there was no work for me in Hualien.' CONTRAST

However, this was not always the case as the contrast can be made purely in terms of highlighting difference e.g. 'I like football, but he likes basketball'. In these cases, the connective *nika* 'but' is often used in Sakizaya to express the *Contrast* relationship between clauses:

(24) unian u alikakay ma-lecad =tu ita
CN-DEM CN alikakay STAT-same =ASP GEN-3PL.INC
tu tademaw
OBL people
nika izaw k-u ka-tineng-an nuheni
but EXIST NOM-CN INF-can-NMLZ GEN-3PL
mi-limut tu uzip
AV-hide OBL body
'The Alikakay were just like us humans, but they had the ability to turn invisible (lit: hide their bodies).' CONTRAST

However, I also encountered many examples where the relationship between contrastive statements in a discourse is left largely to clausal juxtaposition where the interpretation is dependent on context and on the degree of semantic difference between the two clauses, rather than being overtly marked morphosyntactically:

(25) a.

alahican	mi-kukung	k-uinian	u	alikakay	itini
sometimes	AV-steal	NOM-DEM	CN	alikakay	here
i	niazu'	t-uinian	u	lutungay	numita
PREP	village	OBL-DEM	CN	infants	POSS.1PL

'Sometimes the alikakay would come and steal the infants in our village,'

b.

ahican	mu-lakep
unable	AV-catch

'[but] we couldn't catch them' CONTRAST

c.

cay	ka-azih	numita
NEG	INF-see	POSS.1PL

'[because] we could not see them.' EXPLANATION

English contrastive clauses can also be implicit, e.g. 'John liked the film. (but) I didn't'. Despite the finer subdivisions proposed by Jasinskaja and Karagjosova (2015), there is no obvious correlation in Sakizaya between them and the presence (or absence) of *nika*. Instead, the use of *nika* is most likely related to emphasising contrast and to avoid ambiguity.

Interestingly, as negative clauses lack any sort of action, no event takes place, meaning no action is transferred over from agent to patient. This lack of transference entails that no switch is morphosyntactic alignment takes place, meaning that negative clauses (and therefore most *Contrast* relations) do not occur in UV clauses.

4.1.4 Result

While temporally, *Result* is similar to *Narration* in that similarly things in space and time at the end of event *α* are where they are at the beginning of event *β*, the rhetorical relation *Result* explicitly connects a cause to its effect. Asher and Lascarides (2003) thus provide the axiom for *Result* as:

$$\phi \ Result\ (\alpha,\beta) \rightarrow cause\ (e\alpha, e\beta)$$

That is, the *Result* relation holds if event eα precedes eβ and if eα is also a cause of eβ. This is also reflected in the temporal and clausal ordering of *Result* relations in Sakizaya:

(26)	cuzuh-an	ni	Kacaw	ci	Kulas	ma-puling	=niza
	push-LV	GEN.PN	Kacaw	NOM.PN	Kulas	PV-fall.down	=GEN.3SG
	Nucleus					Satellite[1]	

'Kacaw pushed Kulas. He fell down.' RESULT

1 'Nucleus' and 'Satellite' here refer to two non-overlapping text spans: the nucleus is the dominating clause in the relation, while the satellite is the subordinate clause (Mann, Thompson 1988, 245).

As predicted, the *Result* relation correlates more with UV aligned *ma*$_3$- and –*en* (making up almost half (48%) of all occurrences) as the two are used to express accomplishments whereby an action is transferred from an agent or causer to a patient leading to a result state. The difference between them is that the agent in a PV *ma*$_3$- clause is typically inanimate (or, if animate, the act was performed unintentionally), whereas the agent of a PV -*en* clause is always animate and the action is intentional:

Result relation: PV ma$_3$-

(27)	cula~culal	sa	k-uinian	u	udad	ma-elul
	RED~appear	MN	NOM-DEM	CN	rain	PV-submerge
	amin	k-u	mi-paluma-an			
	all	NOM-CN	PRF-plant-NMLZ			

'The rain came again and again, and all the crops were submerged.' RESULT

Result relation: PV -*en*

(28)	ma-idih	ku-heni	ta-iza	i	nu-tip-an	
	STAT-want	NOM-3PL	Go-there	PREP	GEN-west-LOC	
	n-u	tumay-an	n-u	sauwac	a	hebal.
	GEN-CN	bear-LOC	GEN-CN	river	LNK	bank
	lakuit-en	k-u	sauwac	nuheni.		
	cross-PV	NOM-CN	river	GEN.3PL		

'The wanted to go to the riverbank west of Tumayan, (so) they crossed the river.' RESULT

However, UV *ma*$_3$- featured more commonly in *Result* clauses than –*en*, again, possibly due to (1) there being a wider variety of inanimate causers in transitive clauses (e.g. weather conditions etc.) in the dataset, and (2) the various uses of –*en* (imperatives, potential aspect, volitive mood etc.).

Despite this prevalence, there were also examples of AV clauses being used in *Result* relations (27% of occurrences). However, they are usually preceded by the connective *kyu* 'so; therefore', which may emphasise the cause-effect relation without any resulting change or effect being noted/occurring:

(29)	u	hitay	n-u	hulam	sa
	CN	Army	GEN-CN	Chinese	TOP
	inayi'	k-u	ka-kan-en	ma-idih	ku-nuheni
	NEG.EXIST	NOM-CN	CA-eat-NMLZ	STAT-want	NOM-3PL
	ma-uzip	kyu	mi-kukung	ku-nuheni	t-u
	STAT-live	therefore	AV-attack	NOM-3PL	OBL-CN
	Sakizaya				
	Sakizaya				

'As for the Chinese army, they had no food (but) wanted to live. **Therefore,** they attacked the Sakizaya.' RESULT

The other substantial clause type related to *Result* relations was causatives (25% of occurrences), where the verb is marked with the causative prefix *pa-*:

(30)	a.	ma-liwliw	=tu	k-uinian	u	niazu'
		PV-surround	=ASP	NOM-DEM	CN	village
		saan	k-uinian	u	selal	
		said	NOM-DEM	CN	age.group	

'"The village has now been surrounded [with thorny bamboo]" said the youth.'

(30)	b.	pa-hanhan	k-uinian	u	selal
		CAU-breathe	NOM-DEM	CN	age.group

'They [therefore] took a rest.' RESULT

While the above example could be argued to be a *Narration* relation, the act of resting is contingent upon the group having completed their task and can therefore be interpreted as a *Result* relation.

4.2 Subordinating Relations

As previously stated, the initial hypothesis that subordinating relations would align more with AV clauses (primarily stative predicates) was confirmed by the data for the relations *Background*, *Explanation*, and *Elaboration*. The only relation that was contrary to expectation was *Consequence*, which was overwhelming UV (71%). This is largely related to the use of *Consequence* being related to *Conditional* sentences containing a condition/protasis (if…) and a consequence/apodosis (then…), which typically denotes a result and is therefore more likely to be UV aligned. A breakdown of each subordinating relation with examples is provided in the sections below.

4.2.1 Background

While previous studies (Mann, Thompson 1988) state that *Background* clauses typically provide crucial background information making it impossible for the reader to otherwise understand subsequent clauses, for Asher and Lascarides (2003) the primary criteria is that, temporally speaking, *Background* clauses rather express a state of affairs that existed beforehand. The relevant axiom in SDRT (Asher, Lascarides 2003, 165) states that:

ϕBackground (α,β) → overlap (eβ,eα)

This means that the relation *Background* holds when event eα precedes eβ in the sentential order, but that there must be an overlap where eβ precedes eα temporally. Like *Narration*, *Background* requires a common topic yet its temporal structure is different. Compare the two examples (Asher, Lascarides 2003, 165):

(31) a. Max entered the room. It was pitch dark. (*Background – preceding*)
b. Max switched off the light. It was pitch dark. (*Narration/Result – succeeding*)

In Sakizaya, AV clauses occurred twice as often (48 occurrences = 56%) as UV clauses (20 occurrences = 23%). The voice markers that were most commonly associated with *Background* relations were *Ø-* (Stative) (29%), *ma$_1$-* (Stative) (33%), existential clauses (43%):

(32)

u	iza	han=tu	u	mahka
CN	there	say=ASP	CN	just
mi-kikung-ay		a	ma-sa-kapah-ay	
AV-married-NMLZ		LNK	PV-INS-young.man-NMLZ	

'The one just mentioned, the young man who had just married…'

Ø-bangcal	k-uinian	acawa	=niza
STAT-beautiful	NOM-DEM	partner	=GEN.3SG

'His wife was very beautiful.' BACKGROUND

For UV clauses, the most common marker was locative *-an* (39% of locative constructions were used in *Background* clauses). LV *–an* only partially affects a patient, and therefore, although the effect is registered by the listener (i.e. it provides enough information to indicate that something has been affected at some time in the past, and is relevant enough to be brought up in *Background* and *Explanation* clauses), it is not forceful enough to imply a *Result* interpretation:

(33)	a.	ka-sumamad-an	uinian	u	niyazu'	n-u
		INF-past-LOC	REF	CN	village	GEN-CN
		takubuwan	hananay			
		Takubuwan	so.called			
		'In the past, there was a Sakizaya village called Takubuwan.'				
	b.	i	dawya	debeng-an	n-uinian	u
		PREP	that.time	invade-LV	GEN-DEM	CN
		ku	niyazu'			
		NOM	village			
		'At that time, the Alikakay would invade the village.' BACKGROUND				

4.2.2 Explanation

Explanation is the converse of *Result* in that, while *Result* shows a cause-effect relation where the effect (the *Result*) follows the cause, *Explanation* has the opposite ordering whereby the cause follows the result as a way to explain why that result occurred:

(34) a. The weather has been cold **therefore** I got sick (result)
b. I got sick **because** the weather has been cold (explanation)

Explanation and *Result* therefore display structural and temporal opposites. The temporal consequence of *Explanation* is summarised by the following LS:

$$\phi_{Explanation\ (\alpha,\beta)} \rightarrow (event\ (e_\beta \rightarrow e_{\beta} < e_\alpha))$$

The *Explanation* relation holds when the main eventuality described in (e_β) is a sub sort of the main eventuality described in (e_α), or the proposition associated with (e_β) defeasibly implies that associated with (e_α) (Asher, Vieu 2005). The relation *Explanation* is usually signalled by the connector 'because' in English, though in Sakizaya the relationship is almost always uncoded and inferred from context. As the *Explanation* clause is temporally precedent, aspectual information is often overtly marked on the Satellite, i.e. the predicate that explains the condition of the Nucleus:

(35)	ma-sulalis	k-aku	na=	Ø-sienaw	ku	demiad
	STAT- feverish	NOM-1SG	PRF=	STAT-cold	NOM	day
	'I have a cold/fever as the weather has been cold.'					

Explanation relations were more closely aligned with AV clauses (39% of occurrences) than UV clauses (16% of occurrences). The most commonly occurring predicates in *Explanation* relations were

ma$_1$- (Stative) (21%) and negative clauses (70%), showing that predicates in Explanation relations are almost entirely stative in nature, which is in line with the hypothesis.

Examples of UV *Explanation* include cases where the current situation is explained as the *Result* of some event, which led to it:

(36) ahican nuheni ta-luma' ma-ngeli' k-uinian u sapacuna
unable POSS.3PL go-home PV-broken NOM-DEM CN oars
'They were unable to go home [because their] oars had been broken [by the storm].' EXPLANATION

While the example could also be interpreted as AV stative *ma*-, the lack of the aspectual marker =*tu* indicating a change of state (common in UV constructions), and the earlier mention of the storm being the cause of the broken oar suggests an undergoer construction with an omitted agent.

4.2.3 Elaboration

Elaboration "presents additional details about the situation or some other element of subject matter which is presented in N or inferentially accessible in N" (Mann, Thompson 1988, 273). While on the surface level, the relations *Explanation* and *Elaboration* might appear quite similar, the two have quite different temporal implications. Consider the following example from Asher and Lascarides (2003, 159):

(37) a. Max fell. John pushed him.
b. Alexis did really well in school this year.
b'. She got As in every subject.

In sentence (37a), the proposition that *John pushed him* explains why the proposition that *Max fell* is true, while in (37b) the statement *She [Alexis] got As in every subject* elaborates the proposition in (37b) that *Alexis did really well in school this year*. These different relations also reflect different temporal connections: temporal precedence in (37a) versus temporal inclusion in (37b). Although these temporal relations are crucial to the meaning of the clause, they are not derivable from the syntax (Dowty 1979). As predicted, *Elaboration* relations were overwhelmingly AV (51%) and primarily stative in nature:

(38) a.

i	dawya	debeng-an	n-uinian	u
PREP	that.time	invade-LV	GEN-DEM	CN
alikakay	ku	niazu’	dakep-en	nu
Alikakay	NOM	village	grab-PV	GEN
alikakay	k-uinian	u	mi-cucu-ay	
Alikakay	NOM-DEM	CN	AV-breast.feed.-NMLZ	
a	wawa	numita		
LNK	children	POSS.1PL		

‘At that time, the Alikakay invaded our village to take our children who were still breastfeeding.’

b.

ma-idih	ku	alikakay	tu	lutungay
STAT-like	NOM	alikakay	OBL	infant
adiwawa.				
baby				

‘The *Alikakay* liked infant children.’ BACKGROUND

c.

anu	mu-kan=tu	t-uinian	u	hemay
if	AV-eat=ASP	OBL-DEM	CN	rice
sa	ma-kai=tu	ku-nuheni.		
TOP	STAT-not.want=ASP	NOM-3PL		

‘If they [the children] were already eating rice then they [the Alikakay] wouldn’t want them anymore.’ ELABORATION*

The remaining number of occurrences were divided roughly equally between UV clauses (26% of occurrences) and ‘other’ (mostly negative clauses) (23%):

(39) a.

ma-kizem	ku	tu’ud	amin	nu
PV-stolen	NOM	things	all	GEN
niazu’				
village				

‘All the things in our village have been stolen.’

b.

ma-ala	ku	tanud
PV-taken	NOM	wooden.pestle

‘Our pestle has been taken.’ ELABORATION

c.

ma-ala	ku	dangah
PV-taken	NOM	cauldron

‘Our cauldron has been taken,’ ELABORATION

d.

ma-ala	ku	tu’ud	amin	saan
PV-taken	NOM	things	all	said
k-uinian	u	binawlan		
NOM-DEM	CN	neighbours		

‘“Everything has been taken!” said the neighbours.’ RESTATEMENT

4.2.4 Consequence

The *Consequence* relation refers to conditional sentences where following a condition through to its conclusion gives rise to a potential consequence (i.e., an 'if… then…' sentence). Unlike other subordinating clauses, *Consequence* does not closely align with AV clauses (just 23% of occurrences), though such examples are quite acceptable:

(40)		anu	inay'	ku	lawad	=aku	hakiya
	a.	if	NEG.EXIST	NOM	time	GEN.1SG	perhaps
		'If I am busy,'					
		Nucleus					
	b.	ma-udang	=aku	ma-katukuh			
		PV-be.late	GEN.1SG	AV-arrive			
		'I may arrive late.'					
		Satellite					

It is worth noting that the connective *anu* 'if' is not always necessary to indicate this relation and, like others, it can be inferred through context:

(41)	na=	ma-hiza		sa=tu	ma-lingatu=tu	ku-nuheni
	PST	STAT-like.that		MN=ASP	AV-start=ASP	NOM-3PL
	mi-kilim	t-uinian	u	tademaw.		
	AV-look.for	OBL-DEM	CN	people		
	i	tini	izaw	k-u	tademaw	mi-anin
	PREP	here	EXIST	NOM-CN	people	AV-beg
	t-uinian	u	ka-kan-en			
	OBL-DEM	CN	CA-eat-NMLZ			
	'After that, they began looking for people. (If) there were people here, (then) they (would) beg for food.'					

UV clauses made up 71% of occurrences with the primary voice marker being PV *-en*. This is most likely as while *–en* highlights a volitional agent and can indeed be interpreted as perfective in transitive clauses depending on context, it is also used in variety of other irrealis moods including imperative forms and, importantly, the contemplative aspect as commonly seen in the apodosis of conditional sentences, e.g.:

-*en* in imperative sentences

(42)	tengil-en	k-u	kamu	n-i	ama	numisu
	listen-IMP	NOM-CN	words	GEN-PN	father	GEN.2SG
	'Listen to your father!'					

-*en* in conditional sentences (apodosis)

(43)	anu	ma-cilal	anucila	sa	ta-dadipasan-en
	if	STAT-sunny	tomorrow	TOP	go-beach-UV
	ita				
	GEN.3PL.INC				

'If it is sunny tomorrow, we will go to the beach.'

4.3 Some Generalisations on Voice Marking and Relation Types

It has been stated that the AV voice markers differ in terms of their semantic transitivity, that is, verbal predicates (events) prefixed with *mi-* are typically highly dynamic and volitional, those with *mu-* and ma_2- are slightly lower in both, or lack overt (oblique) object arguments, and those prefixed with Ø- and ma_1- denote states. Interestingly, if we examine the distribution of these markers in Table 10 below, dynamic *mi-* verbs occur more frequently in coordinating clauses (57%), as does root + *sa* (this is not true voice marker but denotes the manner in which an action is carried out, and so is similar to an adverbial clause) at 72%. Although ma_2- verbs typically lack object arguments, they can be dynamic and high in both control and volition (i.e. *mapalaw* 'dance', *maduba'* 'run' etc.) and so also feature more in coordinating clauses (76%).

Table 11 Distribution of voice markers within relation type (coordinating vs. subordinating)

Alignment	Voice marker	Occurrence (Discourse Total %)	Coordinating (% of occurrence)	Subordinating (% of occurrence)
AV (Decreasing in semantic transitivity)	*mi-*	74 (15.2%)	42 (57%)	32 (43%)
	root + *sa*	37 (7.5%)	27 (73%)	10 (27%)
	mu-	37 (7.5%)	18 (49%)	19 (51%)
	ma_2-	38 (7.7%)	29 (76%)	9 (24%)
	Ø- (stative)	17 (3.5%)	5 (29%)	12 (71%)
	ma_1- (stative)	63 (12.7%)	9 (14%)	54 (86%)
UV	ma_3-	25 (5.0%)	16 (64%)	9 (36%)
	-en	29 (6.0%)	23 (79%)	6 (21%)
	-an	18 (3.6%)	6 (33.3%)	12 (66.6%)
	-han	28 (7.4%)	17 (47%)	19 (53%)
	sa-(pi-/ka-) (Instrumental)	9 (1.7%)	2 (22%)	7 (78%)
Other	Existential	28 (5.7%)	10 (36%)	18 (64%)
	Causative	27 (5.5%)	17 (63%)	10 (37%)
	Negative	54 (11%)	12 (22%)	42 (78%)

However, as we move down this scale of transitivity, verbs marked with *mu-* ([volition-]) occur less frequently, roughly equally across both types (49% in UV and 51% in AV), while both stative forms *Ø-* and ma_1- overwhelmingly feature in subordinating clauses (71% and 86% respectively). The correlation between semantic transitivity and coordinating vs subordinating relations within AV verb forms is therefore very clear. This position is strengthened by examining which rhetorical relation was most commonly associated with each voice marker.

Table 12 Voice markers and their most common rhetorical relations

Alignment	Voice marker	Most common relation
AV (Decreasing in semantic transitivity)	*mi-*	Narration (41%)
	root + *sa*	Narration (62%)
	mu-	Narration (35%)
	ma_2-	Narration (55%)
	Ø- (Stative)	Background (29%) & Elaboration (29%)
	ma_1- (Stative)	Background (33%) & Explanation (21%)
UV	ma_3-	Result (56%)
	-en	Narration (45%)
	-an	Background (39%) & Narration (28%)
	-han	Narration (39%)
	sa-(pi-/ka-) (Instrumental)	Elaboration (& Motivation) (22%)
Other	Existential	Background (43%)
	Causative	Narration (30%) & Result (26%)
	Negative	Explanation (70%)

Table 12 shows that while AV markers higher in transitivity (*mi-*, root + *sa*, *mu-* and ma_2-) are most commonly found in coordinating *Narration* clauses, stative predicates (*Ø-*, ma_1-, and negative clauses) are most commonly seen in subordinating *Background*, *Elaboration* and *Explanation* clauses as they are temporally inclusive and therefore are rarely involved in pushing the narrative forward by introducing new timeframes.

Regarding UV clauses, it has previously been stated that they are semantically and syntactically transitive and typically denote a perfective event with an affected patient argument. In terms of lexical aspect, these are usually telic accomplishment verbs, which entail a change of some kind, and are therefore expected to fall firmly within coordinating relations that introduce timeframes. Table 11 shows that this is generally the case for UV ma_3-, which is found in coordinating relations in 64% of occurrences, most commonly as a *Result* relation, which adheres to the initial hypothesis. Likewise, UV *–en* is also overwhelmingly coordinating at 79%, though these are primarily found in *Narration* relations. Interestingly, locative *–an* clauses are statistically more likely to occur in subordinating relations (66.6% of occurrences) with the most common rhetorical relation being that of *Background*. This is most likely due to the semantics of the voice marker allowing only partially affected or moved patients, whereby the event provides enough information to indicate that something has

been affected (at some time in the past) but not forcefully enough to imply a *Result* relation. UV *–han*, which is the undergoer equivalent of root + *sa*, is often used adverbially, and is, therefore, found equally distributed across both coordinating and subordinating clauses as it can be used to describe both the event (*Narration*) as well the manner or extent to which the event was completed (*Explanation* and *Elaboration*). Although the instrumental applicative is UV aligned, it has a wide semantic scope highlighting the purpose, reason or beneficiary, and so most commonly found in subordinating *Elaboration* (& *Motivation*) clauses.

5 Conclusion

The relationship between the Philippine-type voice system that defines Sakizaya grammar has a complex relationship with morphosyntactic and semantic transitivity, (lexical) aspect, topicality, and mood. Actor-aligned clauses in Sakizaya are considered (extended) intransitives: in these clauses events are interpreted atelic and ongoing, with direct objects being marked as oblique (as are adjuncts) and typically indefinite, with an indeterminate effect on the patient argument. Undergoer-aligned clauses are considered transitive with telic, perfective events, whereby patient arguments are marked as nominative, are definite and have been wholly or partly affected in some way, often leading to a change of state (result). While the idea that the foregrounding and backgrounding of information is related to transitivity (Hopper, Thompson 1980) and to specific alignment patterns in related Austronesian languages has been addressed in previous studies (e.g. Katagiri 2005; Davies 2005), these have not focused specifically on how this relates to temporal inference and temporal flow in discourse. This paper, therefore, draws upon Rhetorical Relation theories, primarily the work of Asher and Lascarides (2003) and Mann and Thompson (1988) to test this phenomenon to better understand the relationship between them.

The initial hypothesis as to (i) whether or not undergoer-aligned transitive sentences that introduce new time frames and drive the narrative forward would correlate more closely with coordinating relations (*Narration*, *Parallel*, *Contrast*, and *Result*), while actor-aligned intransitive sentences would correlate more closely with subordinating relations (*Background*, *Elaboration*, *Explanation*, and *Consequence*); (ii) if there is any correlation between such relations and the semantic incline of AV voice markers ([dynamic+] vs [state+]).

The study shows that while the most commonly found coordinating relation, *Narration*, did not occur more frequently with UV clauses, due to AV alignment being statistically more common in discourse, it did correlate with AV voice markers (*mi-*, *mu-*, ma_2-) that denote higher

levels of semantic transitivity (dynamic+, volition+). Stative predicates (*Ø-*, *ma$_1$-*), however, feature much more heavily (around 80% of occurrences) in subordinating clauses, which are overwhelmingly AV in alignment, which is in line with the hypothesis. Moreover, the study showed a strong correlation between coordinating clauses and UV markers *ma3-* (64%) and *-en* (79%) as they typically denote *Result* or *Narration* relations as expected. Other UV aligned clauses (locative *–an*, the manner marker *–han* and the applicative instrumental *sa-*(*ka-*/*pi-*) either feature more in subordinating clauses or are more evenly distributed between the two relation types as they either: (i) they do not mark enough of a change on the patient to justify a result/change of state (as in the case of the locative voice); (ii) their multiple uses in expressing adverbial constructs (as *–han* does) or providing reason or purpose (as with the instrumental form) mean they are often used to provide background information, justification or motivation for events. While the results may not be as striking as the initial hypothesis suggested due to the complex and multifarious semantic features and uses of specific voice markers, there is certainly evidence for an overarching tendency for dynamic verbs to drive the temporal flow of a discourse and for stative forms to provide temporally inclusive background/elaborative information.

The study concludes by acknowledging that temporal inference in Sakizaya is formed via a complex interaction between overt aspectual marking, the inherent lexical aspect of the predicate and entailing morphosyntactic and semantic transitivity of clauses. These features are reflected and conditioned by the pragmatic inference of discourse relations, which are interpreted via an intricate series of update operations that contextualise and explain each clause in relation to the surrounding discourse. While this is a small-scale study, it will hopefully lead to an increased interest in the application of rhetorical relation theories to Austronesian (and particularly Philippine-type) languages, so that more cross-linguistic research can be conducted on these interesting and complex voice systems.

Abbreviations

1	first person
2	second person
3	third person
ABIL	Abilitative
ATTR	Attributative
ASP	Aspect Marker
AV	Actor Voice
CA	Ca-Reduplication
CAU	Causative
CN	Common Noun
DEM	Demonstrative
DM	Discourse Marker
DUR	Durative
EMPH	Emphatic
EVID	Evidential
EX	Exclusive
EXIST	Existential
FAC	Factual marker
GEN	Genitive
HORT	Hortative
HTOP	Hypothetical topic marker
IMP	Imperative
INC	Inclusive
INCH	Inchoative
INF	Infinitive
INS	Instrument (nouns)
INV	Instrumental Voice
IRR	Irrealis
LNK	Linker
LOC	Locative case
LV	Locative Voice
LW	Loan word
MN	Manner
MOOD	Mood
NMLZ	Nominaliser
NOM	Nominative
NVOL	Non-Volitional
OBL	Oblique
Q	Question Marker
PL	Plural
PN	Personal Noun

POSS	Possessive
PREP	Preposition
PRF	Perfect
PRV	Perfective
PV	Patient Voice
QUOT	Quotative
RECP	Reciprocal
RED	Reduplication
REF	Referential marker
REP	Reported evidential
SG	Singular
SUP	Superlative
TOP	Topic
UV	Undergoer Voice
VOC	Vocative
VOL	Volitional

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Space in Time: Diachrony of Goal-Participant Marking in Ryukyuan Languages

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Abstract The purpose of the paper is a typological and diachronic study of goal-participant marking in Ryukyuan languages, with goal-participants understood as the participants encoding semantic and syntactic notions typically associated with indirect object, such as Recipient, passive agent, and causee. The study focuses on dative-spatial case polysemy, considering how in Ryukyuan languages G-participants are typically marked either by dative-locative or dative-allative markers. As a result of an examination of over twenty Ryukyuan topolects by studying language documentation examples of encoding of a wide semantic range of G-participants, Ryukyuan languages have been divided into three synchronic types with a range of subtypes, which also reflect a diachronic process of a transition from dative-locative to dative-allative marking. The process is explained as semantically motivated, and conceptualisation of G-participants as destinations of a vectored movement is identified as the main factor of first locative/allative variation, and then a potential domination of allative in G-participant-marking.

Keywords Case marking. Case polysemy. Spatial cases. Ryukyuan. Japonic.

Summary 1 Typological and Japonic Background of the Study. – 2 Typology of G-Marking in Ryukyuan. – 2.1 Type 1: Full Dative-Locative Syncretism. – 2.2 Type 2: Variant Dative-Locative and Dative-Allative Marking. – 2.3 Type 3: Full Dative-Allative Syncretism. – 2.4 Unclassifiable Topolects and Variations on the Typology. – 3 Diachrony of G-Participant-Marking in Ryukyuan. – 3.1 Factors Behind the Dative-Locative > Allative Change. – 3.2 Philological Evidence for the Dative-Locative > Allative Shift. – 3.3 Dative-Locative > Allative Change and Ryukyuan Prehistory. – 4 Conclusions.

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1 Typological and Japonic Background of the Study

The focus of this paper will be case-marking typology and diachrony of Goal-participants, henceforth G-participants, in Ryukyuan languages from the Japonic family. What is understood behind the notion of G-participant is basically the participant expressing one of the semantic roles most typically associated with indirect object, defined after Bickel, Nichols (2008, 307) as "the more goal-like non-agent-like argument of a three-place predicate" in an active voice clause. Morphologically, G-participants are frequently encoded by dative marking, at least in languages with nominative-accusative and indirective (cf. Haspelmath 2005) alignment, which Japonic is representative of.

The most typical roles of G-participants in the Japonic context can be roughly divided into two groups: semantic and syntactic. The former are reflected in the surface structure of the clause as indirect object due to a semantic motivation – they indicate participants which are prototypically associated with the "more goal-like argument" – whereas the latter pertain to non-canonical indirect-object-like marking of agent-like arguments caused by the shift in the case-marking pattern of the clause due to a change in the valency of the clause. This latter group incorporates passive agent, which in Japonic languages typically functions as adjunct (in prototypical passive) or indirect object (in submissive passive, cf. Klaiman 1991, also called adversative passive, cf. Shibatani 1985, or Martin 1987); causee, which typically becomes indirect object of the causative clause; and Experiencer, including Possessor, e.g. in possessive constructions with existential verbs. In Japonic, Experiencer frequently permits non-canonical marking whereupon the Experiencer participant, while syntactically subject, receives dative rather than nominative encoding (Shibatani 2000; Jarosz 2017). This is due to Experiencer being a less prototypical agent-like argument (as per e.g. Van Valin 2001, 29 ff. continua of semantic roles and thematic relations) and displaying the prototypical-agent-like (Dowty 1991) semantic features of [+ sentience], [+ motion] while also being non-agent like in the features of [– causation], [– volition]. Such dative-marking of Experiencer in Japonic is typically related to a shift in valency in clauses marked for potential or inchoative, which can be interpreted as an example of inverse voice (Jarosz 2023, 194), or in possessive clauses, in which the Possessor participant is added to the clause through possessor raising. In either case, the more agent-like subject argument is conceptualised as Experiencer. Consequently, the non-canonical (non-nominative) Japonic marking of the Experiencer subject can be classified alongside passive agent and causee as a syntactic G-participant, or valency-shift-based G-participant.

The most typical semantic roles of G-participants in active clauses can be abstracted like in the following list.

- Recipient: a sentient target of an event which involves a change of possession or location of Theme (the most object-like argument). Occurs in ditransitive/trivalent clauses with predicates such as 'to give' and 'to send'.
- Beneficiary: a variant of Recipient; a sentient target of an event who benefits from the event.
- Donor: a sentient source of an event which involves a change of possession or location of Theme (the most object-like argument). Occurs in ditransitive/trivalent clauses with predicates such as 'to receive' and 'to learn from'.
- Endpoint: the outcome of a spontaneous or self-propellent change. Occurs in intransitive, but bivalent clauses with predicates such as 'to become' and 'to change into'.
- Result: the effect of an action which causes a change in Patient/Theme. Occurs in ditransitive/trivalent clauses with predicates such as 'to divide into'.
- Reference: the criterion or axis of a comparison. Occurs in intransitive, but bivalent clauses with predicates such as 'to resemble' and 'to be close to'.
- Source/Cause: an entity, animate or inanimate, which instigates the predicated event and directly affects the subject. Occurs in intransitive, but bivalent clauses with predicates such as 'to get wet' (e.g. 'to get wet in the rain') and 'to lose'.

In Tokyo-Japanese-based standard Japanese as well as in historical varieties of Japanese, G-participants, whether semantic or syntactic, are typically marked for dative case syncretic with locative case, encoding adjunct participants for the semantic roles of Place/Location of stative predicates. This dative-locative case, exemplified by standard Japanese *-ni*, Proto-Japonic *-ni, is also attested to a limited degree in directive meanings such as illative (e.g. *hana-o bin-ni ok-u* flower-ACC vase-DAT 'to put flowers in a vase') and superlative (e.g. *yama-ni nobor-u* mountain-DAT climb-NPST 'to climb mountains'), although not strictly allative understood as 'to move at/towards'. Conversely, the Japanese allative marker *-e*, which specialises specifically in those strictly allative functions, does not co-occur with G-participants.[1]

In Ryukyuan, the marking of G-participants displays a range of typological patterns based on dative-spatial case polysemy. Apart from topolects which resemble the standard Japanese model with the dative-locative syncretism and allative remaining outside the

1 This remark, however, only concerns standard Japanese; according to Martin (1987, 46-7), colloquial downtown Tokyo Japanese permits allative marking of Recipient, as well as employs allative marking with *-e* of Goal and even Location roles.

encoding options available for G-participants, there are also those which display a split locative/allative marking with some G-participants marked for locative/historical locative (the reflex of Proto-Japonic *-ni) and some with a variant of allative, as well as those which use the historical locative only marginally or not at all, in which the encoding of G-participants has been generally taken over by some variant of predominantly allative case.

The purpose of this paper is to examine the phenomenon of the dative-locative versus dative-allative polysemy, or locative versus allative variation in the marking of G-participants in Ryukyuan, from a typological as well as diachronic perspective. The hypothesis underlying the present study is that the variation in the marking of G-participants can be explained semantically as a metaphoric equation of G-participants with locative concepts (as in standard Japanese) on the one end of typological and diachronic continuum, and with allative on the other. I will also search for a grounding of the Ryukyuan patterns in cross-linguistic evidence and general linguistic typology.

The term 'locative' is understood here as synonymous with 'essive', and 'allative' as synonymous with 'directive', and both pairs can be used interchangeably. At the same time, the terms 'locative' and 'allative' function as hyperonyms of more specific spatial case labels such as, respectively, adessive and inessive, and superlative, illative and apudlative (for the exact definitions and cross-linguistic examples, cf. Creissels 2008). Like the aforementioned instance of standard Japanese, Japonic languages tend to group together locative marking with certain kinds of allative marking in what in terms of Bourdin's (1997) modal distinction could be understood as 'Goal Intent' as well as 'Goal Attainment' (Japanese *-ni*), contrasting it with specialised allative marking, Bourdin's 'Goal Approximation' (Japanese *-e*). The patterns discussed for Ryukyuan languages in this paper will overall concern a shift in the marking of G-participants from dative-locative into allative, whereby the etymological allative begins to cover all modal types of Goal marking, be it Goal Intent, Goal Approximation, or Goal Attainment, and possibly also indirect objects expressing Recipient or Beneficiary.

Although the variation in G-participant marking and its syncretism with spatial cases has been discussed in a number of studies devoted to specific Ryukyuan topolects,[2] the subject has not yet been treated comprehensively in a systematic way, by encapsulating Ryukyuan as a whole. This paper will therefore be an attempt to initiate this vein of typological and diachronic study of Ryukyuan, and should prospectively be followed-up by studies expanded by evidence

2 E.g. Nishioka 2004 (Shuri-Okinawan); Matayoshi 2006 (Tsuken-Okinawan); Shimoji 2018 (Nagahama-Miyako).

from Mainland Japonic as well as examining proto-language origins of indirect object and spatial case marking in Japonic.

Topolects selected for this study were intended to evenly reflect the two major genetic division units of Ryukyuan, North and South Ryukyuan/Sakishima, as well as, at the same time, the four major geographic and linguistic subdivisions of Amami, Okinawa, Miyako and Yaeyama. A detailed analysis concerning the subject matter was conducted for about a dozen North and South Ryukyuan topolects respectively. Classifications of Japonic employed in this paper reflect those adopted in Jarosz (2024, 7, 11)

The paper will first discuss the typology of G-participant-marking in Ryukyuan, grouping them into three types based on the observed patterns of corelation between G-participants and spatial case marking (section 2). The results of the grouping will be subsequently given a diachronic interpretation, explaining the most likely stages as well as causes behind the shift from a dative-locative to dative-allative syncretism, and discussing the relevant proto-forms and typological profiles of Ryukyuan proto-languages (section 3). The study is concluded with a discussion of how the Ryukyuan evidence fits into a broader cross-linguistic pattern of case grammaticalisation and spatial case polysemy (section 4).

The data used in the present study was predominantly extracted from lexicographic sources, research reports and other types of language data compilations focusing on the Ryukyuan languages.[3] The author's own examples come from the fieldwork on Kurima-Miyako in the years 2018-19 and 2023-24 (informant: Fumio Kuninaka) and on Naha-Okinawan in 2023 (informant: Masanao Toyama). For the sake of consistency, examples cited in the paper have been re-transcribed phonologically into the IPA. All glossing and translations into English are the author's own. When giving specific linguistic forms, the tilde symbol ~ indicates free variation and the slash / allomorphy, including suppletion.

2 Typology of G-Marking in Ryukyuan

In terms of G-participant marking, Ryukyuan languages show a typological gradation which permits their division into three groups. This synchronic gradation between type 1 (all G-participants marked with locative or historical locative) and type 3 (all G-participants marked

3 See for example Osada, Suyama, Fujii 1980; Hirayama 1983; 1986; 1988; Kuno et al. 1992; Nohara 1998; Uchima 2002; 2004; Miyagi 2003; Matayoshi 2006; Maeara 2011; Kibe et al. 2011; Kibe 2012; Tomihama 2013; Kiku 2014; Niinaga 2014; Shimoji 2017; Topping 2019; Asō 2020.

with allative) is considered to be a reflection of linearly arranged diachronic stages of development[4] from stage 1 = type 1, closest to the alleged Proto-Japonic profile with dative-locative syncretism, to stage 3 = type 3, the furthest from Proto-Japonic with an elimination of the historical dative-locative from the G-marking system and a replacement of dative-locative with dative-allative syncretism.

2.1 Type 1: Full Dative-Locative Syncretism

On the one end of the scale there are type 1 languages which encode all G-participants with a descendant of the historical dative-locative marker *-ni. This type essentially matches that of standard Japanese, and is represented mostly by North Ryukyuan languages, in particular by Amami. The list includes several Kikai-Amami topolects (Onotsu, Shitōke, Nakazato, Araki), Kasari-Amami, Yamatoma-Amami, Yuwan-Amami,[5] Henoko-Okinawan, as well as South Ryukyuan Taketomi-East Yaeyama.[6]

In general, type 1 topolects display a case-encoding syncretism between G-participants and locative spatial adjuncts.[7] There appears to be a conceptual conflation between the semantics of G-participants and of adjuncts which indicate location. In other words, these G-participants are metaphorically equated with a specific space or location in which an event takes place.

Some Type 1 topolects, such as Henoko-Okinawan, use the dative-locative case marker not only in locative (2-1), but also allative functions (2-2), suggesting a conceptualisation of G-participants not just as a stative space of an event, but also as a vectored destination or endpoint of the event. Diachronically speaking, this extension of conceptualisation from space to destination is likely the instigator of the expansion of G-marking strategies from dative-locative to allative case.

4 Diachronic differentiation between types 3-1 and 3-2, which is reliant on the original directional marker(s) taking over also the locative functions of the original dative, in theory may involve an earlier process which occurs independently of the locative > directive shift in the G-participant marking.

5 Although there are attestations of the Yuwan allative marker *-katsɨ* flagging Endpoint, they are so limited and rare that it has been decided to classify Yuwan as Type 1 nonetheless.

6 I further divide Pellard's (2015) Macro-Yaeyama languages into East Yaeyama, West Yaeyama and Yonaguni, as per the proposal introduced in Jarosz (2023; 2024).

7 There are exceptions such as Yamatoma and Yuwan, where the realisations of the dative marker *-n*/*-ni*/*-nin* are only used in temporal, but not spatial functions (cf. Osada, Suyama, Fujii 1980, 484; Niinaga 2014, 558 ff.). This can be assumed to be a secondary development, with spatial uses of *-n*/*-nin* having been replaced by a range of specialised spatial case markers developed in these topolects.

(2-1) gama-ni ɕima:-to:-n.
cave-DAT live-PROG.NPST-IND
'They live in a cave.' (Henoko; Nohara 1998, 204)

(2-2) ʔUgimi Kidzuka-ni ʔi-ra-n.
Ōgimi Kijoka-DAT go-PST-IND
'We went to Kijoka in Ōgimi.' (Henoko; Nohara 1998, 204)

A more advanced iteration of the Henoko pattern is Taketomi, where the dative marker *-i ~ ĩ ~ -ni*[8] is employed in allative (2-3), but not locative uses, in the case of which it has been replaced with the specialised locative marker *-na* (cf. Nohara 1998, 607-8; Maeara 2011, 728) or a compound of both markers, *-na:i* (Maeara 2011, 730).[9] Diachronically, Taketomi reflects a more advanced stage than Henoko: one can hypothesise that the Taketomi dative initially specialised in locative uses, then it combined locative and allative uses, and then shifted to allative uses only.

(2-3) Ho:ɕi-mitɕi-ju tu:r-i sambaɕi-ĩ-du har-u.
Hōshi-road-ACC cross-CVB pier-DAT.ALL-FOC go-NPST
'I go to the pier through the Hōshi road.' (Taketomi; Nohara 1998, 606)

2.2 Type 2: Variant Dative-Locative and Dative-Allative Marking

Type 2 topolects display a split or variant G-participant marking. Some of the G-participants are marked by exponents syncretic with locative case marking/historical dative, and others by exponents syncretic with allative case marking. This is by far the largest group in Ryukyuan – unsurprisingly, since the split marking indicates a broad transitional stage between a full dative-locative polysemy to full dative-allative (or dative-allative-locative) polysemy – and it involves a number of subtypes.

8 The allomorphs *-i ~ ĩ* etymologically come from PJ *-ni as a result of deletion of the nasal, with the latter retaining the nasality feature on the remaining vowel. The variant *-ni* theoretically might reflect the archaic form which for some reason has been fossilised and retained; considering, however, how it is only used marginally and either with Japanese-borrowed adjuncts to modify verbs (e.g. *funto-ni* 'really' from Japanese *hontō-ni*, Maeara 2011, 768) or as an alternative to *-na* in purposive constructions (Nohara 1998, 606), it is more likely that this *-ni* is not inherited, but a relatively recent loan from Japanese.

9 *-na* can also be used directively with transitive attachment verbs such as 'to write', e.g. *kabi-na ko-n* paper-LOC write-IND.NPST 'to write on a paper' (Maeara 2011, 728).

Unlike type 1, which is almost exclusive to North Ryukyuan with an exceptionally high proportion in Amami, most subtypes of type 2 are distributed roughly evenly throughout the North and South Ryukyuan areas – the exception being, again predictably, subtype 2-1, which is typologically and diachronically closest to type 1 and so far has only been found in North Ryukyuan.

Subtype 2-1 includes topolects which permit allative G-marking only with less prototypical G-participants representing minor semantic roles associated with G-participants. One representative is Kanna-Okinawan, which allows allative case marking (-*gati*) on Result and Reference (2-4), but not on Recipient, Experiencer, passive agent, or causee, for which the historical dative -*ni* is used (2-5).

