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霧台魯凱語的空間概念研究

Spatial Conceptualizations in Budai Rukai

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Abstract

How space is conceptualized in different languages has long been considered a highly researchable topic in various academic fields. However, studies exploring the spatial conceptualizations in Austronesian languages are relatively less than those investigating the same topic in Indo-European or other renowned languages. As one of the main offshoots of Proto Austronesian, spatial conceptualizations in Budai Rukai has not been thoroughly investigated yet. Therefore, the present thesis aims to study the spatial conceptualizations, especially spatial expressions and motion events in Budai Rukai, a Formosan language spoken in the mountainous areas in Pingtung of Taiwan.

On the one hand, a detailed investigation into spatial expressions in Budai Rukai is conducted, including locative constructions with various locative nouns and cardinal directions as predicates and spatial prefixes. With respect to locative nouns, five types of Regions are discussed in terms of Zlatev's (1997) classification. Data show that locative nouns of each type of Region can all be prefixed by *i-* and *sa-* to be predicates in locative constructions, which convey a slightly different meaning only in the UP and DOWN and the IN and OUT Regions. In addition, another prefix *tali-* 'direction' can be used with *i-* to denote a broader region of the Ground. Regarding cardinal directions, Budai Rukai exhibits the sun model, similar to some Formosan languages such as Saisiyat, Isbukun Bunun, Paiwan and Squliq Atayal. Lastly, four spatial prefixes, *mu-*, *i-*, *pu-* and *pi-*, attested in Thao, Puyuma and Paiwan by Blust (2003) are shown to be highly productive in Budai Rukai. Whereas the first two prefixes indicate motion and location respectively, the latter two prefixes indicate the causative of motion and location. In particular, the *mu-* prefix of motion can be classified into five types in Budai Rukai based on its morphological formation and semantic functions.

On the other hand, this research also examines the motion events in Budai Rukai Frog narratives based on viewpoints from both Huang and Tanangkingsing (2005) and Slobin (2004). Seven narratives running to 45 minutes and 39 seconds for a total of 900 Intonation Units (IUs) formed the database. Firstly, our data show that Budai Rukai is more path-salient than the other six Austronesian languages examined in Huang and Tanangkingsing (2005) because Path verbs are frequently used in motion clauses, as either the only verb or one of the verbs in serial-verb construction. Secondly, Budai Rukai is also a purely verb-framed language from Slobin's (2004) perspective because it passes four diagnostic tests for verb-framed languages. The results show that these two perspectives echo with each other because verb-framed languages are path-salient.

Keywords: spatial conceptualizations, Budai Rukai, motion events, Formosan languages, Austronesian languages

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摘要

空間概念如何在不同語言中表達，一直是許多學術領域長期關注的主題。然而，相較於印歐語系等為人知悉的語言來說，較少研究著重在探討南島語的空間概念。其中，霧台魯凱語作為古南島語的主要分支之一，對其空間概念的研究也未曾在過往文獻中所提及。因此，本論文欲探討霧台魯凱語的空間概念，特別著重在跟空間相關的用法及其在動作事件的描述。

首先，本文的第一部分討論了跟空間相關的詞彙與詞綴，包含地方名詞 (Locative noun)、基本方位 (Cardinal directions) 等詞彙及空間詞綴 (Spatial prefix)。地方名詞按照 Zlatev (1997) 對於區域 (Region) 的分類，分成了五大類。每一類地方名詞皆可搭配前綴 *i-* 及 *sa-* 一同使用，並作為方位句中的述語。兩者只在上/下區域 (UP and DOWN Region)及裡/外區域 (IN and OUT Region) 才會產生差異。除此之外，另一個與空間相關的前綴 *tali-*「方向」也可與前綴 *i-* 搭配使用，指涉背景 (Ground) 中較寬廣的一個區域。跟賽夏語、郡群布農語、排灣語和賽考利克泰雅語等臺灣南島語相似，霧台魯凱語的基本方位詞之語意來源與太陽的東昇西落相關。最後，第一部分也討論了四種在 Blust (2003) 的研究中所提及的空間詞綴，如 *mu-, i-, pu-, pi-*，這些詞綴常見於排灣語、邵語及卑南語中，在霧台魯凱語的能產性 (productivity) 也相當高。前兩個詞綴 *mu-*及 *i-*分別與動態與靜態空間相關，後兩個詞綴 *pu-*及 *pi-*則與動態和靜態空間的使役語意相關。在這四個詞綴中，更可將 *mu-*依照構詞和語意的差異分成五小類。

基於 Huang 和 Tanangkingsing (2005) 及 Slobin (2004) 兩篇研究的觀點，本論文的第二部分進一步探討霧台魯凱語青蛙故事語料中的動作事件 (Motion event)。七個故事長度共計 45 分 39 秒，涵蓋 900 個語調單位。按照前者的分析架構，霧台魯凱語比許多 Huang 和 Tanangkingsing (2005) 所分析的南島語更為路徑顯著 (path-salient)，因為在故事中，跟動作事件相關的子句常使用路徑動詞 (Path verb) 作為唯一的動詞或作為連動結構中其中之一個動詞。按照後者的分析架構，霧台魯凱語可被視為相當典型的動詞框架化語言 (Verb-framed language)，因為他通過了 Slobin (2004) 所提供的四個對動詞框架化語言的診斷測試。從本篇的研究結果顯示，兩篇研究的觀點相互吻合，因為動詞框架化語言一定是較為路徑顯著的語言。

關鍵詞：空間概念、霧台魯凱語、動作事件、臺灣南島語、南島語言

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List of Abbreviations and Symbols

Abbreviaitons

1S	First person singular	P	Plural
1P	First person plural	PAST	Past tense
2S	Second person singular	PART	Particle
2P	Second person plural	PASS	Passive voice
3S	Third person singular	PFV	Perfective
3P	Third person plural	PN	Proper noun
ACT	Active voice	PROG	Progressive
COP	Copula	PROX	Proximal
DEF	Definite	PRS	Present tense
DIST	Distal	POSS	Possibility
EX	Exclusive	RED	Reduplication
FEM	Feminine	REFL	Reflexive
FIN	Finite	STAT	Stative
FIL	Filler	TOP	Topic
FS	False start	VIS	Visbile
FUT	Future tense		
GEN	Genitive case	**Symbols**	
IMP	Imperative	.	Transition: Final
IN	Inclusive	,	Transition: Continuing
INV	Invisible	?	Transition: Appeal
LOC	locative	\	Falling pitch
MASC	Masculine	/	Rising pitch
MOD	Modal	_	Leveling pitch
NEC	Necessity	==	Lengthening
NEG	Negator	…(N)	Pause (> 0.7 sec)
NFIN	Nonfinite	…	Pause (0.3-0.6 sec)
NMLZ	Nominalizer	..	Pause (< 0.2 sec)
NOM	Nominative case	(0)	Latching
OBL	Oblique case		

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Chapter 1 Introduction

1.1 Motivation and Research Questions

Spatial conceptualizations refer to how people with different languages conceptualize the indispensable cognitive domain, space, in their everyday lives. Since people with different languages may express spatial relations, spatial reference or spatial concepts in various ways, it has always been a popular research topic in different academic fields such as anthropology, psychology, philosophy, and linguistics. As a linguistic research, this study aims to explore how spatial conceptualizations are expressed in Budai Rukai, one of the Austronesian languages of Taiwan.

Studies exploring the spatial conceptualizations in Austronesian languages are relatively less than those investigating the spatial conceptualizations in Indo-European or other renowned languages, let alone Formosan studies related to this research topic. Previous Formosan studies addressing this issue include Huang (2001, 2002a), Tanangkingsing (2002, 2004), Li (2004), Wu (2004), Huang and Tanangkingsing (2005), Jiang (2006), Rau, Wang and Chang (2012), Chang (2018). Among these studies, a total of only seven Formosan languages have been investigated in terms of spatial conceptualizations, focusing on either description of spatial reference or motion events. Since there are 16 Formosan languages officially recognized in Taiwan[1], more attention should be paid to those unexplored Formosan languages. Budai Rukai is the main focus of the present paper partly because it is one of the Formosan languages that lacks the focus/voice system and partly because it is one of the main offshoots of Proto Austronesian languages. Therefore, this thesis attempts to fill this gap and address the following research questions:

[1] There are in fact more than 16 Formosan languages in Taiwan from a linguistic perspective. For instance, Siraya is a Formosan language, used to be spoken in plains in Tainan, a city in the southern part of Taiwan, but is only recognized as an official language by Tainan city government now.

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(i) How are locative nouns, cardinal directions and spatial prefixes used in Budai Rukai?
(ii) What morphosyntactic patterns in motion events are expressed in Budai Rukai narratives?
(iii) Is Budai Rukai a verb-framed or satellite-framed language based on Talmy's typology of motion events and does it align with the distinction of path-salient and manner-salient languages from Huang and Tanangkingsing's perspective?

1.2 General background of Budai Rukai

Rukai is one of the Formosan languages in the Austronesian language family. Before delving into the subgrouping and distribution of Rukai languages, it is worth noting the origin and the subgrouping hypotheses of the Austronesian language family.

The Austronesian language family has been considered to be one of the largest language families in the world with more than 1200 languages and approximately 270 million speakers. The speakers range from the Easter Island in the east to Madagascar in the west and from Taiwan in the north to New Zealand in the south (Tryon, 1995). Among these areas, Taiwan has been argued by most scholars as the homeland of Austronesian language family. Through Linguistic Paleontology, the Migration Theory and Toponymy, linguists are able to speculate the origin of a language family in the early days (Li, 2001). For instance, Blust (1985) argued that Taiwan is the homeland of the Austronesian family primarily based on two pieces of evidence. First, the linguistic features of Formosan languages in Taiwan are the most diverse and complicated within the whole Austronesian language family. Second, cognates of Austronesian languages show that words of plants or animals are highly associated with the terrains or climates in Taiwan.