(2-4) mi:-tɕu-gati wakki-n.
three-CLF-ALL divide-IND.NPST
'To divide in three.' (Kanna; Nohara 1998, 234)

(2-5) ʔinnu-kʔwa:-ni ku:-jat-ta-n.
dog-DIM-DAT bite-PSV-PST-IND
'I got bitten by a dog.' (Kanna; Nohara 1998, 234)

In subtype 2-2, although allative G-marking is available for prototypical G-participants – such as Recipient and Endpoint – its use is limited or less frequent, while the historical dative exponent remains dominant. Examples include Wadomari and China-Okinoerabu, in which the historical dative -*ni* can be used with any kind of G-participant (6), as well as in a wide range of both locative and directive functions, whereas allative/parlative -*tɕi* is only attested with Endpoint, Result, an inanimate variation of passive agent called here the passive mobile Force (cf. 3.1), and also Recipient (2-7).

(2-6) tɕʔu:-ni kuri-ta-n.
person-DAT give-PST-IND
'I gave it to someone.' (Wadomari; Hirayama 1986, 845)

(2-7) ʔuja-tɕi dʑin-Ø ʔukuj-u-n.
parent-ALL money-ACC send-NPST-IND
'I'm sending money to my parents.' (Wadomari; Hirayama 1986, 846)

Circumstances parallel to Okinoerabu are confirmed in Irabu-Nakachi and Tarama (both Miyako), with their respective allative markers -*nkai* / -*nke:* available in Recipient and Result marking; Nagahama-Miyako, which permits optional allative marking with -*nkai* of Recipient, causee and Endpoint (cf. 3.1), and also uses allative to

encode Result; Ikema-Miyako, with allative *-nkai* available in Recipient, Result, but also causee-marking; Karimata-Miyako, with centripetal allative *-i* attested in Recipient and centrifugal allative *-ngai* in Result-marking; Kuroshima-West Yaeyama, with allative *-ha* attested on certain Recipient participants as well as on Result, Endpoint, and limited Reference participants. Subtype 2-2 shows thus an expected, gradient variation among topolects concerning the range of participants which permit allative marking, as well as the conceptual Goal-like status of these participants.

Subtype 2-3 involves those topolects in which, although both locative and allative syncretism with G-participant-marking is available in a roughly equal measure, there are some rather clear-cut semantic/functional distinctions between the two exponents. The representatives include Kametsu-Tokunoshima, which uses only the historical dative-locative *-ni* for marking causee, Donor, and Source/Cause, and conversely only allative *-katsɨ* for Endpoint and Result, whereas the roles of Recipient, Reference and passive agent can be marked by either;[10] Torishima-Kume, which seems to permit only dative-locative (essive) *-ni* for marking Experiencer, causee and passive agent, and conversely only allative *-nke:* for marking Endpoint and Result; Kurima-Miyako, in which dative-essive marking *-n* is dedicated to the valency-shift-based participants (Experiencer, causee, passive agent; 2-8), Endpoint and several minor G-participant roles (Reference, Source/Cause, Beneficiary), whereas allative *-nke:* specialises in the marking of Recipient and Result (2-9), with rare instances of Endpoint, causee and passive agent (cf. Jarosz 2024).

(2-8) ku-nu tɕa:-ja ati atsɨ-kar-iba banu-nn-a num-ar-un.
PRX-GEN tea-TOP very, too hot-VRB-CSL 1SG-DAT-TOP drink-POT-NEG.NPST
'This tea is too hot, so I can't drink it.' (Kurima; author's fieldwork 2024)

(2-9) nnama-kara sɨgutu-nu kutu-u sudʑa-ssu-nke:
now-ABL work-GEN thing-ACC older.colleague-DIM-ALL
sabak-i mj-u:tti: umu-u.
ask-CVB EXP-RSN think-NPST
'Soon I will ask my older colleagues about the job.' (Kurima; author's fieldwork 2024)

Aragusuku (West Yaeyama) is similar to Kurima in its default employment of essive-allative *-ka* in the marking of Recipient, Reference,

10 There may be a functional differentiation in the Kametsu marking of passive agent, whereby passive agent proper is marked by the dative only, and the allative is reserved for what is called here the passive mobile Force (§ 3.1).

and Result, and dative *-ni* in the marking of the valency-shift participants: causee, passive agent and Experiencer. There seems to be, however, a convergence of *-ka* and *-ni*-marking of causee and passive agent (2-10, 2-11) which allows a more free *-ka*/*-ni* variation than in Kurima. This might be an expression of the more general *-ka*/*-ni* convergence in Aragusuku also in the spatial uses of the markers, either of which are attested in both vectored (directive/lative) and vectorless (locative/essive) uses.

(2-10) psɨtu-ka bar-ari-ta-n.
person-ALL laugh-PSV-PST-IND
'I was laughed at by people.' (Kuno et al. 1992, 94)

(2-11) psɨtu-n-ja bar-ari-runa.
person-DAT-TOP laugh-PSV-PROH
'Don't be laughed at by people.' (Kuno et al. 1992, 94)

The North Ryukyuan topolect of Yoron displays an advanced stage of variation between dative-locative *-n*/*-nan* on the one hand and allative *-kati* on the other. The usage rules of any of the markers are fine-tuned and can be predicted to become increasingly fuzzy, gradually effecting Yoron's transition from type 2-3 to 2-4. Most of the typical G-participant functions are assigned to *-n*/*-nan* (2-12, 2-13), whereas *-kati* does not seem permitted on passive agent, Donor, or Reference,[11] and has only one respective attestation on Experiencer and Source/Cause (2-14).

(2-12) urj-a: Manju-n-so:ka wakar-am-bo: naj-u-n.
MES-TOP Manju-DAT-even know-NEG.NPST-CND can-NPST-IND
'It's best if even Manju doesn't know about this.' (Kiku 2014, 163)

(2-13) urj-a: Manju-nan-so:ka wakar-am-bo: naj-u-n.
MES-TOP Manju-LOC-even know-NEG.NPST-CND can-NPST-IND
'It's best if even Manju doesn't know about this.' (Kiku 2014, 163)

(2-14) urj-a: Manju-kati-so:ka wakar-am-bo: naj-u-n.
MES-TOP Manju-ALL-even know-NEG.NPST-CND can-NPST-IND
'It's best if even Manju doesn't know about this.' (Kiku 2014, 163)

11 The marking of Reference in Yoron has been mostly taken over by comitative *-tu*. The use of dative *-n*/*-nan* is residual and relatively infrequent.

Conversely, it is *-kati* and not *-n*/*-nan* allowed as the marker of Endpoint, provided Endpoint is marked at all.[12] *-kati* is also strongly preferred to *-nan* in encoding causee (2-15), displaying in this function an asymmetrical variation with *-n* rather than *-nan*. Although *-n*/*-nan* are mostly interchangeable, such asymmetries are noteworthy; apart from the encoding of causee, in which *-nan* is dispreferred to *-n*, differences are also observed in spatial uses, mostly essive with infrequent instances of lative, in which *-nan* prevails over *-n*. These functional gaps between *-n* and *-nan* corroborate the morphological observation that *-n* reflects the original proto-language dative, while *-nan* is a later development initially specialised in locative functions which has been reinterpreted as a variant form of *-n*.

(2-15) hat-ar-u kusa-ja e:nan-in/kati ko-oɕ-u-n.
mow-RSL-ATR grass-TOP cow-DAT/ALL eat-CAUS-NPST-IND
'I fed the mowed grass to the cows.' (Kiku 2014, 160)

Shika-Ishigaki (East Yaeyama) exemplifies a more advanced shift from historical dative to allative marking, since almost all G-participants are marked by default by allative *-kai*; the historical dative *-n*, not used in the modern language in any spatial functions (cf. 3.2), for most semantic and syntactic roles shows a deep-running syncretism with *-kai* – it is, however, only *-n* and essive-allative *-nga* but not *-kai* that are permitted on Experiencer (Topping 2019, 77 ff.; cf. § 3). The use of historical dative-locative as opposed to allative on the G-participants also appears to have been minimised in Kabira (East Yaeyama), with dative *-ni* attested on Recipient and Reference participants and allative-locative *-he*(*:*) on Recipient and causee, although the Kabira examples are arguably too few to assign it confidently to one of the subtypes.

In general, and as illustrated also by Taketomi mentioned in § 2.1, East Yaeyama topolects tend to remove the historical dative from spatial uses, which may actually have been a factor in their gradual release from the G-participant marking as well (cf. § 4).

Subtype 2-4 displays deep-running parallels in both (/all) of its G-participant-marking options, with either marker (/all markers) available in virtually equal measure for all prototypical G-roles. A near-perfect example is Yonaguni, which employs both historical dative-locative *-ni* and allative *-nkai* ~ *-nki* in any attested G-role, including Recipient, Reference, Endpoint, causee and passive agent (2-16, 2-17). Moreover, both *-ni* and *-nkai* ~ *-nki* are used in both locative and allative functions.

12 Like many Ryukyuan topolects, Yoron usually leaves Endpoint unmarked.

(2-16) uja-ni din-Ø ugur-u-n.
parent-DAT money-ACC send-NPST-IND
'I'm sending money to my parents.' (Yonaguni; Hirayama 1988, 804)

(2-17) uja-nki din-Ø ugur-u-n.
parent-ALL money-ACC send-NPST-IND
'I'm sending money to my parents.' (Yonaguni; Hirayama 1988, 804)

Representatives of subtype 2-4 also include Kamikatetsu-Kikai, which permits allative marking (*-e* ~ *-en*) in the roles of passive agent, causee, Recipient, Donor and Reference (2-18, 2-19), whereas the only role not attested with locative marking is Experiencer.

(2-18) ʔun jumita-a tudʑi-jen-daki tɕik-atɕ-i.
MES.GEN story-TOP wife-ALL-only listen-CAUS-PFT
'I only told that to my wife.' (Kamikatetsu; Kibe et al. 2011, 297)

(2-19) Kadzu-o-tu nin-mun-nu ʔassa:-Ø
Kazuko-GEN-TOP resemblance-thing-GEN wooden.clog-ACC
Hanako-jen-mu ho-o:-ja.
Hanako-ALL-ADD give-VOL-ITM
'I'm going to give Hanako the same wooden clogs as those which Kazuko has.' (Kamikatetsu; Kibe et al. 2011, 305)

2.3 Type 3: Full Dative-Allative Syncretism

Type 3 topolects show a case-marking syncretism between G-participants and allative spatial adjuncts and an elimination of historical dative-locative marking in the encoding of G-participants. They are thus the reverse of Type 1. Also these topolects can be divided into at least two subtypes.

Type 3-1 represents a polysemy of G-participant-marking with pure markers of direction which do not have locational/vectorless uses. Sonai-Iriomote (West Yaeyama) is a prototypical instance of this type, with allative *-tti* covering all of G-participant functions (2-20) and no traces of historical dative in the system at all, whereas locative meanings are expressed by a specialised, spatial-only locative marker *-na*.

(2-20) banu-tti fi:-ri.
1SG-ALL give-IMP
'Give it to me.' (Iriomote; Nohara 1998, 446)

In contrast, type 3-2 involves marking of G-participants with spatial markers which have expanded their range beyond direction to include also locative meanings. A major example here are the Shuri-Naha topolects of Okinawa, in which the marker *-nkai*, apart from handling all G-participant roles and functions (2-21), is used freely with both essive (vectorless; 2-22) and lative (vectored; 2-23) Ground participants. The etymology of *-nkai* is historical dative followed by the historical allative marker, *-nikaje (Jarosz 2024, 331, 602) The system has an explicit rule which prohibits the use of the narrow allative marker *-kai* from locative and G-participant uses (Nishioka 2004, 4-6). Owing to its relatively rich written traditions as the literary language of the Ryukyus, Shuri-Naha is also a documented example of a system in transition from, allegedly, type 2-4 to current 3-2 (cf. § 3).

(2-21) tɕibu-ja maja-nkai war-ari-ita-n.
jar-TOP cat-ALL/DAT break-PSV-PST-IND
'The jar was broken by the cat.' (Naha; author's fieldwork 2023)

(2-22) nnkaɕi-n-tɕu-ja gama-nkai sud-o:-ta-n.
past-GEN-person-TOP cave-ALL/DAT live-PROG-PST-IND
'People in the past lived in caves.' (Naha; author's fieldwork 2023)

(2-23) ufu:ma-ja ja:-nu na:ka-nkai ʔitɕ-i-tɕ-a-n.
aunt-TOP house-GEN inside-ALL go-CVB-VNT-PST-IND
'Aunt went into the house.' (Naha; author's fieldwork 2023)

2.4 Unclassifiable Topolects and Variations on the Typology

Naturally, some of the topolects elude the patterns assumed by the proposed typology, especially if they are in a transitional stage from one type to another. An illustrative case is Hateruma (West Yaeyama), which shows an extreme proliferation of G-participant-marking strategies, dedicating special markers to certain narrow semantic roles and differentiating between types of referents which in other Ryukyuan languages tend to be grouped together.

In essence, Hateruma seems to be a recessive Type 2 topolect, with dative *-ni* available for marking of passive agent, Experiencer, Source/Cause, and, in spatial terms, of inessive (2-24). There are, however, as many as three vectored spatial case markers used to encode a wide range of G-participants. All are tentatively glossed as allative. One, apparently secondary in terms of frequency and range, is *-tɕi*, from Proto-Ryukyuan (PR) *-ti-pe, which can flag Recipient, Endpoint, Result and passive agent (2-25), as well as allative adjuncts and purposive clauses. The other two are *-ga* and *-naga*, both reflecting

Proto-Japonic (PJ) locative *-ka. *-ga* < PJ genitive *-nə + locative *-ka, which is likely an extension of another purposive marker, *-ga*, apparently is the dominant G-participant marker in Hateruma, used with Recipient, Endpoint, Result, Reference, causee – although not with passive agents (2-26). It is also a versatile spatial case marker attested in both lative and essive uses. On the other hand, *-naga* < PR inessive *-na + *-ga*, which is primarily an allative marker, is attested on Recipient and Reference participants (2-27). The complexity of the Hateruma system is amped up by a specialised Recipient and Experiencer marker *-mu*, which is only used with human referents (Asō 2020, 211).

(2-24) musɨka at-tɕara ban-ni hir-i.
supposing be, have-CND 1SG-DAT give-IMP
'If you have it, give it to me.' (Hateruma; Nohara 1998, 614)

(2-25) uja-tɕi dʑin-Ø ugur-u-n.
parent-ALL money-ACC send-NPST-IND
'I'm sending money to my parents.' (Hateruma; Hirayama 1988, 733)

(2-26) pɨtu-ga h-a-n.
person-ALL give-PST-IND
'I gave it to someone.' (Hateruma; Hirayama 1988, 771)

(2-27) pɨtu-naga h-a-n.
person-ALL give-PST-IND
'I gave it to someone.' (Hateruma; Hirayama 1988, 772)

Some of the Hateruma diversity can and probably should be explained by the chronological distance between the data sources (Hirayama 1988; Nohara 1998; Asō 2020), which means that generational differences between the informants are reflected as divergent case-marking systems. However, this explanation alone does not suffice, since a similar chronological range of sources pertains to most other topolects examined in this paper. An increase in complexity caused by sociolinguistic factors such as community isolation, its relatively small size and tight contact network (Trudgill 2011), all of which apply to Hateruma (cf. Asō 2020), may have been a crucial factor.

Several among the type 2 and 3 topolects also permit G-marking with more than one spatial case; one example already mentioned is Karimata-Miyako, which has centripetal allative *-i* in Recipient and centrifugal *-ngai* in Result-marking. In Kametsu-Tokunoshima (subtype 2-3), apart from the default allative case marker *-katsɨ* used freely for most G-participants, also a much rarer allative-locative marker

-*na*, associated with marking Destination of vectored actions and Location of vectored events (e.g. 'I dropped something inside the bus' or 'he drowned in the water', cf. Hirayama 1986, 917-18), has been attested once as a marker of passive agent – passive mobile Force, to be exact, a setting explained in (3.1). In Shika-Ishigaki, alongside the dominant dative-allative marker -*kai*, the use of broad (locative and allative) markers -*nga* ~ -*nanga* is attested on passive Force participants, not necessarily mobile, and additionally on Experiencer participants.

3 Diachrony of G-Participant-Marking in Ryukyuan

3.1 Factors Behind the Dative-Locative > Allative Change

According to Kuteva et al. (2019, 52-3), the development of Recipient uses of allative markers is rather broadly attested cross-linguistically, with evidence from Lezgian, Indo-European and, possibly, pre-Old Chinese. A variety of factors can be hypothesised to have resulted in such a development in Ryukyuan, and they will be explored in this section. One important clue concerning the instigation of a dative-locative / allative variation in G-participant-marking is provided by Shimoji (2018, 120-1) and his Nagahama-Irabu (Miyako) evidence. Nagahama, classified as type 2.2 in § 2.2, can be considered a transitional type 2-1 > 2-2 topolect in which, while the historical dative -*n* still prevails, some variant uses of allative -*nkai* begin to be permitted under specific circumstances by some speakers. These circumstances include the marking of Endpoint, whereby the allative emphasises the notion of an eventual completion of the process following a period of waiting or a notable degree of effort (cf. the use of adverb *jattu* 'finally' in example (3-1)); marking of causee in ditransitive clauses, whereby the allative underlines a physical transfer of the Theme argument from the causer subject to the causee (3-2); and marking of causee which involves contrast, in other words, a figurative transfer of the causee from the person mistakenly assumed by the interlocutor to be the causee to the actual causee (3-3; observe that the 'regular' causee in the first clause is marked for dative).

(3-1) Kanimega-a jattu-du ɕinɕi:-n /-nkai nar-i-ul.
Kanimega-TOP finally-FOC teacher-DAT/ALL become-CVB-PROG.NPST
'Kanimega eventually became a teacher.' (Shimoji 2018, 120)

(3-2) Kanimega-nkai-du fɨda-u kaki-sɨmi-tal.
Kanimega-ALL-FOC tag-ACC hang-CAUS-PST
'I passed the dialect tag on to Kanimega'; lit. 'It was Kanimega I had hang the dialect tag around her neck.' (Shimoji 2018, 121)

(3-3) Kadʑi-gama-n-du ɨda-u kaki-sɨmi-tal? Ar-an Kanimega-nkai-du.
Kadʑi-DIM-DAT-FOC tag-ACC hang-CAUS-PST be-NEG.NPST Kanimega-ALL-FOC
'Was it little Kadʑi that you passed the dialect tag on to?' 'No, it was Kanimega.'
(Shimoji 2018, 121)

All these semantically marked circumstances in which some of Shimoji's informants report the acceptability of the allative *-nkai* can be indeed easily conceptualised as involving vectored motion. The eventually achieved Endpoint can be compared to arriving at a destination following a long road, or to a time-consuming movement from one point to another. Transfer of possession of Theme from causer to causee involves a literal vectored motion of Theme toward the causee-marked entity (person). The marking of the actual causee which contrasts with the interlocutor's mistaken assumption about the identity of the causee represents a figurative redirection of the interlocutor's attention/understanding of the situation. Similar instances with an allative-marked causee have also been confirmed in my fieldwork for a type 2-3 Miyako topolect, Kurima.

With this Nagahama background in mind, it is also easier to explain why in type 2 topolects, the most typical G-participants which receive allative marking are Result and Endpoint, both of which can be represented metaphorically as a destination of a vectored movement. Indeed, this tendency is so prevalent that it may be formulated as an implication: if a topolect permits allative marking on G-participants, at least one of these G-participants is Result or Endpoint.

Once allative marking becomes available for either or both Result and Endpoint, the path is open for other G-participants to follow suit.

In order to identify the motivations behind the variation in Recipient-marking, examples of Recipient-marking from types which permit both locative and allative marking on Recipient, i.e. 2-2, 2-4, and some topolects of the 2-3 type, were examined. The focus of the investigation was the semantics of predicates requiring a Recipient argument, the assumption being that it is the semantics of the predicate – or, seen from the opposite angle, the very detailed specification of the semantic role of the given Recipient argument – that may determine the choice of locative versus allative marking on the Recipient argument.

This is in fact a topic that requires a separate study and a dedicated fieldwork, since the general descriptive databases do not include an exhaustive range of Recipient-governing verbs nor a sufficient number of clauses with Recipient to warrant accurate generalisations. Nevertheless, what could be concluded from the data currently available, with the sample extended to include also Donor alongside the narrowly understood Recipient, and the eligible topolects including Kamikatetsu-Kikai, Kametsu-Tokunoshima, China and Wadomari-Okinoerabu, Yoron, Ikema, Nakachi, Nagahama, Tarama,

and Karimata-Miyako, Kabira-East Yayeama, Kuro-West Yaeyama, and Yonaguni, allows the following inferences.

- Verbs which indicate a physical transfer of the Theme participant from Agent to Recipient, such as 'to send' (e.g. 'money', 'letter'), 'to share with', 'to pass on to', 'to sell', are more likely to choose allative rather than locative marking; e.g. there are 9 topolects confirmed to use allative marking with 'to send' as opposed to only 2 using dative-locative marking.
- Interestingly, however, this does not pertain to benefactive 'to give' verbs, for which the proportion of topolects is 12 (locative) to 5 (allative), with two among the latter, Kamikatetsu and Yonaguni, representing type 2-4, i.e. the topolects with essentially free variation in the locative/allative marking of G-participants.
- The North Ryukyuan language Yoron also permits locative (-*n*/-*nan*): allative (-*kati*) variation in marking the role of Beneficiary. While the locative marking remains dominant, allative is used in contexts which indicate a change of Beneficiary (3-4). Such contexts of transfer are reminiscent of the above-discussed (3-3) instances with allative marking on the "shifted causee" in Nagahama and Kurima, and make a good fit with the notion of vectored movement represented by the allative. One can hypothesise that the Yoron variation reflects an early stage of a typical pattern of extending the use of allative to Beneficiary.

(3-4)

fu-nu	T-ɕatsu-ja	Taro:-muti-tɕi	mu:-ti.
PRX-GEN	T-shirt-TOP	Tarō-possession-QUOT	think-GER
ho-ota-ɕiga	Dʑiro:-kati	giras-an	
buy-PST-but	Jirō-ALL	give-VOL	

'I bought this T-shirt for Tarō, but I'm going to give it to Jirō.' (Kiku 2014, 172)

- Verbs indicating transfer of information/knowledge show heterogeneous results. There is a slight domination of topolects which use allative marking (7: 5) in the case of locution verbs 'to talk to, to tell, to speak to', whereas, apart from Yoron, the Recipient argument of 'to teach' is invariably marked for historical dative-locative. This applies not just to the lexicalised causative form of the verb 'to learn', which is the default 'to teach' verb across Ryukyuan (Proto-Ryukyuan *narapu 'to learn' > *narapasɨ learn-CAUS 'to teach'), but also to etymologically unrelated verbs such as Yonaguni *tˀamirun* (cf. Hirayama 1988, 803). Although the former case could be explained by the fact that Recipient here was historically causee (cf. below in this section on the ties of causee with dative marking), and the dative-locative marking of causee may have been carried over to Recipient of the lexicalised causative verb, it does not seem coincidental that

'to give' and 'to teach' resist the shift to allative marking. In either case, Recipient can be interpreted as Beneficiary, and apparently, there are stronger ties of locative rather than allative marking with the notion of Beneficiary in Ryukyuan.[13]

- The marking of Donor with verbs indicating transfer of information, such as 'to hear from', 'to learn from', 'to take advice from', is also not uniform, with no clear domination of locative or allative marking. Although the direction of the transfer is reverse from the one expected in usual Goal marking, allative marking on Donor may be motivated by conceptualising the event as indirectly lative, in other words, as a metaphorically vectored action of the subject Recipient turning their attention toward Donor in order to acquire the Theme entity.

In sum, it appears that what instigates directive marking of Recipient is the group of predicates which express a physical transfer of the Theme participant. Allative marking is likely grounded here in a metaphoric equation of the Recipient participant with "space" toward which the object is being transferred. The next diachronic step is extending this spatial conceptualisation of Recipient to predicates indicating transfer of information/knowledge, i.e. verbs whose Theme is abstract and the event of transfer non-physical, so, as such, already methaphoric. Possibly a little more advanced diachronically is allative marking of Donor, metaphorically equated with "space" toward which the Recipient participant directs their focus in order to acquire Theme. The last stage in the expansion of the allative among the Recipient participants appears to be the marking of Beneficiary. This is an intriguing observation, since it runs counter to Kuteva et al.'s (2019, 53) prediction that benefactive is the intermediate stage in the expansion from allative to recipient/purpose-marking (cf. further discussion in section 4). As implied by the case of Yoron (3-4), allative marking on Beneficiary is likely initiated in the contexts of a change in the original Beneficiary. This reiteraters the importance of the notion of transfer in the metaphorical extension of lative markers to the marking of G-participants.

It also appears that valency-shift-based G-participants are (diachronically) more resistant to, or (synchronically) less compatible with allative marking than semantic G-participants. The former are shown to take allative marking only from stage 2-2 on, and even then such a use is marked and limited. The first valency-shift-based

13 Also in the Kurima topolect, type 2-3, although Recipient in general receives exclusively allative marking, there are individual examples of residual dative-locative marking governed by the benefactive verbs *fi:* 'to give' (e.g. *banu-nn-a fu-un* 1SG-DAT-TOP give-NEG.NPST 'They won't give it to me', Nohara 1998, 369), *turasɨ* 'to give' and by *naro:sɨ* 'to teach', the latter two of which are at the same time lexicalised causatives.

arguments to take on allative marking may be causee, like in Miyako topolects of Nagahama, Ikema and Kurima, or passive agent, like in Okinoerabu topolects of Wadomari and China as well as Kametsu-Tokunoshima. Like explained in Shimoji (2018), the instigation of dative-locative/allative variation in the marking of causee can be attributed to the conceptualisation of the act of causation as a kind of transfer or a vectored movement.

In terms of passive agent, the first step to its acquiring allative marking appears to be the development of allative marking of a specific type of semantically non-prototypical agent, characterised by the following features: [- sentience] [- volition] [+ movement] [+ causation], and therefore representing Force rather than Agent (cf. Van Valin 2001). Here such agents are called the passive mobile Force. In topolects of Okinoerabu and Tokunoshima, Force entities which are found in this role and are marked for allative include vehicles such as 'car' in examples meaning 'X was hit by a car' (3-5, 3-6), and forces of nature such as 'wave' and 'water' in examples of the 'X was carried away by a wave' and 'drowned in the water' sort (3-7, 3-8).

(3-5) kuruma-na sɨk-at-ti.
car-LOC drag-PSV-PFT[14]
'He was hit by a car.' (Kametsu-Tokunoshima; Hirayama 1986, 918)

(3-6) dʑido:ɕa-tɕi ɕik-aj-un.
car-ALL drag-PSV-NPST
'He was hit by a car.' (Wadomari-Okinoerabu; Hirayama 1986, 880)

(3-7) nami-katsɨ nagaɕ-at-ti.
wave-ALL flush-PSV-PFT
'He was carried away by a wave.' (Kametsu-Tokunoshima; Hirayama 1986, 919)

(3-8) midʑi-tɕi ubukuri-ra-sa-tan.
water-ALL drown-PSV-CAUS-PST
'He was made to drown in the water.' (Wadomari-Okinoerabu; Hirayama 1986, 880)

14 Hirayama (1986) describes the Kametsu suffix *-ti* as an alternative past-tense marker, whereas van der Lubbe and Tokunaga (2015) gloss Okinoerabu *-ti* as medial, also in sentence-final uses such as in (3-5, 3-7). My interpretation is that these are perfective/sequential suffixes reflecting Proto-Ryukyuan perfective *-ti-a(ri) *-ti-ja > *-teː, cognates with the Old Okinawan perfective *-teː*, modern Okinawan *-tiː* (Serafim, Shinzato 2021, 249; 254; for more explanation, cf. Jarosz 2024, 587-8). Pellard (2012, 111-12) discusses these North Ryukyuan uses of *-*te* as a desubordination device.

A different sort of evidence is provided by the type 2-3 topolect of Kurima-Miyako, which has one example of an allative-marked passive agent (3-9). Considering that this passive clause has been transformed from a causative clause, the choice of the allative may be related to the swapping of syntactic roles of subject and object between Agent (causer = original subject) and Maleficiary (causee = original object). Again, this transfer of allative marking is somewhat reminiscent of Shimoji's (2018; 3-3) reported contrast-motivated variation in the marking of causee.

(3-9) hannin-ke:-ja bidʑar-as-ari-taz-suga nnutsɨ-gamj-a: tur-o-ottam.
criminal-ALL-TOP cripple-CAUS-PSV-PST-but life-LIM-TOP take-PSV-NEG.PST
'I was hurt, but not killed, by the criminal.' (Kurima; author's fieldwork)

The evidence from Miyako on the one hand and North Ryukyuan (Okinoerabu and Tokunoshima) on the other suggests two pathways that enable the expansion of allative marking of the valency-shift-based G-participants. The Miyako pattern involves the vectored motion and/or contrast-motivated dative-locative/allative variation in marking of causee as the first stage of the change, and enabling of allative marking of passive agent in passivised causative clauses as the next stage. The North Ryukyuan topolects instigate their dative/allative variation by using the allative-encoding variant on a specific type of passive agent which is passive mobile Force, also inherently related to motion.

In brief, the Miyako pattern implies the change in causative clauses as a predecessor of the change in passive clauses, whereas in the North Ryukyuan pattern it is the passive clauses that initiate the change. In either case, the semantic components which incite the initial variation are identifiable through evidence from modern languages.

Among the three basic types of syntactic G-participants, Experiencer is by far the one most resistant to the transition to allative marking. Although examining Experiencer participants posits inherent challenges caused by a relative scarcity of Experiencer clauses in the database,[15] Experiencer retains its dative-locative-marking in all type 2 topolects where it is attested, a fact which unambiguously shows its conservativeness. The only two topolects which show a variation in Experiencer-marking represent type 2-3. Either case is rare and appears very specific. In Yoron, the allative marker *-kati* is

15 The occurrence of dative-marked Experiencer in Japonic is in general relatively low to begin with due to the variation between nominative and dative marking of Experiencer and the fact that, in this configuration, dative marking is generally optional as well as the marked option.

attested as an optional alternative to dative and locative *-n/-nan* when governed by the cognitive verb *wakajun* 'to understand, to know, to be known to' in the predicate position (2-12-2-14). In Shika-Ishigaki, the variation concerns the generic spatial marker/allative-locative *-nga* (3-10), and not the specialised allative marker *-kai* which is otherwise found on almost all G-participants in Shika, syntactic and semantic alike (cf. Topping 2019, 77 ff.).

(3-10) banu-nga-ja nar-an-u.
1SG-ALL.LOC-TOP can-NEG-NPST
'I am unable to do this.' (Shika-Ishigaki; Topping 2019, 79)

It may be the case that a transfer from locative to allative marking of Experiencer, as confirmed in Shuri-Okinawan, is the final stage completing the typological shift from type 2 to type 3. In a way, this can be considered a confirmation of Van Valin's (2001, 32) actor and undergoer hierarchies. Experiencer precedes Recipient in both the actor (Agent > Instrument > Experiencer > Recipient) and undergoer hierarchy (Patient > Theme > Stimulus > Experiencer > Recipient/Goal/Source/Location), which allows for a prediction that in either case Recipient will be quicker than Experiencer to acquire a semantic case marking, such as spatial, alongside a syntactic/core-argument case marking, such as dative.

To synthesise the information accumulated so far, the diachronic paths of the G-participant-marking shift from locative to allative can be considered as two parallel chains for semantic and syntactic G-participants:

- (semantic) Result/Endpoint > Recipient, physical transfer > Recipient, information transfer > Donor > Beneficiary;
- (syntactic) causee, physical transfer of Theme/contrast | passive mobile Force > causee, any type | passive agent, any type > Experiencer.

Although these paths are depicted above as parallel and independent of one another, the process of variation-permitting and shift in either one occur simultaneously, instigating and reinforcing one another. Also, to reiterate, the evidence from type 2 topolects also shows that it is the semantic path that launches the whole process of variation/change in the marking by permitting allative marking on Result and/or Endpoint. In topolects which initiate allative marking on their syntactic G-participants starting from causee, such as Nagahama-Irabu, it is also very likely that the variation in causee is preceded by the variation permitted in the Recipient marking.

3.2 Philological Evidence for the Dative-Locative > Allative Shift

Shuri-Okinawan and Shika-Ishigaki are the topolects which provide actual philological evidence of transitioning from stages 2 to 3. In Classical Okinawan *ryūka* poetry from the turn of eighteenth and nineteenth centuries, which can be assumed to reflect Shuri as the prestige language of the Ryukyu Kingdom court, the historical dative -*ni* is robustly used in roles such as Recipient and Source, as well as in a wide range of locative and allative functions, whereas the use of a separate allative case marker is barely attested (cf. Nohara 1998, 638-51). As reported by Nishioka for modern Shuri (2004, 3), although the use of historical dative-locative -*ni* as e.g. passive marker and in lative functions is not considered asystemic, such a use of -*ni* is unambiguously interpreted as archaic, excessively formal and associated with literary language. Although the language of *ryūka* was strongly influenced by mainland Japanese and as such, the abundance of -*ni* and scarcity of allative marking may partially reflect structural calques from Japanese, it nevertheless appears that two-three centuries before Shuri may still have been a type 1 topolect.

The song language of Shika-Ishigaki has the marker -*ni* which is labelled as archaic and used in poetry in dative, allative and locative functions (cf. Miyagi 2003, 63-4). -*ni* is considered to be a predecessor/archaic allomorph of the modern dative -*n*, the increasingly limited use of which, as explained in (2.3), includes Recipient, Reference, causee, passive agent, and Experiencer. Although the attested roles of -*ni*-marked G-participants comprise essentially the same set as the modern -*n*, the archaic, poetic -*ni* is also found in spatial uses, both locative and directive, neither present in the modern spoken language uses of -*n*. This fact could be indicative of a causal relationship between a loss of spatial uses of the dative marker and a subsequent decline of the marker in its prototypical dative function. This would underline the crucial role of semantics, specifically movement and spatial conceptualisations, in the G-participant marking in Ryukyuan (cf. 3.1).

3.3 Dative-Locative > Allative Change and Ryukyuan Prehistory

Based on the evidence from both modern and historical varieties of Ryukyuan, one can draw some generalisations concerning proto-language developments of the dative-locative versus allative marking of the G-participants.

Considering that type 1 predominantly consists of representatives of North Ryukyuan, especially Amami, as well as how unlikely it would be for a topolect to shift back to type 1 after it has entered the stages from 2 onward, both Proto-North-Ryukyuan and

Proto-Ryukyuan can be reconstructed as Type 1 languages. It is not impossible, however, that even in these proto-languages, some variation (e.g. in the marking of Endpoint or Result) was already permitted.

Conversely, with the exception of Taketomi, there are no examples of type 1 topolects in South Ryukyuan. In Miyako, topolects with the least advanced stages of the shift represent type 2-2, which at the same time appears to be predominant in the Miyako context. It should be safe to assume that Proto-Miyako represented type 2-2 as well, with a prevalence of dative-locative marking and some early signs of allative G-marking on e.g. Result, Endpoint, Recipient of physically transferred Theme, and causee.

The shift in all Macro-Yaeyama languages except Taketomi – East Yaeyama, West Yaeyama and Yonaguni – is at the stage 2-3 or further. There is a high likelihood that Proto-Macro-Yaeyama, the shared ancestor of all three languages (cf. Pellard 2015), also represented stage 2-3, with a roughly even distribution of dative-locative and allative G-marking and a clear functional distinction between the two. There remains, however, a caveat that the type 1 Taketomi evidence sours the clear-cut picture of Proto-Macro-Yaeyama being a relatively advanced language in the locative > allative G-marking shift. The paradox may be resolved with the assistance of the observation that Taketomi is a topolect strongly influenced by Okinawan, to the extent that one may argue that Taketomi has an Okinawan substratum (cf. Thorpe 1983, 4, 40, 69); therefore, the type 1 features that it displays may be contact-induced, reflecting the said Okinawan substratum, rather than inherited from Proto-Macro-Yaeyama.

If the above assumption concerning Taketomi is correct, it would permit reconstructing not just Proto-Macro-Yaeyama as type 2-3, but also Proto-Sakishima as 2-2, revealing a South Ryukyuan advancement in the dative-locative > allative variation compared to Proto-Ryukyuan.

It is worth to observe that while the historical dative-locative marker *-ni can be reconstructed for Proto-Japonic and its traces in some form can be found in almost any Ryukyuan language, there is a remarkable diversity found in Ryukyuan lative markers. Most of these are complex markers incorporating Proto-Japonic allative *-pe, the ancestor of modern Japanese *-e*. The simplex *-pe is reflected e.g. as Kamikatetsu-Kikai (Amami) *-i*/*-e*, Karimata-Miyako *-i* and Kabira-East Yaeyama *-he*(:). Its derivations minimally include Proto-Kyushu-Ryukyuan (PKR) allative *-kape/*-kaje from PJ *ka 'place' > PKR locative *-ka and allative *-pe (cf. Jarosz 2021, 67; Jarosz et al. 2022, Supplementary Information 2),[16] e.g. Old Okinawan *-kaje*, Sakamine-Kikai (Amami)

16 The latter source reconstructs the marker as *-kapje, which I now believe to be erroneous.

-kai/*-kae:*, Shika-East Yaeyama *-kai*; the PR extension of *-kape/*-kaje with dative-locative *-ni,[17] *-nikape/*-nikaje, e.g. Shuri-Okinawan, Hirara-Miyako, Nakachi-Miyako *-nkai*, Tarama-Miyako, Kurima-Miyako *-nke:*, Yonaguni *-nki*; and PR allative *-tipe with a grammaticalisation of PJ *ti 'way, road', e.g. Kikai-Amami, Kametsu-Tokunoshima, China-Okinoerabu, and Hateruma-West Yaeyama *-tɕi*.

There are also other configurations of the PJ, PKR and PR simplex morphemes: dative *-ni, allative *-pe, locative *-ka, allative (possibly perlative?) *-ti, inessive *-na < *naka 'inside'. Most frequently attested exemplars include variants of *-katɕi* < *-ka-ti-pe, e.g. in Kamikatetsu-Kikai and Yuwan (both Amami), Sonai-Iriomote (West Yaeyama) *-tti*; and variants of *-nga*/*-nanga*, e.g. Shika and Ōhama (both East Yaeyama) *-nga*/*-nanga*, Hateruma-West Yaeyama *-naga* < *naka-no-ka inside-GEN-place. These are, however, only the tip of an iceberg which constitutes the strikingly complex picture of lative-marking possibilities in modern Ryukyuan. This diversity suggests a development of these markers later than Proto-Japonic dative *-ni and allative *-pe, as well as a significant regional variation in allative marking on the Proto-Ryukyuan and post-Proto-Ryukyuan level, an observation which solidifies the diachronic view that systems with dative-allative polysemy are younger than those with just dative-locative polysemy.

4 Conclusion

Kuteva et al. (2019, 266) observe that "locative [= spatial; AJ] markers are clearly the most important sources of case markers of all kinds", discussing locative > benefactive, locative > possessive[18] (Possessor understood here as a subtype of Experiencer), and allative > recipient as common grammaticalisation pathways. The marking of G-participants in Ryukyuan, which is syncretic with synchronic or historical spatial case marking, can be considered a good illustration of this cross-linguistic tendency. It confirms Heine's (2008, 466) generalisation that among common patterns of extension from one case function to another, there is also the extension of allative into benefactive and dative. In even broader terms, the Ryukyuan evidence is also an illustration of how spatial cases like locative and allative/directive, used to encode semantic rather than syntactic functions, are inherently less grammaticalised than the more syntactic cases such

17 Allative markers which originate from the dative and locative alone, such as Tsuken and Aragusuku *-nka* < *-ni-ka, are also attested.

18 Understanding Possessor as a subtype of Experiencer, I interpret this grammaticalisation as a more general locative > Experiencer development.

as dative (Heine 2008, 466-8), which leaves the former with room for grammaticalisation from flagging roles which are purely semantic (spatial adjuncts) to semantico-syntactic (semantic G-arguments) and syntactic (valency-shift-based G-arguments) ones.

As the evidence introduced in this paper has shown, conceptualisations of G-participants as spaces in which an event is taking place or destinations toward which an action is directed is the factor which prompted dative-locative, including historical dative-locative, and dative-allative syncretism in Ryukyuan languages. Like explained in (3.1), the change from dative-locative to dative-allative pattern is caused by a reframing of some G-participants as 'destinations' of vectored movement, or, in the case of mobile passive force, as mobile entities causing vectored movement. Through analogy, the allative variant of the marking of G-participants gradually extends beyond those participants which can be easily conceptualised as 'destinations', such as Endpoint, Result and Recipient of physically transferred objects. In some topolects, the range of G-participants which allow allative marking eventually expands to incorporate any kind of G-participant (type 2-4), which, if advances further, may result in eliminating the dative-locative versus allative variation in G-participant-marking whatsoever and a retention of the allative option alone (type 3).

Conversely, a loss of spatial functions of a dative-locative marker caused by the development of new, more specialised spatial markers may be a factor which causes a decline of the historical dative marker altogether. This development is observed in Shika-Ishigaki (type 2-3, cf. § 2.2, § 3.2). On the other hand, however, a loss of spatial functions in several type 1 topolects (cf. § 2.1) has led to a specialisation of the historical dative-locative in dative functions, i.e. syntactic G-participant-marking alone (and, apart from that, usually also temporal adjunct-marking). One can conclude that such erosion of spatial functions of the historical dative in Ryukyuan is a necessary, but not necessarily sufficient, condition of a complete elimination of the historical dative marker *-ni in the context of G-participants.

One interesting feature concerning the Ryukyuan patterns is their treatment of Beneficiary (§ 3.1). Although the results of the present study are inconclusive and examining the details are left for a future research, it does appear that Beneficiary is one of the semantic roles that is most resistant to locative versus allative variation, or the locative > allative shift. General linguistic sources differ in their treatment of Beneficiary: while Kuteva et al. (2019, 53) predict Beneficiary as an intermediate step leading from Destination to Recipient-marking, Malchukov and Narrog's (2008, 531; cf. fig. 4-1) general map of thematic roles suggests a reverse implicature from Destination (abbreviated G for Goal) through Recipient (abbreviated R) to Beneficiary (abbreviated BEN), or vice-versa **[fig. 1]**. It is Malchukov and Narrog's prediction that the Ryukyuan evidence seems

to confirm. Ryukyuan can also be considered a prototypical illustration of this map with the semantic range of Destination, Recipient and Beneficiary packed into a single case dimension in (some examples of) types 2-2 onward.