In the past forty-five years, a large number of studies have been investigating the subgrouping of Austronesian languages (Blust, 1999; Li, 1985; Ross, 2009). One of the most widely accepted subgroupings is hypothesized by Blust (1999), as illustrated in

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Figure 1.1. Formosan languages are considered to be at the same level as other Malayo-Polynesian languages.

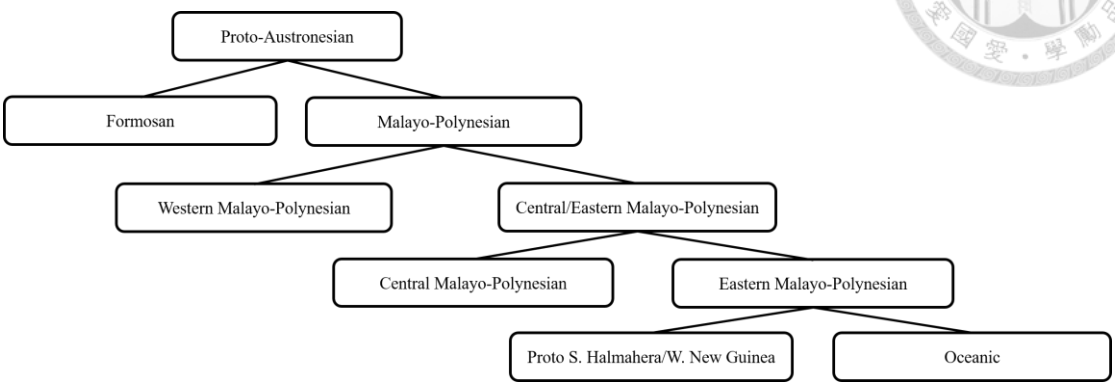

Figure 1.1 Austronesian family tree (Blust, 1999)

Among Formosan languages, the indigenous languages in Taiwan are classified into nine groups by Blust (1999) as shown in Figure 1.2 below.

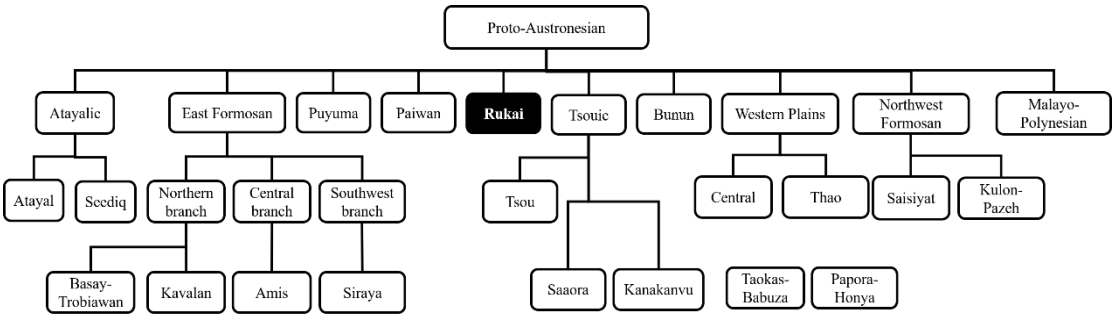

Figure 1.2 The subgrouping of Formosan languages (Blust, 1999)

As illustrated above, Rukai is one of the main offshoots of the Proto-Austronesian (PAn) argued by Blust (1999). This can also be seen in the subgrouping hypothesis proposed by Ross (2009), as shown in Figure 1.3.

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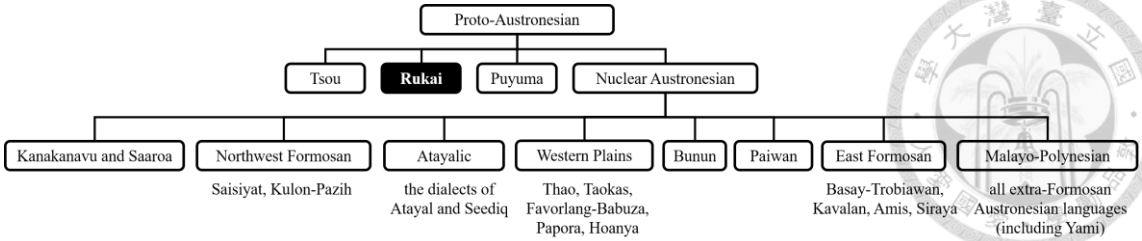

Figure 1.3 The subgrouping of Formosan languages (Ross, 2009)

Ross (2009) suggested that PAn has undergone a four-way split into Puyuma, Tsou, Rukai and Proto Nuclear Austronesian (PNAn) through the analyses of verbal morphology. The original PAn in Blust's (1999) subgrouping is demoted to a lower node and further comprised of the rest of the Formosan languages and Malayo-Polynesian. Another conflict between Ross' (2009) and Blust's (1999) lies in that Kanakanavu and Saaroa are assigned to PNAn as shown in Figure 1.3.

The Rukai languages are the sixth-largest indigenous group with estimated population of about 13,600 in Taiwan. Rukai speakers mainly inhabit in the mountainous regions of Kaohsiung City, Pingtung County and Taitung County, as illustrated in Figure 1.4.

Figure 1.4 Geographical Distribution of Rukai

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According to Li (1998), the Rukai languages can be divided into six dialects: Mantauran, Maga, Tona, Budai, Labuan and Tanan (Taromak). Among these six, Maga dialect is claimed to be close to Tona dialect and Labuan dialect is close to Tanan dialect. Budai Rukai is argued to be the most conservative one. The inner relationship between Rukai dialects is as summarized in Figure 1.5.

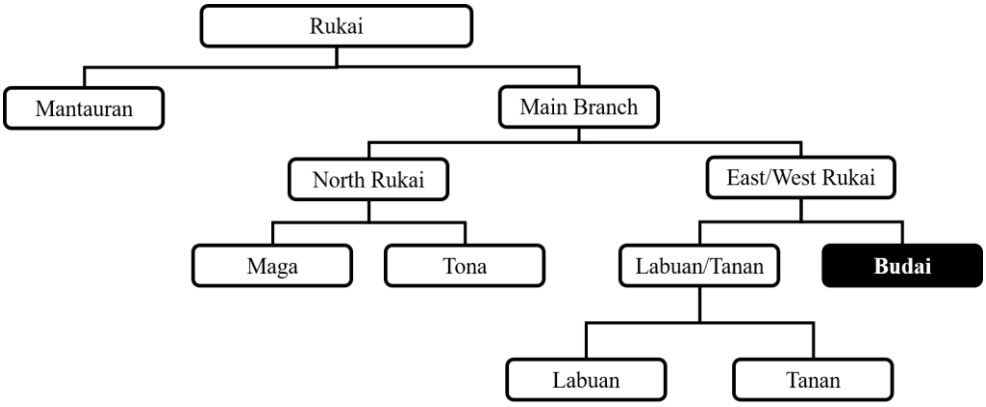

Figure 1.5 The relationship between Rukai dialects (Li, 1998)

1.3 A brief sketch of Budai Rukai grammar

For ease of reference, this section provides readers with a sketch of basic Budai Rukai grammar in terms of its phonemic inventory (1.3.1), word class (1.3.2), word order (1.3.3), case-marking system and demonstratives (1.3.4), pronominal system (1.3.5), voice system (1.3.6) and serial verb construction (1.3.7).

1.3.1 Phonemic inventory

The phonemic inventory of Budai Rukai includes twenty consonants and four vowels, as respectively shown in Table 1.1 and 1.2 (Zeitoun, 2000). The orthography in Budai Rukai virtually corresponds one-to-one to the sounds in International Phonetic Alphabet (IPA) system with five exceptions, i.e., *th* [θ], *dr* [ɖ], *dh* [ð], *lr* [ɭ], and *ng* [ŋ]. For the convenience of typing, we will use the symbols in the Rukai orthographic

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system in place of the IPA symbol, adopted by the Council of Indigenous People of the Executive Tuan of Taiwan.

Table 1.1 Budai Rukai vowels (Zeitoun, 2000)

	Front	Central	Back
Close	i /i/		u /u/
Mid		e /ə/	
Open			a /a/

As can be seen in Table 1.1, a four-vowel sound system is used in Budai Rukai. The symbol *e* is used to represent [ə] in the examples of the present thesis.

With respect to consonants, voicing is distinguished in Budai Rukai in terms of plosives and fricatives. For instance, there are bilabial plosive /p/ and /b/, alveolar plosive /t/ and /d/ and velar plosive /k/ and /g/. Also, there are interdental fricative /θ/ and /ð/. Budai Rukai consonants are illustrated in Table 1.2.

Table 1.2 Budai Rukai consonants (Zeitoun, 2000)

		Bilabial	Labiodental	Dental	Alveolar	Retroflex	Palatal	Velar
Plosive	-voiced	p /p/			t /t/			k /k/
	+voiced	b /b/			d /d/	dr /ɖ/		g /g/
Nasal		m /m/			n /n/			ng /ŋ/
Fricative	-voiced			th /θ/	s /s/			
	+voiced		v /v/	dh /ð/				
Affricate					c /ʦ/			
Lateral approximant					l /l/	lr /ɭ/		
Trill					r /r/			
Approximant		w /w/					y /j/	

The distribution of different syllable structures in Budai Rukai is as shown in Table 1.3. The basic syllable structure to form a morpheme is a consonant plus a vowel, e.g., the nominative marker *ka*. A typical syllable in Budai Rukai contains at least one vowel

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as in ***u**ngulu* ‘water’ and *bae* ‘red quinoa.’ Vowels can also be preceded by a consonant to form a syllable as in ***ka**ne* ‘eat’. Once the vowel is preceded by the consonant, glides like /w/ and /j/ can be followed by the vowel to form a CVG structure as in ***saw**valay* ‘male’. The vowel in the combination of CV structure is sometimes lengthen as in ***daa**ne* ‘house’ and can be further followed by another glide consonant as in ***baay*** ‘give’.

Table 1.3 Distribution of different syllable structure in Budai Rukai

Syllable configuration	Non-coda position	Coda position
V	**u**ngulu ‘water’	ba**e** ‘red quinoa’
CV	**ka**ne ‘eat’	ci**lr**i ‘throw’
CV:	**daa**ne ‘house’	**pee** ‘wring out’
CVG	**saw**valay ‘male’	aci**lay** ‘water
CV:G	**baay** ‘give	-

Words in Budai Rukai are primarily stressed on the penultimate syllable, e.g., *mádru* ‘fruit’ or *vaéva* ‘one’. However, some words stressed on the third to the last syllable, e.g., *dáane* ‘house’.

Two morpho-phonological alternations occur in the one-to-one glossing of the examples. A phonological rule deals with two approximant-fricative pairs: [w]-[v] and [j]-[ð]. The rule is applied when the approximants as a stem-final consonant are followed by [a], as summarized in (1.1):

(1.1) The approximant-fricative alternation
a. [w] → [v] / _+[a]
b. [j] → [ð] / _+[a]

(1.2) **layladha**!
laylay-a
run-IMP
‘Run!’

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(1.3) **waranavaku** pulrialrivale ki Lavurase.

wa-ranaw=aku	pu-lria-lrivale	ki	Lavurase
ACT.FIN-intentionally=1S.NOM	PU-RED-mock	OBL	PN

'I intentionally mock Lavurase.'

As shown in (1.2), the verb root *laylay* 'run' becomes *layladha* 'run!' when stem-final consonant [j] is followed by an imperative suffix *-a*. Similarly, *waranaw* 'intentionally' becomes *waranavaku* 'I intentionally' when the stem-final consonant [w] is suffixed by the first-person singular bound nominative pronoun *=aku*.

1.3.2 Word class

Only the open class in Budai Rukai will be reviewed in this section. Budai Rukai consists of two open clasess: nouns and verbs. Nouns in Budai Rukai do not differ in gender. The prefix *la-* is attached to a noun root to specify a plural form as in (1.4). The noun root *situ* 'student' is prefixed by the plural marker *la-*.

(1.4) wasenasenay kay lasitu ikay kay.

wa-sena-senay	kay	la-situ	i-kay	kay
ACT.FIN-RED-sing	this	P-student	be.at-this	this

'These students are singing here.'

(1.5) kay kuka kiacilri pua ki belenge ki daane.

kay	kuka	ki-a-cilri	pua
this	chicken	PASS-FIN-throw	put
ki	belenge	ki	daane.
OBL	upperness	GEN	house

'The chicken is thrown to the upper part of the house.'

Additionally, nouns in Budai Rukai will be marked by case markes as in (1.5) above. In (1.5), three nouns are shown in this sentence, i.e., *kuka* 'chicken', *belenge* 'upperness' and *daane* 'house'. *Kuka* 'chicken' is marked by a demonstrative so no case marker is preceded. With resepct to *belenge* 'upperness' and *daane* 'house', they are respectively

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marked by an oblique and a genitive case. More information about case-marking system in Budai Rukai will be reviewed in 1.3.4.

Verbs in Budai Rukai can be divided into two types: active verbs and stative verbs. In finite forms, active verbs are prefixed by active voice marker *wa-* and *-a-* or zero marker, and stative ones are prefixed by *ma-*. More examples will be given in 1.3.6.

Some verbal prefixes in Budai Rukai are used to verbalize the parts-of-speech of a noun. For example, prefix *tu-* 'make, do, have, eat' and *mu-* 'go' are attached to a noun root to verbalize the noun to a predicate, as in (1.6) and (1.7).

(1.6) lritulalake luigane ka taelrelresu?
lri-tu-lalake lu-igane ka ta-elre-elre=su?
FUT-make-kid FUT-when NOM HUM-together-RED=2S.GEN
'When is your wife going to give birth?'

(1.7) muabelenge ka Lavurase ki angatu.
mu-a-belenge ka Lavurase ki angatu
go-FIN-upperness NOM PN OBL tree
'Lavurase went up to the tree.'

As shown in (1.6) the prefix *tu-* 'make' is attached to the noun root *lalake* 'kid' and enables the whole compound to become the predicate of the sentence. Similarly, the prefix *mu-* 'go' in (1.7) is used to verbalize the noun root *belenge* 'upperness' as the predicate of the sentence. More verbalizing prefixes related to space will be discussed in section 3.4.

1.3.3 Word order

Like many other Formosan languages, Budai Rukai is a copula-less and essentially predicate-initial language. The predicate refers to new information followed by the subject denoting old information. The predicate can be either nominal or verbal as shown in (1.8) and (1.9) respectively.

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(1.8) [ngudradrekay]$_{predicate}$ [ka Salrabu]$_{subject}$

ngudradrekay	ka	Salrabu
Rukai	NOM	PN

'Salrabu is a Rukai.'

(1.9) [walrumay ki Lavurase]$_{predicate}$ [ka Lavakaw]$_{subject}$

wa-lrumay	ki	Lavurase	ka	Lavakaw
ACT.FIN-hit	OBL	PN	NOM	PN

'Lavakaw hits Lavurase.'

As (1.8) and (1.9) shows, noun phrase *ngudradrekay* 'Rukai' or verb phrase *walrumay ki Lavurase* 'hit Lavurase' can both function as predicates. They are respectively followed by the subjects, *Salrabu* and *Lavakaw*.

With respect to the word order of arguments, on the one hand, when two of them are both noun phrases, the word order is relatively flexible. That is, both Verb-Subject-Object (VSO) and Verb-Object-Subject (VOS) are grammatical as shown in (1.10) and (1.11) respectively.

(1.10) [wakane]$_{Verb}$ [ka Kui]$_{Subject}$ [ku aga]$_{Object}$.

wa-kane	ka	Kui	ku	aga
ACT.FIN-eat	NOM	PN	OBL	rice

'Kui eats rice.'

(1.11) [wakane]$_{Verb}$ [ku aga]$_{Object}$ [ka Kui]$_{Subject}$.

wa-kane	ku	aga	ka	Kui
ACT.FIN-eat	OBL	rice	NOM	PN

'Kui eats rice.'

As can be seen in (1.10) and (1.11), the verb *wakane* 'eat' is followed by two arguments *Kui* and *aga* 'rice'. The subject *Kui* precedes the object *aga* 'rice' as in (1.10) while the subject *Kui* follows the object *aga* 'rice' as in (1.11).

On the other hand, when one of the arguments is pronoun, the word order may not be flexible like that of noun phrases. The nominative case pronouns are obligatorily

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attached to the verb because they are clitics, resulting in a VSO word order as in (1.12). The oblique case pronouns can still follow or precede the other noun phrase argument because they are free morphemes as in (1.14) and (1.15)

(1.12) [wadreelaku]$_{Verb+Subject}$ [musuane]$_{Object}$.
wa-dreele=aku musuane
ACT.FIN-see=1S.NOM 2S.OBL
'I see you.'

(1.13) *wadreele musuane aku.
wa-dreele musuane aku
ACT.FIN-see 2S.OBL 1S.NOM
'I see you.' (Intended meaning)

(1.14) [madalame]$_{Verb}$ [ka Lavakaw]$_{Subject}$ [musuane]$_{Object}$.[2]
ma-dalame ka Lavakaw musuane
STAT.FIN-like NOM PN 2S.OBL
'Lavakaw likes you.'

(1.15) [madalame]$_{Verb}$ [musuane]$_{Object}$ [ka Lavakaw]$_{Subject}$.
ma-dalame musuane ka Lavakaw
STAT.FIN-like 2S.OBL NOM PN
'Lavakaw likes you.'

The verb *wadreele* 'see' is suffixed by *aku* '1S.NOM' and followed by *musuane* '2S.OBL' as in (1.12). In contrast, when the first-singular bound nominative suffix is in the sentence-final position as in (1.13), the sentence becomes ungrammatical. As can be seen in (1.14) and (1.15), the verb *madalame* 'like' is followed by two arguments, i.e., the subject *Lavakaw* and the object *musuane* '2S.OBL'. The word order follows VSO order in (1.14) and VOS order in (1.15).

Even though the word order in Budai is basically predicate-initial, sometimes the subject can also be pre-posed to the sentence-initial position, showing that the word order in Budai Rukai is genuinely flexible. Therefore, example (1.9) can be reordered

[2] Note that there are no adjectives in Budai Rukai because they function more like an adjectival verb. They can also function as the predicate of the sentence as in (1.10).

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as in (1.16) below. The subject *Lavakaw* precedes the verb *walrumay* 'hit'.

(1.16) [ka Lavakaw]$_{Subject}$ [walrumay]$_{Verb}$ [ki Lavurase]$_{Object}$.

ka	Lavakaw	wa-lrumay	ki	Lavurase
NOM	PN	ACT.FIN-hit	OBL	PN

'Lavakaw hits Lavurase.'

1.3.4 Case-marking system and demonstratives

Budai Rukai displays a three-way case distinction between Nominative, Genitive and Oblique. Nominative case marks the subject, genitive case marks a non-subject agent and oblique case marks a non-subject argument. The case markers are further differentiated into different usages in terms of semantic factors such as visibility, distance, animacy, humanness, and specificity. The nominal case system in Budai Rukai is as summarized in Table 1.4.