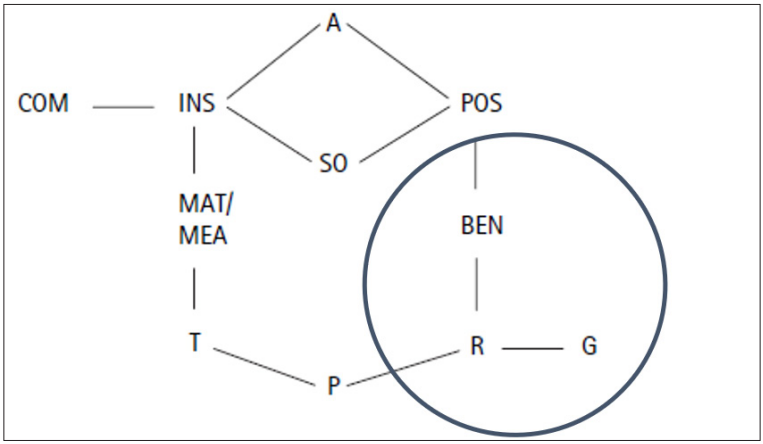

Figure 1 General map of thematic roles (Malchukov, Narrog 2008, 531). The circle marks the semantic range of dative-allative syncretism in Ryukyuan

The patterns of allative marking of G-participants in Ryukyuan are therefore an exemplification of widely reported cross-linguistic tendencies of expanding directive/allative cases to include prototypically dative functions such as Recipient-marking. At the same time, with their typological diversity corresponding directly to diachronic pathways of the shift from dative-locative to dative-allative syncretism, Ryukyuan languages are a fascinating laboratory that allows to observe the exact steps occurring in the process of such a shift. Insights derived from examining the Ryukyuan case are therefore of merit not only in Japonic, but also in a general typological context.

Abbreviations

Glossing abbreviations

1	first person
ABL	ablative
ACC	accusative
ADD	additive
ALL	allative
ATR	atributive
CAUS	causative
CLF	classifier
CND	conditional
CSL	causal
CVB	converb
DAT	dative
DIM	diminutive
EXP	experiential
FOC	focus
GEN	genitive
GER	gerund
IMP	imperative
IND	indicative
ITM	interactional marker
LIM	limitative
LOC	locative
MES	mesial
NEG	negative
NPST	non-past
PFT	perfective
POT	potential
PROG	progressive
PROH	prohibitive
PRX	proximal
PST	past
PSV	passive
QUOT	quotative
RSL	resultative
RSN	resolutional
SG	singular
TOP	topic
VNT	venitive
VOL	volitional
VRB	verbalizer

Other abbreviations

PJ	Proto-Japonic
PKR	Proto-Kyushu-Ryukyuan
PR	Proto-Ryukyuan

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How Conservative Is the Morphology of Hachijō?
A Few Comparative Reflections on the *rentaikei/shūshikei* Distinction in Japonic Languages

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Abstract The opposition between 'adnominal' (*rentaikei* 連体形) and 'final' (*shūshikei* 終止形) forms of verbs and adjectives is one of the most commented features of the Hachijō language, as it is considered both a remarkable archaism and a possible argument towards its classification within the Japonic language family. This article is dedicated to a description of this opposition in Hachijō, in comparison with other Japonic languages, and especially with Eastern Old Japanese.

Keywords Japonic. Hachijō. Old Japanese. Historical linguistics. Morphology.

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1 Introduction

1.1 What Is Hachijō?

Hachijō is a small Japonic variety,[1] spoken on several islands in the south of the Izu archipelago, roughly 300 km south of Tōkyō. Its name comes from the name of the most populated of those islands, Hachijō-jima 八丈島, but it is usually simply called *ɕima-kotoba*[2] 島言葉 'island speech' by its speakers.

Hachijō was until recently considered a dialect of Japanese rather than an independent language. However, based on several arguments such as possible lack of mutual intelligibility with neighbouring Japanese varieties (see Iannucci 2019, 100-20) and debates on its classification within the Japonic family (see Hirako, Pellard 2013, 52), the tendency is now to consider it a separate language.

Although there is no official census of the number of speakers, Hachijō is now severely endangered due to the pervasion of standard Japanese in the local communities (through education, media and immigration from the mainland). It is likely that there are now not more than a few hundred fluent speakers, all elderly. Thus, it was included in 2009 in UNESCO's *Atlas of the World's Languages in Danger* (Moseley, Nicolas 2009), alongside Ainu and six of the Ryukyuan languages.

As it is spoken within the Tōkyō Metropolis and exhibits interesting and sometimes remarkably archaic features, Hachijō was studied quite early, compared to other languages of Japan. Namely, its first thorough description was made by Hoshina in 1900; then, a very large-scale study was conducted by the NINJAL in 1950, and ever since, it has been quite abundantly described on many aspects, including its verbal morphology. Thus, this article is mostly based on already existing sources. However, when necessary, mentions will be also made to newer data that was collected during a field trip in March-April 2023, with about a dozen informants.

1 Many thanks to Aleksandra Jarosz, Akiyo Kubo-Herlédant and Hao Li for their help during the preparation of this article.

2 Note on transcriptions: in this article, forms of contemporary varieties and minority languages are provided in simplified International Phonetic Alphabet ('simplified' meaning not taking into consideration vowel reduction or pitch accent), while standard Japanese forms are provided in Hepburn transcription. Finally, Classical Japanese forms are transcribed following Vovin 2003, 13; Old Japanese forms follow Vovin 2020, 27-33, and Old Okinawan forms follow the system created by Serafim and Shinzato (2021, 18-84).

1.2 The Adnominal/Final Distinction

'Adnominal' or 'attributive' form (*rentaikei* 連体形 lit. 'form connecting to a substantive', **RT**) and 'final', 'conclusive' or 'predicative' form (*shūshikei* 終止形 'full-stop form', **SS**) are two grammatical categories that are still widely taught in Japanese schools when learning verbal and adjectival morphology. As their names indicate, while the adnominal form is used preceding a substantive (in which case the verb or the adjective qualifies the following noun), the final form is used to form conjugate verbs and adjectives in a predicative function. However, depending on the Japonic variety and period, the use of the adnominal or the final form can also be triggered by some particles, or have different pragmatic meanings.

In any case, in the current standard language (that is, the dialect of Tōkyō) and, more generally, in most contemporary Japanese varieties, those two forms have almost completely merged together (if we neglect the word's pitch accent) **[tab. 1]**:

Table 1 The *rentaikei/shūshikei* in standard Japanese

***Rentaikei* 連体形**		***Shūshikei* 終止形**
高い山	=	山が高い
taka-**i** yama		yama=ga taka-**i**
high-**RT** mountain		mountain=NOM high-**SS**
'A high mountain'		'The mountain is high'
立つ時	=	立つ
tats-**u** toki		tats-**u**
stand-**RT** time		stand-**SS**
'When [I] stand'		'[I] stand'

Thus, in practice, this terminology is not necessary any more to describe the modern standard language (except in some marginal cases, such as な *na* vs だ *da* for adjectival nouns, or *keiyōdōshi* 形容動詞), but it is inherited from the description of Classical Japanese (CJ) and Old Japanese (OJ), in which it forms an important part of the morphological system (cf. *infra*).

2 The Adnominal/Final Distinction in Hachijō

The existence of a distinction between adnominal and final forms of verbs is one of the most-commented features of Hachijō. It already occurs in the first Hachijō attestations (Satō 1781, MS *Izu kaitō fudoki*), and was noted in the first linguistic comment on the language (Dickins, Satow 1878, 470), which already compares those Hachijō forms with their Eastern Old Japanese counterparts found in the *Man'yōshū*.

Namely, the equivalent of the Japanese forms quoted earlier in Hachijō are shown in Table 2:

Table 2 The *rentaikei/shūshikei* in Hachijō

***Rentaikei* 連体形**		***Shūshikei* 終止形**
タカケヤマ	=	ヤマガタケー ~ タキャー
taka-**ke** jama		jama=ga tak**e:** ~[1] tak**ja:**
high-**RT** mountain		mountain=NOM high-**SS**
'A high mountain'		'The mountain is high'
タトトキ	=	タツ
tat-**o** toki		tats-**ɯ**
stand-**RT** time		stand-**SS**
'When [I] stand'		'[I] stand'

1 The tilde indicates different outcomes depending on the topolect.

Later on, Tachibana and Tōjō (1934, 45) and Hōjō (1948) elaborated on this discovery, and made it an important argument for the putative classification of Hachijō as a daughter-language of Eastern Old Japanese (EOJ). However, we can wonder how much Hachijō really resembles EOJ, especially if we take into consideration not only the non-past of regular verbs and adjectives, but also the various irregularities of their systems. More generally, we can wonder how conservative Hachijō morphology is in this perspective.

2.1 The Use of Nominal and Final Forms

It is worth mentioning that the use of the final or the adnominal form in Hachijō obeys many rules, the details of which go far beyond the scope of this article. In a nutshell, we can say that in Hachijō, the adnominal form can:

- mark the adnominal use of a verb, ex.: *ma:dʑan=jo ɕ-**o** toki* 'when [I] play *mahjong*' (Asanuma 1999, 242)
- nominalise a proposition, ex.: *omi=ga oɕar-**o**=wa mottomo da* '*what* you are saying is true' (Asanuma 1999, 73)
- be triggered by some particles, ex.: *ɕigoto: ɕ-**o**=wa* '[they] are working' (Asanuma 1999, 180)
- express interrogation: *adan ɕ-**o*** 'what will [I] do?' (Asanuma 1999, 180)

On the other hand, the use of the final form can:

- mark the 'final' (i.e. predicative) use of a verb, ex.: *jo: tsɯɾi=ɲi ik-**ɯ*** '[I]'m going to catch some fish' (Asanuma 1999, 239)
- be triggered by the use of other particles (ex.: *ik-**ɯ**=tɕi:=ja* 'it seems [they] are going' (Asanuma 1999, 32)

In fact, the final form of verbs is rarely used in Hachijō, the most common way of forming a declarative sentence being to use the adnominal form with the particle =*wa* (probably originating from the topic particle). Thus, in his 2001 book dedicated to Hachijō morphology, Kaneda considers that functionally in the contemporary language, the -*o*=*wa* form is best considered to be the proper 'final form' of verbs.

2.2 Non-Past Forms

In the non-past, the final/adnominal opposition is based on an opposition between -*o* and -*ɯ* **[tab. 3]**.

Table 3 Verbal *rentaikei/shūshikei* in Hachijō.

***Rentaikei* 連体形**		***Shūshikei* 終止形**
シゴトニ イコワ	≠	ソバニ イクト
ɕigoto=ɲi ik-**o**=wa		soba=ɲi ik-**ɯ**=to
work=LOC go-**RT**=PT		vicinity=LOC go-**SS**=PT
'[I'm] going to work'		'If [you] go nearby'
(Asanuma 1999, 217)		(Asanuma 1999, 124)
エー　デロ　トキ ù	≠	シェキガ　デル
e: der-**o** toki		ɕeki=ga der-**ɯ**
house.ACC go.out-**RT** time		sneeze=SUBJ go.out-**SS**
'When [I] leave home...'		'[I] sneeze'
(Asanuma 1999, 194)		(Asanuma 1999, 107)

Thus, the Hachijō system appears extremely straightforward and regular, as there seems to be no allomorphy at all in the non-past; -*o* and -*ɯ* being respectively the only adnominal and the only final marker for both classes of verbs (i.e., vowel and consonant verbs). Only the verb 'to do' has a slightly irregular pattern, as we can observe a variation of its root between a plain alveolar *s*- in the final form, and a palatalised *ɕ*- in the adnominal:[3]

アダン ショ	≠	ケガー スト
adan **ɕ-o**		kega: **s-ɯ**=to
what do-**RT**		injury do-**SS**=PT
'What will [we] do?' (Asanuma 1999, 180)		'If [they] get hurt' (Asanuma 1999, 180)

3 In some occurrences, the adnominal form also has a non-palatal allomorph *s-o*, which was given by some native speakers (in my personal data) as a more recent form. It could indeed be influenced by the final form.

We can wonder about the origin of this palatalisation and we will see that the comparison with Ryukyuan might provide an explanation for it (cf. *infra*).

However, when we look at some uses of the final form with other particles, such as the form Kaneda calls 'conjectural form' *suiryōkei* 推量形 (2001, 114, morphologically 'final form + *now*'), and the one Kaneda calls 'emphatic form' *kyōchōkei* 強調形 (2001, 115, 'final form + *neː* ~ *njaː*'), we can see that there is some irregularity in the Hachijō system. Namely, all vowel verbs (including the irregular *kwɾw* 'come') can have two forms before these particles: one with the final mark *-ɾw* and one without, the latter being perceived as older form. Thus we have: *kw-now* / *kwɾw-now* 'would come', *mi-now* / *mirw-now* 'would see', etc. Thus, in the case of vowel verbs, there seems to be some conditioned allomorphy, which we will try to explain through the comparison with Old Japanese.

2.3 Copula and Negative Auxiliary

In Hachijō, both the copula and the negative auxiliary verb also have distinct adnominal and forms in the non-past **[tab. 4]**:

Table 4 The *rentaikei/shūshikei* opposition in copulas

***Rentaikei* 連体形**		***Shūshikei* 終止形**
オヤガ ダメ ダーンテ oja=ga dame **daː**[1]=nte... parent=SUBJ bad **be.RT**=PT 'Since [her] parents are no good...' (Asanuma 1999, 233)	≠	イソガシケンテ ダメ ダラ isogaɕi-ke=nte dame **dara** busy-RT=PT bad **COP.SS** 'Since [I'm] busy, [it]'s no good' (Asanuma 1999, 41)
イソガシクテ ミ ンナー ジャ isogaɕi-kɯte mi-**nnaː**[2]=dʑa busy-CONJ see-**NEG.RT**=PT 'Since [we]'re busy, we don't see [each other]' (Asanuma 1999, 223)	≠	ウノ ヒト ワ ミ ンナカ ɯno=çito=wa mi-**nnaka** this=person=PT see-**NEG.SS** '[I] don't see that person' (Asanuma 1999, 223)

1 This form is from the Sueyoshi variety. In other varieties, *da*: has a cognate form *do*: or *doa*.

2 This form is from the Sueyoshi variety. In other varieties, *na*: has a cognate form *no*: or *noa*.

As we will see in the next subsection, these markers are parallel to the adnominal and final forms encountered in the past tense.

2.4 Past Tense

In Hachijō, the final/adnominal opposition in the past tense of verbs and adjectives[4] is marked by an opposition between *-oa* ~ *-o:* ~ *-a:* (depending on the topolect) and *-ara* **[tab. 5]**.

Table 5 The *rentaikei/shūshikei* opposition in the past tense

***Rentaikei* 連体形**		***Shūshikei* 終止形**
シマザケー ノマー	≠	ショーチューヨ ノマラ
ɕima-zake: nom-**a:**[1]		ɕo:tɕɯ:=jo nom-**ara**shōchū.ACC
sake.ACC drink-**PST.RT COP**-PT		drink-**PST.SS**
'[Because I] drank local *sake*...'		'[I] drank *shōchū*'
(Asanuma 1999, 104)		(Asanuma 1999, 19)
カゲブチョ ミター デ	≠	ユメー ミタラ
kagebɯtɕo mit-**a:**[2]=de		jɯme: mit-**ara**
silhouette.ACC see-**PST.RT**=PT		dream.ACC see-**PST.SS**
'When [I] saw [your] silhouette...'		'[I] had a dream'
(Asanuma 1999, 63)		(Asanuma 1999, 239)

1 This form is from the Sueyoshi variety. In other varieties, *-a:* has a cognate form *-o:* or *-oa*.

2 Cf. note above.

Again, the system appears very regular with no allomorphy whatsoever. It should also be noted that in a few fossilised occurrences first described by Kaneda (1991), Hachijō also uses another past tense form in *-tɕi* or *-dʑi*, in which there is no opposition between final and adnominal. We will also discuss its origin in comparison with OJ (cf. *infra*).

2.5 Adjectives

Finally, Hachijō also distinguishes adnominal and final form of adjectives through an opposition between *-ke* and *-kja* **[tab. 6]**.

4 The adjectives have the exact same *-a:* ~ *-o:* / *-ara* markings, since they are seemingly made of the adverbial marker *-kɯ* followed by the copula *arɯ* (ex: *ɯreɕi-k-ara:* / *ɯreshi-k-arara*).

Table 6 The *rentaikei*/*shūshikei* opposition in adjectives

***Rentaikei* 連体形**		***Shūshikei* 終止形**
ウンマケ　ムギゾーシー	≠	ムギゾーシーワ ウンマキャ
ɯmma-**ke** mɯgi-zoːɕiː		mɯgi-zoːɕiː=wa ɯmma-**kja**
tasty-**RT** wheat-porridge		wheat-porridge=TOP tasty-**SS**
'Tasty wheat porridge'		'The wheat porridge is tasty'
(Asanuma 1999, 129)		(Asanuma 1999, 223)

However, a few final forms in *-i* are also attested,[5] often triggering vowel coalescence with the adjective root, as in:

- **ama-i → ameː ~ amʲaː* vs *ama-kja* 'sweet'
- **mɯdzɯkaɕi-i → mɯdzɯkaɕiː* vs. *mɯdzɯkaɕi-kja* 'difficult'
- **warɯ-i → wariː* vs. *warɯ-kya* 'bad'
- **-be-i→ -bei ~ -beː ~ -biː* vs. *-be-kya* 'should'[6]
- **ɕo-i → ɕei ~ ɕiː* vs. *ɕo-kja* 'aware'

These contracted forms are especially common in pre-modern sources, but are given as old-fashioned by native speakers, who seem to prefer *-kya* forms in almost all contexts except frozen idioms and code-switching with standard Japanese. Given the fact that *-s-* is usually dropped in medial position in Hachijō (Kaneda 2001, 22), it is highly likely that those contracted final forms are archaisms perpetuating OJ *-si, which means that *-kja* must be the result of a recent innovation (cf. *infra*).

3 The Adnominal/Final Distinction in Mainland Japanese

3.1 In Classical Japanese (CJ)

In CJ, adnominal and final forms are morphologically distinct for all adjectives, but only for some classes of verbs. Namely, the opposition is marked for the 二段 *nidan* 'bigrade' verbs and for all irregular verbs, but not for the 一段 *ichidan* 'monograde' and 四段 *yodan* 'quadrigrade' verbs. The global pattern was as follows **[tab 7]**:

5 It should also be noted that a few *-ki* adnominal forms and a few *-shi* final forms are attested in pre-modern sources (such as Ōhara 1811), but I suspect those to be influenced by classical Japanese. Similarly, a contracted adnominal occurs in Hachijō in a few words like *wakeː-ɕɯ* / *wakjaː-ɕɯ* 'youngster', but I suspect those words to be loanwords from mainland Japanese (< *wakai-shu*) rather than genuine Hachijō syntagms.

6 The adjective auxiliary *-bei* / *bekya* (classical Japanese *beshi* 可し), which attaches on the final form of a verb, appears to be the only *-e* adjective root in Hachijō.

Table 7 The *rentaikei/shūshikei* opposition in Classical Japanese

***Rentaikei* 連体形**		***Shūshikei* 終止形**
Adjectives, class 1:		
高き山 taka-**ki** yama high-**RT** mountain 'A high mountain'	≠	山が高 yama=ga taka-**si** mountain=NOM high-**SS** 'The mountain is high'
Adjectives, class 2:		
悲しき人 kanasi-**ki** fito sad-**RT** person 'A sad person'	≠	人が悲し fito=ga kanasi-∅ person=NOM sad-**SS** '[That] person is sad'
Bigrade and irregular verbs:		
老ゆる人 oy-**uru** fito get.old-**RT** person 'Ageing people'	≠	人が老ゆ fito=ga oy-**u** person=NOM get.old-**SS** 'People get old'
R- irregular verbs (*aru*, *woru*, etc.):		
有る所 ar-**u** toko robe-**RT** place 'There is a place...'	≠	個々で有り koko ar-**i** here be-**SS** '[It]'s here'
	BUT	
Monograde verbs:		
見る時 mir-**u** toki look-**RT** time 'When [I] look'	=	見る mir-**u** look-**SS** '[I] look'
Quadrigrade verbs:		
立つ時 tat-**u** toki stand-**RT** time 'When [I] stand'	=	立つ tat-**u** stand-**SS** '[I] stand'

By observing Table 7, we can see that the standard language (i.e. the dialect of Tōkyō) only seems to preserve adnominal forms: *takai* < *taka**k**i*, *kanashii* < *kanasi**k**i*, *oiru* < *o**yu**ru*, *aru* < *ar**u***. For the rest, this pattern is almost entirely inherited from Old Japanese (OJ), as we can see *infra*.

3.2 In Western Old Japanese (WOJ)

In WOJ, the adnominal/final opposition can be summed up as follows **[tab. 8]**.

Table 8 The *rentaikei/shūshikei* opposition in Western Old Japanese

***Rentaikei* 連体形**		***Shūshikei* 終止形**
Adjectives:		
多可吉多知夜麻 taka-**kyi** tatiyama high-**RT** Tatiyama 'The high *Tatiyama*' (MYS 17.4003)	≠	浪高之 NAMYI TAKA-**si** wave high-**SS** '[The] waves are high' (MYS 7.1143)
于都倶之枳 […] 古弘 utukusi-**kyi** kwo=wo pretty-**RT** child=ACC '[My] pretty child' (NSK 121)	≠	妻子 […] 宇都久志 mye-kwo [...] utukusi-∅[1] woman-child pretty-**SS** '[His] wife & children are pretty' (MYS 5.800)
Irregular and weak vowel verbs:		
美知久流之保能 miyti k-**uru** sipo=nə rise-INF come-**RT** tide=GEN 'Of the rising tide' (MYS 17.3985)	≠	之保美知久 sipo miyt-i k-**u** tide rise-INF come-**SS** 'The tide is rising' (MYS 15.3707)
Strong vowel verbs:		
牟那美流登岐 muna myi-**ru** təkyi chest look-RT time 'When [I] look at [my] chest' (KK 4)	≠	美等母 mi-∅[1]=təmə look-**SS**=CONJ 'Though [I] look' (MYS 18.4037)
R- irregular verbs:		
伊可奈留夜比止 ika nar-**u**=ya pyitə how be-**RT**=PT person 'What kind of a person' (BS 5)	≠	乎思吉物奈利 wosi-kyi MÖNÖ nar-**i** regrettable-RT thing be-**SS** '[It] is a regrettable thing' (MYS 17.3904)
Past tense:		
妹等安里之時 IMO=tə ari-**si** TÖKYI beloved=COM be-**PAST.RT** time 'When [I] was with [my] beloved' (MYS 15.3591)	≠	倭柯倶阿利岐 waka-ku ari-**kyi** young=ADV be-**PAST.SS** '[He] was young' (NK 11)
Consonant verbs:		
多都追奇其等爾 tat-**u** tukiy=Nkətə=ni rise-**RT** moon=COMP=LOC 'Like the rising moon' (MYS 15.3683)	=	夜久毛多都 ya kumwo tat-**u** many cloud rise-**SS** 'Many clouds are rising' (KK 7)

1 This form is probably due to a haplology *-si-si > -si in the final form.

2 There might also be a *hapax m-uru* in MYS VI.942, but it was rejected by Vovin 2020, 506.

Compared to Classical Japanese, the similarities are striking, but it can be noted that 'strong vowel verbs'[7] such as *myi* 'see' did at that time have a RT/SS distinction that was lost in CJ through the extension of the adnominal *mi-ru*. This indicates that the extension of the adnominal form to the expense of the final form was already an ongoing phenomenon between OJ and CJ.

Furthermore, we can observe that strong and weak vowel verbs respectively had an unmarked and a *-u* final form, such as *mi*, and *k-u*. Thus, these forms are probably the direct ancestors of the fossilised final forms of vowel verbs found before some particles in Hachijō: *kɯ-no:* < **k-u-namu*, *mi-no:* < **myi-∅-namu*, which means that the *-ru* forms are indeed recent remodellings based on an extension of the adnominal form of those verbs to a final use (**mi*, *mi-no:* > *mi-rɯ*, *mi(rɯ)no:*).

More generally, if we compare WOJ to Hachijō, we can observe that:

- WOJ has an adjective adnominal *-kyi*, whereas Hachijō has *-ke*;
- WOJ has no adnominal/final opposition in the non-past of consonant verbs (*tat-u* = *tat-u*), whereas Hachijō features an opposition (*tat-o* ≠ *tats-ɯ*). Both of these elements can be discussed by comparison with Eastern Old Japanese (cf. *infra*);
- WOJ has an adjective final form *-si*, whereas, in most cases, Hachijō has *-kja*. Thus, it appears that Hachijō created a new final form. According to Kaneda (2001, 85; 2012, 132), this new form is based on the adnominal *-ke*, *-kja* being a contraction of *-ke* followed by the final particle *=wa*;
- WOJ opposes an adnominal *-u* and a final *-i* in the case of the verb *aru* and of all the derived stems, whereas the verb *aɾ-* is a regular consonant verb (*aɾ-o* / *aɾ-ɯ*) in Hachijō. We will discuss this point when comparing Hachijō with other contemporary languages;
- WOJ opposes a final past form *-kyi* from an adnominal past form *-si*, whereas Hachijō has only one form *-tɕi*, *-dʑi*. This form is likely to be solely from the adnominal *-si* (Kaneda 1991), which means that the final form *-kyi* was eliminated from the language early on. This shows again an extension of the RT form at the expense of the SS form;
- Hachijō also has a more recent past tense with an attributive form *-a:* / *-oa* / *-o:*, and a final form *-ara*, which did not exist in OJ. This form is, according to Iitoyo (1959, 223) and Kaneda (2001, 109, 144), a former stative based on **aro*, the final form being the contraction of **aro* with the final particle *=wa*.[8]

7 We borrow the terminology used by Vovin 2020, 506.

8 Kaneda (2001, 144) also explains the negative auxiliary forms through an **aro*/**aro=wa* opposition, as he proposes that the attributive form *no:* ~ *noa* ~ *na:* originates from *nak-o* (a form attested in some topolects, cf. Kaneda 2001, 22), itself from **naku* + *aro*. Similarly, the final form *naka* would originate from **naku aro*, followed by the final declarative particle *=wa*.

3.3 In Eastern Old Japanese (EOJ)

The EOJ data being quite scarce, it is harder to get a clear picture of the full paradigm of that language. In general, most forms appear identical to their Western counterparts **[tab. 9]**:

Table 9 The rentaikei/shūshikei in Eastern Old Japanese

***Rentaikei* 連体形**		***Shūshikei* 終止形**
Adjectives, class 1:		
曽能可抱与吉尓 sənə=kapo yə-**kyi**=n it hat=face good-**RT**=LOC 'That face being good[-looking]' (MYS 14.3411)	≠	安路許曽要志母 ar-o=kəsə ye-**si**=mə be-RT=PT good-**SS**=EXCL '[It]'s so good to have…' (MYS 14.3509)
Adjectives, class 2:		
加奈思吉兒呂我 kanasi-**kyi** kwo-rə=ga adorable-**RT** girl-DIM=SUBJ '[My] adorable girl' (MYS 14.3351)	≠	古呂之可奈思 kwo-rə=si kanasi-∅ girl-DIM=EMPH adorable-**SS** '[That] girl is adorable' (MYS 14.3537)
Irregular and weak vowel verbs:		
久流比等母奈之 k-**uru** pyitə=mo na-si come-**RT** person=PT is.not-SS 'No one will come' (MYS 20.4353)	≠	阿尓久夜 ani k-**u**=ya INTERJ come-**SS**=PT 'Alas! Will [he] come?' (MYS 14.3411)
Strong vowel verbs:		
美流波々 myi-**ru** papa look-**RT** mother 'My mother who saw' (MYS 20.4330)	?	(missing data)
R- irregular verbs:		
伊刀尓奈流等毛 itwo n-i nar-**u**=təmwo thread be-**RT**=CONJ 'Even though they get unravelled' (MYS 20.4405)	≠	阿志氣比等奈里 asi-key pyitə nar-**i** bad-RT person be-**SS** '[He] is a bad person' (MYS 20.4382)
Past tense:		
安里之波可 ari-**si** paka be-**PST.RT** rumour 'A rumour said [there] was' (MYS 14.3385)	?	(missing data)
Consonant verbs:		
多妣由久阿礼波 tabi=ni yuk-**u** are=pa journey go-**RT** I=TOP 'I, who will go on a journey...' (MYS 20.4327)	=	和波由久 wa=pa yuk-**u**I=TOP go-**SS** 'I will go' (MYS 14.3366)

However, in a minority of occurrences, different forms specific to EOJ also occur **[tab.10]**:

Table 10 Irregular *rentaikei* in Eastern Old Japanese

***Rentaikei* 1 (= WOJ)**		***Rentaikei* 2 (≠ WOJ)**
Adjectives, class 1:		
曽能可抱与吉尔 sənə=kapo yə-**kyi**=ni that=face good-**RT**=LOC 'That face being good[-looking]' (MYS 14.3411)	/	須美与氣乎 sum-yi yə-**key**=wo live-NOMIN good-**RT**=ACC '[There,] where it is good to live' (MYS 20.4419)
Adjectives, class 2:		
加奈思吉兒呂我 kanasi-**kyi** kwo-rə=ga adorable-**RT** girl-DIM=SUBJ '[My] adorable girl' (MYS 14 3351)	/	可奈師家兒良尔 kanasi-**kye** KWO-ra=ni adorable-**RT** girl-DIM=LOC '[Away] from [my] adorable girl' (MYS 14.3412)
Irregular and weak vowel verbs:		
久流比等母奈之 k-**uru** pyitə=mə na-si come-**RT** person=PT is.not-SS 'No one will come' (MYS 20.4353)	/	可閇利久麻弖尔 kapeyri-k-**u**[1]=maNte=ni return-come-**RT**=until=LOC 'Until [I] come back' (MYS 20.4372) 安良波路萬代母 arapar-**wo**[1]=maNte=mə appear-**RT**=until=EXCL 'Until [it] appears' (MYS 14.3414)
R- irregular verbs:		
伊弊奈流伊母 ipye=n ar-**u** imə home=LOC be-**RT** beloved '[My] beloved who is at home' (MYS 20.4415)	/	安路許曽要志母 ar-**wo**=kəsə ye-**SI**=mə be-**RT**=PT good-**SS**=EXCL '[It]'s so good to have…' (MYS 14.3509)
Consonant verbs:		
多妣由久阿礼波 tabi=ni yuk-**u** are=pa journey go-**RT** I=TOP 'I, who will go on a journey...' (MYS 20.4327)	=	由古作枳尔 yuk-**wo**[1] sakyi=ni go-**RT** ahead=LOC 'Where I'm going' (MYS 20.4385)

1 It seems common in EOJ to mark the non-past adnominal with *-u* instead of *-uru* for vowel verbs. For instance, *=maNte* 'until' is always preceded by an adnominal in both EOJ and WOJ, but EOJ has *k-u=maNte* in 4 occurrences, and no occurrence of **k-uru=maNte*. Other examples include: *op-u* (MYS 14.3488), *meyNt-u* (16.3880), *yəs-u* (14.3548), *nak-u* (14.3458), *wakar-u* (20.4381), the passive *-are-* (ex: *nur-ar-u yatuko* 'the scolded lad', 16.3879) and the perfective *-n-* (ex: *kyi-n-u=kamə* '[I] came', 20.4364)

2 *Arapare-* is a vowel verb in WOJ, but a *hapax legomenon* in EOJ. Thus, it could also be that this verb is simply a consonant verb in EOJ, but in my opinion, this *-o* in *araparwo* is to be seen as a regular vowel verb marker in EOJ, since *-o* also occurs in other vowel verbs such as *kyi-n-wo=kamə* '[I] came' (MYS 14.3527).

3 An adnominal marker *-ə* also occurs for consonant verbs, but only after the bilabial *-m-*. Thus, *-ə* can be considered a purely graphic variant of *-o* (Vovin 2021, 30).

In addition, one occurrence is problematic, but could also be putatively interpreted as adnominal forms of the weak vowel *Nte-* 'go out' (according to Kupchik 2023, 174):

伊豆流湯能	=	於毛比度路
iNt-**uru** YU=nə		omwop-yi [i]Nt-**worwo**[1]
go.out-**RT** hot.spring=GEN		think-INF emerge-**RT**
'Like the hot water that springs'		'[I] recall'
(MYS 14.3368)		(MYS 14.3419)

1 This occurrence is highly problematic, as the whole poem is almost impossible to analyse. However, both Kupchik and Vovin agree to analyse *-toro* / *-Ntoro* as an adnominal, either of *iNte-* 'exit' or of *tor-* 'take'. If the second analysis is correct, then we must consider *-o* to be a consonant verb adnominal. On the other hand, if 度 does not write *Nto* but *to*, as Vovin says is possible, another analysis could also be to interpret *-t-oro* as an adnominal of perfective *-t-*, parallel to WOJ *-t-uru*. However, since Kupchik considers that 度 always writes *Nto* and never *to*, this hypothesis does not seem to be the most plausible to me.

Based on this inventory, we can see that there is a lot of allomorphy in EOJ. Namely, in the non-past of verbs, we can count at least:

- 4 allomorphs for the adnominal form: *-o*, *-u*, *-ru*, *-uru* (+ possibly *-oro*);
- 2 allomorphs for the final form: *-u*, *-i*.

These 'Adnominal 1' and 'Adnominal 2' forms appear to be in complete free variation in EOJ, since both forms occur in the same dialects and often in the same poems.[9]

However, as we can observe, the 'Adnominal 2' forms are much less common than their counterparts. In total, in Vovin's corpus of EOJ texts (2021), I counted:

- 48 occurrences of *-o* vs. 138 *-u* for consonant verbs;
- 9 occurrences of *-o*, 13 occurrences of *-u*, 1 possible occurrence of *-oro*, and 29 occurrences of *-uru* for irregular and vowel verbs;[10]

9 However, the non-Western forms are more rare in some dialects than others, as illustrated by Kupchik 2011, 697.

10 Interestingly, a putative form *-uro does not occur.

- 3 occurrences of *-ru* for strong vowel verbs, with no further allomorphy;[11]
- 2 occurrence of *-o* vs. 27 occurrences of *-u* for *-r-* irregular verbs.

Thus, we can see that non-Western forms are not equally distributed, depending on the class of verbs, which might give us some insights on the prehistory of the EOJ system. Phonologically, however, *-o* forms are also not particularly restricted, since they can occur after all consonants.

Finally, two other adnominal morphemes *-a* and *-e* are sometimes reported for EOJ. However, the former is mostly based on one occurrence for which there are several interpretations[12] and was therefore considered dubious by Kupchik (2011, 696-7) before he recently accepted it as genuine (Kupchik 2023, 334). Similarly, the latter is considered dubious by Vovin, who provides a different analysis for all proposed occurrences.[13] Thus, we will exclude both from our inventory.

As for adjectives, we can list:

- Three possible allomorphs of adjective adnominal forms: *-kye*, *-key*, *-kyi*;
- Two allomorphs of adjective final forms: *-si*, -∅, with the same distribution as WOJ.

The variation between *-kye* and *-key* might look rather puzzling at first glance, since on the one hand *-kye* represents a majority of 'non-Western' occurrences (12 vs. 6), but on the other hand more adjectives have a *-key* form than a *-kye* form (*-key* is used with 6 different roots, and *-kye* only with 3, since 10 out of 12 of its occurrences are with the adjective root *kanasi-* 'pretty'). However, as pointed out by

11 A putative *-ro does not occur.

12 Namely, the line 可欲波等里我栖 in 14.3526 is analysed differently by:
Kupchik (2011, 697); Vovin (2021, 214); Kupchik (2023, 334):
kay-wo=**pa** təri=Nka sukaywop-**a** təri=Nka sukaywop-**a** təri=Nka su
be.far-ATTR=**TOP** bird=POSS nestvisit-**ATTR** bird=POSS nestgo.back.and.forth.-**ATTR** bird=POSS nest'in the distant [is] a bird's nest''the nest of a bird that visits...''the nests of a bird that shuttles...'. All 8 other occurrences of this adnominal *-a* are found after the negative morpheme *-n-* and before a locative particle. Thus, if the *kayopa* is not considered an *-a* adnominal, it is possible to consider that *-a* in *na=n-* is in fact a nominalising suffix or a part of the negative suffix, as proposed by Hōjō (1966, 496-501). On the contrary, Ikier (2006, 101) proposes that this *-a* is a genuine adnominal and an allomorph of *-o* resulting from an assimilation with neighbouring /a/.

13 This supposed morpheme only occurs 11 times and always after the negative iterative *-an-ap-*. Vovin proposes to analyse this *-e* as a nominalising morpheme in 1 occurrence: 14.3482a, as a converb morpheme in 4 occurrences: 14.3455, 14.3478, 14.3529, 14.3555, and as an eventual morpheme in the remaining 6 occurrences: 14.3394, 14.3466, 14.3482a, 14.3483, 14.3509, 14.3524.

Kupchik, graphic <*ye*> and <*ey*> are frequently mixed in both directions in EOJ, which seems to indicate that both phonemes had merged in at least some dialects (2011, 469). Thus, both of those spellings probably point toward the same morpheme *-ke*.

In comparison to verbal forms, the non-Western adjectival adnominal *-ke* does not appear to be that rare, since I counted 18 occurrences of it and only 15 occurrences of *-kyi* in Vovin's EOJ corpus. On the other hand, we can observe that *-ke* and *-kyi* occur in both adjective classes and without apparent phonological conditioning, but that they do not occur in the same poems, or actually, to some extent, in the same dialects, as pointed out by Ikier (2006, 99), Hino (2003, 200) and Kupchik (2011, 624), respectively.

Finally, regarding the origin of these non-Western adnominal forms, the least we can say is that there is a strong consensus to claim that they are more archaic than their Western counterpart, and, based on the comparison with Hachijō and with other Japonic languages (cf. *infra*), many specialists consider that they are probably directly inherited from Proto-Japonic (PJ) *-o and *-ke, respectively.[14] In addition, as mentioned by Pellard (2008, 148-9), an adnominal adjective form *-ke* also occurs in the earliest stage of WOJ, like 波斯祁夜斯 *pa-si-kye=ya=si* 'how dear' (KK 32), and, as pointed out by Osterkamp (2018, 47), an adnominal *-o* can also be found in some very early *mok-kan*, for instance in 佐児 [...] 波奈 *sak-wo pana* 'blooming flower'.

For vowel verbs, the picture is a bit less clear, but according to Miyake (2003, 122), we might have an attributive ending *-ro* in a syntagm found on the Inariyama sword: *waka-takye-rwo* 獲加多支鹵, which he interprets as 'being young and fierce', with *take-* probably being a weak vowel verb.[15] If his analysis is correct, then we have to assume that the *-uru* adnominal forms which are later found in both WOJ and EOJ were somehow reshaped analogically from that proto-form *-ro. In that case, the instances of *-o* / *-u* adnominal forms in EOJ would necessarily be an innovation, either due to a syncope or to a form of extension of the consonant verb marking.

On the other hand, if we reject this analysis or if we consider that one evidence is not enough, we could also suppose that the EOJ *-o* / *-u* forms are the archaic ones, and that WOJ *-uru* is secondary. In that case, we can assume that the PJ was *-o and that the *-ro suffix was added later on (probably by recharacterisation on the model of strong vowel verbs). This would explain the form attested in MYS 14.3419 *iNt-oro*. However, further research will be needed, especially in Old Okinawan, in order to decide between those two hypotheses.

14 Serafim 1999; Miyake 2003; Frellesvig, Whitman 2004; Pellard 2008.

15 As a matter of fact, all strong vowel verbs in OJ are in *-i* or *-ï*, while weak vowel verbs are often in *-e*.

In any case, we can say that even though the EOJ system is highly irregular, Hachijō offers a remarkable parallel with its oldest layer, as can be illustrated in Table 11:

Table 11 Parallels between Hachijō and Eastern Old Japanese *rentaikei*

ヨケ　テンキデ yo-**ke** tenki=de good-**RT** weather=CIRC 'Since the weather is nice' (Asanuma 1999, 194)	//	須美与氣乎 sum-i yə-**key**=wo live-NOMIN good-**RT**=ACC '[There,] where it is good to live' (MYS 20.4419)
アオ　コトン　シタラ a-**o** koto=n shit-tara meet-**RT** decision=LOC do-PAST 'They decided to meet' (Kaneda 2006, *Awazu no ki*, 3)	//	阿抱思太毛 ap-**o** siNta=mwo meet-**RT** time=FP 'When [we] meet' (MYS 14.3478)

In this regard, Hachijō appears remarkably conservative in two ways: **morphologically**, since Hachijō preserves a distinction that most neighbouring languages lost, sometimes several centuries ago, and **phonologically**, since Hachijō retains unraised forms that were already getting replaced centuries ago in EOJ. This parallel alone between Hachijō and EOJ is often used as an argument for the putative classification of the former as a daughter language of the latter. However, and while there might incidentally be very good other lexical and phonological arguments for this classification, we also need to remember that 'shared archaisms' can methodologically not be used as a tool for classification, as only 'shared innovations' are relevant in order to establish branches of a language family.

In order to better understand both Hachijō and all Japonic languages on the adnominal/final distinction, we still need to take a look at other modern languages.

3.4 In Contemporary Dialects

The distinction between adnominal and final forms seems to have disappeared from most contemporary Japanese dialects.[16] However, it has been noted since at least the 1980s (Mase 1980) that two different Japanese varieties preserved parts of this paradigm until recently.

The first of these two varieties is the dialect spoken on Toshima, in the north of the Izu archipelago, which retains unraised adnominal verb ending *-o*, but generalised it to all uses, except before some particles which trigger the final form, like the conjectural *-bei* and *-no:* (Ōshima 1962, 45-7; Hirayama 1965, 53-6) **[tab. 12]**.

Table 12 Traces of rentaikei/shūshikei in the Toshima dialect

***Rentaikei* 連体形 (now ubiquitous form)**		***Shūshikei* 終止形 (conditioned use)**
アレモ イコダロベイ are=INCL ik-**o** daɾo=bei he=PT go-**RT** cop.CONJ=CONJ 'He'll probably go as well' (Ōshima 1992, 138)	≠	フネデ イクノー ɸɯne=de ik-**ɯ**=no: boat=CIRC go-**SS**=CONJ '[They]'ll (surely) come by boat' (Ōshima 1992, 138)

The preservation of fossilised forms before some specific particles is a remarkable parallel to the fossilised unmarked final forms of strong vowel verbs that we saw earlier in Hachijō (*kɯ=no:*, *mi=no:*, vs. newer forms *kɯɾɯ=no:*, *miɾɯ=no:*), and the generalisation of the adnominal form to the expense of the final form shows again how strong this tendency is among Japonic languages. In that regard, we can also notice that the adjective forms, have a unique form in *-i*, which is inherited solely from the former adnominal, just like the Tōkyō dialect (ex.: *kuɾoi iro* 'black colour' / *kuɾoi=ne:* '[it] is black', Ōshima 1962, 107).