Table 1.4 Nominal case system in Budai Rukai
(cf. Li, 1997; Chen 1999; Chen 2008; Zeitoun, 2000; adapted from Sung, 2011)

Nominative	Oblique	Genitive
ku	*ku*	
(-visible, +distance, ±animate)	(-visible, +distance, -human, ±generic)	
ka	*ka*	
(+visible, +distance, ±animate)	(+visible, -distance, -human)	
	ki	*ki*
	(+specific, +human) (+generic, -human)	(±animate)

Overt case marking enables Budai Rukai to possess a relatively free word order. When two arguments are marked by the same case markers, the word order then plays an important role in distinguishing the subject and object. The subject is preferably in the sentence-final position, preceded by the object (Chen, 2008; Sung, 2011).

Sometimes case markers are omitted, especially in natural discourse (Shih, 2012). Case markers often cooccur with demonstratives but sometimes the noun phrases are

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only marked by demonstratives. Demonstratives in Budai Rukai are summarized in Table 1.5.

Table 1.5 Demonstratives in Budai Rukai (summarized from Sung (2011))

	kay 'this'	*kuini/kui* 'that'	*kavay* 'that'	*ku(i)dra* 'that'
Visibility	+	+	+	-
Distance	-	- (proximal)	+ (distal)	N/A

The word order between demonstratives, case markers (termed as determiner in Chen (2008)) and noun phrases are as shown in Figure 1.6. In a demonstrative phrase (DP), demonstratives are followed by optional determiners (shown in parenthesis) and then noun phrases. The arrow, added by the present author, shows that the order between demonstrative and determiner can be reversed as found in our discourse data. In addition, case markers and demonstratives in Budai Rukai have both been grammaticalized into complementizers or relativizers (cf. Kuo, 1979; Chen & Sung, 2005).

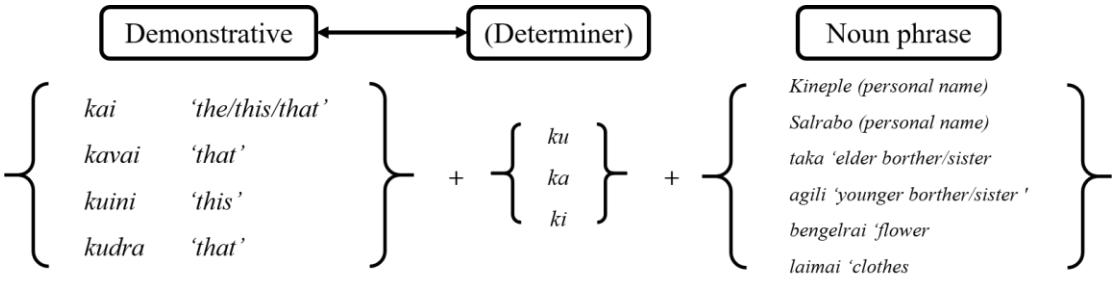

Figure 1.6 DPs with a s demonstrative and a determiner (cf. Chen, 2008)[3]

1.3.5 Pronominal system

Pronouns in Budai Rukai can be separated into two groups, i.e., free pronouns and clitic pronouns, as tabularized in Table 1.6. Free pronouns consist of topic and oblique pronouns whereas bound pronouns comprise nominative and genitive enclitics. Note

[3] The spelling of demonstratives is adapted from Chen (2008), in which glide [j] in *kai*, *kavai* and *bengelrai* was written as a vowel *i*. In addition, he termed case markers *ku*, *ka* and *ki* as determiners.

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that there is no free form for the nominative pronouns. The case marker *ku* is grammaticalized to be a topic marker preceding the pronouns. It is written together in Zeitoun (2000) but written separately in Chen (1999). Examples are given in (1.13) and (1.14).

Table 1.6 Pronominal system in Budai Rukai (adapted from Chen (1999:10))

Person	Plurality	Visible/ Inclusive	Free			Bound	
			Topic	NOM	OBL	NOM	GEN
1	Singular		*ku aku*	Ø	*nakuane*	*=(c)aku, =naw*	*=li*
	Plural	± Inclusive	*ku ta*	Ø	*mitaane*	*=ta*	*=(i)ta*
		± Exclusive	*ku nay*	Ø	*nayane*	*=nay*	*=nay*
2	Singular		*ku su*	Ø	*musuane*	*=su*	*=su*
	Plural		*ku numi*	Ø	*numiane*	*=numi*	*=numi*
3	Singular	± Visible	*ku ini*	Ø	*iniane*	Ø	*=ini*
	Plural	± Visible	*ku ini*	Ø	*liniane*	Ø	*=lini*

(1.17) **kuta** makanaelre lrimugakuta.
kuta makanaelre lri-mu-gaku=ta
1P(IN).T all FUT-go-school=1P(IN).NOM
'We, all will go to school.'

(1.18) **kunay** lukakaiya taelrenay kibulrubulru.
kunay lukakaiya taelre=nay ki-bulru-bulru
1P(EX).T every.day together=1P(EX).NOM PASS-RED-teach
'We study together every day.'

As shown in (1.17) and (1.18) respectively, the topic pronoun *kuta* and *kunay* both occur at the sentence-initial position. Like most Austronesian languages, Rukai makes a distinction between inclusive and exclusive 'we'. The distinction is also made in oblique free pronouns (*mittane* and *nayane*), and nominative and genitive bound pronouns (*=(i)ta* and *=nay*) as in Table 1.6. More examples are given in (1.17) and (1.18).

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(1.19) adha arakay ku hulrice ki payrange si kerenge nayane.

adha	arakay	ku	hulrice	ki	payrange
NEG.IMP	use	OBL	law	GEN	people.in.plain
si	kerenge	**nayane**			
and	tie	1P(EX).OBL			

'Don't bind us with the law of people in plains.'

(1.20) lawlripalribulu **mitaane** ka Laucu.

law-lri-palribulu	mitaane	ka	Laucu
POSS.MOD-FUT-save	1P(IN).OBL	NOM	PN

'Laucu may saves us.'

The free oblique pronoun used in (1.19) is *nayane*, which excludes listeners. In contrast, as can be seen in (1.20), *mitaane* denotes that *Laucu* will help us including the listeners.

Nominative pronouns usually attach to the first verbal element in the clause. However, when preverbal elements like negators occur, the nominative pronouns will be encliticized to the negator as shown in (1.21) and (1.22).

(1.21) wathingal**aku** madalame ki Balenge ka Kui.

wa-thingale=aku	ma-dalame	ki	Balenge	ka	Kui
ACT.FIN-know=1S.NOM	STAT.FIN-like	OBL	PN	NOM	PN

'I know Kui likes Balenge.'

(1.22) kai**su** thingale kay takidremedremane**li**.

kai=su	thingale	kay	ta-kidremedreme-ane=li
NEG=2S.NOM	know	this	LOC-heart-NMLZ=1S.GEN

'You don't know what I feel.' (Lit. you don't know my mood/heart.)

As can be seen in (1.21), the nominative bound pronoun *=aku* '1S.NOM' is enclitized to the verb *wathingale* 'know' because it is the first verbal element. However, the pronoun in (1.22) does not attach to the verb because a preverbal negator *kai* 'NEG' occur. Thus, the clitic pronoun *=su* '2S.NOM' is forced to encliticized to the negator. Also, in (1.22), it is shown that a genitive pronoun *=li* '1S.GEN' is attached to the nominal element *takidremedremane* 'mood'.

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1.3.6 Voice system

Unlike most Formosan languages which exhibit a characteristic focus system, Rukai displays an active/passive voice system (Li, 1973; Li, 1977; Kuo, 1979; Starosta, 1995; Chen, 1999, Zeitoun, 2000, Chen 2008). The most common active and passive form in Budai Rukai are illustrated in (1.23) and (1.24).

(1.23) walrumay ki Lavurase ka Kui. (active voice)
wa-lrumay ki Lavurase ka Kui
ACT.FIN-hit OBL PN NOM PN
'Kui hits Lavurase.'

(1.24) kialrumay ki Kui ka Lavurase. (passive voice)
ki-a-lrumay ki Kui ka Lavurase
PASS-FIN-hit OBL PN NOM PN
'Lavurase is hit by Kui.'

Affixed with *wa-* and *ki-*, the verb root *lrumay* 'hit' can indicate active voice as in (1.23) or passive voice as in (1.24). In an active voice construction, the agent *Kui* is marked by the nominative case as the subject. However, in a passive construction, it is the patient that is marked by the nominative case to be the subject of the sentence.

As argued by Sung (2011), four types of active finite forms are found in Budai Rukai, i.e., *wa-*, *ma-*, *-a-*, and *Ø*. The latter three are exemplified in (1.25) to (1.26).

(1.25) a. **ma**dalamku musuane.
ma-dalame=aku
STAT.FIN-like=1S.NOM
'I like you.'

b. kay Balenge lawlri**ka**dalame nakuane
kay Balenge law-lri-ka-dalame nakuane
this PN POSS.MOD-FUT-STAT.NFIN-like 1S.OBL
'Maybe Balenge will like me.'

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(1.26) a. kiararagadhaku.
ki<a><ra>ragay=aku
<FIN><RED>happy=1S.NOM
'I am happy.'

b. lrikiragadhaku.
lri-kiragay=aku
FUT-happy=1S.NOM
'I will be happy.'

(1.27) a. ka Kui pathagili apece
ka Kui **Ø**-pathagili apece
NOM PN FIN-start sleep
'Kui starts to sleep.'

b. ka Kui lri-pathagili apece.
ka Kui lri-pathagili apece
NOM PN FUT-start sleep
'Kui will start to sleep.'