Finally, as Ōshima points out, the existential verb 'to be' in Toshima is *aɾ-o*, *aɾ-ɯ*, like it is in Hachijō, and not *aɾ-o*, *aɾ-i* like it is in EOJ. Thus, we have to assume either that both those languages exhibit an archaism that was lost early on in OJ, or that the verb *aɾ-* underwent

16 It is possible that it was preserved until recently in some dialects, but remained unnoticed. For instance, though I could not find any trace of it anywhere yet, Hirayama (1968, 119) claims that an adjective adnominal *-ke* also existed in some dialects of the Chiba prefecture. Similarly, some occurrences attested in the *Zenkoku hōgen shiryō*, if proven genuine fossilised forms, might represent traces of such an original opposition. For instance, in the town of Kamiōzu, Fukue (in the Gotō archipelago, Nagasaki prefecture), though the usual form of adjectives is *-ka* in both adnominal and final forms (ex.: *makke-ka çi* 'a vivid red fire', NHK, 9, 1967, 46), we can also see an adnominal *-ki* in *tɕika-ki niŋgeɴ* 'the people surrounding' (NHK, 9, 1967, 46). As the study of those forms exceeds the scope of this article, they will not be discussed here. However, I would like to warmly thank Aleksandra Jarosz for bringing them to my attention.

parallel remodelling in both of those varieties. As we will see (cf. *infra*), the Ryukyuan data might provide good insights to answer that question.

The second contemporary variety that retains some parts of this system is the Akiyamagō dialect, spoken in Nagano prefecture. The opposition is reported by Mase to be partly preserved for both verbs and adjectives **[tab. 13]**.

Table 13 Rentaikei/shūshikei in Akiyamagō

***Rentaikei* 連体形**		***Shūshikei* 終止形**
kat-**o** dotɕa:	≠	kats-**ɯ**=ɾoa:
stand-**RT** time		win-**SS** CONJ
'When [you] win…'		'[He] will probably win'
(Mase 1992, 201)		(Mase 1992, 201)
アカッケツラ	≠	アケァーゲダ
akak-**ke** tsɯra		ak**ɛ:**[1]=ge da
red-**RT** face 'A red face'		red**.SS**=COMP COP '[It]'s reddish'
(Mase 2002, 19)		(Mase 2002, 19)

1 Since Mase does not provide an interpretation of the origin of this contracted form, we can wonder whether it originates from OJ *-si*, or from OJ *-ki*. As they strongly resemble neighbouring *-i* adjectives (which come from adnominal *-ki*), Pellard (2008, 150-1) supposes that they are likely to be an external influence. However, it does not seem impossible either to suppose that medial *-s-* was dropped in some context in Akiyamagō; in a similar way that in Hachijō (cf. *supra*). However, since this question exceeds the scope of this article, we leave it open for further research.

However, as explained by Mase (2002, 17-20), the opposition was already almost lost when this data was recorded in 1971, since very few speakers distinguished the two forms for verbs, and the ones who did only preserved in a minority of verbs, such as for the consonant verbs ending in *-t-* (probably because the difference between affricate and plain alveolar occlusive reinforced the opposition).

As for adjectives, the contracted final form is now seen as the default for both adnominal and final uses and, except in a few fossilised expressions such as *oreɕi-ke koto* 'how happy [I am]!' or *nekottaraɕi-ke jatsɯ* '[what] a naughty fellow!', the old adnominal actually does not occur any more (Mase 2002, 19). The system was also partially remodelled, since the former adnominal marker *-ke* can now agglutinate to the contracted form (*ago-ke kɯsa* 'green grass' > *age:-ke kɯsa*), but is not a compulsory in this use (19).

Thus, we can see that even though it offers remarkable traces of the OJ pattern, the adnominal/final opposition was not preserved as well in Toshima and Akiyamagō as it was in Hachijō.

4 The Adnominal/Final Distinction in Ryukyuan

Finally, I would like to finish this reflection with a few insights from Ryukyuan languages.

4.1 In Old Okinawan (OO)

The data is quite scarce in Old Okinawan, but the adnominal/final distinction does not seem to be preserved for verbs, as usually consonant verbs have a unique form in *-u*, and vowel verbs have a unique form in *-ru*. Besides the distinction between strong and weak vowel verbs was eliminated from the language, and the irregular verbs were mostly made regular, *kʰuh-* 'to come' and *si-* 'to do' being regular vowel verbs, and *syín-* 'to die' being a regular consonant verb (Takahashi 1991, 21-2; Serafim, Shinzato 2021, 187-90). This lack of opposition is illustrated by Table 14:

Table 14 The *rentaikei/shūshikei* in Old Okinawan

Consonant verbs		
おもうやに		おむうな
ʔumu'-**u**=yoo-nyi		ʔumu'-**u**=naa
think-**RT** =like-ADV		think-**SS**=PT
'As [he] thinks...' (OS 6.#299))		'Don't [you] think' (OS 15.#1122)
Vowel verbs:		
ひきよせるわし	=	よせるまじ
pyik-yusi-**ru** wasyi		yusi-**ru**=mazyi
pull-let.approach-**RT** eagle		let.approach-**SS**-NEG.IA
'The eagle who drags...'		'[We] can't let [them] approach'
(OS 20.#1340)		(OS 12.#721)

However, as pointed out by Vovin (2009, 633-4) graphical *-o* adnominal forms do occur in the *Omoro saushi*, and it is not trivial to identify what this allography was representing.

As for the past tense, data is also lacking, as only the adnominal form *-syi* is attested, ex.:

わかさあしとき
wakʰa-sa ʔas-syi tʰuk˚yi
young-NOM be-**RT** time
'when [we] were young' (OS 7.#380).

However, we can note the remarkable parallel between the OO form *ʔas-syi* and the Hachijō *at-tɕi*, /tts/~/ttɕ/ being the regular outcome of geminated /ss/ in Hachijō.

On the other hand, the copula *ar-* maintains a clear distinction between adnominal and final forms:

つゞみのあるあぢ	≠	だにあり
ciʤɨmyi=nu ʔar-**u** ʔaʤyi		da=nyi ʔar-**yi**
hand.drum=SUBJ be-**RT** lord		certain=ADV be-**SS**
'The lord who has a hand drum'		'[That]'s true'
(OS 19.#1295)		(OS 1.#40)

Thus, the existence of a final form *ar-i* in Old Okinawan seems to indicate that Hachijō and Toshima *aro* / *arɯ* is in fact secondary, and probably due to an analogical remodelling.

Finally, it is almost impossible to get any Ryukyuan comparative data on adjectives, since they were completely reshaped with the nominalising suffix *-sa*, followed the copula *ar-*, or more rarely with adverbial suffix *-ku*, followed by the same copula *ar-* (Serafim, Shinzato 2021, 151). Thus, the old adnominal is only visible in a few fossilised forms,[17] and the adjective final form *-*si* is not clearly attested in the *Omoro saushi*.[18]

4.2 In Modern Ryukyuan Languages

Data from modern Ryukyuan languages is also challenging to use, since, as explained by Vovin (2009, 632), most modern contemporary Ryukyuan languages completely reshaped their paradigm and now distinguish an adnominal *-*uru* from a final *-*um*, both usually triggering palatalisation of the preceding stop (e.g., in Shuri Okinawan, quoted from Vovin: *'itʃ-uru* 'go-RT', vs. *'itʃ-un* 'go-SS'). However, as pointed out by Thorpe (1983, 182), and further explained by Pellard (2008, 142-3), a few Northern Okinawan languages still preserve a fossilised adnominal form in some specific contexts, and those adnominal forms can, according to Pellard, only be traced back to PR *-o. For instance, in Nakijin Yonamine Okinawan we find **[tab. 15]**.

17 Such as おきおふぢ *ʔuu-k̊yi ʔuqp̊uʤyi* big-RT grandfather 'great-grandfather' (OS 21.#1395), or わかいきよ *wakʰa-yi kʰyuu* young-RT one 'the young one' (OS 21.#1472), in which we can observe the dropping of medial *-k-*.

18 A morpheme *-syi* seems to occur as a final form marker, for instance in いけゝゝし *ʔyik̊yi-syi* 'vivid' (OS 11.#648), but Serafim and Shinzato (2021, 153) consider that it is not a final marker, but a 'derivational suffix for adjectives with emotional content'. Thus, they gloss it as 'affective adjective formative' (2021, 164). Similarly, an unmarked *-si-* adjective final form seems to occur for instance in *ʔuruwasyi-∅* 'beautiful-SS' (OS 8.#402), which could indicate that the same haplology as in WOJ and EOJ took place in Ryukyuan, but this hypothesis is not certain.

Table 15 The *rentaikei/shūshikei* in Nakijin Yonamine

***Rentaikei* 連体形**		***Shūshikei* 終止形**
wa:=ga **hakʔu**=madi: mattɕʔure: I=NOM write-**RT**=CONJ wait.IMP 'Wait until I write' (Pellard 2008, 142-3)	≠	wa:=ga **hatɕʔu**-n I=NOM write.**SS**-FIN 'I write' (Pellard 2008, 142-3)

Similarly, as Jarosz has already showed in her article on South-Ryukyuan historical phonology (2019, 407-8), the phonological system of proto-Sakishima caused the infinitive and conclusive forms to become homophonous, which caused a lot of analogical reshaping of the paradigm. However, according to her, traces of the adnominal/final opposition can be found in the diversity of forms among modern South Ryukyuan languages, since, for instance Nakachi Miyako *kaf-u* 'write' can only be reconstructed as **kak-u*, whereas the form found in Ishigaki Yaeyama *kak-u* can only point to **kak-o* (411).

Finally, it is important to our discussion that both Thorpe (1983, 154) and Jarosz (2019, 406) do not reconstruct a proto-Ryukyuan adnominal *-ru for vowel verbs (as attested in WOJ), but *-ro, which corroborates Miyake's analysis of the Inariyama sword. In addition, based on the Ryukyuan data, Thorpe proposes to reconstruct a proto-Ryukyuan adnominal **se-ro* for the verb 'to do', which, if we assume that WOJ and EOJ *s-uru* are secondary, could explain the palatalisation of the root in the Hachijō form *ɕ-o*.

5 Conclusion

As we have seen through the comparison of Hachijō with several other Japonic languages, we can only agree with Pellard's statement (2008, 144) that "there is definitely evidence for reconstructing the adnominal/conclusive opposition in PJ from comparative evidence". Even though most contemporary Japonic languages eliminated this opposition, we can also see several traces of it and several shared tendencies in its evolution.

In this perspective, the morphology of Hachijō is, indeed, to some extent remarkably archaic, as it preserves some oppositions that are long gone in other Japonic varieties in ways that appear very close to what we can reconstruct for Proto-Japonic.

However, on the other hand, several important innovations can also be observed, among which:

- the remodelling of *aru* / *ari* as a regular consonant verb (*aɾ-o* / *aɾ-ɯ*);

- (possibly)[19] the remodelling of *sinu* 'to die' (an irregular verb in WOJ) as a regular consonant verb (*ɕin-o* / *ɕin-ɯ*);
- the merging of weak and strong vowel verbs categories;
- the elimination of the attributive past morpheme *-ki*;
- the making of a new past tense in *-ar-*, possibly from the EOJ progressive *-ar-;*
- the (partial) remodelling of vowel verb final forms with analogical final marker *-rɯ;*
- the (still ongoing) re-characterisation of final forms with the particle *=wa*, with the gradual elimination of all inherited final forms.

Among these innovations, some can be said to obey a general tendency in Japonic languages (such as the 'normalisation' of the copula and of irregular verbs, the extension of adnominal forms and remodelling of unmarked final forms, and fusion of all vowel verb categories), while some other can be said to be proper to Hachijō (such as the creation of a past tense with *-ar-* or the re-characterisation of final forms with the final particle *=wa*). In any case, it should be remembered that shared archaisms between EOJ and Hachijō cannot be used in order to prove a genetic relation between them.

In a nutshell, we can sum up the changes of the non-past verbal paradigm between PJ and Hachijō as follows, with innovations indicated in bold letters **[tab. 16]**:

Class	***Rentaikei***	***Shūshikei***	***Ren'yōkei***
Consonant verbs: ex.: *tər-* 'take'	*tər-o >tor-o	*tər-u >tor-ɯ	*tər-i >tori
R- irregular: ex.: *ar-* 'be'	*ar-o >ar-o	***ar-i >ar-ɯ**	*ar-i >ari
N- irregular: ex.: *sin-* 'die'	(?) *sin-**oro** >ɕin-**o**	***sin-u >ɕin-ɯ	*sin-i >ɕini
Weak vowel verbs: ex.: *əkï-* 'rise'	(?) *ək-**oro** >oki-**ro**	***ək-u >oki- /** oki-**rɯ**	*əki >oki
Strong vowel verbs: ex.: *myi-* 'see'	*mi-ro >mi-ro	*mi >mi- / mi-**rɯ**	*mi >mi
K- irregular: *kə-* 'come'	*k-**oro** >kɯ-ro	*k-u >kɯ / kɯ-**rɯ**	*k-i >ki
S- irregular: *se-* 'do'	*se-ro >ɕ-o	*s-u >sɯ / sɯ-**rɯ**	*s-i >ɕi

19 This verb does not occur in EOJ, therefore it is impossible to know if it was already irregular in PJ. Besides, it must be noted that the verb *ɕinɯ* is now rarely used in Hachijō outside of fossilised idioms, its synonym *marɯbɯ* ~ *marɯbɯ* (which means 'to fall down' in Standard Japanese) being way more common.

And for adjectives **[tab. 17]**.

Table 17 The evolution of adjectival *rentaikei* and *shūshikei* between proto-Japonic and Hachijō

Class	*Rentaikei*	*Shūshikei*
1	*taka-ke >taka-ke	*taka-**si >**take: ~ takja: / taka-**kja**
2	*kanasi-ke >kanaɕi-ke	*kana**si >**kanaɕi: / kanaɕi-**kja**

As stated earlier, the question of the exact form of PJ marking for weak vowel verbs and for the *-n-* irregular verbs remains puzzling, and will be tackled in further research on that matter.

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A Typology of the Deictic Day Name System in Manchuric

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Abstract Deictic day names like English *yesterday*, *today*, and *tomorrow* are a potentially universal but neglected field in cross-linguistic research. This study presents a comprehensive panchronic analysis of the deictic day name system in the Manchuric branch of the Tungusic family. Based on a small sample of languages, it establishes several typological dimensions of variation within the domain that serve as a background for the analysis. It demonstrates that Manchuric languages exhibit an unusual asymmetric system. The study also shows that Manchuric differs markedly from other Tungusic languages, which is explained by language contact.

Keywords Deictic day name system. Deixis. Temporal expression. Tungusic. Manchu. Typology. Diachrony.

Summary 1 Introduction. – 2 Typology. – 2.1 Number of Forms and Numeral Symmetry. – 2.2 Analysability and Morphological Symmetry. – 2.3 Recursion. – 2.4 Length. – 2.5 Lexical Symmetry. – 2.6 Secondary Reference Points. – 2.7 Relation to Elements Outside of the System. – 3 Manchuric. – 3.1 Inventory. – 3.2 Three Days Ago. – 3.3 Ereyesterday. – 3.4 Yesterday. – 3.5 Today. – 3.6 Tomorrow. – 3.7 Overmorrow. – 3.8 In Three Days. – 4. Diachronic Aspects. – 4.1 Palatalisation. – 4.2 Fusion of the Word for 'Day'. – 4.3 Language Contact. – 4.4 Relation to Expressions for Months and Years. – 5 Summary and Conclusion.

1 Introduction

Deictic day names like English *yesterday*, *today*, and *tomorrow* denote diurnal periods or intervals of time that follow in linear succession and are anchored by a temporal deictic centre ('now'), which, by definition, is part of the present diurnal period ('today'). As such, they are usually considered "temporal shifters" (e.g. Dixon 2010, 114) that

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change their meaning according to the flow of time (cf. today is tomorrow's yesterday, Tillman et al. 2017). This sets them apart from other diurnal expressions referring to the days of the week or specific days like Manchu *niolhun* ~ *niolhūn* 'the sixteenth day of the first month, the end of the New Year festivities'.

Although they are mentioned in countless descriptions of individual languages, deictic day names are a relatively neglected field of study. In cross-linguistic investigations, they are usually only briefly mentioned in passing (e.g. Fillmore 1975, 47; Haspelmath 1997; Klein 2009). They are furthermore rarely described as one coherent semantic domain. Even though languages exhibit a wide variety of different deictic day name systems, there is thus surprisingly little typological research on this topic (e.g. Tent 1998; Szeverényi 2012). This paper is a case study of the unusual deictic day name system of the Manchuric languages that form one branch of the endangered Tungusic language family (e.g. Janhunen 2012a; Hölzl, Payne 2022). As such, it contributes to the typology of this specific semantic domain as well as to the study of the Manchuric languages.

Following Tent (1998, 113) 'today' will be indicated with the label N (for 'now'), days in the past are shown with negative numerals, and days in the future with positive numerals. Thus, –1 stands for 'yesterday', +1 for 'tomorrow', etc. This enumeration has an actual basis in several languages that use numerals for the expression of the individual categories. An example can be found in Afaan Oromo (Cushitic), which has expressions like *guyyaa* ***sadii*** *dura* for 'three days ago (-3)', *guyyaa* ***afur*** *dura* for 'four days ago (-4)', and *guyyaa* ***shan*** *dura* 'five days ago (-5)'. These consist of the words *guyyaa* 'day' and *dura* 'before' as well as the numerals *sadii* 'three', *afur* 'four', and *shan* 'five', respectively (elicited). This suggests that the entire semantic domain cross-linguistically is connected to or perhaps even conceptually based on the lower numeral system.

As the name suggests, diurnal expressions are based on the semantic category of DAY (cf. Latin *diurnus*). In many languages, deictic day names are in fact based on words meaning 'day', such as *to-day* in English or *hoy día* in Spanish. For instance, Standard Mandarin has two different sets of expressions involving the words *tiān* 天 'day (< sky)' and *rì* 日 'day (< sun)' **[tab. 1]**. The latter is less frequently used and more common in the written language. Such expressions are comparable, for example, to interrogatives that are often based on basic or schematic categories like THING, as can be seen in Italian *cosa* 'thing' in *che cosa* 'what'. Unlike interrogatives, however, which are based on a variety of different concepts (PERSON, THING, REASON, etc.), deictic day names, by definition, are all based on the same concept of DAY. This common semantic component leads to a much more homogenous system than that formed by interrogatives. Another difference with respect to interrogatives, which usually belong to

various word classes, is the fact that deictic day names often belong to the same class (i.e. adverbs).

Table 1 The deictic day name system in Standard Mandarin (elicited)

–3	dà qián-**tiān** 大前天	dà qián-**rì** 大前日	dà 'big'
–2	qián-**tiān** 前天	qián-**rì** 前日	qián 'in front, before'
–1	zuó-**tiān** 昨天	zuó-**rì** 昨日	
N	jīn-**tiān** 今天	jīn-**rì** 今日	jīn < 'now'
+1	míng-**tiān** 明天	míng-**rì** 明日	míng 'bright'
+2	hòu-**tiān** 后天	hòu-**rì** 后日	hòu 'behind, after'
+3	dà hòu-**tiān** 大后天	dà hòu-**rì** 大后日	dà 'big'

Temporal expressions are frequently based on the metaphor TIME IS SPACE (e.g. Lakoff, Johnson 1999). This metaphor is the basis for expressions like the *flow of time* as well as concepts like the ARROW OF TIME (with the topology of a line). Manchu *jidere aniya* 'next year' is literally 'the coming year' and *duleke aniya* 'last year' means 'the passed year', which suggests the conceptualisation of a moving time. Deictic day names are no exception from this common pattern of employing spatial expressions for temporal categories. For instance, Mandarin uses *qián* 'in front > before' and *hòu* 'behind > after' for –2 and +2, respectively. Some languages use spatial case markers (e.g. an ablative).

Tacheng Dagur (Mongolic)

(1) *kəčig-**əːr*** *ordon* *udur*
day.before.yesterday-ABL before day
'three days ago' (Yu et al. 2008, 126)

Important entailments of the metaphor include that duration is understood as length and that temporal proximity equals spatial proximity. The latter can be observed in expressions that contain proximal demonstratives for 'today' (e.g. *on this day*) but distal ones for days that are further away (e.g. *on that day*).

Ultimately, diurnal expressions such as 'today' are based on the rotation of the earth relative to the sun along its north-south axis. Although the time of year and precise location on the globe make a difference in the length of day- and nighttime, the diurnal period as such remains almost completely constant. Given the universal character of the underlying system, the domain can perhaps be understood akin to a conceptual space with different languages carving out a language-specific semantic map (e.g. Croft 2003). If so, the analysis of language-specific expressions can contribute to the understanding

of the underlying conceptual architecture of this semantic domain (i.e. language as a window to the mind). For instance, there appears to be a hierarchical structure that takes the following form:

(2) … –3 > –2 > –1 > N < +1 < +2 < +3 …

This can be read as follows: if there is an expression for –3, then there is also an expression for –2, and so on. Additionally, it would be unexpected to find many languages that have a very large system on one side of N but a considerably smaller one on the other side. These predictions are valid for the languages mentioned in this study, but further cross-linguistic research will be necessary to test and refine them on a global scale.

Although the topology of the system is that of a line, there are conceptual links between the individual deictic categories that add further dimensions. There are different types of links, such as polysemies or diachronic derivations from one category to another. In the Uralic language Nganasan, for instance, there are two such polysemies: the same expressions are used for –1 and +1 as well as for –2 and +2, respectively **[tab. 2]**. The latter are, furthermore, derived from the former with the help of spatial postpositions. Contrast this with Turkish, which uses different forms for –1 and +1 and has separate expressions for –2/+2 that are not based on –1/+1. Figure 1 attempts to illustrate these additional links between the categories with dashed arrows. The individual categories do not overlap but might show some language- or culture-specific boundaries, for example whether the next day starts at midnight or at sunrise. Before a universally applicable conceptual space can be established, more detailed case studies are necessary to understand all links between the individual diurnal categories. Figure 1 should be understood as a working model that can be amended depending on future cross-linguistic findings.

Table 2 The deictic day name system in Nganasan (Szeverényi 2012, 467) and Turkish (elicited, simplified)

	Nganasan	**Turkish**
–2	taluə takənu, taluə taanini	evvelsi gün
–1	talu	dün
N	əməd'alị	bugün
+1	talu	yarın
+2	taluə takənu, taluə taanini	(öbür gün)

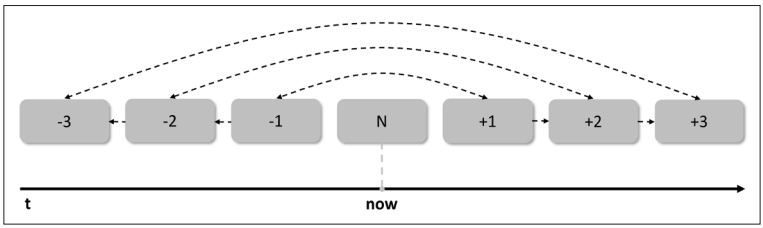

Figure 1 A preliminary illustration of the deictic day name domain as conceptual space

A potential problem for this approach is the apparent non-universality of some of the diurnal categories mentioned above. For instance, Dixon (1972, 115) presents a description of the Dyirbal system shown in Table 3. In this Pama-Nyungan language, there are expressions for 'yesterday' and 'tomorrow' but no single word for 'today'. Instead, there are two words *ɖaŋɖaru* 'earlier on today' (apparently derived from *ɖaŋɖa* 'now') and *gilu* 'later on today'. Other languages like Italian or English also possess expressions that denote subparts of the deictic day names. However, while *stamattina/stamane* 'this morning' or *tonight* are vaguely comparable to the Dyirbal forms, these two languages also have the broader expressions *oggi* and *today* for the entire present diurnal span. Like many other languages, Dyirbal lacks special terms for 'day before yesterday' and 'day after tomorrow'. There are, however, two expressions, *ŋudaŋga* 'the other day' (up to a month) and *ɖada* 'in a few days time', that suggest some sort of fuzzy boundary on both sides of the domain.

Table 3 The deictic day name system in Dyirbal

–1	ŋumbuŋga	
–	ɖaŋɖaru	'earlier on today'
–	gilu	'later on today'
+1	ŋulga	

There are further cultural and situational differences concerning the exact meaning of words referring to 'day'. For instance, expressions like *day and night* or *the days are getting longer* indicate a meaning of the word *day* that refers to the daytime when there is sunlight. In *a week has seven days*, on the other hand, it refers to the entire diurnal span. There is evidence that many other languages behave in a similar way. Manchu *inenggi* 'day, daytime' exhibits the same polysemy: *inenggi-dari* 'every day' denotes the entire span but *inenggi buda* 'lunch' only refers to a subpart. These different types of construal will not be addressed in detail in this study.

Occasionally, deictic day names have also been discussed in the context of absolute versus relative time reference (e.g. Comrie 1985, 56). For instance, English possesses two sets of expressions for diurnal categories.

(3) *yesterday* vs. *on the day before*
today vs. *on the same day*
tomorrow vs. *on the next day*

The expressions on the left occur in direct speech and have an absolute time reference. The ones on the right, on the other hand, are usually found in indirect discourse and have a relative time reference. Another category that some languages possess is metrical tense based on diurnal categories (see Frawley 1992, 363-70). This study will only address lexical expressions and will focus on those with an absolute time reference.

Section 2 is a brief typological overview of deictic day name systems and some of their cross-linguistic properties. Section 3 focuses on the Manchuric system. Section 4 discusses some diachronic aspects and Section 5 is a summary and conclusion.

2 Typology

This section will briefly discuss the typology of deictic day name systems, which will serve as a background for the description of the Manchuric system.

2.1 Number of Forms and Numeral Symmetry

The languages in Tent's (1998) global sample of 157 languages reportedly exhibit between 3 and 13 deictic day names. Tent found a cross-linguistic preference for systems from –2 to +2 while larger systems are much rarer. Languages are furthermore said to possess an "overwhelming tendency" for numerically symmetrical systems (Tent 1998, 122). However, Tent's classification is arguably somehow misleading. English, for instance, is classified as having a system from –1 to +1, i.e., he only includes *yesterday*, *today*, and *tomorrow*. Tent is not very clear about why further expressions are excluded. He claims that languages like English "do not have deictic items identifying days beyond –1/+1" and, for some reason, excludes periphrastic expressions like *the day after tomorrow* and *the day before yesterday*. There are several problems with this point of view.

First, the two English periphrastic expressions are, of course, also deictic. The fact that they contain an additional reference point

makes them no less reliant on 'today' as their deictic center (see Section 2.6). Second, periphrasis is no valid reason for excluding the expressions from the count. English *yester-day* and *to-day*, at least to a certain degree, are also analysable, which apparently was no reason for excluding them. There is a fuzzy boundary between periphrastic and synthetic expressions, which makes the distinction difficult to maintain. The function should have priority over the specific type of morphosyntactic expression.

Tent (1998, 122) furthermore found a tendency for numerical symmetry, i.e., languages tend to have the same number of names on both sides of the system. Problematically, he did not make his entire sample available. Arguably, there are a few misclassifications, including the two Manchuric languages Manchu and Sibe (see Section 3), which make the results less reliable. For instance, Italian, Czech, and Thai are all classified as having a symmetric –2/+2 system in Tent (1998, 123). Table 4 shows that this classification is not accurate. All three languags have symmetric systems that range from –3 to +3, although the most conventionalized system in Czech might in fact range from -2 to +2.[1] Excluding periphrastic expressions from the count would not make the classification correct either because then Italian *l'altro ieri* (lit. 'the other yesterday') should have been excluded but Thai *marûaŋ* should have been included. In this study, all lexicalised or conventionalised expressions will be discussed, independent of whether they are periphrastic or not.

Table 4 The deictic day name system in Italian (author's knowledge), Czech (Nina Adam, personal communication), and Thai (elicited, see also example 6)

	Italian	**Czech**	**Thai**
–3	tre giorni fa	(předpředevčírem)	sǎam wan kɔ̀ɔn/ thîilɛ́ɛw
–2	l'altro ieri	před(e)včírem	mû̂awaansʉʉn
–1	ieri	včera	mû̂awaan(níi)
N	oggi	dnes	wanníi
+1	domani	zítra	phrûŋníi
+2	dopodomani, domani l'altro	pozítří	marʉʉn
+3	fra tre giorni	(popozítří)	marûaŋ, nay/ phaaynay sǎam wan

1 I would like to thank an anonymous reviewer who pointed out that Czech possesses a –3 expression that the original informant, who was also uncertain about the +3 expression, did not provide.

2.2 Analysability and Morphological Symmetry

The second dimension is the analysability of the individual forms. Tent's (1998, 114) sample of 157 languages reportedly contains altogether 908 deictic day expressions. He classifies them as shown in (4).

(4) monomorphemic (450)
polymorphemic (458)
Type 1: specialised day name plus modifier (289)
Type 2: lexeme for 'day' plus modifiers (162)
Type 3: periphrastic expressions (7) (?)

About half of the forms are monomorphemic while the other half is polymorphemic. The latter is classified into three distinct types. Type 1, which entails dependencies within the system, consists of specialised day names in combination with modifiers, such as French *avant-hier* 'the day before yesterday', literally 'before (*avant*) yesterday (*hier*)'. To Type 2 belong expressions that contain a word meaning 'day' and its modifier, e.g., Turkish *bu-gün* 'today', literally 'this day'. Type 3 consists of periphrastic expressions, such as English *the day after tomorrow*. The exact delineation between Types 1 and 2 on the one hand and Type 3 on the other remains somehow unclear. Tent distinguishes between different types of modifiers, including adverbial particles, adpositions, adjectives, numerals, determiners, and words meaning 'day'. A pattern not mentioned is the use of classifiers such as the general classifier *ge* 个 in Mandarin dialects (e.g. *zuó ge* 昨个 'yesterday').

Based on these categories, Tent (1998, 118 f.) identifies four different cross-linguistic patterns that deictic day name systems can exhibit.

(5) Pattern 1: fully monomorphemic (16 languages)
Pattern 2: fully polymorphemic (20 languages)
Pattern 3: mixed (121 languages)
Pattern 3a: symmetric distribution on both sides (64 languages)
Pattern 3b: asymmetric distribution on both sides (57 languages)

Generally, forms closer to today tend to be less analysable and peripheral forms tend to be more unanalysable. Table 5 contains data from Tent showing the distribution of the three types in (4) over the diurnal categories. For simplicity, more peripheral categories for which few languages were listed are excluded. The most common combinations are in boldface.

Table 5 Simplified distribution of types over categories (based on Tent 1998, 118)

	Monomorphemic	**Polymorphemic**		
		Type 1	Type 2	Type 3
–3	6	**34**	10	–
–2	39	**80**	30	2
–1	**116**	20	20	–
N	**89**	–	64	3
+1	**126**	22	7	1
+2	47	**78**	23	2
+3	13	**32**	7	–

While these findings seem to be valid as general tendencies, the same criticism as above applies. Since most of the data are not available, it is difficult to verify the results without additional research. Again, there are several misclassifications, including Manchu and Sibe (see Section 3). Among other problems, Type 3 is said to be unattested for –3 and +3. Counterexamples can be found, for instance, in English, Italian, or Thai.

Thai (Kra-Dai)

(6) a) *sǎam* *wan* *kɔ̀ɔn/* *thîilɛ́ɛw*
three day ago/ last
'three days ago' (elicited)

b) *nay/* *phaaynay* *sǎam* *wan*
in/ by/within three day
'in three days' (elicited)

Within the polymorphemic forms, Tent (1998) identifies what he calls "lexico-semantic symmetry" with identical modifying elements on both sides of N. For instance, Bolivian Quechua has the same element *minchha* for both –2 and +2 **[tab. 6]**. Coincidentally, this could be another problem in Tent's analysis, who lists *minchha* as a monomorphemic word meaning '–2, +2'. While not necessarily wrong, it shows that *qayna minchha* and *q´aya minchha* could perhaps also qualify as Type 1 expressions. See Section 2.5 for a similar example from Uilta.

Table 6 The deictic day name system in South Bolivian Quechua (elicited)

–2	qayna minchha
–1	qayna
N	kunan
+1	q´aya
+2	q´aya minchha

2.3 Recursion

Analysable expressions can exhibit recursion by productively applying the same derivation more than once. A good example is German, which is illustrated in Table 7 (based on the author's knowledge). The day before yesterday in German contains the initial element *vor* 'before, in front', while the day after tomorrow has the element *über* 'over' (cf. older English *overmorrow*). Both can be productively added several times to indicate preceding or following days. In practice, the embedding is usually restricted to one or two levels (see also Czech in Table 4 and Chinese in Table 10).[2]

Table 7 The deictic day name system in German and its raw frequencies in the *Wortschatz Leipzig* (see Section 2.4)

	Form	Frequency
–3	**vor**-**vor**-gestern	9
–2	**vor**-gestern	1.044
–1	gestern	34.508
N	heute	249.121
+1	morgen	20.869
+2	**über**-morgen	621
+3	**über**-**über**-morgen	3

Another type of recursion can be found in Oroqen **[tab. 8]**. In this language, too, –3 and +3 are based on –2 and +2, respectively. However, what is recursive are not the elements modifying the deictic day names but the names *tiinug* 'yesterday' and *timaan* 'tomorrow' themselves.

Table 8 The deictic day name system in Nanmu Oroqen (Tungusic: Chaoke 2007, 255) and Kurux (Dravidian: Kobayashi, Tirkey 2017); cf. Oroqen *əri* 'this', *ini* 'day', *-ŋi* '-GEN/-ATTR'

	Oroqen	Kurux
–3	**tiinug**ŋi **tiinug** tʃaawudu	–
–2	**tiinug** tʃaawudu	(cero: mala) horbore:, …
–1	tiinug	cero:
N	əri ini	inna:
+1	timaan ini	ne:la:, …
+2	**timaan** tʃaawudu	nelbeɲja:
+3	**timaan timaan** tʃaawudu	nelbeɲja: ti: xo:xa:

2 Frequencies are taken from https://wortschatz.uni-leipzig.de/de.

2.4 Length

Deictic day names differ not only in their analysability but also in their length. Some analysable forms can be very long or even consist of entire phrases.

(7) a) Evenki (Tungusic, Nedjalkov 1997, 73)
ilan-ma *tyrgani-l-va* *amaski*
three-ACC.DEF day-PL-ACC.DEF backwards
'three days ago'

b) *ilan-duli* *tyrgani-l-duli*
three-PROL day-PL-PROL
'in three days'

Cross-linguistically, it seems that forms closer to today tend to be shorter. Impressionistically, this can be observed in the characteristic U-shaped distribution found in Oroqen and Kurux **[tab. 8]** as well as many other languages mentioned in this study. Likely, there is a correlation of this distribution with analysability (see Section 2.2) and text frequency. As a rule of thumb, more frequent words are usually also less analysable and shorter. This pattern can be observed, for instance, in German for which raw frequencies are available that are listed in Table 7 (cf. Zipf's well-known law of abbreviation).

2.5 Lexical Symmetry

In some languages, such as the Uralic language Nganasan, there are identical lexical elements in both directions on the timeline (see Section 1). In such languages, the actual temporal meaning is often determined by the context or tense marking on the verb (Szeverényi 2012). Another example can be found in Uilta **[tab. 9]**. While *čeennee* 'yesterday' and *čimanaa* 'tomorrow' are not identical, the rest of the system shows the following polysemies: –3=+3 as well as –2=+2.

Table 9 The deictic day name system in Uilta; cf. *tari* 'that', *əsi* 'now' (Ikegami 1997)

–3	tari čigaapani
–2	(čeennee) **čigaapani**
–1	čeennee
N	əsinəŋi
+1	čimanaa
+2	(čimanaa) **čigaapani**
+3	tari čigaapani

2.6 Secondary Reference Points

Apart from the deictic centre, which functions as a primary reference point for the day name system, languages can exhibit secondary reference points (cf. Langacker 1993). In such systems, one deictic day name other than 'today' is the basis of preceding or following day names (including Type 1 and parts of Type 3 above). Examples for this can be found in English (*the day before yesterday, the day after tomorrow*) or in the following examples from Udihe (+1 as reference point for +2) and Kurux (+2 as reference point for +3).

(8) Udihe (Tungusic: Nikolaeva, Tolskaya 2001, 372)
tima:na(ŋi) ***ca:****-la-ni*
tomorrow **after**-LOC-3SG.POSS
'the day after tomorrow'

(9) Kurux (Dravidian: Kobayashi, Tirkey 2017, 695, *passim*)

nelbeɲja:	*ti:*	***xo:xa:***
overmorrow	ABL	**after**

'in three days'

Further cross-linguistic research will have to identify those categories that most often function as secondary reference points (see also Section 1 on Dagur).

2.7 Relation to Elements Outside of the System

Deictic day name systems often show connections to other elements in the language. In some cases, 'yesterday' and 'tomorrow' can be the source of grammaticalisation (see Heine et al. 2019 for examples).

(10) a) yesterday > past
b) tomorrow > future, next

These two categories in turn are frequently connected to words meaning 'evening' or 'morning'. Synchronically, this connection often shows up as polysemy.

(11) a) evening > yesterday
b) morning > tomorrow

This can be observed in Armenian *erek* 'yesterday', *ereko* 'evening' (Dum-Tragut 2009), German *morgen* 'tomorrow', *Morgen* 'morning', or Polish *jutro* 'tomorrow, morning'. Examples are also known from Tungusic languages like Udihe (*tima-* 'tomorrow, morning') or Kilen.

(12) Kilen (Zhang, Zhang, Dai 1989, 27)

ɕiksə *ɕiksə-ni*
yesterday evening-3SG.POSS
'yesterday evening'

As in the case of Kilen, the development usually is from the time of day to the deictic day name (see Section 3.4), but apparently not necessarily so. In Yidiŋ (Pama-Nyungan), there are two sets of words that suggest a more complex relation between the two types of concepts (Dixon 1977, 498).

(13) a) *guygam* 'yesterday (afternoon)'
b) *ŋaɖa* 'tomorrow (morning)'

(14) a) *guygaguygam* 'afternoon/evening'
b) *ŋaɖaguran* 'morning'

While the terms in (13) seemingly already have a connection to 'afternoon, evening' and 'morning', the terms designating the times of day in (14) are said to be derived from them rather than the other way around.

A different and apparently almost unexplored type of relationship exists with deictic expressions for months and years (e.g. Haspelmath 1997, 7 fn. 3; Tent 1998, 137). In German, for instance, there is a parallel between *heute* 'today (< this day)' (cf. *Tag* 'day') and *heuer* 'this year' (cf. *Jahr* 'year') but not to *dieser Monat* 'this month'. In Mandarin, expressions for years (*nián* 年) are almost entirely parallel to the deictic day names except for the use of *qù* 'to go' (see Section 1). Expressions for months (*yuè* 月), on the other hand, are very different **[tab. 10]**. Among other differences, the latter contain cases of recursion and are based on a well-known vertical metaphor for the passing of time in which 'earlier' is conceptualised as 'above' (*shàng* 上) and 'later' as 'below' (*xià* 下).[3]

Table 10 Deictic month and year expressions in Mandarin (elicited)

	Months	Years
–3	sān ge **yuè** zhī qián 三个月之前	dà qián-**nián** 大前年
–2	shàng shàng ge **yuè** 上上个月	qián-**nián** 前年
–1	shàng ge **yuè** 上个月	qù-**nián** 去年
N	zhè ge **yuè** 这个月	jīn-**nián** 今年
+1	xià ge **yuè** 下个月	míng-**nián** 明年
+2	xià xià ge **yuè** 下下个月	hòu-**nián** 后年
+3	sān ge **yuè** zhī hòu 三个月之后	dà hòu-**nián** 大后年

3 Analysis: *zhè ge yuè* 'this CLF month' *sān ge yuè zhī qián* 'three CLF month ATTR before', *sān ge yuè zhī hòu* 'three CLF month ATTR later'.

3 Manchuric

This section presents an exhaustive discussion of the Manchuric deictic day name system. It first gives an overview of the inventory (Section 3.1) and then presents a detailed analysis of the individual forms (Sections 3.2 to 3.7).

3.1 Inventory

The deictic day name system in written Manchu is shown in Table 11. The individual forms are discussed in the subsections below.

Table 11 The deictic day name system in written Manchu (based on Norman 2013) and the modern Sibe pronunciation[4]

	Written Manchu	Spoken Sibe	Comment
–3	–	-	
–2	cananggi	[tɕ^{hj}əniɖʐ^{j}]	cf. inenggi ‘day’
–1	sikse	[ʈʂ^{h}ɯksə]	cf. sikse-ri ‘dusk, twilight’, -ri < eri(n) ‘time’
N	enenggi	[ənɯŋ]	cf. e- ‘this’
+1	cima-ri, cima-ha	[tɕ^{h}imar], –	‘tomorrow; morning’
+2	coro	[tɕ^{hj}ɔr]	
+3	jai coro	[ɖʐaj] + [tɕ^{hj}ɔr]	jai ‘next, second; again; later; and’

3.2 Three Days Ago

According to the standard dictionaries, written Manchu lacks an expression for –3 (Hauer 2007; Norman 2013). Other Manchuric varieties do not appear to exhibit such a word either.

3.3 Ereyesterday

The first part of *cananggi* ‘day before yesterday’ is probably related to the element *cara,* which is only known from the expression *cara aniya* ‘the year before last’ (cf. *aniya* ‘year’) (see Section 4.1). The latter part is a reduced form of the word *inenggi* ‘day’ that additionally underwent vowel assimilation (< *ca-n**e**nggi) (see Section 4.2). Cognates of *cananggi* are known from the majority of the Manchuric

4 I would like to thank an anonymous reviewer for bringing the following online dictionary to my attention, from which the spoken Sibe forms have been taken: `https://minibuleku.github.io/`. Aspiration added.

varieties **[tab. 12]**. These generally have forms without the vowel assimilation. Jurchen furthermore has a form that still preserves an initial plosive instead of an affricate (see Section 4.1 for details concerning palatalisation).