As can be seen in (1.25a), the finite form *ma-* is attached to stative verbs such as *dalame* 'like'. When it is used in non-finite form as in the future tense in (1.25b), *ma-* form is replaced by *ka-* form to display its non-finiteness. With regard to the third type, a finite infix *-a-* is used in some verbs in Budai Rukai. Example (1.26a) shows that the verb *kiragay* 'happy' is infixed by *-a-* to display its finiteness. In contrast, (1.26b) shows that the finite infix *-a-* is omitted when the sentence is in its non-finite form. The last type is concerned about verbs that do not have any finite marker in its active form. For instance, *pathagili* 'start' is not affixed by any marker as in (1.27a). Since no marker is used in the active form, no non-finite marker is used in the non-finite form as in (1.27b).

Another rarely used passive voice marker *ku-* is found in Budai Rukai. From our elicitation data, it is often used with verbs that contain adversative meaning. The example is given in (1.28), in which the verb *lama* 'burn' is prefixed by *ku-* to indicate that the rice will be charred adversatively.

(1.28) lrikulama kay agagasu.
lri-ku-lama kay aga-aga=su
FUT-ADVRS.PASS-burn this RED-rice=2S.GEN
'Your rice will be charred.'

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1.3.7 Serial verb construction

A serial verb construction (SVC) refers to a sentence including at least two verbs as the predicate expressing a complex event (Payne, 1997). A basic SVC include the following morphosyntactic features: (a) each verb of an SVC can function independently as the predicate of another sentence; (b) the second verb of the SVC cannot be used with pronominal clitics independently; (c) two verbs in SVCs share a tense-aspect-mood (TAM) marker; (d) two verbs in SVCs share the same negators and the scope is over the entire clause.

As shown in (1.29), the SVC consists of two verbs *mua* 'go' and *langay* 'buy' and these two verbs can function independently as the predicate of (1.30) and (1.31). The promominal clitic *=aku* '1S.NOM' is attached to the first verb of (1.29). Only the first verb is prefixed by the future tense marker *lri-* in (1.29) but the entire clause contains future meaning. Lastly, in (1.32), the negator is in the sentence-initial position and has the scope over this complex event.

(1.29) lrimuaku ki talangalangadhane ki kange langay ku kange.
lri-mua=aku ki ta-langa-langay-ane ki kange
FUT-go=1S.NOM OBL LOC-RED-buy-NMLZ GEN fish
langay ku kange
buy OBL fish
'I will go to the fish market (to) buy fish.'

(1.30) lrimuaku ki talangalangadhane ki kange.
lri-mua=aku ki ta-langa-langay-ane ki kange
FUT-go=1S.NOM OBL LOC-RED-buy-NMLZ GEN fish
'I will go to the fish market.'

(1.31) lrilangadhaku ku kange.
lri-langay=aku ku kange
FUT-buy=1S.NOM OBL fish
'I will buy fish.'

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(1.32) kainaku lrimua ki talangalangadhane ki kange langay ku kange.

kai=naku	lri-mua	ki	ta-langa-langay-ane	
NEG=1S.NOM	FUT-go	OBL	LOC-RED-buy-NMLZ	
ki	kange	langay	ku	kange
GEN	fish	buy	OBL	fish

'I will not go to the fish market (to) buy fish.'

1.4 Data collection

The Budai Rukai data presented in the present thesis primarily come from two sources. Data of this chapter and chapter three were elicited from Rukai informants in Wutai Township, Pingtung County through three fieldtrips from 2020 to 2022. Informants' name, gender and year of birth are provided in Table 1.7. Data of chapter four consist of seven Budai Rukai Frog narratives, five of which are withdrawn from National Taiwan University Corpus of Formosan Languages and two of which are tape-recorded and transcribed by the present author during the fieldtrip to Wutai in 2022. Informants were first given a wordless book, *Frog, where are you?* (Mayer, 1969). The stories were then transcribed into Intonation Units (IUs) based on Du Bois et al. (1993) after the informants narrated the stories in Budai Rukai. More information related to the narrators of these stories will be provided in section 4.1.

Table 1.7 Information of Rukai informants

Budai Rukai name	Chinese name	Gender	Year of birth
Legeane ka taiKasepelane	Ju-Hua Ke	Female	1961
Legeai ka taiPalrangelrange	Shan-Guang Ba	Male	1946
Legeai ka taiSukinadrimi	Wen-Chen Sung	Male	1936
Paludase ka taiAluladen	Tian-Si Lai	Male	1959
Lrupilriane ka taiTawgadhu	Chuan Tu	Male	1943

1.5 Organization of the thesis

The organization of thesis is presented as follows. An introduction to the basic spatial semantic categories will be provided in Chapter 2 along with the linguistic

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typologies of motion events from different scholars' perspectives. In addition, previous studies investigating the spatial conceptualizations of Austronesian languages will also be reviewed. Chapter 3 provides a detailed description of the spatial expressions in Budai Rukai in order to answer our first research question. Chapter 4 analyzes the motion events in Budai Rukai narratives and reveals the status of Budai Rukai from the typological perspective. Finally, in Chapter 5, we will summarize our main findings and further point out some future directions related to studies of spatial conceptualization.

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Chapter 2 Literature Review

This chapter is divided into three sections. Section 2.1 introduces the basic spatial semantic categories proposed by Talmy (1983, 1985, 2000b). Section 2.2 reviews the typological frameworks proposed by previous researchers. Section 2.3 reviews empirical Formosan studies investigating the spatial concepts and motion events by adopting the frameworks of section 2.1 and 2.2.

2.1 Basic spatial semantic categories

Within Talmy's (1985, 1991, 2000b) framework, clauses of motion events are analyzed into a Core-event and a Co-event. While a Core-event consists of four spatial semantic components: Figure, Ground, Motion and Path, a Co-event in relation to the Core-event comprises Enablement, Cause and Manner, etc. These two events can be schematized as in (2.1) below:

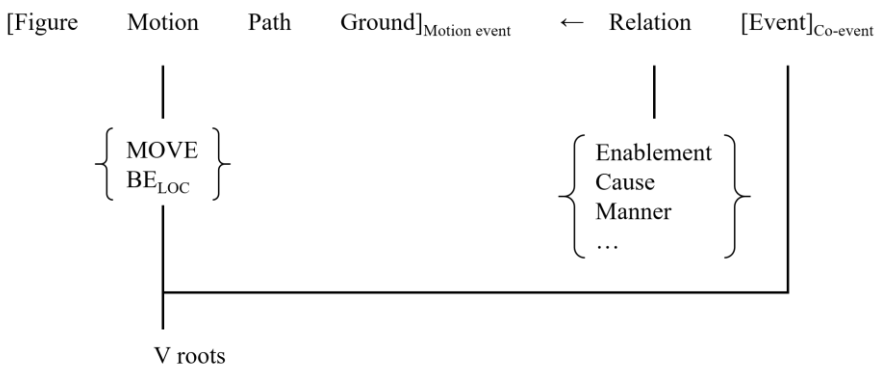

Figure 2.1 The schema of Motion event (Adapted from Talmy, 2000b:28)

As illustrated in Figure 2.1, a basic motion event contains four main components: Figure, Motion, Path and Ground. The Motion can either be "occurrence (MOVE) or nonoccurrence (BE_{LOC}) of translational movement" as defined by Talmy (2000b:25). With respect to the motion event, the Co-event indicates the conflated components of the motion verb, which includes Cause, Manner, Enablement and so forth. The first two

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are considered to be more common than the others.

In addition to the semantic components pointed out by Talmy (1985, 1991, 2000b), Zlatev (2003) further proposed a set of semantic components in his Holistic Spatial Semantic partly based on Talmy's framework. These components include Trajector, Landmark, Motion, Region, Frame of Reference, Path, and Direction. In regard to the first two categories: Trajector and Landmark, Zlatev (2003) indicated that they are similar to the Figure and Ground in Talmy's framework. In this present paper, we will employ the term Figure and Ground but we will also introduce the concept of Region, Frame of Reference and Direction in this chapter.

2.1.1 Figure and Ground

The terms Figure and Ground first emerged out of the field of Gestalt Psychology, then introduced by Talmy (1972) with distinct semantic interpretations. Talmy (1983:232, 2000a:312, 2000b:26) defined Figure as "a moving or conceptually movable object whose path, site or orientation" is particularly significant while Ground as "a reference frame or a reference object stationary within the reference frame, with respect to which the Figure's path, site or orientation receives characterization." The following two examples help clarify the definition of these two semantic components.

(2.1) The supermarket (F) is next to the post office (G).
(2.2) The post office (F) is next to the supermarket (G).

As can be seen in (2.1) and (2.2), these two sentences indicate the same spatial configuration. However, which object or entity should be viewed as Figure or Ground depends on different construal and linguistic structures. In (2.1), *the supermarket* is Figure while *the post office* is Ground because *the post office* serves as the reference point with known location for establishing the location of the Figure *supermarket*. In

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contrast, in (2.2), the second-appearing nominal *supermarket* serves as the reference point to indicate the site of Figure *post office*.

However, sometimes the reverse specification does not conform with the demand of the real world. Consider (2.3) and (2.4) below.

(2.3) The bike (F) is near the store (G).
(2.4) ?The store (F) is near the bike (G).

As shown in (2.3), The *bike* is the Figure whose location is indicated by the location of the Ground, *store*. However, in (2.4), though we can still view *the store* as the Figure and *the bike* as the Ground, the sentence is somewhat peculiar in that a Figure role to *store* and a Ground role to *bike* are inconsistent with the associated characteristics of Figure and Ground as revealed by Talmy (2000a). Talmy provided a number of associated characteristics of the Figure of Ground. According to these associated characteristics, Figure should be more movable, smaller and more dependent, etc. However, *the store* does not meet these requirements. Ground should be more permanently located, larger, more independent and so forth. Also, *the bike* flouts these characteristics.

2.1.2 Motion

As defined by Talmy (2000b:25), the semantic category, Motion, denotes "the presence per se of motion or locatedness in the event". This definition indicates two types of Motion in general: one with specific translational movement which means the entity moves from the original position to the other point and one without specific translational movement which means that the entity stays at the original position as the time goes by. The distinction can be elaborated when other semantic components like Manner and Cause come into play. Examples are given in Table 2.1 adapted from Talmy

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(2000b:26).