Table 12 Cognates of written Manchu *cananggi* 'day before yesterday'

Variety	Form	Source
Jurchen	<tanengji> 塔能吉	Kane 1989
Alchuka	?	
Yibuqi Manchu	tɕ'ɪɛnnəŋ(ŋ)ə	Zhao 1989, 62, 96
Aihui Manchu	tɕɛnniŋŋə	Wang 2005, 169
Sanjiazi Manchu	čəniŋ [tɕ^h-]	Kim et al. 2008, 60
Sibe	qanengji [tɕ^h-]	Li, Zhong, Wang 1984, 216

3.4 Yesterday

Manchu *sikse* can be traced to Proto-Tungusic *siksä 'evening' (Doerfer, Knüppel 2004, 719). As in Kilen, it underwent a metonymic extension of its meaning from 'evening' to 'yesterday' (see Section 2.7). Within Manchuric, Jurchen is unique in having the word for 'day' as a second component (see Section 4.2). The *s* regularly changed to *ɕ* before an *i*. There is a metathesis (*ks* > *sk*) in Yibuqi and Sanjiazi Manchu.[5] Sibe and Alchuka exhibit affricatisation of the first and second fricative within the word, respectively (cf. Hölzl 2021, 180). Written Manchu has an alternative expression *nenehe inenggi* 'previous day', formed with the perfective participle *-hA* of the verb *nene-* 'to be first, to be ahead, to do something first, to act first' (see Section 5) **[tab. 13]**.

Table 13 Cognates of written Manchu *sikse* 'yesterday'

Variety	Form	Source
Jurchen	<shisainengji> 失塞能吉	Kane 1989
Alchuka	ɕik'tsa	Mu 1986, 15
Yibuqi Manchu	ɕisk'ə	Zhao 1989, 119
Aihui Manchu	ɕiksə, ɕiqsə, sikəsə	Wang 2005, 171, 188, 263
Sanjiazi Manchu	ɕisk, ɕiskɯ	Enhebatu 1995, 333
Sibe	chekse	Li, Zhong, Wang 1984, 114

5 An anonymous reviewer pointed out that Sibe also has variants with the metathesis.

3.5 Today

The word *enenggi* 'today', like *cananggi*, is based on the word *inenggi* 'day'. The first part is the proximal demonstrative *e-(re)* 'this'. Aihui and Sanjiazi Manchu preserve variants with the initial vowel of Manchu *inenggi* 'day' **[tab. 14]**. Manchu *enenggi*, therefore, is a typologically common formation meaning 'this day'. Although it is perhaps not of Proto-Tungusic origin, there are several parallels in other Tungusic languages, such as Oroqen *əri ini* (see Section 4.2). In written Manchu, there is an alternative expression *ineku inenggi*, literally 'the same day'.

3.6 Tomorrow

Manchu *cima-* derives from Proto-Tungusic *tïma- 'tomorrow, morning' (Doerfer, Knüppel 2004, 789). It is probably the only deictic day name straightforwardly inherited from Proto-Tungusic. It underwent regular palatalisation before *i*. Written Manchu has two derivations, *cimaha* and *cimari*. The former contains a synchronically opaque suffix *-ha* while the suffix *-ri* is a relatively recent grammaticalisation of the word *eri(n)* 'time' shared with *sikse-ri* 'twilight, dusk'. The suffix can also be found on terms referring to the four seasons, such as *bolo-ri* 'autumn'. Of the varieties shown in Table 15, only Alchuka and Sibe have cognates of *cima-ri*.

Table 14 Cognates of written Manchu *enenggi* 'today'

Variety	Form	Source
Jurchen	<enengji> 额能吉	Kane 1989
Alchuka	əniŋi	Mu 1986, 15
Yibuqi Manchu	ənəŋə, …	Zhao 1989, 133
Aihui Manchu	eniŋŋe, einiŋŋe, …	Wang 2005, 50, 201
Sanjiazi Manchu	ɯiniŋŋɯ, ɯiniŋ	Enhebatu 1995, 216
Sibe	eneŋ	Li, Zhong, Wang 1984, 135

Table 15 Cognates of written Manchu *cima-* 'tomorrow, morning'

Variety	Form	Source
Jurchen	<tima-hanengji> 替麻哈能吉	Kane 1989
Alchuka	tʃ'umɔ-li	Mu 1988, 10
Yibuqi Manchu	tʂ'əma-ɣə, …	Zhao 1989, 63
Aihui Manchu	tɕima-ɣa, …	Wang 2005, 167
Sanjiazi Manchu	tʂuma:-ʁa, …	Enhebatu 1995, 353
Sibe	qima-r [tɕ^{h}-]	Li, Zhong, Wang 1984, 218

3.7 Overmorrow

Cognates of Manchu *coro* 'the day after tomorrow' are only attested within Manchuric **[tab. 16]** and, as a secondary borrowing, in Kilen (e.g. *tiorə* in An 1986). Both Jurchen and Kilen preserve archaic forms without palatalisation (see Section 4.1). Only the Jurchen form contains the word for 'day' as a second part (see Section 4.2). The word lacks a Tungusic background and seems to be a loanword (see Section 4.3).

Table 16 Cognates of written Manchu *coro* 'the day after tomorrow'

Variety	Form	Source
Jurchen	<tiaolunengji> 跳魯能吉	Kane 1989
Alchuka	?	
Yibuqi Manchu	tʂʻole, tʂʻɔlɣə	Zhao 1989, 49, 174
Aihui Manchu	tʂore, tʂor	Wang 2005, 198, 209
Sanjiazi Manchu	tʂɔːrɔ	Enhebatu 1995, 352
Sibe	qər [tɕ^h-]	Li, Zhong, Wang 1984, 222

3.8 In Three Days

Written Manchu *jai coro* 'in three days' is a transparent derivation with *jai* 'next, second; again; later; and'. It is the only form that is based on a secondary reference point. Among the other varieties, the only cognate found in the available sources is Sanjiazi Manchu *ǰaj čolo* (Kim et al. 2008, 78). This suggests that this complex expression proved diachronically unstable. It was replaced by other expressions, such as Sanjiazi *amba tʂɔːrɔ*, an obvious calque from Mandarin (Section 4.3). Another expression is *tɯrɯi tʂɔːrɔ* (Enhebatu 1995, 340, 352), which is based on the genitive form of the distal demonstrative (written Manchu *tere-i* 'that-GEN'). This is also attested in Sibe as *terey qər* (Li, Zhong, Wang 1984, 244) and has certain parallels in other Tungusic languages (see Section 2.5 on Uilta). All of these forms are obviously less conventionalised than the range from –2 to +2.

4 Diachronic Aspects

This section discusses three important aspects of the system that include a phonological development (Section 4.1), details of the morphosyntax (Section 4.2), and language contact (Section 4.3). Section 4.4 shows that the deictic day name system is historically largely independent of expressions for months and years.

4.1 Palatalisation

The words ***ci**ma-*, ***ca**(nanggi)*, and ***co**ro*, all underwent palatalisation of an aspirated alveolar plosive *t* before *i*. In the first case, the development is quite straightforward. In the latter two cases, however, the *i* was part of a diphthong *ia* or *io* that was simplified to a plain vowel *a* or *o* after the palatalisation. Table 17 presents a few parallels for these regular sound changes. Alchuka often preserves non-palatalised forms that also still exhibit the diphthongs.

Table 17 Examples for the palatalisation of aspirated alveolar plosives (Alchuka data from Mu 1986)

Development	Alchuka	Manchu	Meaning
ti > ci	-**t‘i**	-**ci**	ordinal suffix
	t‘u**t‘i**-	tu**ci**-	to exit
tia > cia > ca	**t‘ia**r (ts‘ə)	**ca**r (seme)	painful (of a burn)
	u**t‘ia**ra-	u**ca**ra-	to meet
tio > cio > co	**t‘iɔ**k‘ɔ, …	**co**ko	chicken
	t‘iɔxɔm	**co**home	especially, …

The three words ***ci**ma-*, ***ca**(nanggi)*, and ***co**ro*, therefore, go back to earlier *tima-, *tia(nenggi), and *tioro, respectively. The first is confirmed by Jurchen as well as by data from many other Tungusic languages. Palatalisation in Alchuka *tʃʻumɔli* ‘tomorrow’, however, indicates borrowing from a more innovative variety. The second faces the similar problem that no corresponding form in Alchuka seems to be attested. Jurchen *tanenggi (Kane 1989) furthermore lacks the vowel *i*, which triggered the palatalisation in other varieties. Either the vowel is absent due to the process of transcribing the word with the help of Chinese characters or this variety simply lost the vowel. However, Yibuqi Manchu *tɕʻ**iɛ**nnəŋ(ŋ)ə* provides evidence for the intermediate stage after palatalisation but with the (slightly changed) diphthong still in place (see Hölzl 2021, 183 for a similar case). At a first glance, a parallel for the third case *coro* can be found in the Para-Mongolic loanword *coko* ‘chicken’ (e.g. Hölzl 2017). Kilen must have borrowed both words from a conservative variety of Manchuric, i.e., ***tiɔ**qɔ* ‘chicken’, ***tiɔ**rɔ* ‘day before yesterday’ in Zhang (2013).

However, a look at the details makes the comparison somehow less straightforward. The two words turn out to have different vowel qualities in some varieties, such as Jurchen (<t**i**ke> 替课, <t**iao**lu-> 跳鲁 in Kane 1989). Other recordings of Kilen, too, confirm that the original vowel quality of the two words may have differed (e.g. ***tio**ko*, ***tiau**ri* in Dong 2016). The *o* in the first syllable of *c**o**ko* might be the result of a regressive vowel assimilation before the palatalisation.

Hölzl (2017) assumed that this assimilation might already have taken place in the Para-Mongolic source. But given forms like Bala ***t'i***hə (Mu 1987, 11), it probably only occurred within a part of Manchuric from which the Kilen form was borrowed before palatalization. The same cannot be true for *coro*, however. In this case, there is evidence for the possible existence of a triphthong that must have been simplified to a diphthong before the palatalisation **[tab. 18]**. For some reason, the vowel quality of the two words gradually coalesced over the course of time. Even so, some varieties like Yibuqi Manchu and Sibe still exhibit a vowel difference.

Table 18 A comparison of selected cognates of written Manchu *coko* and *coro*

Variety	chicken	overmorrow	Source
Jurchen	<tike> 替课	<tiaolu-> 跳鲁	Kane 1989
Kilen	tioko	tiauri	Dong 2016
	tiɔqɔ	tiɔrɔ	Zhang 2013
	t œqo	tiorə	An 1986
Yibuqi Manchu	tʂ'ɷk'o	tʂ'ole, tʂ'ɔlɣə	Zhao 1989
Aihui Manchu	tʂoqo	tʂor(e)	Wang 2005
Sanjiazi Manchu	tʂɔ^{q}x, tʂɔ:^{q}xɔ	tʂɔ:rɔ	Enhebatu 1995
Sibe	[tʂ^{h}ɔq^{h}ɔ]	[tɕ^{hj}ɔr]	online dictionary[6]
	choḳo	qər	Li, Zhong, Wang 1984

4.2 Fusion of the Word for 'Day'

According to the analysis by Alonso de la Fuente (2019), *cananggi* (allegedly < *ca-ne-nggi) and *enenggi* (allegedly < *e-ne-nggi) are derived from *ne* 'now' and an obscure derivational suffix. While the progressive vowel assimilation in *can**a**nggi* < *can**e**nggi is correctly identified, the proposed etymology is simply untenable on morphosyntactic and semantic grounds. For instance, it seems unusual that 'now' would be part of a lexeme for 'day before yesterday'. Instead, there is overwhelming evidence that the two words are based on the word *inenggi* 'day' (as also pointed out, for instance, in Hauer 2007).

First, some Manchu dialects preserve the initial vowel of the word for 'day', e.g., Sanjiazi Manchu *ɯ-(r)* 'this', ***i**niŋŋɯ* 'day', *ɯ**i**niŋŋɯ* 'today' (Enhebatu 1995, excluding some variants). The loss of the initial vowel in cases of grammaticalisation is also known from other cases, including *-rgi* < *ergi* 'side' or *-ri* < *eri(n)* 'time'.

6 Pronunciation taken from `https://minibuleku.github.io/`. Aspiration added.

Second, there are parallels in expressions based on *biya* 'month' (e.g. *e-re biya* 'this month') and *aniya* 'year' (e.g. *e-re aniya* 'this year'). In some cases, these exhibit similar contractions, such as written Manchu *cara aniya* vs. Sibe *charani* 'the year before last' (Li, Zhong, Wang 1984). Chinese Kyakala *sainengni* 赛能尼 'auspicious day' (Hölzl, Hölzl 2019) and written Sibe *sainggi* 'holiday' (Stary 1990, 75) have a parallel contraction with the modifier *sain* 'good'. There are also parallel formations including the word *inenggi* that exhibit no fusion, e.g., *ineku inenggi* 'the same day'.

Third, there are parallels in other Tungusic languages **[tab. 19]**. Most of these can be found in Nanaic and Udegheic. Within Nanaic, the only exception is Uilta, which has a similar form *əsinəŋi* 'today' based on *əsi* 'now' and *inəŋi* 'day' (Ikegami 1997). Additionally, there are typological and areal parallels, such as in the Mongolic language Dagur (*ən* 'this', *udur* 'day', *ən udur* ~ *əndur* 'today', Yu et al. 2008). See also Type 2 in Table 5.

Table 19 Nanaic and Udegheic parallels for written Manchu *enenggi* (Ling 1934; Sunik 1958; An 1986; Ko, Yurn 2011; Petrova 1936; Sem 1976; Avrorin, Lebedeva 1978; Nikolaeva, Tolskaya 2001)

	this	**day**	**today**
Hezhen	ɜi	inəŋgi	ɜinəŋgi
Kili	əj	inəŋi	əjnəŋi, əjn'i
Kilen	əi	iniŋ	əiniŋ
Nanai	əi	ini	əinjə
Ulcha	əj	inəŋni	əjnəŋ
Ussuri Nanai	əi	in, in'i	əin'ə, əiin'i
Oroch	əi	inəŋi	əinəŋu
Udihe	ei	(i)neŋi	eineŋi

The use of the word for 'day' in written Manchu is restricted to two deictic day names but historically used to be more widespread as can be observed in data from Jurchen. In the variety shown in Table 20, the word for 'day' is <yinengji> 亦能吉. As in written Manchu, it fused with the preceding elements. The same loss of the initial vowel as in Manchu is observed in the resulting contractions. Hezhen, likely due to Manchuric influence, also exhibits parallels, although only three forms are known. In this language, –1 and +1 are still analysable. The contractions and fusion of the elements could be an avoidance strategy for unusual prefixes, given that 'day' is the head and the other elements are usually the modifiers. The demonstrative in ***e***-*cimari* (~ ***e-re*** *cimari*) 'this morning' is among the very few potential cases of prefixes in written Manchu (cf. Italian *sta-mattina* 'this morning').

Table 20 The inventory in Jurchen (Kane 1989, 171, 190f.) and Hezhen (Ling 1934, 275)

	Jurchen	**Hezhen**
–2	<tanengji> 塔能吉	?
–1	<shisainengji> 失塞能吉	ʃiksə inəŋgi
N	<enengji> 额能吉	ɜinəŋgi
+1	<timahanengji> 替麻哈能吉	tʻumakʻi inəŋgi
+2	<tiaolunengji> 跳鲁能吉	?

The origin of the first element in written Manchu *ca(nanggi)* 'day before yesterday' is not entirely certain. At a first glance, it could be the postposition *ca-* 'over there, on the other side', which is attested as *ca-la* (with a locative), *ca-si* (with an allative), and *ca-rgi* (with a grammaticalised variant of *ergi* 'side') (e.g. Enhebatu 1995, 37). Written Manchu does have the expressions *cargi biya* 'the month before last', *cargi aniya* 'the year before last' that seemingly make this analysis very likely. Several Tungusic languages employ a cognate of this postposition for +2 expressions based on a secondary reference point (see Section 2.6).

However, given that Manchu *cananggi* goes back to *tianenggi, the similarity with the postposition *ca-* is perhaps a chance resemblance. There is no indication that the postposition could go back to a form with a plosive. For instance, Benzing (1956, 99) reconstructs it to Proto-Tungusic as *čā. Although the postposition *ca-*, therefore, is probably not an actual cognate of the initial part of *cananggi*, it might have been understood as such by the speakers. This would explain the expressions *cargi biya* and *cargi aniya*. In other words, the word *ca(nanggi)* at one point might have been contaminated by the postposition.

The most likely origin of the first part of *ca(nanggi)* is the attributive element *cara*, which can only be found in the expression *cara aniya* 'year before last'. As noted above, in some varieties this expression exhibits a similar fusion as *cananggi*, e.g. Sanjiazi Manchu *tʂarane*, *tʂa:rá:nie* (Enhebatu 1995, 351). There is no plausible language-internal explanation for this word. It is not attested in Kilen, which makes the reconstruction more difficult.

It remains unclear whether <tiaolu> or <-nengji> is the head of the +2 expression in Jurchen. If the latter is the case, then *coro*, too, could originally have been an attributive element. It might have changed its meaning after dropping the word for 'day'. In fact, there seems to have been a contrast between *cara* for –2 and *coro* for +2 **[tab. 21]**. Whether this could be the result of an analogy, an ablaut phenomenon, or chance, remains unclear at this point. Manchuric usually only exhibits ablaut between *a* and *e*, which is by and large restricted to the expression of a sexus distinction.

Table 21 Deictic temporal expressions in Jurchen (Kane 1989, 192) in comparison with written Manchu

	day	year	written Manchu
–2	<**ta-**nengji> 塔能吉	<**ta-**anie> 塔阿捏	ca(nanggi), cara (aniya)
+2	<**tiaolu-**nengji> 跳鲁能吉	<**tiaolu-**anie> 跳鲁阿捏	coro

4.3 Language Contact

Among Tungusic languages, the closest similarities to the Manchuric deictic day name system can be found in Kilen. Many of the parallels can likely be traced to Manchuric influence on the language **[tab. 22]**. For instance, as in written Manchu only –2 and N are based on the word for 'day'. According to some sources, Kilen also shares the grammaticalisation of the word *ərin* 'time', e.g., *ɕiksə-rin* 'evening', *bɔlɔ-rin* 'autumn' (Zhang, Zhang, Dai 1989), although this is not found on deictic day names. Among the differences is the form *dʑyluki iniŋ* instead of Manchu *cananggi*. This is derived from a cognate of Manchu *jule-* 'in front of, before'. But even this has a parallel in Jurchen <zhule bie> 住勒别 'month before last' (cf. Manchu *biya* 'month'). The Kilen expression is also reminiscent of Mandarin *qián tiān* 前天 'day before yesterday' (cf. *qián* 前 'front', *tiān* 天 'day').

Table 22 The deictic day name system in Kilen according to An (1986)

–2	dʑyluki iniŋ	iniŋ 'day', cf. Jurchen
–1	ɕiksə	< PTu *siksä 'evening' as in Manchuric
N	əiniŋ	< 'this day' as in Manchuric
+1	toma-ki	< PTu *tïma- 'tomorrow, morning', opaque suffix
+2	tiorə	← Manchuric

Very likely one of the reasons for the unique characteristics of the Manchuric deictic day name system can also be found in language contact. For instance, Sanjiazi Manchu *amba tʂɔːrɔ* is a partial calque of the Mandarin term *dà hòutiān* 大后天, Mandarin *dà* and Manchu *amba* both meaning 'big' (see Sections 1 and 2.7 for Mandarin). The addition of the word for 'day' to all forms in Jurchen also has an areal parallel in Chinese. However, the same is also attested for Khalkha Mongolian **[tab. 23]**. Unlike Chinese, Mongolian shares the subsequent fusion (cf. *өдөр* / *ödör* 'day').

Table 23 The deictic day name system in Khalkha Mongolian (elicited) and Janhunen's (2012b, 209) notation (right)

–2	уржигдар / urjigdar	ourj-der
–1	өчигдөр / öchigdör	eucegder ~ eutzeg-der ~ eutzgel-der
N	өнөөдөр / önöödör	euneo-der ~ en' euder
+1	маргааш / margaash	malgaa-der ~ margaash
+2	нөгөөдөр / nögöödör	neugeo-der

The Mongolic language Dagur shows even more similarities to Manchuric than Khalkha **[tab. 24]**. The use of the word *udur* 'day' is restricted to a few categories (that depend on the variety and the description) and, in the word for 'today' fuses with the demonstrative *ən* 'this'. The word *udiš* 'evening > yesterday' shares the semantic development of Manchu *sikse* (Tsumagari 2003, 132; Nugteren 2011, 470, 538). As in Manchuric, +3 employs +2 as a reference point. Furthermore, +3 expressions likewise seem to be less conventionalised as different expressions are attested. Some of the forms exhibit a similarly unusual length with +2 being considerably shorter than N. Yang, He (2017) do not list a –3 form, suggesting an asymmetry as in Manchuric. However, such a form is actually attested for Tacheng Dagur (on which see Section 1).

Table 24 The deictic day name system in Manchurian Dagur (Yang, He 2017) and Tacheng Dagur (Yu et al. 2008)

	Manchurian Dagur	**Tacheng Dagur**
–3	–	kəčigəːr ordon udur
–2	keqg [kʻətɕʻîɣ]	kəčig udur
–1	udx [udîɕ]	udiš
N	enudr [ənu.dûr]	ən udur ~ əndur
+1	bun' (udur) [bunᵊ]	bənj
+2	chaaj [tɕʻAːtɕ]	čaːǰ
+3	qun chaj [tɕʻuⁿ tɕʻAtɕ]	təw čaːǰ

Manchu *coro* seems to lack a plausible Tungusic etymology and could be a loanword. To the best of my knowledge, no surrounding language exhibits a sufficiently similar form that would make a borrowing plausible. The distribution in Manchuric and Kilen suggests that it could be from Para-Mongolic. Manchuric is known to exhibit several Para-Mongolic borrowings such as *coko* 'chicken' that also spread to some other languages like Kilen. However, available sources of the only extensively attested Para-Mongolic language Khitan do not seem to contain evidence for any +2 expressions (Stefan Georg, p.c. 2023). If

coro originally was a modifier of the word for 'day' as Jurchen might suggest, the search could be extended to include other elements in surrounding languages in future studies.

4.4 Relation to Expressions for Months and Years

Table 25 lists written Manchu expressions containing *biya* 'month' and *aniya* 'year'. These exhibit a few similarities with the deictic day name system but overall are quite different. First, there is more than one expression for most of the categories, which might indicate that they are less lexicalised or conventionalised. Second, there is a smaller range from –2 to +1 for months and to +2 for years. Third, there is very little overlap in the morphosyntactic structure of the individual expressions. Similarities include the use of *ere* 'this' and *ineku* 'same' for the current spans, the use of *cara* for –2, and of *jai* for the expression of a secondary reference point (albeit a different one). Differences include the use of the word *cargi* 'over there', *ishun* 'towards, next', and *ne* 'now'. Unlike the deictic day names, expressions for months and years use imperfective participle forms (*-rA*) for future and perfective ones (*-hA*, *-kA*) for the past. These are used to derive attributive forms of the verbs *dule-* 'to pass, to go by', *nene-* 'to be first, to be ahead', *mana-* 'to be old, to come to an end, …', and *ji-* 'to come' (with an irregular stem *jide-*). The Manchuric deictic day name system, therefore, is rather isolated and exhibits few connections to expressions of months and years.

Table 25 Expressions for months and days in written Manchu (Norman 2013)

	Month	Year
–2	cargi biya	cara aniya, cargi aniya
–1	duleke biya, nenehe biya, manaha biya	duleke aniya, nenehe aniya
N	ere biya, ineku biya	ere aniya, ineku aniya, ne aniya
+1	ishun biya, jidere biya	ishun aniya, jidere aniya
+2	–	jai jidere aniya

5 Summary and Conclusion

Tent (1998) included the two Manchuric languages Manchu and Sibe in his discussion but did not present any actual data or sources. According to him, both languages exhibit a system that ranges from –2 to +2 and Manchu is said to have an entirely monomorphemic system. This study clearly demonstrated that these classifications have no basis in the facts. This section briefly summarises the findings, classifying Manchuric languages according to the typology set out in Section 2.

From both cross-linguistic and Tungusic perspectives, Manchuric has an unusually asymmetric deictic day name system. Manchuric languages generally exhibit six different forms ranging from –2 to +3. There is asymmetry due to the absence of expressions for –3. However, forms for +3 are diachronically less stable than the other forms. Given several problematic classifications in Tent (1998), such an asymmetric system from –2 to +3 could be more common than previously thought (e.g. Dagur, Kurux).

In terms of analysability, Manchuric offers a mixed picture (Tent's Pattern 3b). Only one form is synchronically fully analysable (+3), two forms are entirely unanalysable (–1, +2), and three forms are no longer fully componential (–2, N, +1). Although *cima-ri* 'tomorrow; morning' contains a suffix that is also found on other words, the stem *cima-* is not attested on its own. It is only known in its derived form *cima-ha*, which contains an opaque suffix. The derivation is probably cognate with Russian Kyakala *tima-ka* (Hölzl 2018, 138). Other Tungusic languages exhibit further fossilised suffixes that are not fully understood either, e.g. Kilen *toma-ki*, Nanai *cɪma-na*. Manchuric has almost no lexico-semantic symmetry (absence of identical word formation). Even the suffix *-ri* < *eri(n)* 'time' shows some semantic asymmetry: whereas *cima-ri* can mean both 'tomorrow' and 'morning', *sikse-ri* only means 'dusk, twilight' (Norman 2013). Similarly, there is asymmetric derivation with a fused form of *inenggi* 'day' (found in –2 and N), on which see Section 4.2. Only +3 contains the modifier *jai* 'next, following, second; still, again, more; later; and'.

Table 26 Analysability, type, and length of written Manchu deictic day names

	Form	Analysability	Type	Length
–2	cananggi	partly	Type 2	8
–1	sikse	no	–	5
N	enenggi	partly	Type 2	6
+1	cima-ha, cima-ri	partly	Type 1	7
+2	coro	no	–	5
+3	jai coro	yes	Type 1	9

Manchuric exhibits an unusual system in terms of the length of the individual forms. Unexpectedly, the shortest form is not 'today'. Instead, 'yesterday' and 'the day after tomorrow' share that status. For the phoneme count in Table 26, written Manchu <ngg> is analysed as [ŋg], <j> as [tʃ], and <c> as [tʃʰ] (i.e. each orthography corresponds to two sounds). Currently, there are no accessible electronic corpora for Manchuric languages that could indicate the raw frequencies of the deictic day names or changes thereof over the course of time, which will have to be checked in future studies.

In Manchuric, only +3 expressions exhibit a secondary reference point, which is +2. Unlike several other Tungusic languages, there are no recursive forms of either kind and no cases of lexical symmetry.

As in Kilen, Manchu *sikse* 'yesterday' derives from 'evening' and still preserves the polysemy. The polysemy of the term *cima-* 'tomorrow, morning' in all likelihood can be traced to Proto-Tungusic times. There is almost no connection to expressions for months and years (Section 4.4).

Overall, the Manchuric system is very different from other Tungusic languages, except Hezhen and Kilen (see Sections 4.2 and 4.3). It is also rather unusual from a typological perspective in so far as none of the three symmetries identified by Tent (1998) can be observed. Future studies should provide additional case studies of languages from around the world, which will allow a better understanding of this semantic domain and its cross-linguistic expression.

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Tonal Change in Yu

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Abstract This study presents an analysis of the factors conditioning certain processes of a merger in the tonal system of Yu, an endangered variety of Jin Chinese. Drawing on three investigations of this variety that were conducted at intervals of nearly a decade each, we found that the falling tone HM has merged with the falling tone HL over the past thirty years. When analysing the tone sandhi patterns in these three studies, it becomes clear that the merger of the two falling tones (HL and HM) is driven by internal phonological factors. HL is the variant of HM resulting from the application of regular sandhi processes in this variety, which has resulted in the neutralisation of the contrast between HM and HL in many words, and which finally has caused all syllables with HM to be realised as HL. This diachronic change reveals an internally driven tonal change that is currently occurring in Jin Chinese, and it also shows that the change is driven towards simplification, which is in accordance with observations on tonal systems in other Chinese varieties.

Keywords Tones. Sound Change. Endangered Language. Yu Chinese. Jin Chinese.

Summary 1 Introduction. – 2 Methodology. – 2.1 Corpus Study. – 2.2 Tone Sandhi and the Obligatory Contour Principle. – 3 The Merger of Ia and IIa. – 3.1 Results of Pitch Fluctuation of Monosyllabic Tones. – 3.2 Previous Research on the Tonal System of Yu. – 4 Tone Sandhi Processes Triggering Tonal Change. – 4.1 Results of Tone Sandhi in Two-Tone Sequences. – 4.2 Reconstructing the Diachronic Evolution. – 5 Conclusions.

1 Introduction

Language change is a common phenomenon and one of the classical topics in historical linguistics. One of the primary forms of language change is sound change, which refers to the systematic change in the pronunciation of phonemes. Sound changes manifest themselves in the variation of consonants or vowels, as well as tones in tonal

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languages. This study aims to analyse the factors conditioning certain processes of a merger in the tonal system of Yu, an endangered Chinese variety spoken in the town of Yu, situated in Shanxi, China. Yu is a variety of Jin Chinese, which is one of the ten dialectal groups of Chinese (Ho 2015). Despite being primarily spoken in regions surrounded by Mandarin Chinese, Jin Chinese has maintained its independent status throughout its evolution (CASS 2012). The Yu variety is spoken by approximately 290,000 people living in the town of Yu and is less and less used by younger generations, which makes it an endangered language. It is a tonal language with a complex tonal inventory. Two previous studies (Liu 2010; Song 1991) describe its tonal system as consisting of six tone categories. However, the data collected in my fieldwork conducted in 2019 reveal that two falling tones in Yu have merged into one category. This article will describe the merger and try to discover the underlying process driving this sound change.

Previous theoretical analyses of sound change follow two divergent directions. One direction stems from the classical notion of sound laws, initially proposed by the Neogrammarian linguists in the nineteenth century (Hale 2003). This perspective claims that sounds change regularly without exceptions. The other significant approach is Lexical Diffusion, put forth by W.S.-Y. Wang (1969; 1977), which suggests that sound change spreads gradually through the lexicon until it has been applied to all relevant words in a language. Though these two hypotheses refer to two distinct aspects of sound change, Labov (1994) argues that both theories find support in different situations of language change. Although previous studies primarily focus on sound change in vowels and consonants, an increasing number of recent works have addressed tonal change (among others, Yin 2012; Brunelle, Hạ, Gric 2016; Gao 2018). However, they consider predominantly tonal changes that occurred in the history of language evolution.[1] In contrast, the present paper deals with ongoing processes of tonal change that have occurred over the last three decades and are still in progress, thereby providing empirical observations about tonal change as it happens. What is evident from the observations of the Yu variety is that the long-term trend and the expected final result of tonal change adhere to the principle of regular sound change, while the process of this change is best described by the model of Lexical Diffusion. Namely, tonal change has gradually spread through the lexicon of Yu, according to the predictions by the theory of Lexical Diffusion, affecting more and more lexemes, until the change appears regular and (almost) exceptionless.

In recent years, our knowledge of diachronic change in tonal systems has grown steadily. Zhu (2009; 2019) studies tonogenesis in

1 Among others, Cheng, Wang 1977; Xu 1998; Yin 2011; Zhu 2019; Zhang 2020.

Sinitic languages and analyses the tonal systems. His analysis suggests that the tonal system of Chinese seemingly arose out of a toneless language and subsequently evolved from a complex to a simpler system. Gao (2018) states that diachronic tonal changes are often triggered by tone sandhi. The tonal change observed in the Yu variety is an example of such a change driven by factors that are internal to the tonal system of this language. An influence of external factors can be excluded as no similar phenomena are observed in the languages standing in contact with Yu. More precisely, Standard Mandarin, along with two Jin Chinese varieties – the Pingding Variety and the Taiyuan Variety – are in contact with Yu, yet none of them exhibit a comparable merger in their respective tone categories (Li 2014).

This article examines the merger of two falling tones and analyses the factors driving this phenomenon. After Section 2 offers a brief introduction to the methodology, Section 3 describes the diachronic tonal change that has occurred in the Yu variety over the past thirty years. Section 4 describes the surface realisations of two-tone sequences in Yu and the sandhi processes that are applied to them (Section 4.1), then discusses how these sandhi processes might have led to the merger of the two falling tones (Section 4.2). Conclusions are drawn in Section 5.

2 Methodology

2.1 Corpus Study

This study is based on a corpus study of the data that I collected in 2019 in the town of Yu. The collected data have been published at Refubium (Jia 2021a), the institutional repository of the Free University of Berlin.[2] The corpus comprises 228 audio recordings of monosyllables covering all eight tone categories in Middle Chinese. It is supposed that the tone categories in modern varieties of Sinitic languages have evolved from those of Middle Chinese (Wang 1980; Hou 1987; Chen et al. 1996). Consequently, a set of syllables that covers the eight tone categories of Middle Chinese also covers all tone categories existing in a given modern variety of Sinitic languages (Zhan 2004). By analysing the surface realisations of the 228 recordings of monosyllabic tones in this corpus, we can construct the tonal inventory of the Yu variety.

For all recordings, I measured the pitch values of 20 equidistant points of each syllable. After excluding the outliers, the quantiles

2 https://refubium.fu-berlin.de/.

at 25%, 50%, and 75% of the pitch values were calculated at each point, with the aim of identifying the pitch contour and register of each tone. The pitch values were measured with a Praat script, and the measurements were normalised and analysed with the statistical software package JMP. The results of the analysis are provided in Section 3. In what follows, a comparison is made between my findings and the results obtained by Song (1991) and Liu (2010) to highlight any discrepancies.

The corpus under study here also includes audio recordings of 490 disyllabic sequences covering all possible combinations of tone categories. These pronunciations instantiate all processes of tone sandhi that exist in the Yu variety. By measuring, normalising, and analysing the pitch values of these disyllabic sequences, a comprehensive overview of the sandhi processes in Yu was generated. The algorithm to capture the pitch contours of disyllabic sequences was the same as the one applied to the monosyllabic tones described above. The results are presented in Section 4.1. Additionally, in Section 4.2, I discuss how the synchronic tonal variations – the sandhi processes – impact the diachronic tonal change – the merger of the two tone categories. This discussion is based on the pitch measurements from the recordings contained in the corpus (Jia 2021a) and includes comparisons with the data from Song (1991) and Liu (2010).

2.2 Tone Sandhi and the Obligatory Contour Principle

This study argues that synchronic tone sandhi is the trigger of the diachronic tonal change in the Yu variety, therefore it is essential to provide a clear definition of tone sandhi before delving into the discussion. Jia (2021b) identifies three kinds of tone changes in the Yu variety, that is, tone co-articulation, tone sandhi, and tone deletion. Tone sandhi here specifically refers to the kind of tone change governed by the phonological constraint known as the Obligatory Contour Principle (OCP) (Leben 1973; Yip 1988; Chen 2000).

1. OCP: In Yu, the adjacency of two identical falling tones is forbidden in a prosodic word (Jia 2021b).

The OCP is universally defined as a constraint against adjacent identical elements at the melodic level. One of the earliest formulations of the OCP is proposed by Leben (1973) when examining the combinations of surface tonal patterns in Mende. Leben considers the OCP as a morpheme-structure constraint requiring adjacent tone melodies to not be identical. Another formulation of the OCP originates from McCarthy (1986) as that "[a]t the melodic level, adjacent identical elements are prohibited".

The OCP has been developed in autosegmental phonology in studies on tones.[3] Initially applied in analyses of tones in African languages (Goldsmith 1984), it has since been extended to the study of Chinese tones. Chen (2000), for instance, applies the OCP in his analyses of tone sandhi in Chinese dialects, such as the Tianjin dialect.

As stated by Yip:

> The OCP thus acts as a universal constraint on phonological rules. Complete matrices always show OCP effects, but languages differ in which features, or groups of features appear on a separate tier and are thus subject to the OCP. Languages also differ in how OCP violations are alleviated. (Yip 1988, 65)

In individual languages, the precise formulation of the OCP might be different. To give an example, in the Tianjin Dialect, the OCP is a constraint against two adjacent identical tones (except HH) (Chen 2000).

In the Yu variety, the accurate formulation of the OCP specifies that "no adjacent identical falling tones" are allowed, as only two adjacent falling tones violate the OCP, while two level tones do not. For example, in the corpus study by Jia (2021b), it is observed that when two high falling tones (HL-HL) are adjacent, the second tone is modified to a low level tone (HL-LL). However, when two high level tones (HH-HH) or two low level tones (LL-LL) are combined, no tone alternation occurs. A detailed analysis of tone sandhi is provided in Section 4.2.

3 The Merger of Ia and IIa

In this section, the data of monosyllabic tones in the Yu variety are presented, along with an explanation as to why I assert that in the past thirty years the two falling tones, HL and HM, have merged, by comparing to the previous studies conducted by Song (1991) and Liu (2010). Then in Section 4, I provide the data of tone sandhi in two-tone sequences and analyse how tone sandhi causes the merger of two tone categories.

3.1 Results of Pitch Fluctuation of Monosyllabic Tones

Presented in Figure 1 is the tonal structure of Yu, illustrating the realised contours of each tone found in the Modern Yu, derived from Middle Chinese. The Middle Chinese tonal system consists of four

3 Leben 1973; Goldsmith 1979; McCarthy 1986; Odden 1986; Yip 1988.

basic tone categories, marked as I, II, III, and IV. It is believed that each of these categories comprises 'a' and 'b' variants, distinguished by differences in register or phonation types (Wang 1980; Zhu, Wang 2015).[4] Consequently, the Middle Chinese tonal system encompasses a total of eight tones.

Figure 1 presents the normalised pitch values of 228 monosyllabic tones and sorts the results according to the eight Middle Chinese tones. The figure shows that the contours of Ia and IIa are identical. Both are falling tones, falling from 250 Hz to 125 Hz, which means that in the modern Yu variety, Ia and IIa have merged into one tone. IIb, IIIa, and IIIb also show the same contours and pitch values, lying between 200 and 225 Hz, which means these three tones have also merged into one tone in modern Yu.

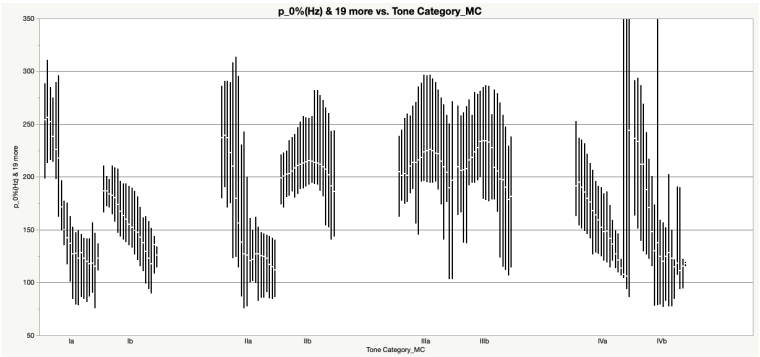

Figure 1 Pitch values of tones in Yu

To sum up, there are five tones in the tonal inventory of Yu, as shown below in Table 1. Ia&IIa is a falling tone marked as HL; Ib is a low tone displaying a relatively flat contour, marked as LL; IIb&III is a high tone displaying a relatively flat contour as well, marked as HH. IVa and IVb are two checked tones. IVa is lower and IVb is higher. Checked tones refer to those tones that exclusively occur in syllables ending with a glottal stop coda [ʔ]. Here, we mark the high checked tone as HMq and the low checked tone as Lq; the contours of checked tones are not explained in detail here.

4 In this study, the Roman numerals I, II, III, and IV stand for the four tones identified in Chinese phonology as Ping, Shang, Qu, and Ru, respectively. The letters 'a' and 'b' correspond to Yin and Yang, which have traditionally been distinguished by the presence or absence of voicing. However, some scholars argue that the distinction may instead lie in phonation types (Zhu, Wang 2015). Consequently, Ia and Ib refer to Yinping and Yangping, respectively, while Ia and IIa denote Yingpin and Yinshang, respectively, within this paper.

Table 1 Tonal inventory of Yu

	Tone category	Mark	Shape	Type
1	Ia&IIa	HL	Falling	Oblique
2	Ib	LL	Level	Even
3	IIb&IIIa&IIIb	HH	Level	Even
4	IVa	Lq	Checked	Even
5	IVb	HMq	Checked	Oblique

3.2 Previous Research on the Tonal System of Yu

We have concluded that Ia and IIa have merged into one tone, on the basis of their phonetic similarity. This result is also in line with the perception of the informants in my fieldwork. However, in two studies published in 1991 and 2010, respectively, these two tones were still recorded as separate tone categories (Song 1991; Liu 2010). That means that over the past decades, the tonal system of Yu has undergone an interesting evolution. The results of the three investigations are provided below in Table 2. Though Song (1991) already mentions that the HL and HM tones tend to merge, they were still contrasted at the time of his study; in contrast, in the data that I collected in 2019, these two tones have completely merged in monosyllabic utterances. Hence, we can conclude that the merger between HL and HM is a gradual change in the tonal system that has taken place in the last thirty years. IIb, IIIa, and IIIb have also merged, but this merger happened much earlier, and it was already completed at the time of Song's and Liu's work (Wang 1980; Tang 1991). In this article we, therefore, discuss only the change that applies to Ia and IIa, that is, we discuss how HM has been absorbed by HL in the past thirty years.

Table 2 Comparison of tonal inventories in three studies

Tone categories	Ia	IIa	Ib	IIb&IIIa&IIIb	IVa	IVb
Song (1991)	HL	HM	LL	HH	Lq	HMq
Liu (2010)	HL	HM	LL	HH	Lq	HMq
Jia (2021a)	HL		LL	HH	Lq	HMq

4 Tone Sandhi Processes Triggering Tonal Change

When comparing the tone sandhi patterns in the three studies, it becomes clear that the merger of the two falling tones (HL and HM) has been driven by internal linguistic factors. Section 4.1 below demonstrates the normalised outputs of sandhi patterns relating to Ia and IIa. After that, Section 4.2 discusses the sandhi patterns in the three studies and argues how the processes of tone sandhi have led to the merger between HL and HM.

4.1 Results of Tone Sandhi in Two-tone Sequences

4.1.1 The Outputs of the Two-Tone Sequence HL-HL

Figures 2-5 provide the outputs of sequences combining HL-HL from two different Middle Chinese tone categories. The first tone of Figure 4, the realisation of the first tone IIa in the two-tone sequence IIa-Ia, is clearly distinct from the first tone in the other three figures. Though all of them are falling tones, with a pitch that starts at about 250 Hz, the tone in Figure 4 descends to more than 150 Hz and the other three descend to pitches that are lower than 150 Hz. Besides, the first tone in Figure 4 starts getting lower at the medial point of the contour, but the other three start getting lower at the very beginning. We, therefore, analyse the first tone in Figure 4 as HM, while the other three as HL. As for the slight rising at the end of the first tones in Figure 3 and Figure 5, this rising comes from the co-articulatory effect of the following high tone. Since the second tone in Figure 2 is realised as LL, there is no rising coda on the previous HL. As for the second tone, both IIa tones in Figure 3 Ia-IIa and Figure 5 IIa-IIa are realised as falling tones, falling from about 200 Hz to 100 Hz.