Table 2.1 Motion and Location with Manner and Cause

	Manner	Cause
Motion	(a) The pencil rolled off the table.	(b) The pencil blew off the table.
Location	(c) The pencil lay on the table.	(d) The pencil stuck on the table (after I glued it).

As can be seen in Table 2.1, *the pencil* functions as the Figure whereas *the table* functions as the Ground in all the above four sentences. Example (a) and (b) indicate the Motion while example (c) and (d) indicate Location. The verb *roll* and *lay* in (a) and (c) respectively conflate Motion with Manner, revealing how the pencil moves from the table to the ground and how the pencil is located on the table. On the other hand, the verb *blew* and *stuck* conflate Motion with Cause, indicating the causative of the motion.

The conflation of Motion with Manner or Cause can be further divided into two types: agentive or non-agentive. Take Motion conflated with Manner for example.

(2.5) The rock rolled down the hill. (non-agentive)
(2.6) I popped the cork out of the bottle. (agentive)
(2.7) I ran down the stairs. (self-agentive)

As can be seen in (2.5), it is a non-agentive sentence with the verb *roll* conflating Motion with Manner, in which *the rock* is not pushed by someone but simply rolls down the hill by itself. In contrast, in (2.6), since the subject *I* occurs, the verb *pop* with Motion and Manner becomes agentive. The difference between (2.6) and (2.7) lies in the Figure. The Figure influenced by the verb is *the cork* in (2.6) whereas the Figure that performs the action of *running* is *I* in (2.7). Therefore, example (2.7) is a self-agentive Motion conflated with Manner.

Another way to classify Motion is to differentiate Abstract Motion from Actual

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Motion (Langacker, 1987). The former one is termed as Fictive Motion by Talmy (2000a:103). Examples are given in (2.8) and (2.9) below.

(2.8) Ken runs from school to my house. (Actual Motion)
(2.9) The cord runs from the TV to the wall. (Fictive Motion)

As shown in (2.8), the Motion verb with Manner *run* indicates the actual motion; that is, the Figure *Ken* runs from a reference point to another. However, in (2.9), the cord does not literally run from the TV to the wall. It is used to indicate how the wire is connected from a reference point to another.

All in all, in the present study, we will mainly investigate verbs denoting Motion and Location. The conflation of Motion and Manner will also be illustrated in Budai Rukai narratives in Chapter 4. However, since few verbs conflating Location and Manner occur in Budai Rukai narratives, only a brief description of this type will be given throughout this research. Last, it is found in Budai Rukai that verbs interpreted as Fictive Motion are less frequently used; therefore, we will primarily concentrate on verbs with Actual Motion.

2.1.3 Path

Among all the semantic spatial categories, Path probably receives more attention than the other categories. In this paper, two ways that the concept of Path used in the fields of spatial semantics will be reviewed. The first perspective is reviewed from Talmy (1983) and Lakeoff (1987) whereas the second one is based on Jackendoff (1990) and Zlatev (1997).

Basically, the concept of Path is viewed as the trajectory of actual or fictive motion of the Figure with respect to the Ground (Talmy, 1983; Lakeoff, 1987). Path is conceived to have shape and contour and comprised of the following three components:

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Vector, Conformation and Deictic. The first component refers to the arrival, traversal and departure of the Path from the Figure to the Ground. Consider (2.10) to (2.12) and their formulas provided by Talmy (2000b).

(2.10) The napkin blew **onto** the bed at exactly 3:05. [Arrival]
(A point MOVE TO a point, at a point of time.)

(2.11) The napkin blew **off** the bed at exactly 3:05. [Departure]
(A point MOVE FROM a point, at a point of time.)

(2.12) The ball rolled **across** the crack at exactly 3:05. [Traversal]
(A point MOVE VIA a point, at a point of time.)

As shown in in (2.10) to (2.12), the prepositions *onto*, *off* and *across* respectively indicate the arrival, departure and traversal of Path. With respect to Conformation, it is seen as a geometric complex associating the fundamental Ground schema with the schema for a full Ground object. The full formula of (2.10) and (2.11) with the 'inside' Conformation are provided by Talmy (2000b) as in (2.13) and (2.14).

(2.13) The napkin blew onto the bed at exactly 3:05.
(A point MOVE TO a point <u>which is of the surface of [a volume]</u> at a point of time.)

(2.14) The napkin blew off the bed at exactly 3:05.
(A point MOVE FROM a point <u>which is of the surface of [a volume]</u> at a point of time.)

As can be seen in (2.13) and (2.14), the underlined words represent the Conformation notion of these two examples and the Ground object is schematized by the bracketed words in the formula. Therefore, the full formulae indicate how the Path is represented by the Vector and the Conformation. Lastly, the notion of Deictic can be simply categorized into two notions: "toward the speaker" and "in a direction other than toward

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the speaker", which is expressed by *come* and *go* in English (Talmy, 2000b).

The other perspective of Path is mainly based on Jackendoff (1990) and Zlatev (1997). They classify Path into three components: its beginning (Source), its middle (Milestone) and its end (Goal) on the ground that languages may differ in this respect cross-linguistically. The classification is similar to Talmy's Vector component of Path. The examples are given in (2.15) to (2.17). It is apparently that prepositions *out of*, *to* and *through* indicate the Source, Goal and Milestone of the Path which correspond to Departure, Arrival and Traversal in Talmy's analysis.

(2.15) He went out of the house. [Source-Path]
(2.16) He went to the school. [Goal-Path]
(2.17) He went through the house. [Milestone-Path]

Since this paper is not in a position to argue which terminology will better describe the Path, we will adopt Jackendoff's and Zlatev's terms which is more straightforward in terms of meanings and classification. Furthermore, it is worth noting that the three-way distinction of Path in Budai Rukai is rarely used in narratives, our description in terms of the subcategories of Path will only be sketchy.

2.1.4 Direction

Whereas Path always requires reference points to express the trajectory between the Figure and the Ground, the concept of Direction is used when no Ground information is expressed in the clause, defined by Zlatev (2006). Examples are as shown in (2.18).

(2.18) He went that way. [Direction]

As can be seen in (2.18), no Ground information is revealed in this example. Only *that*

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way is expressed to indicate the Direction of the Motion. Even though a distinction can be made between Path and Direction, in the present paper, Direction is considered a kind of Path. Because these categories in section 2.2 are further used in the semantic typology of motion events to classify languages (Talmy, 2000b; Slobin, 2004; Huang and Tanangkingsing, 2005) and the concept of Direction is not differentiated in their analysis, thus, we will also consider Direction to be a kind of Path when analyzing Budai Rukai narratives.

2.1.5 Region

Region is seen as a configuration of area in relation to the Ground. That is to say, a partitioned area associated with the Ground is further depicted to specify the location of the Figure. The concept of Region may be classified into following categories: the INTERIOR and EXTERIOR Region, the PROXIMATE and MEDIAL Region, the SUPERIOR and INFERIOR Region, the ANTERIOR and POSTERIOR Region, and the CITERIOR and ULTERIOR Region, demonstrated by Zlatev (1997) in terms of Japanese locative nouns. Simply speaking, these five pairs of Region can be addressed in more straightforward terms, i.e., the IN and OUT Region, the SIDE and MIDDLE Region, the UP and DOWN Region, the FRONT and BACK Region and the LEFT and RIGHT Region as noted by Chang (2018).

Though these categories are universal in a sense, languages appear to differ in the extension of the Region. For example, languages may show different ranges of the SUPERIOR Region. Specifically, a distinction between *above* and *on* is made in English but may not be made in Indonesian (using *di atas* 'is on' only). In addition, different languages may contain various terms to address a category of the Region. For instance, a number of terms denoting the UP Region in Isbukun Bunun, a Formosan language, are found (Chang, 2018).

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The following three examples show how Region is particularly specified in English. As can be seen in (2.19), the Ground information *the tree* is expressed and the Region is absent since we do not know which Region of the tree the Figure *bird* flew in. In contrast, in (2.20), that the Figure *bird* flew to the IN Region of the Ground *nest* is specified by the preposition *into* in English. With respect to (2.21), it is found that sometimes the Region can still be specified without indicating the Ground of the motion event.

(2.19) The bird flew to the tree.
(2.20) The bird flew into the nest
(2.21) The bird flew in.

It is worthwhile to note that sometimes in English prepositions indicate the Path and the Region simultaneously especially in a clause of motion event. Consider the following examples.

(2.22) The waiter came out of the kitchen.
(2.23) The waiter went into the kitchen.

As shown in (2.22) and (2.23), the *waiter* functions as the Figure while the *kitchen* functions as the Ground. In these two sentences, the preposition *from* and *into* simultaneously indicate the Source and Goal of the Path and the INTERIOR Region of the Ground. Although the conflation of Path and Region occur in English, cross-linguistically speaking, the two semantic categories may be assigned to different morphosyntactic constituents. For instance, it is argued by Ameka (1995) that in Ewe, a Niger-Congo language, uses postposition to convey the Region and preposition to express Path.

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2.1.6 Frame of Reference

Frame of Reference (FoR) is a linguistic concept that receives considerable attention in the field of spatial semantics. Generally speaking, FoR, as its name suggested, constructs a frame including a coordinate system of axes and angles in which the locational relations between the Figure and the Ground are within that frame. The subcategories and the terms of FoR proposed by different scholars vary. Therefore, three perspectives from Levinson (1996), Zlatev (1997) and Talmy (1983, 2000a) will be reviewed in this section.

Levinson (1996) divided FoR into three categories: Intrinsic, Relative and Absolute in terms of the strong claim that "there are exactly three frames grammaticalized or lexicalized in language" (Levinson, 1996: 138). Their definition of these three categories are as follows.

(2.23) Frame of Reference (Levinson, 1996:138)
a. Intrinsic: the main reference point coincides with the landmark, and axes and angles are projected on the basis of its geometry.
b. Relative: a real or imaginary viewpoint serves as a reference point, and coordinates are projected on the basis of this viewpoint.
c. Absolute: the system is anchored in fixed geo-cardinal positions.

As defined in (2.23a), the first category, the Intrinsic FoR means that the reference point is the landmark (or Ground) itself and the orientation is based on the Ground's perspective. With respect to (2.23b), the Relative FoR refers to the viewpoint of the interlocuter. Last, in (2.23c), the orientation of the Absolute FoR is according to the geo-cardinal positions, i.e., east, west, south and north. The above three categories can be elaborated by examples in (2.24) and Figure 2.2 to 2.4.

(2.24) a. The tree is in front of the car. [FoR: Intrinsic]
b. The tree is to the right of the car. [FoR: Relative]

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c. The three is to the east of the car. [FoR: Absolute]

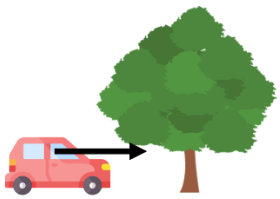

Figure 2.2 Illustration for (2.24a)

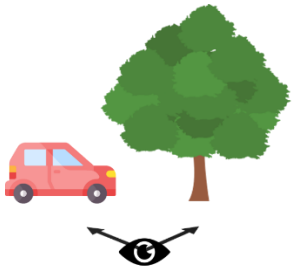

Figure 2.3 Illustration for (2.24b)

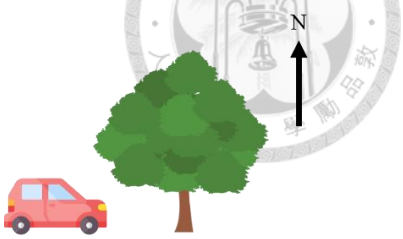

Figure 2.4 Illustration for (2.24c)

As can be seen in (2.24a), the sentence indicates intrinsic FoR in that the locational relations between the Figure *tree* and the Ground *car* is based on the orientation (axes and angles) of the car. It can be illustrated in Figure 2.2. With respect to (2.24b), the Relative FoR is shown because the location between the Figure *tree* and the Ground *car* is based on human beings' viewpoint. Therefore, from readers' sight, the tree is to the right of the car. Lastly, based on the cardinal orientation, the tree is to the east of the car if the cardinal direction is specified.

Zlatev (1997) argued that the trichotomy proposed by Levinson can only account for static projective relations. Therefore, he proposed a three-way distinction: object-centered, viewpoint-centered and Geocentric to further indicate the movement on both the horizontal and the vertical plane. The three terms correspond to the Intrinsic, Relative and Absolute FoR in Levinson's analysis.

Talmy (2000a) proposed a four-way distinction: Ground-based, Field-based, Projector-based and Guidepost-based. The first three correspond to the Intrinsic, Absolute and Relative of Levinson's (1996) analysis. The last one is added by Talmy. The Guidepost-based means that there is a Secondary Reference Object temporaily used to guide the location between the Figure and the Ground. The example is as given in (2.25) where *across the street* is used as the Secondary Reference Object to guide the

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location between the Figure *bike* and the Ground *church*.

(2.25) The bike is across the street from the church. [Guidepost-based]

To sum up, previous scholars used different terms to address different FoR. In the present paper, we adopt the relatively straightforward trichotomy proposed by Zlatev (1997). Since three FoRs are possibly used by languages, we do not aim to argue which FoR is more frequently used in Budai Rukai. Instead, we will only present how these terms may be used in the spatial expressions.

2.2 Semantic typology of motion events

Previous studies related to spatial conceptualization often discuss the status of the target language based on the semantic typology of motion events proposed by various scholars. Therefore, this research also aims to see the status of Budai Rukai from the typological perspective. In the following sections, we shall first review the semantic typology of motion events proposed by Talmy (2000). Furthermore, recent refinements related to the typology such as the work of Slobin (2004), the study of Huang and Tanangkingsing (2004) and that of Zlatev (2006) will also be reviewed in this section.

2.2.1 Talmy's two-way typology

As have been discussed in section 2.1, a motion event can be divided into the following four main semantic components: Figure, Motion, Path and Ground. The Core event is frequently associated with a Co-event which may include the Manner and Cause of the Motion. Talmy (1991, 2000) suggested that every language show different ways to encode these semantic components in its clause of motion event. A two-way typological distinction is then made in terms of how these components are encoded.

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Based on Talmy's typology, languages can be classified into two types: the verb-framed language and the satellite-framed language. These two types differ as to whether Path or Manner is encoded as the main verb of the sentence. On the one hand, in satellite-framed languages, the main verb is conflated with Manner whereas the Path is expressed by the prepositional phrase, termed as satellite by Talmy (2000). On the other hand, in verb-framed languages, the verb is conflated with Path.

Languages such as English, Finnish, Ojibwa and Warlpiri are considered to be typical satellite-framed languages. Consider the following example.

(2.26)	The eagle	flew	into	the cave.
	[Figure]	[Motion + Manner]	[Path]	[Ground]

As shown in (2.26), the *eagle* functions as the Figure while the *cave* functions as the Ground. The verb *flew* conflates the Motion with the Manner whereas the Path is expressed by the preposition *into*. It is interesting to note that some verbs in English conflate Motion with Path as in most verb-framed languages. The example is shown in (2.27).

(2.27)	The man	enters	the room.
	[Figure]	[Motion + Path]	[Ground]

As can be seen in (2.27), *the man* is the Figure and *the room* the Ground. The verb *enter* encodes two semantic components: Motion and Path. With respect to this phenomenon, it is not surprising that languages sometimes adopt two ways to encode their spatial components. How to classify languages like English seems to depend on the numbers of Path and Manner verbs and the frequencies of these two types in natural discourse. Therefore, English is considered to be satellite-framed languages because it is apparent that verbs like *enter* are exceptions.

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With regard to verb-framed languages, Spanish, French, Japanese, Tamil and Polynesian belong to this type. Take French for example as in (2.28).

(2.28)

L'-aigle		est		entr-é	dans
DEF.S.MASC-eagle		COP.3SG.PRS		enter-PAST.PART	in
[Figure]				[Motion + Path]	
la	grotte	en	vol-ant.		
DEF.S.FEM	cave	by	fly-PRS.PART		
	[Ground]		[Manner]		

L'aigle 'eagle functions as the Figure whereas *grotte* 'cave' functions as the Ground as in (2.28). The verb *entré* 'enter' conflates Motion with Path and the Manner component is expressed by the optional prepositional phrase *en volant* 'by flying'. Hence, in verb-framed languages, it is the Path component that plays a significant role in displaying the motion events.

2.2.2 Refinements of the semantic typology of motion events

After Talmy (2000) proposed his two-way typology, more and more studies explored the status of the language according to Talmy's typological framework. However, most of the studies focused primarily on Indo-European languages especially Germanic and Romance languages. Hence, based on data from different languages, while some scholars reformulate Talmy's typology, some proposed three-way or even four-way distinction to better account for different structures of motion events in various languages (Matsumoto, 2003; Zlatev & Yangklang, 2003; Croft, 2003; Slobin, 2004; Huang & Tanangkingsing, 2005).

Matsumoto (2003) pointed out that the terms of verb-framed and satellite-framed languages are misleading. Therefore, the reformulation of the terms into head-framed and nonhead-framed languages is proposed due to two reasons. First, the term "verb"

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is misleading because it can refer to a morphosyntactic category and a grammatical category. However, what Talmy meant only refers to a grammatical category, which is in fact the head of the clause. Therefore, Matsumoto (2003) argued that head-framed language is a better name than verb-framed language. Second, the term "satellite" is considered to be expressed by a preposition in English. Nevertheless, in some languages such as Japanese, satellites can be expressed by verbs. Consider (2.29) cited from Matsumoto (2003).

(2.29)	太郎	は	川	を	歩いて	渡った
	Taro	wa	kawa	o	aruite	watat-ta.
	Taro	TOP	river	ACC	walk	cross-PST
	[Figure]		[Ground]		[Manner]	[Path]
	'Taro walked across the river.'					

As can be seen in (2.29), *Taro* functions as the Figure while *kawa* 'river' functions as the Ground. The main verb of this sentence is *watatta* 'crossed', taking the past tense marker and functioning as the Path. The Manner is encoded by the participle *aruite* 'walk' though the Matsumoto's glossing does not indicate this information. However, the participle is conjugated from the original form *aruku* 'walk' to *te* form. Based on this example, it is found that the Path verb may not be a satellite in some languages; therefore, it is better to term it as nonhead-languages.

In addition to Matsumoto's (2003) reformulation, some scholars proposed a three-way typology, adding another type: serial-verb languages (Zlatev & Yangklang, 2003; Croft, 2003; Slobin, 2004). First, Zlatev and Yangklang (2003) suggested that the two-way typology is problematic for languages utilizing serial-verb strategy to express a motion event based on the data from Thai. Consider (2.30)[4] cited from Zlatev and Yangklang (2003).

4 Pronunciation and glossing of this example are both based on Zlatev and Yangklang (2003).

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(2.30)

ฉัน	เดิน	ข้าม	ถนน	เข้า	ไป	ใน	สวน
chán	**dɘɘn**	**khâam**	thanŏn	**khâw**	**paj**	naj	sŭan
I	walk	cross	road	enter	go	in	park
	[Manner]	[Path]		[Path]	[Deictic]		

'I walked across the road and into the park.'