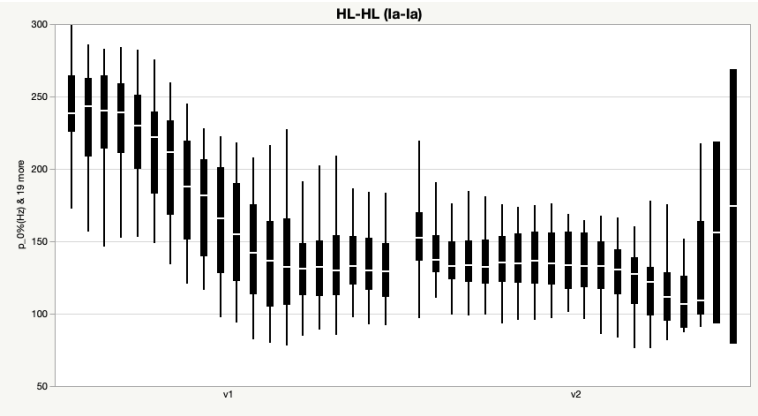

Figure 2 The output of the two-tone sequence HL-HL (Ia-Ia) HL-HL→HL-LL

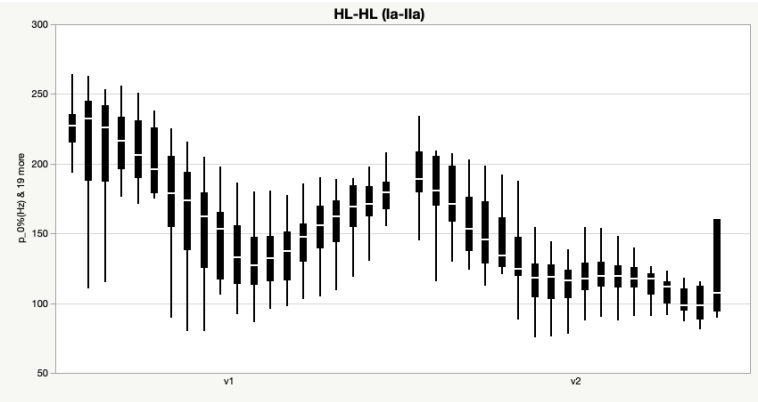

Figure 3 The output of the two-tone sequence HL-HL (Ia-IIa) HL-HM→HL-HL

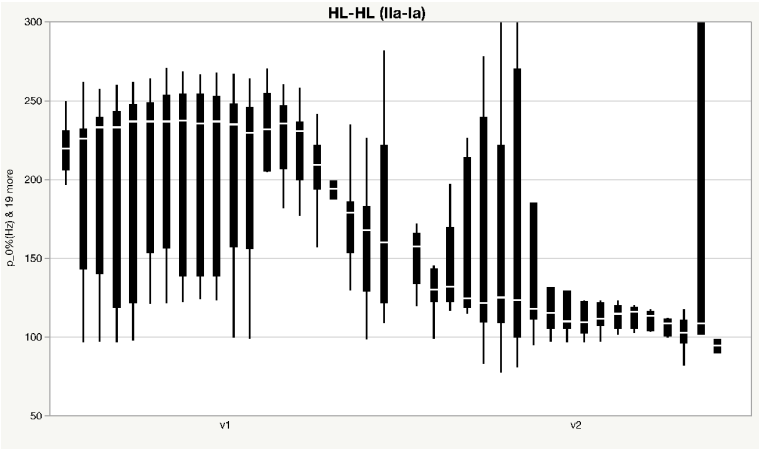

Figure 4 The output of the two-tone sequence HL-HL (IIa-Ia) HM-HL→HM-HL

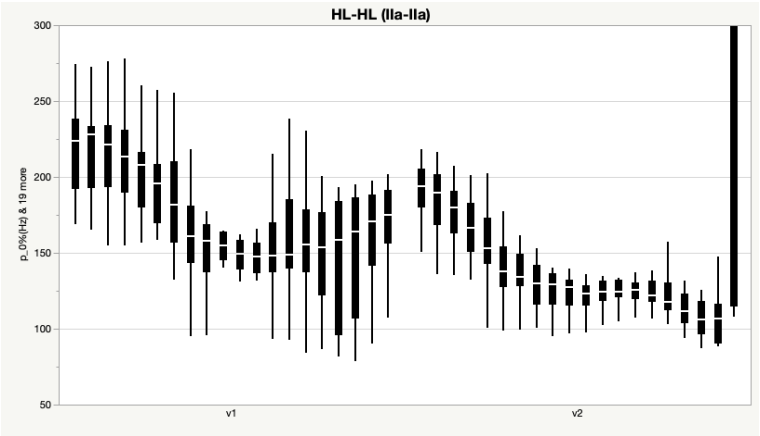

Figure 5 The output of the two-tone sequence HL-HL (IIa-IIa) HM-HM→HL-HL

Based on the results above, we can conclude that Ia-IIa and IIa-IIa have the same output, that is, HL-HL, Ia-Ia is realised as HL-LL, and IIa-Ia is realised as HM-HL, as shown in Table 3.

Table 3 Outputs of sequences formed by Ia and IIa in Yu

First	Second	Ia HL	IIa HL (HM)
Ia HL		HL-LL	HL<H>-HL
IIa HL (HM)		HM-HL	HL<H>-HL

4.1.2 The Outputs of Two-Tone Sequences Beginning With HL

a. HL-LL

Figure 6 and Figure 7 show the outputs of Ia-Ib and IIa-Ib, respectively. Despite both having their citation tone sequences as HL-LL and both having their first tones as a falling tone, descending from approximately 250 Hz to 150 Hz, there are notable distinctions in their realisation. The HL originating from Ia is maintained as HL since it gradually decreases from the beginning (Figure 6). Conversely, the first tone in Figure 7, IIa-Ib, should be analysed as HM, since it exhibits features similar to HM in Figure 4 HM-HL (IIa-Ia), as it starts descending at the medial point. Regarding the second tone, both of them show a low level shape lasting between 100 Hz to 150 Hz.

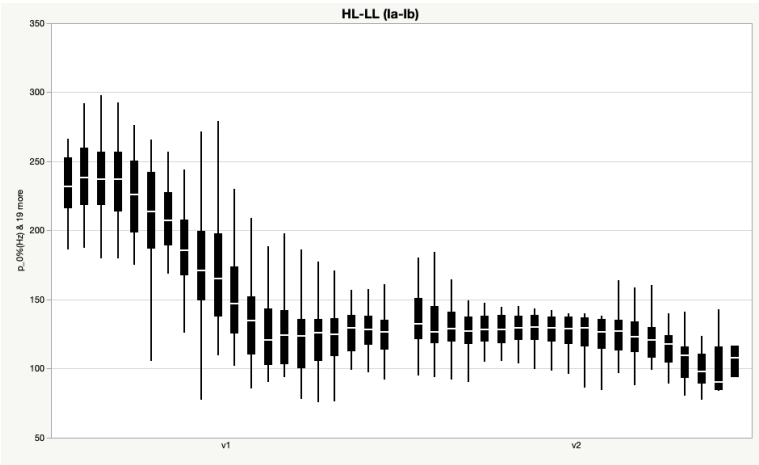

Figure 6 The output of the two-tone sequence HL-LL (Ia-Ib) HL-LL

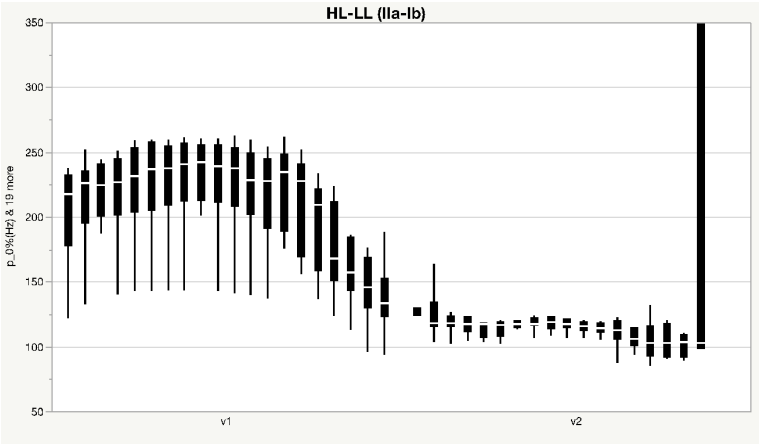

Figure 7 The output of the two-tone sequence HL-LL (IIa-Ib) HL-LL→HM-LL

To summarise, HL from Ia is realised as HL when it precedes LL, while HL from IIa is realised as HM in the same context.

b. HL-HH

Figure 8 and Figure 9 show the outputs of HL-HH. The left tone in Figure 8 first descends from about 250 Hz to 125 Hz and then rises, hence, it is realised as HL<H>, one of the variants of HL realised when preceding a high tone. In contrast, Figure 9 has the same normalised pitch value and contour as the HM in Figure 4 and Figure 7, so we analyse it as HM. The second tones in both figures are level tones, with a contour of around 150 Hz, which we analyse as HH.

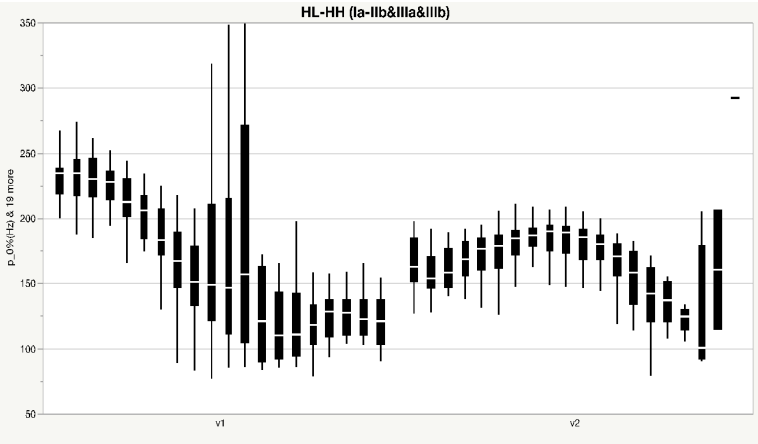

Figure 8 The output of two-tone sequence HL-HH (Ia-IIb&IIIa&IIIb) HL-HH

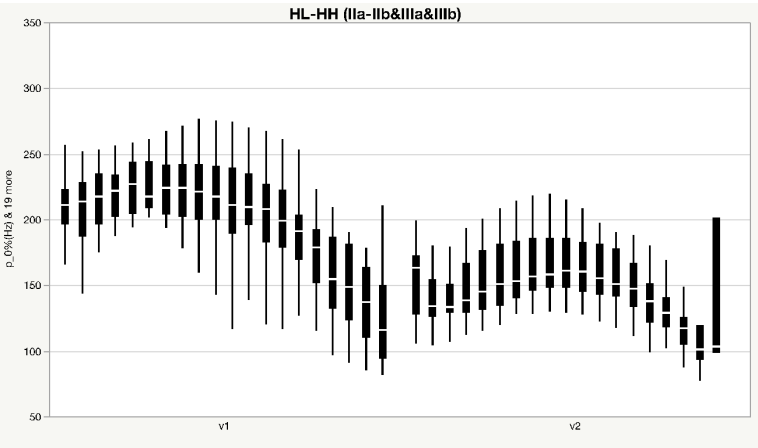

Figure 9 The output of the two-tone sequenceHL-HH (IIa-IIb&IIIa&IIIb) HL-HH → HM-HH

To summarise, HL from Ia is realised as HL when it precedes HH, while HL from IIa is realised as HM in this context.

c. HL-Lq

Figure 10 and Figure 11 illustrate two outputs of the two-tone sequence HL-Lq. Here, we have to note that the distribution of tones in current speech is not balanced, that is, the disyllabic words involving

the checked tone Lq as well as those involving HMq are not as numerous as words with other tones, so the examples in the patterns containing a checked tone are less numerous than it would have been necessary to offer a conclusive description here. In the corpus, there are only three examples for the pattern of Ia-IVa and seven examples for the pattern of IIa-IVa, so the results displayed in the two figures below are somewhat sketchy. But still, we can see that the shape of the first tone in Figure 10 is more like HL described above and that in Figure 11 is more like HM.

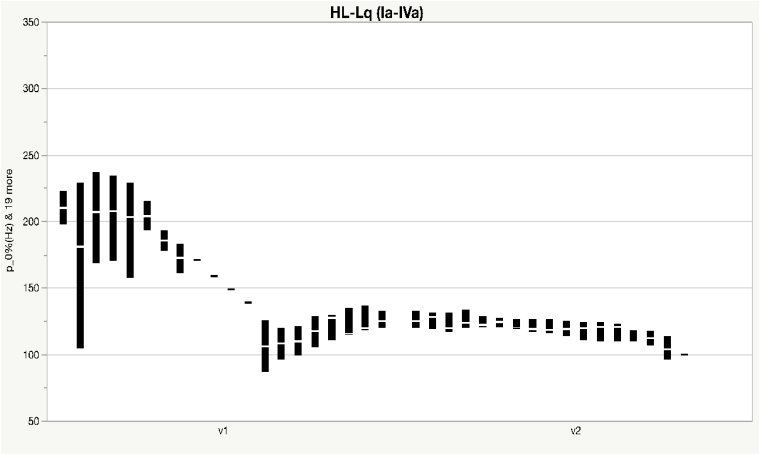

Figure 10 The output of the two-tone sequence HL-Lq (Ia-IVa) HL-Lq

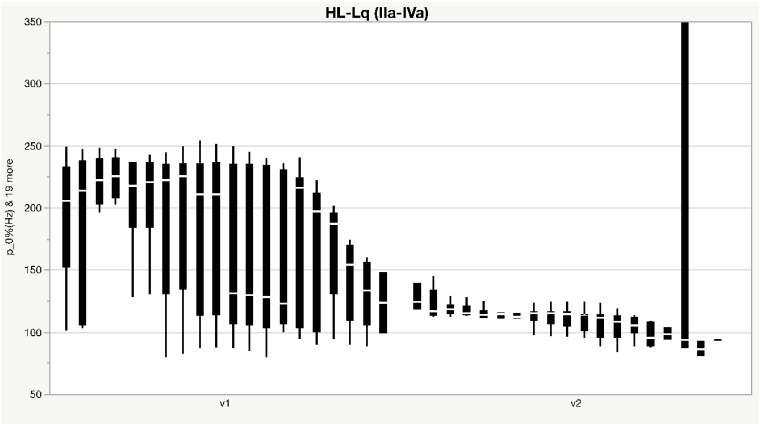

Figure 11 The output of the two-tone sequence HL-Lq (IIa-IVa) HL-Lq→HM-Lq

To summarise, HL from Ia is realised as HL when it precedes Lq, while HL from IIa is realised as HM in this context.

d. HL-HMq

Figure 12 and Figure 13 provide the results for HL-HMq with the base patterns Ia-IVb and IIa-IVb. Similar to the scarcity of HL-Lq instances, examples of HL-HMq are also infrequent, with three cases each in Ia-IVb and IIa-IVb, respectively. Due to the shortage of data, I cannot say whether the first tone in Figure 13 IIa-IVb is the same as that in Figure 12. It seems that one example with the pattern of IIa-IVb has a really high pitch, but the quantiles at both 25% and 50% of pitch values and the contour of this pattern are the same as the one in Figure 12 Ia-IVb, namely, both of them are falling tones that drop from 225 Hz at the beginning to about 100 Hz before rising. Despite the less than conclusive data, I follow Song (1991) and Liu (2010) in their assumption that the first tone in HL-HMq (see Figure 13) is realised as HL. Both Song and Liu have documented that when a tone of IIa precedes a tone of IVb, this IIa takes on the form of Ia, which is HL.

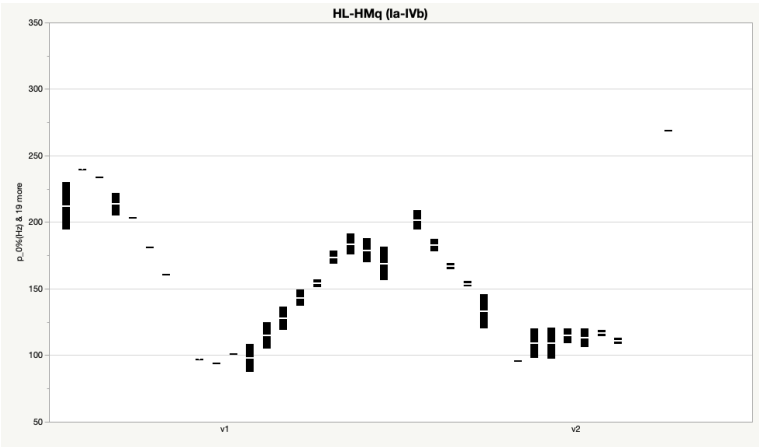

Figure 12 The output of the two-tone sequence HL-HMq (Ia-IVb) HL-HMq

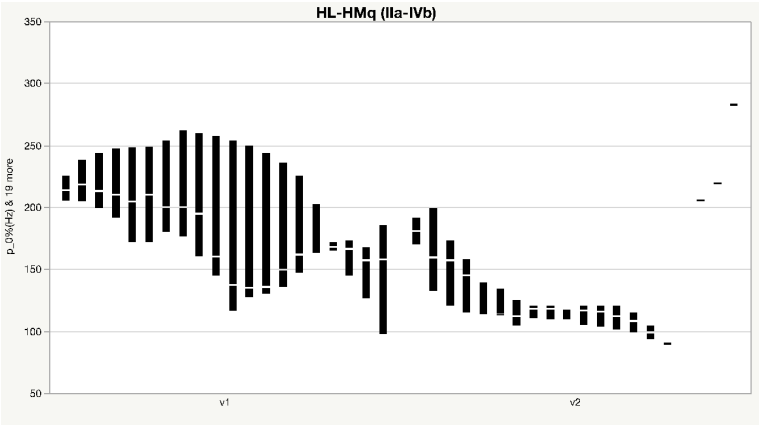

Figure 13 The output of the two-tone sequence HL-HMq (IIa-IVb) HL-HMq

To summarise, HL in front HMq is realised as HL, no matter whether it originates from Ia or IIa in Middle Chinese.

4.1.3 The Outputs of Two-Tone Sequences Ending with HL

a. LL-HL

Figure 14 and Figure 15 provide the results for LL-HL with the base patterns Ib-Ia and Ib-IIa. Comparing the two figures, we can see that the first tone in both figures is realised as a level tone between 150 Hz to 200 Hz. Both of the second tones are realised as a falling tone from a little more than 150 Hz to about 100 Hz, and they start dropping at the beginning rather than the middle point. Therefore, I conclude that the realisation of LL-HL is just the same as their citation tones, no matter whether the second HL is from Ia or IIa.

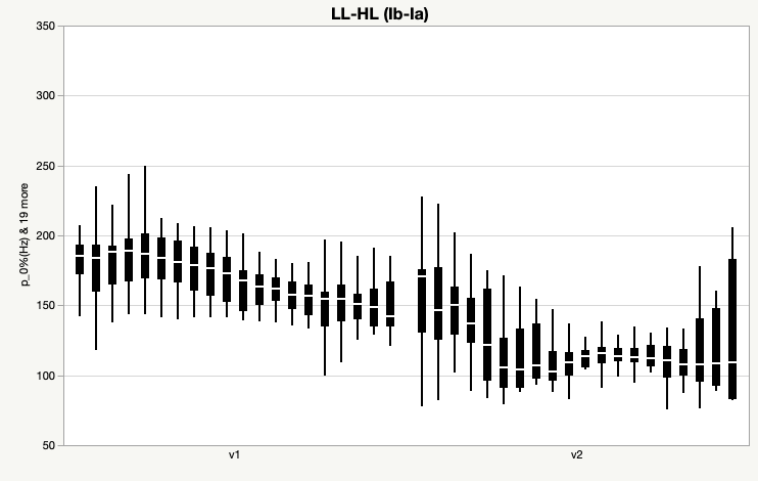

Figure 14 The output of the two-tone sequence LL-HL (Ib-Ia) LL-HL

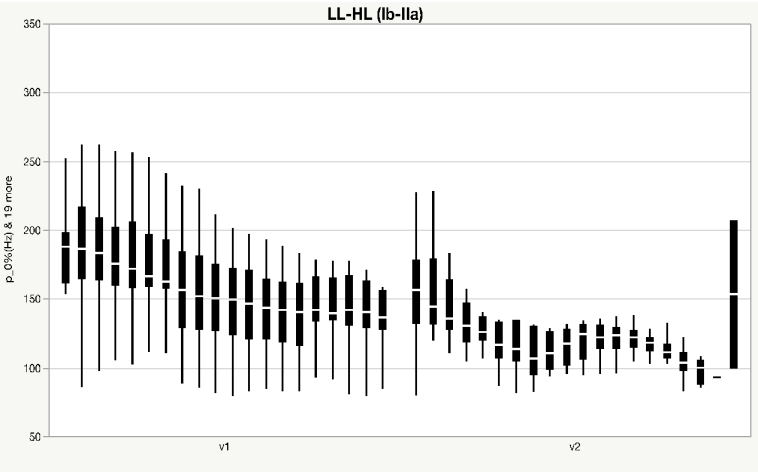

Figure 15 The output of the two-tone sequence LL-HL (Ib-IIa) LL-HL

b. HH-HL

Figure 16 and Figure 17 provide the outputs for HH-HL from IIb&IIIa&IIIb-Ia and IIb&IIIa&IIIb-IIa. In both figures, the first tones are represented as high level tones ranging from 200 Hz to 250 Hz. Similarly, the second tones in both figures exhibit a falling contour, descending from approximately 200 Hz to 100 Hz. Based on these observations, we can deduce that the HH-HL pattern is consistently manifested with their respective citation tones, regardless of whether the second HL tone originates from Ia or IIa.

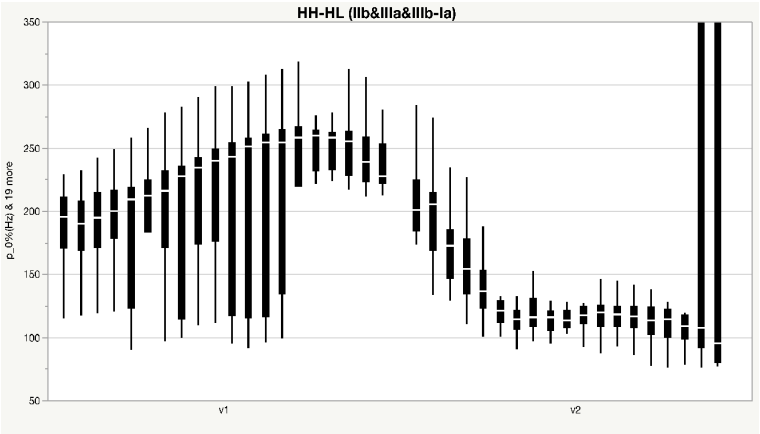

Figure 16 The output of the two-tone sequence HH-HL (IIb&IIIa&IIIb-Ia) HH-HL

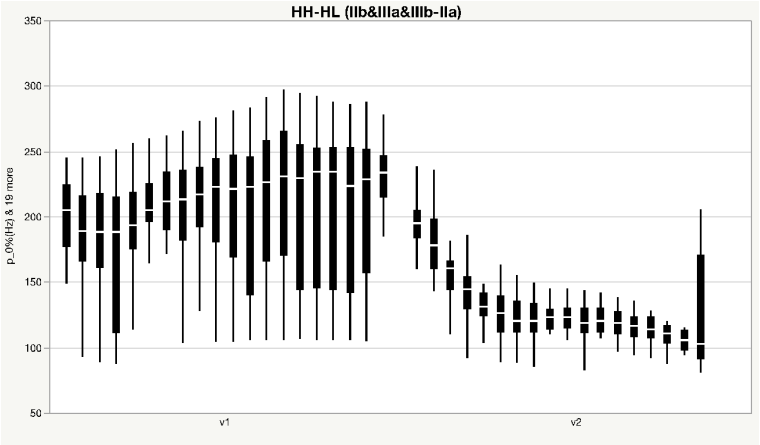

Figure 17 The output of the two-tone sequence HH-HL (IIb&IIIa&IIIb-IIa) HH-HL

c. Lq-HL and HMq-HL

Figures 18-21 show the outputs of HL when it stands after the two checked tones, Lq and HMq, respectively. The first tones in the four figures are all realised as a high level tone between 200 Hz to 250 Hz. Even though having not enough data makes the result of HMq-HM in Figure 21 not so easy to confirm, the median pitch of the first tone in this pattern is still about 225 Hz. As for the second tone, all four figures show a falling tone from about 200 Hz to 100 Hz with a similar contour.

Therefore, we can conclude that the two checked tones have the same behaviour when they precede HL. Concerning the second tone in these patterns, what is particularly significant in this research is that HL is consistently realised as HL, regardless of whether it is preceded by Lq or HMq and regardless of its origin from Ia or IIa. This suggests that Ia and IIa have merged within this specific context.

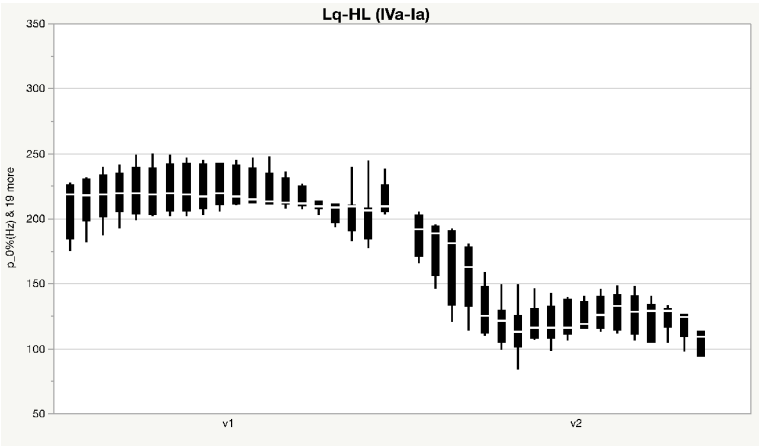

Figure 18 The output of the two-tone sequence Lq-HL (IVa-Ia) Lq-HL→Hq-HL

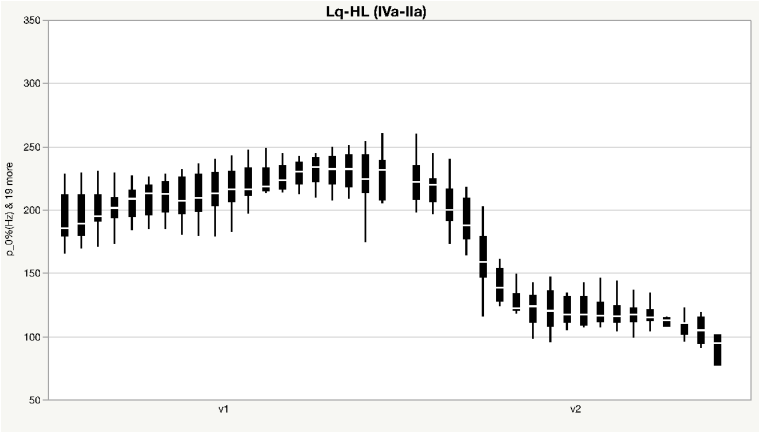

Figure 19 The output of the two-tone sequence Lq-HL (IVa-IIa) Lq-HL→Hq-HL

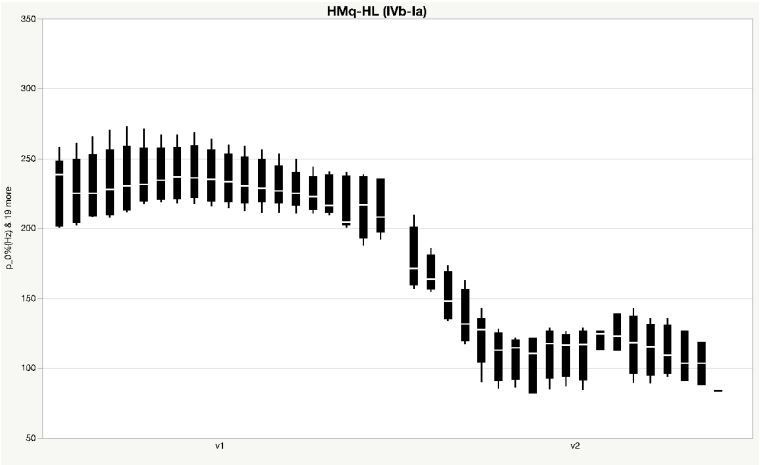

Figure 20 The output of the two-tone sequence HMq-HL (IVb-Ia) HMq-HL→Hq-HL

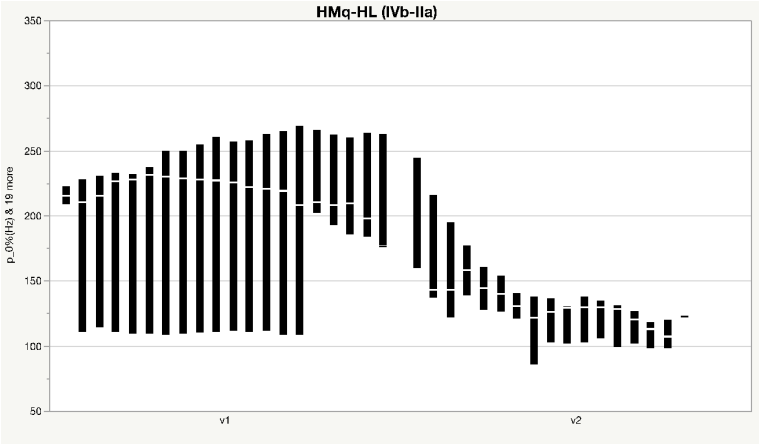

Figure 21 The output of the two-tone sequence HMq-HL (IVb-IIa) HMq-HL→Hq-HL

4.2 Reconstructing the Diachronic Evolution

4.2.1 Tone Sandhi Recorded in the Past Three Decades

Based on the results in Section 4.1, this section summarises the sandhi processes of two-tone sequences involving Ia and IIa, followed by a discussion of how sandhi has affected IIa (HM), leading to its neutralisation with Ia (HL).

Table 4 summarises the outputs of all two-tone sequences involving Ia&IIa. The leftmost column displays the first tone of the sequences, the top row displays the second tone, and the crossing cell displays the output of the relevant pattern. For example, the sequence Lq-HL(IVa-Ia) is realised as Hq-HL on the surface. This table shows that HL (Ia&IIa) is realised as HL, when it is the second tone of a two-tone sequence, without change. However, if the first tone in these sequences is HL, it is realised either as an HM or as an HL (HL<H> is the variant of HL when it precedes a high tone). Meanwhile, the surface realisations are complicated if a two-tone sequence begins with HL. Each pattern has generally two different outputs, and for HL-HL there are even three.

Table 4 Outputs of two-tone sequences in Yu

First Second	Ia&IIa HL	Ib LL	IIb&III HH	IVa Lq	IVb HMq
Ia&IIaHL	HL-LL HL<H>-HL HM-HL	HL-LL HM-LL	HL<H>-HH HM-HH	HL-LLq HM-LLq	HL<H>-HMq
Ib LL	LL-HL				
IIb&III HH	HH-HL				
IVa Lq	Hq-HL				
IVb HMq	Hq-HL				

Nevertheless, the situation becomes clearer when we take the tonal evolution into account and discuss the Middle Chinese origins of the HL tone separately. As shown in Table 5, it is clear that the HM realisations all stem from the IIa in Middle Chinese, which is evidence that the shape of IIa evolved from HM to HL, rather than the reverse or from other shapes to HL. Another piece of evidence comes from the recordings by Song (1991) and Liu (2010), who both differentiate the Ia and IIa as standing in contrast with HL and HM, two falling tones distinguished at the falling gradient.

Table 5 Outputs of two-tone sequences in Yu (2)

First Second	Ia HL	IIa HL (HM)	Ib LL	IIb&III HH	IVa Lq	IVb HMq
Ia HL	**HL-LL**	*HL<H>-HL*	HL-LL	*HL<H>-HH*	HL-LLq	*HL<H>-HMq*
IIa HL (HM)	HM-HL	***HL<H>-HL***	HM-LL	HM-HH	HM-LLq	***HL<H>-HMq***
Ib LL	LL-HL	LL-HL				
IIb&III HH	HH-HL	HH-HL				
IVa Lq	*Hq-HL*	*Hq-HL*				
IVb HMq	Hq-HL	Hq-HL				

Table 5 above shows two kinds of tone changes at the output. First, Lq becomes Hq and HL becomes HL<H>, highlighted with italics, which is caused by co-articulation. The second kind occurs when two identical falling tones are adjacent, highlighted in bold. As shown below in (2), when two tones are both HL, the sequence is realised as HL-LL (2-1). When HM precedes another HM, the first HM is modified to HL (2-2). The change HM→HL happens also in the sequence of HM-HMq (2-3). Though the syllables bearing HMq end in a glottal stop [ʔ], both HM and HMq have the same falling shape and the same high register.

2. 2-1. HL→LL/HL__
   2-2. HM→HL/__HM
   2-3. HM→HL/__HMq

We suppose that this tone change is triggered by the constraint of OCP. Two identical tones (at pitch contours and registers) are adjacent, and this violates the OCP. To repair the OCP-violation, the right-edged tone in HL-HL is modified to LL and the left-edged tone in HM-HM and HM-HMq is modified to HL. The details of how these three sequences chose their substitute tones to repair OCP-violation are not discussed in detail in this article (Jia 2021b).

4.2.2 How the Two Falling Tones Have Merged

To explore the process of HM merging into HL, we analyse the sandhi patterns compared to the recordings in the previous two studies conducted by Song (1991) and Liu (2010).

Table 6 shows the output forms resulting from the combinations of Ia and IIa in the three studies on Yu. The results of Song (1991) and Liu (2010) are presented in bold letters. At their time, HL-HM and HM-HL were well-formed patterns, so that no sandhi process was applied to the outputs. However, based on the data collected in 2019, HL-HM (Ia-IIa) has been realised as HL-HL[5] in most cases, that is 19 examples out of 20 in total. But HM-HL (IIa-Ia) is still realised as HM-HL, which can be considered as evidence that a complete merger has not yet taken place in the connected speech.

HL-HL (Ia-Ia) and HM-HM (IIa-IIa) in Song and Liu were modified to HL-LL and HL-HM respectively, which means the OCP plays a role not only in the present research but also was significant in Song's and Liu's time. The ways to repair the OCP-violation have been consistent till now. In my data, HL-HL (Ia-Ia) is changed to HL-LL, and the first tone of IIa-IIa is mainly realised as HL. Additionally, IIa in all three studies is realised as HL when it precedes an HMq.

5 It should be HL<H>-HL, the co-articulation is ignored in this paper, so as not to bring more confusion to the readers.

Table 6 Outputs of sequences formed by Ia and IIa in Yu across three studies

		Ia HL	**IIa HL (HM)**	**IVb HMq**
Ia HL	**Song (1991)** **Liu (2010)**	**HL-LL**	**HL-HM**	**HL-HMq**
	My investigation	HL-LL (24/25) *Hq-HL (1/25)	HL-HL (19/20) HL-o(LL) (1/20)	HL-HMq (3/3)
IIa HL (HM)	**Song (1991)** **Liu (2010)**	**HM-HL**	**HL-HM**	**HL-HMq**
	My investigation	HM-HL (12/12)	HL-HL (14/19) HM-HL (1/19) Hq-HL (1/19) HL-HM (1/19) HH-HL (1/19) Hq-HH (1/19)	HL-HMq(3/3)

* The number before the "/" refers to the number of examples realised with a certain output; the number after the "/" refers to the number of total examples in a certain tone pattern.

I suppose that the repair of the OCP-violation in HM-HM or HM-HMq might be a trigger for the merger between Ia and IIa (HL and HM). At the time when Song (1991) conducted his investigation, besides being the citation tone of Ia, HL was also a conditional variant of HM (IIa) when in front of HMq or another HM. Gradually, HL appeared more and more frequently in speech, and it finally replaced HM even as a monosyllabic tone. Gao (2018), in his discussion on tonal change, likewise supposes that variants of a tone might be the early stages or the future stage of the shape of a tone category in a tonal change. This hypothesis is supported by the merger of Ia and IIa in Yu. In the beginning, HL was a sandhi tone variant of IIa when preceding HMq or another HM, and it then gradually became the citation tone shape of IIa. If one observes this phenomenon in the present data, HM is the variant of HL in some contexts (see the next paragraph) and HM is also the early stage of HL in these contexts.

In my investigation, HM and HL have completed the merger at monosyllabic tones, namely when speaking every character with its citation tone. However, HM is still preserved in some contexts so that the tone of IIa shows a certain variability in outputs. For instance, IIa in the second position is always pronounced as HL, which happens in 19 out of 20 examples of the sequence Ia-IIa and 17 out of 19 examples of the sequence IIa-IIa. In the remaining examples (1/20) of Ia-IIa, the final tone is deleted rather than preserved as the base tone HM. Nevertheless, when IIa is at the left position of two-tone sequences, it is preserved as HM, except for two cases, which were forced to modify to HL by the OCP (when it is in front of another HM or HMq – HM-HM and HM-HMq). This asynchrony of the merger

at the different positions can be explained by the metrical structure – the tones borne by syllables at the strong position of metrical feet tend to be preserved, which is a phenomenon that has been described in many other Sinitic languages (Chen 2000; Duanmu 2016; 2022). We can assume that (main) Sinitic languages have a trochaic metrical structure, with trochaic feet formed by every two syllables.[6] Even though, as far as I know, there is no previous research on the prosodic structure of Yu variety, we start here from the assumption that it is the same as in Mandarin Chinese; in other words, the foot is a trochee. This appears plausible due to the similar evolutionary paths of the Yu variety and Mandarin from Middle Chinese. Additionally, the trochaic foot is a characteristic feature of Northern Sinitic languages, including Mandarin and Jin, though its presence in Southern Sinitic languages remains uncertain. Given that Yu is classified as a variety of Jin Chinese, it is a reasonable assumption that it exhibits trochaic feet. As we have observed, this hypothesis also helps us account for why HM is preserved more often at the left position than at the right position.

5 Conclusions

To conclude, the internal linguistic factors – tone sandhi in particular, constrained by the OCP – have led to the merger of HL and HM over the last thirty years. Comparing the data collected from the three studies taken into account here, we suggest that the OCP-driven change from HM to HL led to the neutralisation of HM and HL in many words. Subsequently, the replacement of HM by HL gradually spreads to other words and eventually will cause all syllables bearing HM to be realised as HL – this is what we expect. This tonal change does not occur at the same time in all positions. It started in disyllabic sequences in which sandhi applies, constrained by the OCP, then spread to the prosodically weak syllables and to syllables pronounced in isolation, while the tones in the prosodically strong position are the most conservative. This case lends strong support to the view that internally driven tonal change is currently underway in the Yu variety, and this change shows a tendency towards simplification of the tonal system, which is consistent with current observations and analyses of Chinese tones (Zhu 2009; 2019; Zhu, Xiaonong, Yi 2015).

6 Feng 1998; 2016; Duanmu 2016; 2022.

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Metrical Stress in Kaxabu Revisited: A Corpus-Based Approach

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Abstract This paper examines the metrical stress patterns in Kaxabu, a Formosan language spoken in Nantou County, Central Taiwan. The study uses a corpus-based approach, analysing more than 3,000 entries to identify the prosodic patterns of the language based on the number of syllables in a phonological word. The results reveal that final stress is prominent in both disyllabic and trisyllabic words in Kaxabu. The paper not only provides an overview of the general distribution of stress in the language but also discusses irregularities in the corpus that arise from factors such as initial heavy syllables, affixation, or internal structure.

Keywords Kaxabu. Metrical stress. Corpus. Final stress. Affixation. Internal structure.

Summary 1 Introduction. – 1.1 Kaxabu Prosody. – 1.2 Problems in Lim (2016; 2023). – 1.3 Research Questions. – 2 The Corpus and Conversion Process. – 3 Results. – 3.1 Distribution of Disyllabic Words. – 3.2 Distribution of Trisyllabic Words. – 3.3 Distribution of Quadrisyllabic Words. – 3.4 Distribution of Pentasyllabic Words. – 4 Discussion. – 4.1 Irregularities in Kaxabu Prosody. – 4.2 Interaction of Stress Assignment and Internal Structure. – 5 Conclusion.

1 Introduction

Kaxabu is a language spoken in Puli, Nantou County, Central Taiwan and is classified as one of the Western Plains languages.[1] There is a significant linguistic resemblance between Kaxabu and Pazeh, as

1 This paper consistently uses the spelling Kaxabu, although there are other variations such as Kahabu or Kahaxu.

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noted by scholars such as Ferrell (1970),[2] Wei (1981), Tsuchida (1992), Blust (1999), Li, Tsuchida (2001), Lim (2007), Lin (2020), and Lim, Zeitoun (2023), and Lim (2023). In an interview with the last native speaker of Pazeh, mrs. Pan Jin-yu, Blust (1999, 323) reports her statement that Kaxabu and Pazeh are essentially the same language spoken by the same ethnic group living in two different locations, with only different names.[3] Blust (1999), Li, Tsuchida (2001), Lim (2007), and Lin (2020) have conducted linguistic comparisons between Kaxabu and Pazeh, revealing varying degrees of lexical similarities. Blust (1999) has identified 13 points of divergence in phonology and morphology between the two languages. Li and Tsuchida (2001) have similarly presented comparative data. Furthermore, Lim (2007) has conducted a study on the lexical differences between Kaxabu and Pazeh, comparing textbooks published by National Cheng Chi University. The study analysed 274 entries, revealing that 126 entries (46%) were identical, while 148 entries (54%) differed. Of the points of divergence identified by Lim (2007), 63 were related to phonetics, 29 to morphology, and 56 lexicons. In a more recent study, Lin (2020) used a larger corpus to investigate the phonological similarities between Pazeh and Kaxabu. The results of his analysis showed a higher affinity of approximately 55% identical items in the corpus data.

Despite the remarkable affinity between Kaxabu and Pazeh, previous research has tended to focus more on Pazeh than Kaxabu. In the literature on Pazeh phonology, most studies concentrate on segments, as Blust (1999), or on the morphological process of reduplication, as Lu (2003), Myers (2007), and Lin (2010). As for prosody, Blust (1999, 332), Lin (2000, 55), Li, Tsuchida (2001, 3), and Lu (2003, 41) have suggested that Pazeh exhibits final stress in citation forms. In particular, Lu (2003, 41) proposes that the foot structure of Pazeh stress is iambic, with the highest pitch falling on the right syllable within a foot. When there is a suffix, stress shifts to the final syllable to maintain the same stress pattern, as in Blust's (1999, 332) example of *ma-udan* [maw.dán] 'to rain' becoming *ma-udan-ay* [maw.da.náy] 'will rain'. Meanwhile, Pan (2015) and Lim (2016) have conducted research on Kaxabu's phonology. However, there is not much research that specifically addresses Kaxabu prosody, such as stress and intonation.

2 The actual publication year of Ferrell's work has been discussed in Lim 2023, 3. Lim contends that due to delays in the publication process, the paper was officially published in September 1970, although it was originally scheduled for November 1968. Consequently, the citation year for Ferrell in Lim 2023 is 1968. This paper references the actual publication year, 1970, rather than the scheduled year, 1968.

3 Kaxabu and Pazeh are two dialects that are separated by the geographic location of Fengyuan in Taichung City. Kaxabu is spoken to the east of Fengyuan, while Pazeh is spoken to the west (Wei 1981, 27). However, despite this geographic separation, mutual intelligibility between the two dialects is not necessarily affected.

1.1 Kaxabu Prosody

Lim (2016; 2023) conducted the first comprehensive study of Kaxabu phonology, which revealed that stress in Kaxabu has two possible representations, depending on the pitch height of the first syllable, which can be either high or low. The distribution of stress patterns is summarised in Table 1 below.

Table 1 The distribution of pitch height in Kaxabu

Number of syllables	Low pitch in the first syllable	High pitch in the first syllable
2	L+H CV.CV́C *pu.nú* 'head'	M+M CV̀V.CV́C *sàa.pá* 'strap'
3	L+M+H CV.CV.CV́C *tu.la.lá* 'flower'	H+L+H CV̀V.CV.CV́C *sàa.ba.zú* 'soup'
4	L+H+L+H CV.CV̀.CV.CV́C *di.nà.lu.mán* 'livestock'	H+L+M+H CV̀V.CV.CV.CV́C *sàa.ke.ke.lá* 'foot board'
5	L+H+L+M+H CV.CV̀.CV.CV.CV́C *a.bà.ʔa.ba.sán* 'adult'	H+L+H+L+H CV̀V.CV. CV̀.CV.CV́C *màa.to.nò.to.nó* 'hit each other'
6	L+H+L+H+L+H CV.CV̀. CV.CV̀. CV.CV́C *ma.xà.da.xè.da.xé* 'a ghost transformed from human' * H = high, M = mid, L = low	NA

Source: Lim 2016, 109, 112

Lim (2016; 2023) identifies three key features of Kaxabu prosody. First, there is a complementary distribution of high and low pitch. When the first syllable is low, it corresponds to a light syllable, CV, and when the first syllable is high, it corresponds to a heavy syllable, CVV or $CVC_{[nasal]}$. Second, a syllable bearing mid pitch, when not at the word's boundaries, is not stressed. In this situation, the mid pitch within a word is only the transition from low pitch to high pitch. On the other hand, when mid pitch appears at the boundary of a word, it is realised as stress, as in the M + M category of high pitch in the first syllable, as in the example, *sàa.pá* 'strap' in which the stress falls on the first syllable *saa*. Third, high pitch indicates stress, with high pitch in the final syllable being the primary stress and other high pitch being secondary.[4]

4 In Lim 2024, the M + M category is revised as H + H.

Lim (2016, 125) proposes that there are two triggers of high pitch in the first syllable in Kaxabu: rising contour and high level. The former results from the loss of intervocalic *r*, while the latter does not. For instance, Kaxabu *mainu* 'sour' has a rising tone on the first syllable *mai*, which is a consequence of the loss of *r* (cf. the cognate in Pazeh, *marinu* 'paper'). The loss of the intervocalic *r* from the original *marinu* leads to a contraction of LH, generating a rising contour (< L+H) in Kaxabu. Additionally, the data in Table 1 suggest that when the first syllable carries secondary stress, the pitch tends to be high and the duration is prolonged, as in *sàa.ke.ke.lá* 'foot board'.[5]

1.2 Problems in Lim (2016; 2023)

Lim's (2016; 2023) generalisations provide a good starting point for understanding Kaxabu prosody, but there are three issues with his analysis: undefined mid pitch, gap between phonetics and phonology, and redundant rising pitch. First, Table 1 does not clearly define mid pitch, which is identified as a transition from low to high pitch in the middle of a phonological word, as in the examples, *tu.la.lá* 'flower' (L+M+H) and *a.bà.ʔa.ba.sán* 'adult' (L+H+L+M+H). Therefore, marking mid pitch becomes redundant because any transition from low to high must include a mid pitch. Additionally, Lim (2016) includes M+M in the category of "high pitch in the first syllable" for disyllabic words, but also acknowledges that the mid pitch is a phonetic interpretation and should be considered high in terms of phonological notation since content words must have stress. This is a confusing conclusion so it is unnecessary to mark mid pitch in a disyllabic word that only has three pitch possibilities: S1 > S2, S1 < S2, or S1 = S2. Therefore, this paper suggests that marking only high pitch is sufficient for indicating stress.

The second issue pertains to a discrepancy between phonetic representation and phonological notation. For instance, in Table 1, as it can be seen, Lim (2016) identifies the prosodic pattern of *di.nà.lu.mán* 'livestock' as L+H+L+H, with the primary stress falling on the final syllable. However, Lim's phonetic analysis of this example (2016, 105) reveals that the pitch in the second syllable *na* is higher than that in the final syllable *man*. Another example, *saatikipu* 'stairs', is also problematic. This example is identified as H+L+M+H with the primary stress on the final syllable. However, Lim's phonetic analysis (2016, 109) contradicts this phonological representation. Specifically, the pitch in the first syllable *saa* is higher than that in

5 Lim (2023, 98) suggests that initial syllable weight (CVV or CVN) carries stress, and final frication causes falling pitch.

the final syllable *pu*. These discrepancies between phonetic and phonological analyses raise doubts about Lim's proposed stress assignment. In particular, it is unclear whether heavy syllables indeed attract stress in Kaxabu phonology.

The third issue is the interpretation of rising contour in the first syllable in Table 1. Lim (2016) proposes that the first syllable can have two types of pitch contour: rising and high level. According to Lim (2016, 124), the rising contour is a consequence of the contraction of two syllables that carry low and mid pitch, respectively. For example, in the pair *bauba* 'paper' in Kaxabu and *barebar* 'paper' in Pazeh, the prosody is L+M+H. In Kaxabu, the deletion of the *r* between the first two syllables (L+M) leads to a rising contour, R < L+M. When there is no *r* deletion between the first two syllables, there is no rising contour, and the first syllable has a high level pitch. However, the phonetic analyses provided by Lim (2016, 122-4) do not support his own proposals. First, Lim's analyses show that the rising contour is not always clearly present and may be triggered by the following high pitch in the final syllable, which makes it less reliable. Second, Lim (2016) also misunderstands the difference between *saipu* 'radish' and *sainga* 'ears', which he claims show a contrast between high level for *sai* in *saipu* 'radish' and rising contour for *sai* in *sainga* 'ears'. However, according to the phonetic analyses provided (Lim 2016, 123-4), *saipu* 'radish' is actually parsed into two syllables *sai.pu*, while *sainga* 'ears' should be parsed into three syllables *sa.i.nga*. If *sainga* 'ears' is trisyllabic, it follows the L+M+H template, and the first syllable is low. Therefore, in this paper we depart from Lim's rising contour analysis and argue that operating a distinction between low and high pitch can better account for the stress patters of Kaxabu. In this view, the rising contour is simply a transition from low to high pitch.

1.3 Research Questions

In order to address the limitations of Lim's (2016) study, which relies on sporadic examples, this paper adopts a corpus-based approach to re-examine metrical stress in Kaxabu and poses three key questions. First, what is the overall distribution of prosodic patterns in Kaxabu? Second, what are the phonological representations of Kaxabu's phonology based on phonetic realisations? Finally, are there any irregularities in the distribution of patterns in the corpus data?

This paper aims to provide a comprehensive analysis of stress patterns in Kaxabu by examining words of different lengths, from disyllabic to pentasyllabic. In addition to analysing the general distribution of primary stress, this paper investigates the prevalence of high pitch in the first syllable, which is uncommon in disyllabic words but more common in longer words with a long vowel or a diphthong in

the initial syllable. Stress typically falls on the final syllable in disyllabic and trisyllabic words, but internal structure and morphological material, such as patient voice and imperative markers, also play a role in stress assignment.

This paper is organised as follows. Section 2 outlines the steps of creating the Kaxabu corpus, including data source, collection criteria, and analysis process. Section 3 illustrates the distribution of stress patterns in different types of words, while Section 4 discusses irregularities in Kaxabu prosody and the interaction between stress assignment and internal structure. Finally, Section 5 concludes the paper.

Before I discuss the creation of the Kaxabu corpus, this section provides a brief overview of the phonological inventory of Kaxabu. According to Pan (2015, 12), the language has 18 consonants, six vowels, and two diphthongs, as shown in Table 2.[6]

Table 2 Phonemes in Kaxabu[7]

p	t	k	ʔ	i		u
b	d	g		[e]	ə	[o]
	s	x	h			
	z				a	
m	n	ŋ				
	l				ai	au
	r					
w	y					

The consonants consist of three voiceless stops (*p*, *t*, *k*), three voiced stops (*b*, *d*, *g*), one glottal stop (*ʔ*), three voiceless fricatives (*s*, *x*, *h*), one voiced fricative (*z*), three nasals (*m*, *n*, *ŋ*), one voiced lateral (*l*), one alveolar tap (*r*), and two semivowels (*w* and *y*). Kaxabu has six vowels, which can be reduced to four as the mid vowels *e* and *o* are allophones of the high vowels *i* and *u* when adjacent to the consonants *h* or *r*. The two diphthongs in Kaxabu are *ai* and *au*.

6 Pan (2015, 13) has the aspirated affricate [ts^{h}-], which is rare in Kaxabu, so it is not listed in Table 2.

7 Lim (2023, 64) suggests that there are 16 consonants, not including glottal stop and lateral r.

2 The Corpus and Conversion Process

The corpus used in this paper is derived from the Kaxabu Dictionary (Pan 2015), which contains a total of 3,110 entries. The corpus is created through the following steps. First, the entries are sorted according to the number of syllables, including monosyllabic, disyllabic, trisyllabic, quadrisyllabic, pentasyllabic, and those with more than five syllables (> 5). Second, the phonetic values of each entry are analysed by cross-referencing the recordings provided as a supplement to the Kaxabu Dictionary (Pan 2015). For example, the pitch of the example words in (1) are analysed using Praat (version 6.2.17).

(1) a. *punu* 'head' b. *ahan* 'mouth' c. *ituk* 'top of the head'

The prosodic pattern of all three examples in (1) is the same, with the second syllable having a higher pitch than the first syllable, regardless of any pitch changes within a single syllable or between syllables. For instance, in *punu* 'head', the pitch shows a rising contour in the transition between the first and second syllables, while in *ahan* 'mouth' and *ituk* 'top of the head', the first syllable has a falling pitch. In the case of *ituk* 'top of the head', marking the second syllable with a falling pitch would be redundant. Therefore, a more straightforward method is to mark the first syllable with a low pitch and the second syllable with a high pitch.

The third step is to convert the phonetic values to relative pitch height, Sx > Sy, Sx < Sy or Sx = Sy. Since it is not necessary to specify the internal pitch change, such as high level in the second syllable of *punu* 'head' and low falling in the first syllables of *ahan* 'mouth' and *ituk* 'top of the head', the three examples in (1) can be consistently marked as S1 < S2 (L+H).

When a phonological word contains more than two syllables, it becomes necessary to mark the syllable with the highest pitch. The phonetic analysis of a trisyllabic word, *xalixu* 'earwax', is shown in (2).

(2) *xalixu* 'earwax'

In (2), each syllable of the trisyllabic word *xalixu* has a different pitch height. The first syllable is the lowest in pitch, and the third syllable has the highest pitch height. Therefore, the relative pitch height of *xalixu* can be marked as S1 < S2 < S3. More detailed marking is necessary for longer words with secondary stress, as exemplified by the quadrisyllabic word *maxaahan* 'speechless' in (3) below.

The phonetic analysis of *maxaahan* 'speechless' indicates that the second syllable *xa* bears the primary stress, and the last syllable *han* bears the secondary stress. The relative pitch height of this example is S1 < S2 > S3 < S4, with a diacritic highlighting the highest pitch

on S2. After sorting all the data and marking the pitch according to the above steps, the final step is to calculate the token distributions in the corpus. The results of this analysis are presented in section 3.

(3) *maxa ahan* 'speechless'

3 Results

This section presents the distribution of stress patterns in the corpus, categorised by the number of syllables: monosyllabic, disyllabic, trisyllabic, quadrisyllabic, and pentasyllabic words. Words with more than five syllables are grouped into one category. Table 3 displays the overall distribution of the corpus examples.

Table 3 Overall distribution of the corpus examples

Number of syllables	1	2	3	4	5	> 5	Total
Tokens	63	940	1,235	511	207	143	3,099
Percentage	2%	30%	40%	16%	7%	5%	100%

The corpus used in this study includes 3,110 examples, of which 3,099 were analysed.[8] Given the low frequency of monosyllabic words and examples with more than five syllables, this section will focus on disyllabic, trisyllabic, quadrisyllabic, and pentasyllabic words.

3.1 Distribution of Disyllabic Words

There are 940 disyllabic words in the corpus and Table 4 shows the distribution in terms of relative height. In disyllabic words, the second syllable typically has a higher pitch than the first syllable, as reflected by the 98% of corpus instances (923/940) that follow the L+H pattern, (1). However, 17 examples deviate from this pattern and show the opposite H+L, as illustrated by example (4). In this case, the initial high pitch is to be ascribed to the imperative marker *i*, which normally bears a low pitch.

8 Eleven entries are not used because there is a mismatch between the entries and the recordings.

Table 4 Relative height of disyllabic words[9]

Primary stress	Relative height	Tokens	Percentage
Final	$S_1 < S_2$	923	98%
Penultimate	$S_1 > S_2$	17	2%
Total		940	100%

(4) *siani* 'fry (imperative)'

3.2 Distribution of Trisyllabic Words

The corpus contains 1,235 examples of trisyllabic words, and the distribution of relative pitch height is presented in Table 5.

Table 5 Relative height in trisyllabic words

Primary stress	Relative height	Tokens	Percentage
Final	$S_1 < S_2 < S_3$	778	63%
	$S_1 > S_2 < S_3$	12	1%
Penultimate	$S_1 < S_2 > S_3$	195	16%
Antepenultimate	$S_1 > S_2 < S_3$	241	20%
	$S_1 > S_2 > S_3$	9	1%
	Total	1,235	100%

Table 5 shows five patterns of relative height. The most common pattern, observed in 778 examples (778/1,235, 63% of the corpus examples), is S1 < S2 < S3. Within this pattern, the primary stress is placed on the final syllable, as demonstrated by the word *pakato* 'trim one's hair' in (5).

(5) *pakato* 'trim one's hair'

Table 5 presents another pattern, which is characterised by antepenultimate stress (S1 > S2 < S3), where the first syllable bears the stress and the second syllable has the lowest pitch. This pattern is observed in 241 examples (241/1,235, 20% of the corpus examples), as illustrated by the word *gaigehan* 'armpit' in example (6).

(6) *gaigehan* 'armpit'

9 Lim (2023, 105) suggests that final fricative consonant, such as bekes 'hair' would trigger falling pitch (L + F). This paper does not adopt this perspective because the phonetic realization of his example of bekes 'hair' shows that the pitch of kes is still higher than that of the be syllable.

Table 5 also includes a pattern with penultimate stress (S1 < S2 > S3), which is the third pattern. The corpus contains 195 examples (16% of the corpus examples) of this pattern, such as the word *muluzuk* 'comb (v.)' in example (7).

(7) *muluzuk* 'comb (v.)'

The last two patterns in Table 5 are observed less frequently in the corpus, accounting for less than 1% of the corpus examples. The first pattern is characterised by S1 > S2 < S3, where the third syllable has the highest pitch, and the second syllable has the lowest pitch. This pattern is observed in 12 instances, such as the word *mapulut* 'clumsy' in (8a). The second pattern is S1 > S2 > S3 with a gradual lowering change in pitch, which is seen in 9 instances, including the word *haahatan* 'smile' in (8b).

(8) a. *mapulut* 'clumsy' b. *haahatan* 'smile'

3.3 Distribution of Quadrisyllabic Words

The corpus contains 511 quadrisyllabic words, and their distribution according to the position of primary stress is presented in Table 6.

Table 6 Positions of stress in quadrisyllabic words

Primary stress	Tokens	Percentage
First syllable	71	14%
Second syllable	365	71%
Third syllable	18	4%
Fourth syllable	57	11%
Total	511	100%

The majority of quadrisyllabic words in the corpus exhibit primary stress on the second syllable (365 examples, 71%), as seen in the word *maxiilak* 'stare' in (9). Additionally, this example demonstrates that there is a secondary stress on the final syllable.

(9) *maxiilak* 'stare'

The second pattern is observed when the primary stress is placed on the first syllable, as seen in 71 examples (14% of the corpus examples). An example of this pattern is the word *mazubuzu* 'crowded in the public' in (10).

(10) *mazubuzu* 'crowded in the public'

The third pattern of quadrisyllabic words in the corpus (57 examples, 11%) exhibits primary stress on the final syllable, as illustrated by the word *pusingarux* 'echo' in (11).

(11) *pusingarux* 'echo'

In a small number of cases (18 examples, 4% of the corpus examples), the stress falls on the third syllable, as demonstrated by the word *ma'ela'en* 'ill and pessimistic' in (12).

(12) *ma'ela'en* 'ill and pessimistic'

3.4 Distribution of Pentasyllabic Words

The distribution of primary stress in 207 pentasyllabic words in the corpus is presented in Table 7.

Table 7 Positions of stress in pentasyllabic words

Primary stress	Tokens	Percentage
First syllable	23	11%
Second syllable	122	59%
Third syllable	55	27%
Fourth syllable	1	0.005%
Fifth syllable	6	3%
Total	207	100%

The majority of pentasyllabic words in the corpus (122 examples, 59%) exhibit primary stress on the second syllable, as seen in the word *ilas salaman* 'kneecap' in (13).

(13) *ilas salaman* 'kneecap'

In addition to the primary stress on the second syllable *las*, example (13) also illustrates secondary stress on the final syllable *man*.

More than a quarter of the pentasyllabic words in the corpus (55 examples, 27%) exhibit antepenultimate stress, as demonstrated by the word *tatape ima* 'clap' in (14).

(14) *tatape ima* 'clap'

There are 23 corpus examples where the primary stress falls on the first syllable, as seen in the word *maazepezepet* 'crowded' in (15). In this example, there is also secondary stress on the final syllable *pet*.

(15) *maazepezepet* 'crowded'

This section has presented the distribution of the corpus examples in disyllabic, trisyllabic, quadrisyllabic, and pentasyllabic words. Both disyllabic and trisyllabic words follow a similar prosodic pattern, with the primary stress falling on the final syllable. However, quadrisyllabic and pentasyllabic words differ in their prosodic patterns, with the primary stress falling on the second syllable.

4 Discussion

This section will discuss two issues related to Kaxabu prosody: (a) irregularities in Kaxabu prosody, and (b) the interaction between stress assignment and internal structure. Before delving into these topics, Table 8 provides a summary of the Kaxabu prosodic patterns found in the corpus, where S denotes syllable.

Table 8 Summary of the distribution of Kaxabu stress

Primary stress	S1	S2	S3	S4	S5	Total
Disyllabic	17	923				940
Trisyllabic	250	195	790			1,235
Quadrisyllabic	71	365	18	57		511
Pentasyllabic	23	122	55	1	6	207

4.1 Irregularities in Kaxabu Prosody

Thus far, this paper has suggested that stress shift is triggered by phonological and morphological factors. As pentasyllabic words function similarly to phrases, this section will focus on the irregularities observed in disyllabic, trisyllabic, and quadrisyllabic words.

4.1.1 Initial High Pitch

We begin our discussion with the irregular cases in which the primary stress falls on the first syllable. In trisyllabic words, about 20% of the corpus data exhibit initial stress (250 examples). Table 9 summarises the distribution of these irregularities. It is observed that the first syllables in such cases are highly associated with long vowels or diphthongs (311 examples, 92%).

Table 9 Distribution of irregular examples

Number of syllables	disyllabic	trisyllabic	quadrisyllabic	Total
Initial long vowels	2	166	42	210
Initial diphthongs	12	64	25	101
No	3	20	4	27
Total	17	250	71	338

When it comes to disyllabic words, there are twelve instances of initial long vowels and two instances of diphthongs. Most of the irregularities in disyllabic words involve initial diphthongs like, for instance, the word *taubur* 'a room only for men' in (16). There are only three examples lacking long vowels or diphthongs.

As for trisyllabic words, out of the 250 examples with initial stress, 230 contain a long vowel (166 examples) or diphthong (64 examples) in the first syllable. This has been previously illustrated in (6) with *gaigehan* 'armpit' and in (8) with *haahatan* 'smile'. There are also 20 corpus examples with antepenultimate stress that lack initial long vowels or diphthongs.

(16) *taubur* 'a room only for men'

There are 67 irregularities in quadrisyllabic words with initial long vowels (42 examples) or diphthongs (25 examples) attested in the corpus. An example is the word *maubabza* 'learn or imitate' in (17).

(17) *maubabza* 'learn or imitate'

Thus far, we have observed that initial long vowels or diphthongs cause initial stress, but it is also necessary to investigate situations where there are initial long vowels or diphthongs but no first-syllable stress. Table 10 displays the distribution of such cases in the corpus.

Table 10 Distribution of non-initial stress

Vowels	Number of syllables	Positions of stress		Total
		Initial	Non-initial	
Initial long vowels or diphthongs	Disyllabic	14	175	189
	Trisyllabic	230	38	268
	Quadrisyllabic	67	25	92

There are 175 examples of disyllabic words with initial long vowels or diphthongs in the corpus, but they do not have initial stress, as in the word *dauik* 'eye' in (18).

(18) *dauik* 'eye'

On the other hand, there are 38 examples in trisyllabic words and 25 examples in quadrisyllabic words that show no initial stress even if there are initial long vowels or diphthongs. Examples of such cases are shown in *maabadi* 'put hands on one's shoulder' in (19) for trisyllabic words and in *paakoala* 'trip (v.)' in (20) for quadrisyllabic words.

(19) *maabadi* 'put hands on one's shoulder'

(20) *paakoala* 'trip (v.)'

Combining Tables 9 and 10 leads to a preliminary conclusion. In disyllabic words, final stress is prominent (98%, 923/940) even if the initial syllable contains a long vowel or diphthong (14 examples). Only three examples lack long vowels or diphthongs, but the stress still falls on the first syllable. In other words, less than 1% of the disyllabic words are irregular. This might be due to speakers' idiosyncrasy.

For trisyllabic words, final stress is still prominent (64%, 790/1,235), and initial long vowels or diphthongs trigger high pitch (19%, 230/1,235). There are 215 examples showing penultimate stress, which is discussed in § 4.1.2. Regarding quadrisyllabic words, the prominent stress pattern is on the second syllable (71%, 365/511). Similarly, initial long vowels or diphthongs trigger high pitch (13%, 67/511). Only four examples without initial long vowels or diphthongs still show initial stress. A minor issue worth discussing is the 75 examples of quadrisyllabic words with stress on the third syllable (18 examples) and final stress (57 examples). A possible explanation for

the final stress could be the minimal pitch difference between the second and fourth syllables, as illustrated in (11). In this case, the primary stress would be on the final syllable. The 18 examples with stress on the third syllable are included in the discussion in § 4.1.2.

4.1.2 Stress Shift in Trisyllabic Words

The second irregularity arises when stress shifts to the penultimate syllable in trisyllabic words. As shown in Table 5, the default stress falls on the final syllable, and initial long vowels or diphthongs trigger initial stress. However, there are still 195 examples in the corpus with penultimate stress in Table 5. To further examine these examples, the codas of the third syllable and the position of primary stress are analysed. The distribution of these features is shown in Table 11.

Table 11 Distribution of coda types and stress

Coda types of S3	Place of stress			Total
	S1	S2	S3	
Nasals	42	82	133	257
Non-nasals	102	53	359	514
Vowels	110	60	294	464
Total	254	195	786	1,235

A chi-square test was conducted to determine if there is a significant relationship between coda types and stress positions in trisyllabic words in Kaxabu. The results show that there is a significant difference (p <.0001) with a degree of freedom of 4 and a critical value of 13.277 at α =.01, indicating that there is a strong association between coda types and the positions of stress in trisyllabic words in Kaxabu.

When the first and second syllables of a word are emphasised, there is a noticeable difference between syllables that end in a nasal and those that do not. If the final syllable of a (C)vC$_{[nasal]}$-type word is emphasised, penultimate stress is more common than initial stress. However, for the other two types of words, the opposite is true. To gain a better understanding of this phenomenon, we examined the data more closely, focusing on three types of three-syllable words. One of these types includes words with the patient voice marker *-en*, which often triggers a stress shift. Out of the 50 examples of patient voice in the corpus, 33 of them show penultimate stress, while 13 have final stress and 4 have antepenultimate stress. For instance, the word *kudis-en* 'hurt-PV' in (21) is an example of penultimate stress.

(21) *kudis-en* 'hurt-PV'

We also observe that when the third syllable of a word ends in the vowel *i*, which functions as an imperative marker (IMP), stress tends to fall on the second syllable. Out of the 108 examples of this type, 36 examples show penultimate stress, while 55 have final stress and 17 have antepenultimate stress. Among the 36 examples with penultimate stress, 29 of them are associated with the imperative marker *i*, as in the word *silik-i*, 'filter-IMP' in (22) (also refer to example (4)).

(22) *silik-i* 'filter-IMP'
$S_1 < S_2 > S_3$

After analysing the corpus examples, it was observed that when the coda of the final syllable is *r*, there is a high tendency for final lowering. Out of the 22 examples in the corpus with coda *r*, eleven have penultimate stress (four with final stress and seven with antepenultimate stress). An example of this is the word *mepeper* 'slightly sick' in (23).

(23) *mepeper* 'slightly sick'

Based on the available corpus data, there appear to be three potential conditions that lead to penultimate stress: the use of the patient voice marker *-en*, the imperative marker *i*, or a coda *r*. In a total of 108 examples, 73 show penultimate stress (68%). In some cases, the presence of these markers may trigger a lowering of the final syllable, causing the penultimate syllable to become the stressed syllable and therefore the highest in pitch.[10]

Before moving on to the next section, it is necessary to discuss the 18 examples with stress on the third syllable in quadrisyllabic words, as shown in (12). In these cases, the final syllable is always the voice marker -en or the imperative marker -i. This indicates that morphological processes also influence the stress pattern in quadrisyllabic words.

4.2 Interaction of Stress Assignment and Internal Structure

In this section, we will explore the topic of stress assignment in pentasyllabic words. When determining primary stress in a phonological word with more than three syllables, there are multiple factors that come into play, including the word's internal structure. As indicated in Table 8, the corpus contains 207 examples of pentasyllabic words,

10 The process of final lowering is not restricted to trisyllabic words alone. In fact, it has been observed in quadrisyllabic words as well, as demonstrated by the word *maelaen* 'ill and pessimistic' and is presented in (11).

with the majority (119 examples, or 58%) featuring primary stress on the second syllable. To fully understand the process of stress assignment in pentasyllabic words, it is important to examine the details of their internal structure. Given that initial long vowels and diphthongs tend to trigger initial stress, and that penultimate and final stress are relatively rare, Table 12 focuses on examples with stress on the second and third syllables.[11]

Table 12 Internal structures and stress in pentasyllabic words

Stress Internal structure	S2	S3
1+1+2+1	1	0
2+1+2	40	9
2+2+1	1	0
2+3	68	8
3+1+1	2	5
3+2	10	33
Total	122	55

Table 12 presents six different internal structures for pentasyllabic words, and there are three major tendencies. The first tendency is for stress to fall on the second syllable when the internal structure consists of a compound of 2 + 3 (68 out of 122 examples), such as in the word *ilas salaman* 'kneecap', as shown in (13). Conversely, when the internal structure is a compound of 3 + 2 (33 out of 55 examples), stress tends to fall on the third syllable, as in the word *tatape ima* 'clap', shown in (14). Finally, there is some ambiguity in the internal structure of words with a 2 + 1 + 2 structure, as the third syllable is typically the linker *a* that appears between two disyllabic words. An example of this is the word *mataw a dalum* 'flood', shown in (24).

(24) *mataw a dalum* 'flood'

Table 12 includes a total of 49 examples with a 2 + 1 + 2 structure, and among these examples, 44 contain a linker *a*. Of the 49 examples, 35 have stress on the second syllable, while 9 have stress on the linker *a*.

Based on these findings, we can conclude that the internal structure of pentasyllabic words is closely tied to the assignment of stress, following the patterns outlined in section 3. There is a similar prosodic pattern for both disyllabic and trisyllabic words, with the primary stress falling on the final syllable. Specifically, when the first

11 There are 23 examples with initial stress, and 22 of them are associated with initial long vowels or diphthongs.

two syllables form a foot, stress is typically assigned to the second syllable. However, when the first three syllables constitute a phonological word, stress is more likely to fall on the third syllable.

5 Conclusion

This paper has taken a corpus-based approach to investigate the prosodic patterns in Kaxabu. The findings suggest that Kaxabu defaults to a final stress pattern, which becomes more complex as words become longer. Stress assignment is influenced by several factors, including initial vowel types (long vowels and diphthongs), affixation, and internal structure. If a phonological word lacks a heavy syllable in the initial position, it follows the default final stress pattern. However, if the initial syllable contains a long vowel or diphthong, it carries primary stress. Additionally, affixations like patient voice and imperative can cause stress to shift. Finally, internal structure is significant in longer words to determine stress assignment.

This paper presents a corpus-based approach to resolve the issues in Lim 2016. First, it is clear that mid tone is not necessary to represent Kaxabu prosody, and marking only primary stress in disyllabic and trisyllabic words is sufficient. Second, the problem of mismatch between phonetic representation and phonological notation is resolved in this paper, thanks to a larger sample size of over 3,000 examples in the corpus. The results account more accurately for the distributions of Kaxabu prosody across words of different syllable lengths. Additionally, the paper identifies the effects of morphology on prosody by addressing the patient voice marker *-en* and imperative marker *-i*, which can cause stress shift. Overall, this corpus-based approach offers a more comprehensive and reliable analysis of Kaxabu prosody.

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Linguistic Landscapes in Sapporo – 'When' is Ainu Situated?

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Abstract The Indigenous Ainu language is absent from many contemporary language use domains and public spaces in Japan, but has gained visibility in commercial contexts and tourism. Based on a qualitative linguistic landscape (LL) analysis focusing on temporality, this paper examines when the Ainu language is situated in tourism spaces and its implications for the contemporary use and revitalisation of Ainu. The analysis shows that, while Ainu is present in the LL, its use is mostly 'traditional' and decorative, lacking modern instrumental use. However, there are examples of creative language use and neologisms, suggesting adaptation to modern needs.

Keywords Ainu. Linguistic landscape. Temporality. Linguistic commodification. Language and tourism. Neologisms.

Summary 1 Introduction. – 2 The Ainu Language and Its Contemporary Use. – 3 Data Collection and Analysis Methods. – 4 Analysis. – 4.1 Overall Findings. – 4.2 *Irankarapte* – Let Us Begin with Hello? – 4.3 *Tanto nisoro nekon an?* – Ainu Weather Forecast. – 5 Conclusions – 'When' is Ainu Situated?

1 Introduction

Ainu are the Indigenous people of present-day Hokkaidō, southern Sakhalin, and the Kuril Islands. Their lands were colonised by Japan in the 1800s and they were forced to assimilate to the rapidly modernising Japanese society by abandoning their lifestyle and language. Despite ongoing movements to reclaim and revitalise the Ainu language, Ainu has already lost many of its language use domains and

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is generally not used as a language for everyday communication. Due to its history as an oral language and the early language shift from Ainu to Japanese, written Ainu has traditionally not been present in public spaces, and while the language has now gained some visibility in tourism and other commercial contexts, Ainu is still not prevalent in the linguistic landscapes of Hokkaidō or Japan.

Linguistic landscape (LL) typically refers to the visibility of languages on public or commercial signage. LL research addresses questions such as 'which' languages are present in public spaces and which are left out, as well as 'where' and 'how' the languages are used and by 'whom'. The LL of a given place not only reflects the surrounding linguistic conditions, such as the perceived status hierarchy of languages, but can also help maintain or challenge ideas about language thought of as common sense. LL therefore not only reflects, but also constructs the sociolinguistic reality (Cenoz, Gorter 2006, 67-8). Language policies, linguistic ideologies, local practices, historical events, and globalisation all shape the LL,[1] and LL research focusing on minoritised languages such as Ainu commonly emphasises questions of power relations as mirrored and moulded by language use in public spaces (see Marten, Van Mensel, Gorter 2012).

Based on a qualitative analysis of the linguistic landscape, this paper examines where and how the Indigenous Ainu language is used in the linguistic landscapes of tourism spaces in Sapporo and its vicinity. The analysis focuses on temporality, exploring 'when' – in the past world of traditions, in the today's modern world, or in the foreseeable future – the Ainu language is situated in these settings as a language of the past, present, and future. In other words, this paper discusses Ainu use as a part of the linguistic landscapes investigated by exploring the extent to which Ainu is used and portrayed as a contemporary language – or as a language of the past. Furthermore, it considers whether the visibility, contexts and functions reserved for Ainu support the ongoing and future maintenance and revitalisation of Ainu as a modern language of Japan.

2 The Ainu Language and Its Contemporary Use

Ainu is the heritage language of the Indigenous Ainu people. Today most Ainu live in Hokkaidō or other Japanese islands and use Japanese as their language of daily communication. The language shift from Ainu to Japanese started in the late 1800s due to assimilation policies and compulsory schooling with Japanese as the medium of

1 See Ferguson, Sidorova 2016; Leeman, Modan 2009; Pietikäinen et al. 2011; Salo 2012.

instruction (see Okazaki 2019; Heinrich 2012). To justify assimilation, the *Wajin* (ethnic Japanese from the Ainu perspective) portrayed the Ainu as a 'dying race', indicating that their culture was primitive and unsuitable for life in modern society. This narrative depicting Ainu culture as being bound in the past still lives strong (Mason 2012). Discrimination has made many Ainu hide their ethnicity, and today it is difficult to estimate the size of the Ainu population, let alone how many Ainu speakers there are (Satō 2012). Ainu language advocates started to reclaim and revitalise the language in the late 1970s, developing into a full-fledged movement in the 1980s.

Ongoing language revitalisation initiatives focus on raising a new generation of Ainu, who could use the language for communication and teach it to others. Most work is done by language teachers, activists, scholars, and other individuals on a grassroots level and activities are largely centred around language learning.[2] Governmental support is provided through the Foundation for Ainu Culture (*Ainu minzoku bunka zaidan* アイヌ民族文化財団). However, increasing the number of Ainu speakers is not enough if there are no contemporary language use domains for the language (Martin 2011, 89). Issues related to discrimination and language attitudes also affect language use, highlighting that language revitalisation is not purely a linguistic challenge. To tackle these issues, some language activists and scholars have suggested the creation of so-called 'safe spaces' for Ainu language use (see Okazaki 2019).

As a result of the language shift from Ainu to Japanese taking place already in the early 1900s, Ainu is absent from many contemporary domains, and is typically not visible in the public spaces of Hokkaidō and the rest of Japan. While the idea of multilingualism and linguistic diversity is more readily tolerated today, Japan is still commonly perceived as a monolingual state and this linguistic ideology continues to be commonly accepted (see Heinrich 2012; Gottlieb 2011). Official language policy often regulates the use of minoritised languages in public, thus affecting the LL,[3] but there is no language legislation protecting or even concerning the use of Ainu in Japan. Therefore, Ainu texts generally do not appear on public signs by legislation or convention. The recently opened National Ainu Museum and Park (*Upopoy*) is an exception to this, as Ainu has been declared the official first language of the facilities in an aim to create a space for the language to be seen and used.[4] Recently Ainu has also gained prom-

2 For a more thorough overview, see Kitahara 2018; Martin 2011; Okazaki 2019; Ōno 2022; Satō 2012.

3 See Ferguson, Sidorova 2016; Leeman, Modan 2009; Pietikäinen et al. 2011; Salo 2012.

4 The National Ainu Museum and Park was opened in July 2020 as a part of the concrete measures of the Ainu Policy Promotion Act. While the Ainu language is not

inence through linguistic commodification (see Heller 2003) in commercial brands and products (Fukazawa 2019, 18).

Like many other Indigenous people around the world, some Ainu communities and individuals are participating in cultural tourism, thus also expanding the visibility of the language. Ainu culture and language are also commonly used and commodified as a part of tourism services provided by non-Ainu operators, possibly leading to conflicts of cultural ownership and appropriation (see Sámediggi 2018 for discussion in the Sámi context). While the history of so-called Ainu tourism can be described as troubled (see Morris-Suzuki 2014), and some images prevalent in today's tourism services continue to be based on stereotypes disconnected from modern society and contemporary Ainu identities (see Muraki 2010; Mason 2012), tourism is nonetheless a contemporary context in which the Ainu language plays a role. Prior research on language and tourism has shown that language is indeed one of the main semiotic resources used to represent and commodify culture (Thurlow, Jaworski 2010, 227). This means that local languages and linguistically indexed 'authenticity' are a vital part of the tourist experience (Brennan, Costa 2013; Kallen 2008), as is the case with Ainu in Hokkaidō.

In addition to the lack of domains and support for language use, insufficient contemporary vocabulary sets restrictions on how Ainu can be used in modern society. Modernising a minoritised language's lexicon helps make the language more useful in today's society and secure the language's continuity in the future, because the perceived usefulness of the language affects people's willingness to invest in language learning. According to Kitahara (2018, 94), many Ainu are motivated to learn Ainu to connect with their roots, but there are also those who are interested in using the language in their daily lives. Consequently, there have been some attempts to modernise Ainu vocabulary and create neologisms.

In this paper, the new words and new ways of using words that emerged after the decline of Ainu as a community language in the 1950s are considered neologisms.[5] This also includes product names.

protected by language legislation *per se*, legislation related to the Ainu people and their culture does exist. The assimilatory Hokkaidō Former Aborigines Protection Act of 1889 was only abolished as late as 1997, and replaced with the Ainu Cultural Promotion Act, which has been criticised for focusing on the promotion of a narrowly defined and tradition-oriented 'Ainu culture' instead of granting Indigenous recognition. The Ainu Policy Promotion Act of 2019 finally recognised the Ainu as the Indigenous People of Japan but did not grant them Indigenous rights. Despite the severe shortcomings, these improvements in legislation are the result of the tremendous efforts of Ainu activists.

5 Neologisms in general can be formed by three methods: "(1) the use of existing resources, (2) the modification of existing resources, [and] (3) the creation of new linguistic entities" (Sager 1990, 71). In practice, the first method refers to semantic neologisms or meaning extension, in which a new meaning is assigned to an existing word.

Ainu neologisms have been created by various official or semi-official groups as well as individual language advocates. Ijas (2023) points out that the former do not aim for lexical modernisation *per se*, but rather produce neologisms as a by-product of their main goal (for example a translation of a map, bus announcements, museum exhibition labels), and the latter suggest new words for their immediate communicative needs and often use these words on social media. These different actors do not coordinate their activities and there is no systematic method of collecting and publishing the created neologisms, which slows down the spread of these words (Ijas 2023). Typically, these actors have created a relatively low number of new words, at most some hundreds, but the late Mitsuru Ōta's (2022) Japanese-Ainu dictionary draft contains thousands of neologism suggestions.

As a language, Ainu is a language isolate and can be characterised as polysynthetic, agglutinative, head-marking, and incorporating. For this reason, a single Ainu word can bear a meaning that requires a whole sentence in English or Japanese, for example, *a-e-sirepakasnu*[6] translates into 'people (will) tell/told you the way'. The basic word order of Ainu is SOV, for example *menoko cikap nukar* 'the/a woman sees a/the bird', in which *menoko* is 'woman', *cikap* 'bird', and *nukar* 'to see something'. The language is often divided roughly into three varieties: Hokkaidō, Sakhalin, and Kuril Ainu. Hokkaidō Ainu, the variety mainly learned today, can be further divided into four or two regional varieties (Nakagawa, Fukazawa 2022, 253-8). The differences between the varieties are mainly phonological and lexical. The language has not been standardised and does not have a standardised orthography either. Today, Ainu is commonly written using a modified Japanese katakana syllabary or the Latin alphabet, or often both side by side.

Majewicz (2022, 122) points out how it is often emphasised that Ainu does not have a native writing system or that Ainu is a non-written

The second method refers to, for example, compounding and derivation. The third method includes borrowing words from other languages – either direct borrowings of both meaning and sound, or calques (loan translations) that borrow only the meaning but use existing resources for the sound – or creating new sound-meaning pairs *ex nihilo*. The majority of the new Ainu words coined thus far are nouns naming modern things and concepts. The most used word-coining method is the second method on Sager's list and semantic extension and borrowings have been used moderately. (For a more comprehensive review on the recent lexical modernisation efforts and neologism development of Ainu, see Ijas 2023).

6 Consisting of morphemes *a-e-sir-e-pakasnu*, or *a-* 'indefinite or passive subject person marker', *e-* 'you (2nd person singular object person marker)', *sir-* 'land; terrene; surroundings', *e-* 'an applicative prefix indicating accusative meanings in general', *pakasnu* 'to tell, to teach, to punish'. Double or single hyphens are often used to separate the personal markers from verbs and nouns for clarity. The noun *sir* 'land' is incorporated to the ditransitive verb *epakasnu* 'to teach, to tell something to someone' to create the transitive verb *sirepakasnu* 'to tell someone the way'. Ainu verbs themselves do not express tense, but the time reference can be interpreted from the context.

language. Highlighting the lack of early writing seems to support Mason's (2012) observation of the common perception of Ainu culture (and language) as a static relic of the past unable to change and evolve over time. However, the language has been increasingly documented in written form, first by non-Ainu and especially from the early 1900s by the Ainu themselves (see Ōno 2022). For instance, Yukie Chiri compiled a collection of Ainu epics with Japanese translations already in the 1920s, and an Ainu language magazine, *Ainu Times*, has been published quarterly since 1997. The survey conducted for this paper would have been impossible if Ainu was not a written language today. However, due to being a traditionally oral language, written Ainu has not been historically present in public spaces, making the language's appearance in the linguistic landscape a relatively new phenomenon.

3 Data Collection and Analysis Methods

The data used in this paper's analysis has been collected from five different locations in Sapporo and its vicinity. The two main data collection locations were the *Kamui Snow Square* (*Kamui yuki hiroba* カムイ雪広場),[7] an Ainu-themed area located in the Odori Park Site of the 2020 Sapporo Snow Festival,[8] and the Ainu Cultural Space *Minapa* (*Ainu bunka wo hasshin suru kūkan Minapa* アイヌ文化を発信する空間ミナパ),[9] located near the Namboku Line Sapporo Station subway gates. In addition, a more limited supplementary data was collected at the northernmost part of the *Chi-Ka-Ho* (*Chi・Ka・Ho* チ・カ・ホ)[10] underground passageway next to Minapa, the West Exit of Sapporo JR Station, and the 2nd floor of the New Chitose Airport,[11] located outside Sapporo but serving the Sapporo metropolitan area. All of the data collection locations can be linked with tourism; they are either overtly presented as tourist attractions, are related to transit,

7 The official English name of the area is used in this paper. However, the word *kamui* is more typically written as *kamuy*. The form *kamui* is likely a transliteration of the katakana spelling.

8 Sapporo Snow Festival (さっぽろ雪まつり *Sapporo yuki matsuri*) is an annual seven-day festival held simultaneously in numerous sites across the city. The festival was first held in 1950 and it is now a major tourist attraction drawing both domestic and foreign visitors to Hokkaidō. More information online: `https://www.snowfes.com/en/`.

9 More information online `https://www.city.sapporo.jp/shimin/ainushisaku/minapa/index.html`.

10 More information online `https://www.sapporo-chikamichi.jp/`.

11 Including the shopping area, domestic departures lobby and the area leading to the international terminal. Some normally accessible spaces were inaccessible due to COVID-19 restrictions.

or contain both elements. Minapa is managed by the Ainu Policy Division of Sapporo City (*Sapporo-shi ainu shisakuka* 札幌市アイヌ施策課) and the same Division was also in charge of a small Ainu culture exhibition available in Chi-Ka-Ho during 2020 and thus included in the data.[12] The Kamui Snow Square area was implemented by the Sapporo Tourism Organisation (*Sapporo kankō kyōkai* 札幌観光協会) and the aforementioned Ainu Policy Division of Sapporo City, with an Ainu craft shop and display run by the Ainu Women's Organisation *Menoko mosmos*. The other locations are transportation hubs as well as commercial spaces associated mainly with private companies.

The Kamui Snow Square data was collected in February 2020, during the Sapporo Snow Festival. The data covers the whole Kamui Snow Square area, including the two shops and an indoor resting area located within it. All signs containing Ainu were documented. As the data was collected for a qualitative analysis focusing on the use of Ainu, it does not cover every single non-Ainu sign, but instead includes comprehensive examples of all different kinds of signage and language combinations observable in the area. Data collection at Minapa was conducted on multiple occasions during late 2019, 2020 and 2022. The data covers all written signs located in the space, as well as documentation of the audiovisual contents shown on a media screen (collected in 2020), the touch screen menus (2022), and the *Hakoniwa Kotan* interactive table (2020). The supplementary data collected in Chi-Ka-Ho (2020; 2022), Sapporo JR Station's West Exit (2020; 2022), and the New Chitose Airport (2020; 2022) focuses on the use of Ainu. For the supplementary data, all signs including Ainu were documented, with some additional non-Ainu signs portraying the overall linguistic choices observable in the spaces. The final data used for this paper's analysis consists of 390 photographs accompanied by written notes.

The unit of analysis generally consists of single signs (or texts). Identical sign types appearing and pictured together, such as food menus consisting of multiple separate items, are analysed as a whole, taking into account the contents of all items. The units are analysed by paying attention to their location, medium, languages used, the functions of used languages, (a)symmetry in language use, font size, Ainu orthography choices, and the overall contents of the texts available in Ainu (listing words and phrases used, highlighting the use of neologisms, and making general comments). This paper does not aim to make strictly quantitative observations, such as presenting percentages or exact numbers.

12 The duration of this exhibition is unknown to the authors. The exhibition was accessible during data collection in 2020 but was no longer available in 2022.

4 Analysis

The analysis is two-fold: overall findings are discussed first, followed by two case studies focusing on the prevalent use of the Ainu phrase *irankarapte* and a weather forecast available in Ainu. Observations are discussed from a temporal perspective, focusing on 'when' Ainu is situated[13] in the linguistic landscapes observed. All example photographs provided in the analysis are taken by the authors.

4.1 Overall Findings

4.1.1 Ainu Language Use Functions and Markedness

Even though Ainu is present in all observed locations, its language use functions are rather restricted. In general, Ainu use is confined to naming, single words, and some phrases – often used in a decorative manner, suggesting Ainu's role in the LL is closer to visual semiotics than linguistic functions (see Leeman, Modan 2009; Salo 2012, 253-4). Overall, Ainu is not used instrumentally – that is, Ainu is almost completely absent from texts focusing on guidance, instructions, and other forms of conveying information other than referencing and naming. Practical information is often available in both Japanese and English, the global tourist *lingua franca*, and to a smaller extent in Chinese and Korean, reflecting the largest visitor groups by nationality in Hokkaidō (Hokkaidō Chamber of Commerce 2020, 16) **[fig. 1]**.

13 The term 'situated' is used throughout the paper as a common word not rooted in a specific theoretical framework.

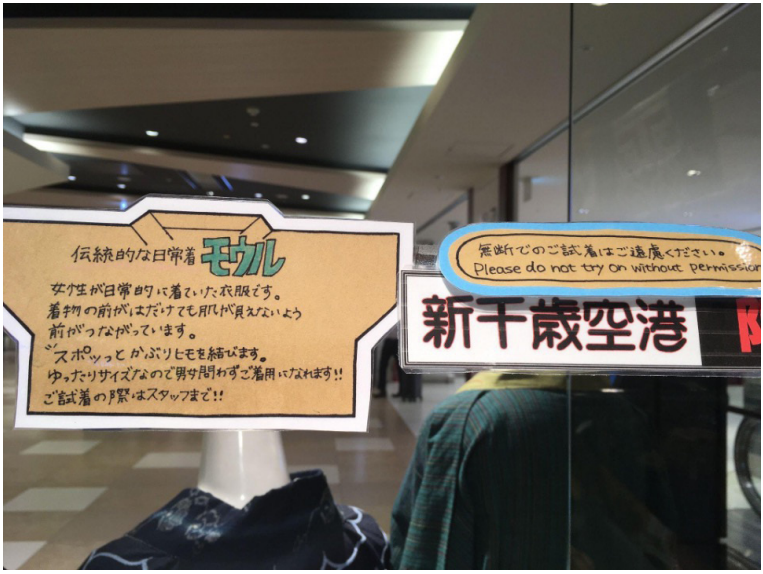

Figure 1 Traditional everyday Ainu clothing called *mour* (written here in katakana as モウル *mouru*) on display at the New Chitose Airport's Ainu craft shop. Information text on the clothing is only available in Japanese, with additional practical information (prohibition) available in Japanese and English. Ainu is only used for denoting the clothing. This kind of incorporation of single Ainu words typically referring to (traditional) Ainu items or cultural concepts as a part of otherwise Japanese (or English) texts is a typical way of using Ainu in the LL observed

Another prominent feature of Ainu use is its markedness – Ainu typically appears in contexts which are overtly linked with 'Ainuness'. On a micro-level, this means that the Ainu words used are often related to so-called traditional culture, tying language use to an (imagined) past. The Ainu words appearing in this data are most commonly linked with Ainu crafts, religion, human relations, food, performing arts, and nature. On a macro-level, Ainu language generally appears in marked spaces specifically connected with Ainu culture.

For example, while Ainu words and phrases are observable inside Kamui Snow Square's Ainu craft shop, as well as outside some food stalls serving Ainu fusion cuisine, the general signage of Kamui Snow Square follows the overall language patterns of the Sapporo Snow Festival area: texts are available in Japanese and English, with occasional use of other tourist languages. Similarly, the widespread use of Ainu visible in Minapa, specifically called a 'cultural space', and the New Chitose Airport's Ainu craft shop does not extend to the immediate surroundings of these clearly defined spaces. As a comparison, while discussing language choices at the Naha International Airport in Okinawa, Heinrich (2010, 346-7) notes the use of the local Indigenous language, *Uchinaaguchi* or Okinawan, to welcome visitors at the airport. However, this kind of usage of Ainu is not observable at

New Chitose, even though the Ainu phrase *irankarapte* is commonly known and used to express hospitality.

Ainu is almost completely absent from the West Exit of Sapporo JR Station, appearing only as single words in the Japanese, English and Chinese introductory texts accompanying the Ainu-themed *Irankarapte Statue*, the names of two pieces of art on display, and some advertisements for Upopoy and the Noboribetsu Cultural Exchange Center. Ainu is not present in any of the station's informational signage, which is mainly provided in Japanese and English **[fig. 2]**.

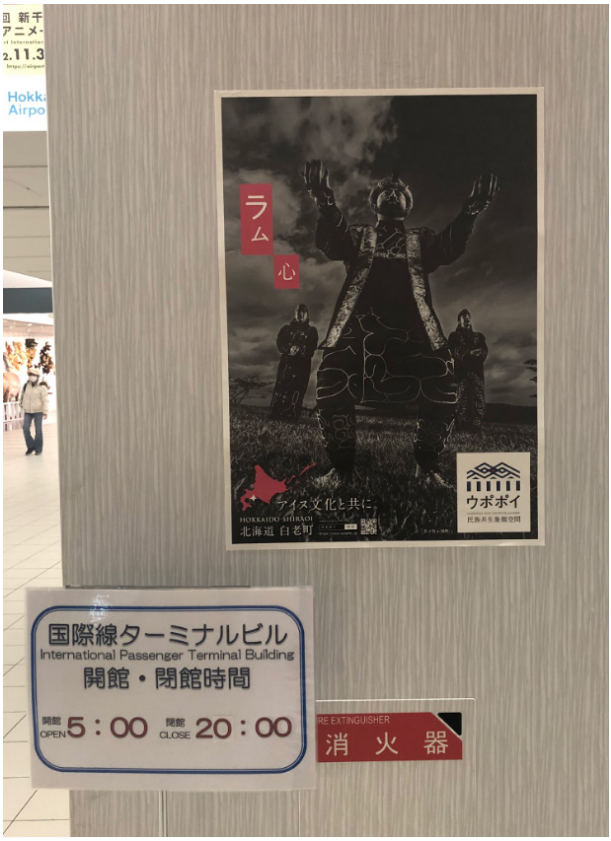

Figure 2 The Ainu word *ram* 'heart, feelings' (written here in katakana as ラム *ram*) is featured in a poster advertising The National Ainu Museum and Park Upopoy at the New Chitose Airport. The poster presents people dressed in traditional Ainu garments. Other information in the poster is only available in Japanese and, to a lesser extent, English. Surrounding information at the airport (opening hours, the location of a fire extinguisher) is only available in Japanese and English. Ainu is used here as decoration rather than a language

The lack of instrumental use, as illustrated in the examples above, might be related to the common idea that Ainu is not a contemporary language with communicative functions. Furthermore, on a more

practical level, providing instructions and other information in Ainu is likely considered pointless, as all Ainu living in Japan are assumed to use Japanese as their language of daily communication.

It should be noted that the markedness of Ainu use is likely to be expected as the data includes locations explicitly meant to introduce different aspects of the Ainu culture, often focusing on traditional cultural elements. Nonetheless, this tendency for marked use is further affirmed by the lack of Ainu in spaces not overtly connected with displaying Ainu cultural heritage.

4.1.2 Ainu Use in Product Names and Commercial Contexts

Another prevalent way of using Ainu is for naming spaces, establishments, brands and products, supporting Fukazawa's (2019) observation of commercial names as a recently emerged, contemporary context of language use. This kind of "ethnographic branding",[14] in which products are accompanied by ethnographic images (Manning, Uplisashvili 2007), can ideally work to increase the perceived authenticity of the products as well as strengthen local culture and increase the prestige of the language(s) used (Ferguson, Sidorova 2016), yet the use of an Indigenous, minoritised language such as Ainu cannot be detached from issues related to linguistic ownership, museumification, and cultural appropriation.

Indeed, while some commercial Ainu names, such as the brand *haponetay* 'mother forest' or the Ainu craft shop *epuy* 'seed, nut', are connected with Ainu culture or Ainu individuals (entrepreneurs, artists etc), there are also numerous cases in which the name bears no apparent connection with the Ainu.[15] Examples of the latter include *iyomante* イヨマンテ haskap[16] butter sandwich cookies and the *Rera* outlet mall. *Iyomante* is a religious ceremony, in which a spiritual being visiting the land of humans in the form of an animal is sent back to the world of spirits. The connection of these particular or any other cookies with *iyomante* is unclear. *Rera* means 'wind' in Ainu and there is no obvious link between the word's meaning or Ainu individuals and the mall, which houses outlet venues for big international and Japanese brands **[fig. 3]**.

14 Leeman and Modan (2009, 337-8) refer to similar processes as the "symbolic economy".

15 The same phenomenon has been noted by Fukazawa (2019, 18).

16 Blue honeysuckle (*Lonicera caerulea*).

Figure 3 The Ainu word *rera* 'wind' has been chosen as the name for an outlet mall located near the New Chitose Airport. In its advertisement, practical information (access, opening hours) is available in Japanese, English, Chinese, and Korean. In addition to Japanese customers, the mall heavily targets foreign visitors: the official website[17] is available in several different language versions (Ainu is not one of them) and discount coupons are available in the airport shuttle buses

It seems that Ainu is not only used to index Ainu culture, but also Hokkaidō as a (Japanese) location: the Iyomante cookies contain the haskap berry, a famous Hokkaidō delicacy not commonly found elsewhere in Japan, and Rera is said to be Hokkaidō's largest outlet mall. Martin (2011, 72) has previously pointed out that Ainu words and phrases are indeed used to promote a sense of 'Hokkaidōness' amongst non-Ainu, constructing a regional image distinct from the rest of Japan. However, completely disconnecting the meanings of the Ainu words from the products or brands they are used to sell or even authenticate risks separating the language from the Ainu people – their past, present, and future (see Leeman, Modan 2009 for discussion on the commodification of Chinese in Washington, D.C.'s Chinatown).

17 https://www.outlet-rera.com/english/.

While discussing the commercial use of Ainu, Fukazawa (2019, 19) gives a list of Ainu words frequently occurring in product and service names: *yukar* 'Ainu heroic songs', *utari* 'people of the same group, family, tribe, etc.', *nupuri* 'mountain', *mintar* 'yard', *kamuy* 'god', *wakka* 'water', and *pirka* 'good'.[18] While out of these only *kamuy*, *pirka*, and *wakka* are used in the names appearing in this data, the sample is too small to draw any quantitative conclusions on the popularity of different words. Examples in this data include *Kamui Snow Square* (*Kamui yuki hiroba* カムイ雪広場), *Kamuy Pita Bread Pocket Sandwich* (*Mori no kamui tokusei shikaniku pitapan* 森のカムイ特製鹿肉ピタパン), and *Pirkawakka* ('good water') beer. Although the use of mythological and spiritual names, such as *yukar* and *kamuy*, can reinforce the connection between local history, Indigenous worldviews and contemporary society, the use of such terms for commodified purposes can also be seen as deprecating the cultural and personal significance attached to these words and the complex meanings they index (Ferguson, Sidorova 2016).

As can be seen from the examples above, the data also includes hybrid names (see also Fukazawa 2019, 19), that is, names combining Ainu with other languages. Other examples include Minapa's interactive table *Hakoniwa Kotan* ハコニワコタン (Japanese *hakoniwa* 'miniature garden' + Ainu *kotan* 'village'), a projection mapping show *Kamuy Symphonia* カムイシンフォニア (Ainu *kamuy* + Italian/Japanese *sinfonia* 'symphony'),[19] and a restaurant called *Hinna Hinna Kitchen En* ヒンナヒンナキッチン炎 (Ainu *hinna hinna*[20] 'thank you' + English *kitchen* + Japanese *en* 'flame'). However, it could be argued that the Ainu word *kamuy* 'spiritual being' is already becoming a Japanese loan word denoting Ainu deities **[fig. 4]**.[21]

18 Presented with English translations as provided by Fukazawa 2019.

19 *Shinfonia* シンフォニア is a commonly used loan word in Japanese.

20 The phrase *hinna hinna* is frequently used in the popular manga and anime series *Golden Kamuy* and is therefore likely familiar to some visitors. This may have affected the choice to use the phrase for naming the establishment.

21 For example, in Minapa's touchscreen explaining different Ainu cultural aspects, on the page about *kamuy* カムイ, the word is first given a Japanese translation of *kami* 神 'god, deity, kami' and then under it there is a subheadline *Ainu minzoku no kamui* アイヌ民族のカムイ 'the *kamuy* of the Ainu people'. *Kamuy* is also used as-is throughout the Japanese text instead of a Japanese translation. Recently the word has also gained recognition due to the vastly popular *Golden Kamuy* manga and anime series featuring Ainu main characters.

Figure 4 *Iyomante* イヨマンテ cookies for sale at the Kamui Snow Square. Additional information about the product is only available in Japanese. *Iyomante* is a religious ceremony in which a spiritual being visiting the land of humans in the form of an animal is sent back to the world of spirits. The use of spiritual names for commercial purposes can be perceived as devaluing their cultural significance

4.1.3 Contemporary Use of Ainu Scripts

As mentioned, Ainu does not have a standardised orthography and it is commonly written using two very different scripts: the (modified) Japanese katakana script or the Latin alphabet. As there are no official guidelines, script choice is mostly a matter of personal preference, though katakana is claimed to be more widely used by the speakers of Japanese, including the Ainu themselves (Ōno 2022, 429). This is also reflected in the LL, as both of these scripts are present in the data, but they are often used in rather distinct contexts: katakana is typically used when writing Ainu together with Japanese, whereas the Latin alphabet appears together with English and other languages, such as Chinese.[22] This is clearly linked with issues of accessibility: a reader not proficient in Japanese is presumably not able to read any of the Japanese scripts either. However, the Latin alphabet is also used in many product names and other commodified contexts as well as for naming pieces of art, even though the main

22 The data also includes some examples of Ainu words appearing as a part of Korean texts and written using the Korean hangul script. However, outside this very specific context, hangul is not used for writing Ainu.

target audience is likely proficient in Japanese. These kinds of script choices are likely due to personal preference, especially in the case of individual Ainu artists naming their works. For example, these two scripts offer very distinct aesthetics **[fig. 5]**.

Figure 5 Part of a menu outside a food stall at Kamui Snow Square. All three items include Ainu in their names, written in katakana for the Japanese-speaking audience and in the Latin alphabet to accompany English. Note that the English version "Ainu mom's home made salmon soup" does not contain any Ainu, even though the Japanese version includes the Ainu words *hapo* 'mom', *chep* 'fish', and *ohaw* 'soup'

The lack of standardisation not only leads to using different scripts, but also to creativeness within their use. An extreme case of variation can be observed in the numerous ways of writing *pirka* 'good', a commonly used and recognised Ainu word. Besides the common katakana variants ピリカ (*pirika*) and ピリカ (*pirka*), the latter using a modified symbol for writing /ɾ/, and even a version utilising the Japanese hiragana syllabary (ぴりか), the Latin alphabet variation *pirka*/*pirika*/*pirica*/*pilica* makes it difficult to recognise the word, especially because <c> is typically used to mark alveolar affricates in Ainu. This degree of variation is most commonly observed in commercial use.

Overall, it seems that the use of Ainu in tourism contributes to the LL by highlighting the differences between and variation within the two scripts commonly used to write Ainu. The Latin alphabet is now adopted especially for the needs of readers not proficient in Japanese. While the use of the Latin alphabet for writing Ainu is not a new phenomenon, this specific use is an example of the language adapting to changing, contemporary needs.

4.1.4 The Use of Ainu Neologisms

In general, Ainu use in the data shows very few examples of neologisms. Instead, words related to traditional culture dominate the Ainu LL. Issues related to the spread of neologisms as well as the general lack of vocabulary to denote many modern concepts is a practical problem likely contributing to the scarce instrumental use of Ainu. For example, it is difficult to tell people to keep social distance and wear face masks to prevent the spread of COVID-19, if you do not have the words for 'social distance', 'face mask', or 'COVID-19'.

Newly coined words can mainly be observed in advertisements and other texts related to the Ainu Museum and Park Upopoy, which itself is a neologism.[23] Neologisms appearing mostly in this specific context is understandable, since a dedicated working group has been established for systematically developing the much-needed new words and terminology for the Upopoy facilities (Satō 2021; Ijas 2023). An example is the official name of the National Ainu Museum: *An-ukokor aynu ikoromakenru* アヌココロ アイヌ イコロマケンル, lit. 'A house we have together that contains Ainu treasures'.[24] Only time will tell whether these recently created neologisms will spread to wider use and appear in the LL outside their original contexts.

Besides neologisms connected to Upopoy, product names showing creativity by combining Ainu words with words from other languages can also be interpreted as coining new words, perhaps in an attempt to replace some missing modern Ainu vocabulary. *LILIYAN*, a lip treatment made of deer tallow, is not a combination of two languages but still an especially creative product name. The product label explains the name to mean *michishio* 満ち潮 in Japanese, or 'high tide' in English. The name is assumably a word play of the phrase *rir yan* 'the sea waves rise ashore', composed of the words *rir* 'sea waves' and *yan* 'to rise ashore'. No confirmation could be found in documented Ainu language sources on whether the phrase is actually used in the meaning of 'high tide' in any Ainu variety. Nevertheless, the combination of orthographic play with <l> and <r> and the ambiguity of meaning shows creative use of language, and the word might also be an attempt to create a neologism with the meaning of 'high tide'.

Other than the neologisms discussed above, there are two cases of modern language use that stand out in the data: the phrase *irankarapte*, and the neologisms used in Minapa's weather forecast,

23 *Upopoy* literally means 'a place/time to sing *upopo* (a type of circular canon)', but here it is used as a nickname of the National Ainu Museum and Park. The name is officially explained to have the meaning 'singing together in a large group'.

24 *An-* 'indefinite or passive subject person marker'; *ukokor* 'to have together'; *aynu* 'Ainu'; *–ikor* 'treasure'; *–oma* 'to contain something'; *–kenru* 'house'.

which is also the only example of instrumental Ainu use in the data. These are discussed below as separate case studies.

4.2 *Irankarapte* – Let Us Begin with Hello?

One of the most salient Ainu words found in the data is the phrase *irankarapte*. The phrase, often translated as 'hello', has been traditionally used by some Ainu varieties' speakers, and was popularised for the larger audiences especially by the governmental Irankarapte Campaign launched in 2013. The original aim of the campaign was to coin and spread the phrase as a "keyword of Hokkaidō's hospitality, similar to *aloha* in Hawaii or *mensoore* in Okinawa" (Ainu Policy Promotion Headquarter, no date).

Originally *irankarapte* was used as a formal salutation by men, though some Sakhalin Ainu Rayciska speakers have been using it as an everyday greeting (Tamura 1996; Ōta 2022, 324). The Irankarapte Campaign has especially promoted the meaning 'hello', that is, a generic greeting that the Ainu language did not have traditionally. The campaign has been met with a mixed reception. The phrase *irankarapte* has not been used in all varieties, and therefore it has been difficult for Ainu from those regions to accept it as 'the' representative expression of the Ainu language.[25] Furthermore, the campaign promotes a probable misinterpretation of the literal meaning of the word.[26] In addition, according to Wataru Takeuchi – the former head of the secretariat of the Hokkaidō Ainu Association – Ainu themselves were not properly heard before the campaign was initiated (Narita, Kawamoto 2022, 20).[27] However, some view the campaign as a welcomed initiative to promote Ainu use in modern society (Fukazawa 2019, 21), though it remains to be seen whether the still ongoing campaign truly expands contemporary Ainu language use, or ends up strengthening stereotypes (Kitahara 2018, 199-200), and portraying Ainu culture as nothing more than a past tradition (lewallen 2016, 62-3).

25 The phrase has not been used especially in the Eastern Hokkaidō varieties and in some parts of the Hidaka area. Some speakers recognise the phrase, but in their own varieties the form is slightly different, for instance, Obihiro region's *inankarapte* and Sakhalin Ainu's *irankarahte* (Hattori 1964, 335).

26 Ainu language teacher and advocate Shigeru Kayano, the first Ainu to become a member of the House of Councillors, analysed the phrase to mean 'let me gently touch your heart', but not all linguists share this interpretation (Narita, Kawamoto 2022, 22; Ōno 2022, 426). For example, Tamura (1996) analyses the word simply to mean 'let me greet you'. Despite this, the campaign adopted Kayano's interpretation.

27 According to Takeuchi, when the Ainu representatives were invited to a meeting and stated that the slogan's interpretation was wrong, it had no effect on the campaign contents since "the bureaucrats" had already grown fond of the slogan and printed it on their business cards (Narita, Kawamoto 2022, 20).

A prominent example of the use of *irankarapte* in the LL is found in the Chi-Ka-Ho underground passageway. The space features eight poles welcoming guests to Sapporo in different languages.[28] While the other language versions are translations of the phrase 'welcome to Sapporo' (*yōkoso Sapporo he* ようこそ札幌へ), the Ainu pole features asymmetrical language use in the form of just *irankarapte* (written in katakana as イランカラプテ *irankarapte*, making the Ainu version invisible to a reader not proficient in the Japanese scripts). Here *irankarapte* is used for expressing "Hokkaidō's hospitality", in line with the Irankarapte Campaign's aim and the phrase's common contemporary use. However, it should be noted that Ainu does have a phrase used to welcome someone (*eci-kopuntek*),[29] meaning that symmetrical use of Ainu to welcome visitors to Sapporo would also have been a viable option. The phrase *eci-kopuntek* even appears outside an Ainu craft shop at the New Chitose Airport, on a sign advertising a Line stamp collection[30] featuring the historical Ainu chieftain Shakushain.[31] While this is not explicitly stated, the positioning of the advertisement suggests that it is also used to welcome visitors to the shop. From a touristic perspective, using the well-known phrase *irankarapte* to welcome visitors, as done in Chi-Ka-Ho, is more likely to be "comfortably exotic" (Kallen 2008, 282), rather than too incomprehensible **[fig. 6]**.

28 Japanese, Ainu, English, German, Chinese, Russian, Korean, and Indonesian.

29 Tamura (1996) lists the word *kopuntek* 'to be delighted to meet someone, to welcome someone' and the phrase *eci-kopúntek* 'Welcome!' (lit. 'I welcome you') in her dictionary. This phrase can be used by anyone; however, it is less formal and polite than *irankarapte*.

30 Line is Japan's most popular instant messaging application. Line stamps (or stickers) are images which can be sent to the chat similarly to text messages. Different stamp collections can be downloaded from the Line Store. The Shakushain stamp collection features a variety of Ainu phrases accompanied by the character of Shakushain, portrayed as a cute elderly man with a large beard and dressed in traditional Ainu clothing.

31 Shakushain was an Ainu leader, who led the Ainu to war against the trade-dominating Wajin in Hokkaidō in 1669-72. The war is known as Shakushain's Revolt.

Figure 6
Two of the poles found in Chi-Ka-Ho. The Japanese text is 'welcome to Sapporo', the Ainu text is *irankarapte* イランカラプテ. Here the Ainu phrase is used along the aims of the Irankarapte Campaign as a generic expression of Hokkaidō's hospitality. While an established Ainu expression for welcoming someone exists, a more direct translation of the Japanese text was not used in this case

Other examples of *irankarapte* observable in the data include the Irankarapte Statue,[32] located at Sapporo JR Station's West Exit, the interactive *Irankarapte Quiz* in Minapa,[33] various promotional materials and products related to the Irankarapte Campaign, and the decorative use of the phrase in different commercial products and advertising. While links to the Irankarapte Campaign can be found, in some instances *irankarapte* is also used as a purely tokenistic phrase likely known by people not otherwise familiar with the Ainu language. For example, the Irankarapte Quiz, mixing Ainu and English together in its name, has no clear connection with the common traditional or contemporary meanings of the phrase (see Tamura 1996).

The widespread use of *irankarapte* can be viewed as both an attempt to modernise and expand Ainu language use in today's society, but also as an example of reducing a complex language to a single

32 According to the introductory text accompanying the statue, the "monument has been erected in hono[u]r of the Ainu People as a part of that [Irankarapte] campaign".

33 The quiz focuses on Ainu culture and language. It can be accessed through touch screen menus in Minapa and its questions occasionally also appear on the space's media screen with changing audiovisual content.

catchphrase, suggesting Ainu cannot be used or does not need to be used like other languages. In the first sense, the meaning extension of *irankarapte* to 'hello' and for expressing hospitality is an example of lexical modernisation, a "new style" (Fukazawa 2019, 21) or "transformed usage" (Ōno 2022, 427), bringing the language to contemporary everyday use.[34] The second interpretation suggests that it is enough to know just one word of Ainu, making it impossible to use the language similarly to so-called 'modern languages'. A common challenge for all language revitalisation is that the language to be revitalised will change in the process. For some people, many changes – such as the introduction of new domains and new vocabulary – pose a threat to the authenticity of the language. They feel that the language becomes artificial and inauthentic if new meanings and words are deliberately introduced (see Hinton, Ahlers 1999; Dołowy-Rybińska, Hornsby 2021). The new way of using *irankarapte* seems to have become such an issue: Fukazawa (2019, 21) believes that it might be a problem for "those who prefer a more traditional approach to the Ainu language". Ōno (2022, 427) also refers to criticism from Ainu individuals not comfortable with ignoring the phrase's traditional use and regional differences. The Irankarapte Campaign's issues related to Ainu agency (Narita, Kawamoto 2022, 20) further complicate questions of linguistic authenticity. Regardless, both "hello in Ainu is *irankarapte*" and "*irankarapte* literally means let me gently touch your heart" are now widely spread interpretations, even though the campaign itself has acknowledged the related disputes on its official website.[35]

4.3 *Tanto nisoro nekon an?* – Ainu Weather Forecast

In the LL of the spaces observed, Ainu is strikingly absent from all instrumental use such as guidance or informational texts. The only example available in this data is the multilingual Ainu weather forecast located in Minapa. It also serves as an example of the use of neologisms and contemporary use of Ainu in a modern, urban setting (albeit located in a marked Ainu Cultural Space). The weather forecast can be seen on both the small touch screens and on the large media screen at the northern end of the plaza. The forecast is multilingual with Ainu-English and Ainu-Japanese displays. Both versions

34 Ōno (2022, 426) has also referred to the contemporary use of *irankarapte* as an example of "dialect mixing", indicating the nowadays common situation in which different regional dialects are mixed together by the same speaker. This phenomenon is explained by different (possibly cumulating) reasons such as the study of multiple dialects or learning words and phrases on the Internet.

35 `http://www.irankarapte.com/content/outline.html`.

feature Ainu as the main language in terms of positioning and font size, and the main variety used is the Ishikari variety.[36] Ainu is written using both katakana and the Latin alphabet **[fig. 7]**.

Figure 7 The multilingual weather forecast with Ainu as the first language on the media screen. Pictograms are used to explain the weather terminology, which is only available in Ainu (written in both katakana and the Latin alphabet). This is an example of the flexibility of weather as a theme while creating public use for a non-modernised language. The date and day of the week is available in Ainu (written in katakana) and Japanese The place names pictured here are in Japanese (written using the Japanese kanji characters and the Latin alphabet)

Neologisms for the weather forecast have been created under the supervision of Mokottunas Kitahara, associate professor of Ainu and Indigenous Studies at Hokkaidō University.[37] One of these is the phrase used to enquire about the weather conditions: *tanto nisoro nekon an?* (lit. 'how (*nekon*) is (*an*) the sky (*nisoro*) today (*tanto*)?'). In addition, the forecast uses calques (loan translations) from Japanese as Ainu names for the days of the week. For example, Sunday in Japanese is *nichiyōbi* 日曜日, literally 'sun-day of the week', and the Ainu version used on the

36 Ishikari Ainu is a variety spoken in a wide area along the Ishikari River – the largest river in Hokkaidō – and its tributaries (excluding Chitose River). It is part of the larger northeastern variety group of Hokkaidō Ainu.

37 More information available on Minapa's official website `https://www.city.sapporo.jp/shimin/ainushisaku/minapa/documents/ainugoitiran.pdf`.

touch screens is *tokapcup to*, lit. 'sun-day'.[38] The Ainu name for Iwamizawa city, *Ikusunpet emko* (lit. 'upstream of (*emko*) the river (*pet*) on the other side (*ikusun*)'),[39] is also a neologism. The majority of place names in Hokkaidō originate from Ainu, but Iwamizawa is a Japanese settlement with no Ainu background, and thus has a name of purely Japanese origin. Interestingly, the new Ainu name for the place is not a translation of the meaning of the Japanese name Iwamizawa but is rather based on Ainu knowledge of the place's geography. The weather theme itself is very flexible, as even languages that have not been modernised typically have vocabulary for expressing meteorological events. This shows that, while lack of modern lexicon does affect a language's use, it does not mean that languages such as Ainu could not be used in the public spaces for contemporary purposes **[fig. 8]**.

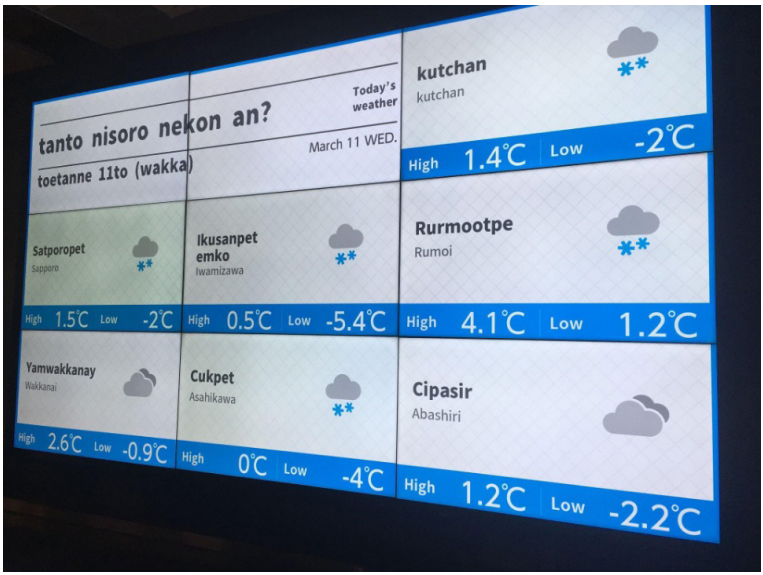

Figure 8 Another view of the multilingual weather forecast on the media screen. Ainu is the first language, accompanied by English. Note that the prominent place names are Ainu toponyms, not their commonly used Japanese versions, which are provided below the Ainu names in a smaller font. The date and day of the week is available in Ainu and English. When used together with English, Ainu is written exclusively with the Latin alphabet

While most of Hokkaidō's toponyms originate from Ainu, these Ainu names are rarely seen in Hokkaidō's linguistic landscapes. When the

38 *Tokapcup* 'the sun' is not a word used in the Ishikari variety, in which *tokam cup kamuy* is used instead (Hattori 1964, 222). However, on the media screen, the Ishikari variety is used in the abbreviated form *tokam*.

39 The name of the river is *Ikushunbetsugawa* 幾春別川 in Japanese.

Wajin settlers started to create maps of Hokkaidō, they modified the Ainu toponyms to suit Japanese phonology, and in many cases also abbreviated the original names (see for example the extensive toponymic material compiled by Hokkaidō Prefecture 2021). These names are usually written with Japanese *kanji* characters, which have typically been chosen to reflect the pronunciation of the name, thus effectively disguising their original meanings.[40] The internationally used versions written in the Latin alphabet are transliterations of the Japanese names. While Ainu place names are often given as an example of living Ainu legacy in Hokkaidō, this typically refers to the Japanese toponyms. However, in the case of Minapa's weather forecast, the original Ainu toponyms are displayed side by side with the Japanese versions of the names.[41]

5 Conclusions – 'When' is Ainu Situated?

The focus of this paper is to discuss 'when' the Ainu language is situated in the (tourist) linguistic landscapes of Sapporo and its vicinity – its visible functions as the language of past, present, and future. Emphasis is placed on the possible implications on the contemporary use and revitalisation of Ainu as a modern language of Japan. As an overall observation, Ainu is used mainly in specifically marked contexts related to Ainu culture or linguistic commodification. This use does contribute to the contemporary maintenance of the Ainu language through ways such as the creation and use of neologisms, creative use of the language in commercial names, and the utilisation of separate orthographies for different audiences brought to Hokkaidō as a consequence of the current globalisation processes and related tourism. However, a lot of Ainu use observed in the data can be considered purely symbolic or decorative, and the lack of instrumental use paired with prevalent use of Ainu as a part of displaying traditional aspects of the Ainu culture does bind the language tightly to the past, portraying it unlike the 'modern languages' Japanese and English, which are utilised in a full variety of contexts.

40 For example, many place names containing the Ainu word *nay* 'river' are written using the kanji character 内 'inside', giving no consideration to the etymologies of these toponyms.

41 The original toponyms refer here to the Ainu toponyms written in a way that more accurately reflects the Ainu pronunciation (in modified katakana or the Latin alphabet), compared to the currently used Japanese versions. The names are also displayed in their full form, since Wajin had a tendency to abbreviate the names, either by cutting off the beginning or the end of the Ainu name. For example, the cities that are commonly known as Sapporo and Wakkanai, are called Satporo*pet* and *Nam*wakkanay in Ainu.

Even though "being visible may be as important for minority languages as being heard" (Marten, Van Mensel, Gorter 2012, 1), all visibility is not the same for language maintenance. While all use of Ainu in the linguistic landscapes challenges common assumptions of Japanese monolingualism, portraying Ainu as nothing but single words and set phrases may diminish its status as a complex linguistic system, a 'real' language of Japan (see Blackwood, Costa 2020, 131 for discussion on the use of the Scots language). This raises a question of whether this kind of use actually supports language vitality or on the contrary disconnects these single words and their marked use from the language as a whole (see Salo 2012, 256 for similar discussion in the Sámi context). Leeman and Modan (2009, 347) have also noted that "language in the linguistic landscape is not always a question of ethnolinguistic vitality, or even of language use", referring to the aesthetic or decorative use of language.

Using Ainu in commercial contexts or linguistic commodification, a phenomenon linked with the globalised new economy (Heller 2003), also contributes to the creation of linguistic landscapes and the exposure of Ainu in public spaces. Playful use of the language shows that Ainu is not a static museum object but can instead be used creatively to express oneself. On the other hand, there are examples of Ainu being used in commercial contexts as mere decoration with little thought given to the meaning of the words. It seems that Ainu is not chosen as the language to be commodified only for its indexicality to the Ainu culture and worldview, but also to index "the imaginative geography" (Manning, Uplisashvili 2007, 638), which is the past and present of multiethnic Hokkaidō as a part of Japan, an imagined 'monoethnic' nation. Using Ainu creates a unique 'brand' for Hokkaidō (see Ferguson, Sidorova 2016 for discussion on the commodification of the Sakha language) though, echoing Martin's (2011, 72-3) concerns, future will show whether this "shallow awareness of Ainu culture" will lead to true widespread acceptance of Ainu identities as a part of Hokkaidō's past, present, and future.

Questions related to cultural and linguistic commodification are also discussed within the Ainu community. Recently, the Akan Ainu[42] have established a consulting organisation *Akan Ainu Consuln* (阿寒アイヌコンサルン),[43] which offers guidance on the appropriate use of Ainu cultural elements and language for commercial purposes, thus also providing Ainu individuals with Ainu language proficiency a

42 The Akan Ainu Association (*Akan ainu kyōkai* 阿寒アイヌ協会), Akan Ainu Culture Preservation Society (*Akan ainu minzoku bunka hoz onkai* 阿寒アイヌ民族文化保存会) and Akan Ainu Industrial Arts Association (*Akan ainu kōgei kyōdō kumiai* 阿寒アイヌ工芸協同組合) are collaborating with the Consuln.

43 For more information, see the Akan Ainu Consuln's official website `https://a-ainucon.com/`.

chance for some economic gain. However, to the authors' best knowledge, there is currently no published research on how Ainu individuals view linguistic commodification and even general studies on language attitudes remain insufficient. As it seems that the commercial sphere is indeed one of the contemporary contexts for Ainu use, supporting prior observations made by Martin (2011) and Fukazawa (2019), future research should look more closely at the commodified use of Ainu and its implications by clarifying questions related to motivations of those using the language, as well as the reception of the brand and product names amongst the Ainu. Furthermore, more general research focusing on Ainu views on the use of the Ainu language in public spaces is needed in order to recognise and address possible issues.

Although possible community concerns over issues of linguistic authenticity should not be brushed aside, all living languages must change to adapt to the contemporary needs of their users. Like the use of the phrase *irankarapte* shows, the linguistic landscape can also reflect ongoing discussions within the language community. As the linguistic landscape does not merely mirror the sociolinguistic realities of the surrounding society but also works to construct them, it is likely that other neologisms will spread through their use in the public space. Since the creation of new Ainu lexicon has so far been uncoordinated and the spread of neologisms has proved difficult, the use of contemporary Ainu in the linguistic landscape could help disseminate knowledge and vocabulary to wider audiences, as has been attempted with the Ainu weather forecast located next to one of Sapporo's busiest transportation hubs.

Despite its precarious status in terms of governmental support, the Ainu language is still learnt and used by contemporary new speakers with varying degrees of proficiency. The lack of so-called 'native speakers' does not mean that Ainu should be viewed as a cultural relic or an intangible museum object. The linguistic landscape could be utilised to show that Ainu can be used in a variety of functions, thus providing support for those learning the language with communicative aims. Ainu visibility in the linguistic landscape could also inspire further Ainu use in the public, possibly also encouraging those who are hesitant to use the language outside the private sphere. However, the public spaces explored in this paper cannot fulfil the wishes of those Ainu calling for the creation of safe spaces for Ainu language use, as they are not controlled by the Ainu themselves. Furthermore, the current positioning of the language as a linguistic decoration to accompany descriptions of tradition can prove problematic and reinforce stereotypes of a 'dying language'. Assumptions of Ainu as a 'language of the past' not suitable for contemporary instrumental use do not merely reflect the linguistic hierarchy of modern Japan, but rather help sustain it.

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This book is based on a selection of papers presented at the Second Conference on the Endangered Languages of East Asia (CELEA2), hosted by the Department of Asian and North African Studies at Ca' Foscari University of Venice on 3-5 May 2022. In each chapter, the authors discuss the topic of 'time' in relation to different aspects of a number of East Asian languages that are rarely represented in typological studies (Nivkh, Nighvng, Chalkan, Khitan, Ainu, Sakizaya, Kaxabu, Ryukyuan languages, Hachijō, Manchurian, and Yu). The volume will appeal to scholars with an interest in the endangered languages of East Asia, and, more generally, will serve as a reference work in descriptive, historical and comparative linguistics, sociolinguistics, discourse studies, and lexicography.

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