According to Zlatev and Yangklang (2003), three kinds of Motion verbs are shown in (2.30) within the same clause and a single motion event: a Manner verb *dɘɘn* 'walk', two Path verbs *khâam* 'cross' and *khâw* 'enter', and a Deictic verb *paj* 'go'. This example shows that Manner and Path verbs are equally significant in serial-verb languages. Therefore, a three-way typology is needed to account for this kind of language.

In the same fashion, Croft (2003) observes that many other languages adopt different verb-serializing strategies apart from verb-framed and satellite-framed languages: the serial strategy in Mandarin Chinese and Lahu, the double coding strategy in Slavic languages and the coordinate strategy in Amele. Similarly, Slobin (2004) proposed a three-way typology taking serial-verb languages into considerations. His typology and the definition of each category are summarized in Table 2.2.

Table 2.2 Slobin's three-way typology (2004)

Type	Verb-framed languages	Satellite-famed languages	Equipollently-framed languages
Definition	Path is encoded in the main verb, with subordinate expression of Manner	Path is encoded in a nonverbal element associated with a verb	Path and Manner are expressed by equivalent grammatical forms
Construction type	PATH VERB + SUBORDINATE MANNER VERB	MANNER VERB + PATH SATELLITE	1. MANNER VERB + PATH VERB 2. [MANNER + PATH] $_{VERB}$ 3. MANNER PREVERB + PATH PREVERB + VERB

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As illustrated in Table 2.2, the second and third column are the same as the two-way typology proposed by Talmy (2000). In the fourth column, Slobin (2004) added another category called equipollently-framed languages in which the Path and Manner component are expressed by equivalent grammatical forms. This category can be further divided into three types as shown in Table 2.2. With respect to serial-verb languages, Thai example shown in (2.30) is considered to be this type. Another example is Mandarin Chinese which aligns with Croft's (2003) perspective. Languages of the second type includes two morphemes of equal status: one denoting Manner and the other denoting Path. The last type is relatively rare, exemplified by the Jaminjungan languages, one of the endangered languages spoken in the Northern Territory in Australia. The verb in Jaminjungan languages is preceded by the Manner and Path preverb with equal status (Schultze-Berndt, 2000).

Although Slobin's (2004) typological classification seemed to account for most of the languages, Huang and Tanangkingsing (2005) proposed a four-way distinction by adding another category: Macro-event language because Slobin's typology fails to account for Tsou, a Formosan language. Their four-way typology is as shown in (2.31)

(2.31) a. Satellite-framed language: Manner verb + Path satellite
b. Verb-framed language: Path verb + Manner adjunct
c. Macro-event language: [Manner prefix + Path root] verb
d. Serial-verb language:
D1: Path verb # Manner verb
D2: Manner verb # Path verb

As can be seen in the above typological classification, (2.31a), (2.31b) and (2.31d) are similar to Slobin's (2004) classification. (2.31d) consists of two types depending on the word order of Path verb and Manner verb. Category (2.31c) is called macro-event language because the clause encodes the manner and the path together in the Core-event

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without the need to specify the co-event. The verb is formed by the Path root and the Manner prefix. Consider (2.32) adapted from Huang (2002).

(2.32)	mo	mea-eafo	to	feongo	'o	pania.
	AF	float-out	OBL	cave	NOM	bottle
		[Manner + Path]		[Ground]		[Figure]

'The bottle floated out of the cave.'

As shown in (2.32), *pania* 'bottle' functions as the Figure whereas *feongo* 'cave' functions as the Ground. The verb is formed by the Path root *eafo* 'out' and the Manner prefix *mea-* 'float'. The Manner component is not expressed by additional constituent representing the Co-event of the clause; thus, this category of languages is termed as Macro-event language.

In addition to the four-way distinction, Huang and Tanangkingsing (2005) argued that since verb-framed languages may show features of satellite-framed languages and vice versa, they proposed a grid to conceptualize the Talmy's two-way typological framework with the vertical axis indicating the path salience and the horizontal axis indicating the manner salience. That is, verb-framed languages are more path-salient whereas satellite-framed languages are more manner-salient.

To sum up, since the typology of motion event was proposed by Talmy (2000), a considerable number of researchers have pointed out the drawbacks of his classification in order to better account for different languages. A two-way typology was refined to three-way and even four-way classification (Zlatev & Yangklang, 2003; Croft, 2003; Slobin, 2004; Huang & Tanangkingsing, 2005). This thesis adopts the viewpoints from Huang and Tanangkingsing (2005) since they are the only researchers who provided Austronesian data to classify languages, which will be better applied to Budai Rukai.

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2.3 Previous Formosan studies on spatial conceptualization

In this section, previous Formosan studies focusing on the spatial conceptualizations will be reviewed. In the past two decades or so, a number of studies dealing with Formosan languages put much emphasis primarily on two topics: spatial reference and motion typology (Tsai, 2003; Huang, Su & Sung, 2004; Li, 2004; Wu, 2005; Huang & Tanangkingsing, 2005; Jiang, 2006; Rau, Wang & Chang, 2012, Chang, 2018). The former is concerned with the linguistic structure and semantic functions of the locative expressions and cardinal directions whereas the latter is associated with the status of the target language within the typological framework mentioned in section 2.2. Table 2.3 provides a brief overview of the comparison of these languages.

Table 2.3 Comparison of empirical studies on spatial reference and motion typology*

Languages	Spatial Reference		Motion Typology
	Locative terms	Cardinal directions	
Saisiyat (Wu, 2004)	√	√	Verb-framed L
Tsou (Wu, 2004)	√	√	Macro-event L
Paiwan (Li, 2004)	√	√	Equipollently-framed L
Squliq Atayal (Huang et al., 2004)	√	√	Verb-framed L
Kavalan (Jiang, 2006)	√	√	Verb-framed L
Isbukun Bunun (Chang, 2018)	√	√	-
Yami (Tao) (Rau et al., 2012)	-	-	Verb-framed L

*Blanks marked by "-" indicate that no previous studies investigate the topic.

As can be observed in Table 2.3, most of the languages were investigated in terms of both the spatial reference and motion typology. However, previous studies on Isbukun Bunun paid much attention to the description of the usages of locative terms and cardinal directions whereas research on Yami spatial expressions laid much emphasis on the status of Yami based on the semantic typology of motion events. In the following sections, we shall review the main findings of these previous studies in order to better compare Budai Rukai with these languages.

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2.3.1 Previous Formosan studies on spatial reference

Two main foci of spatial reference that are frequently studied by previous researchers include locative terms and cardinal directions. Except for Yami, most of the aforementioned Formosan languages are discussed in terms of these two topics.

Like many other languages, most locative terms in Saisiyat derive from the source domain of body or animal parts (Tsai, 2003; Wu, 2004). For instance, *hikor* 'back; behind', *ka'anal* 'right hand; right' and *kayri* 'left hand; left' all have double meanings. The first meaning refers to the back, right and left hand of our body whereas the second one denotes the spatial relationship between two references. Additionally, Wu (2004) pointed out three distinctive phenomena of Saisiyat locative terms. First, no distinction is made between the 'bottom' and 'underneath' of an object, both represented by *hahoer* 'bottom, below'. Second, the term for Exterior Region of an object and a house is different. The former is expressed by *'oehaz* 'exterior' while the latter is expressed by *ratal* 'outside'. Last, the physical distance between two references side-to-side can be expressed by two terms, one denoting a distal distance *kabih* 'side/beside' and the other denoting a proximal one *rangi'* 'side/beside'. With respect to the cardinal directions, Saisiyat exhibits a universal model of sun for the term of East and West as well as a correlational model between wind and season for the term South and North, as pointed out by Wu (2004).

In comparison to Saisiyat, Wu (2004) also conducted a detailed research in terms of the spatial reference in Tsou. It is interesting to note that Tsou lacks a locative term to denote the FRONT Region. Consider (2.33) and (2.34) to see how Tsou express FRONT alternatively, cited from (Wu, 2004:11).

(2.33)	mo	ea	av'u si	tan'e-si	ta	kueai
	AUX.AF	exist.AF	dog NOM	here-3SG.POSS	OBL	car
	'There is a dog in front of the car.'					

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(2.34) a. mo ea av'u si ta'e-si ta kueai
AUX.AF exist.AF dog NOM there-3SG.POSS OBL car
= b. mo ea av'u si f'uhu ta kueai
AUX.AF exist.AF dog NOM back OBL car
'There is a dog in back of the car.'

As can be seen in (2.33), in order to express that a dog is in front of the car, the region between the car and the speaker is described by *tan'e* 'here'. Therefore, the FRONT Region is considered to be a relative relation that needs a secondary projector. Similarly, the BACK Region of the Ground *kueai* 'car' can be expressed by *ta'e* 'there', representing the Region behind the car as in (2.34a). However, Tsou also possesses a locative term of BACK Region, *f'uhu* 'back' as in (2.34b); therefore, the same meaning in (2.34) can be expressed in two ways. With respect to the cardinal orientation, Tsou has a less frequently-used system. The East and West for most Tsou speakers refer to the uphill and downhill respectively whereas the South and North are seldom used and both expressed by *feona* 'side/beside'.

Li (2004) studied the spatial expressions in Paiwan, with much emphasis on the spatial reference and Motion typology. He pointed out that the INTERIOR Region of the Ground is differentiated from a house (*tjuma'* 'inside the house') and a container (*taljatj* 'interiority'). However, there is no such distinction in the EXTERIOR Region in which only *casaw* 'outside the house' is used. As for the cardinal directions, though a sun model is adopted to the East and West in Paiwan, a lexical gap occurs when it comes to North and South. They are expressed by the left and right or the northern city Taipei and the southern city Kaohsiung in Taiwan.

The spatial reference in Squliq Atayal is briefly discussed in Huang et al. (2004). Some of the locative terms are divided into two types in terms of the animacy of the Ground and the distance between two reference points (Figure and Ground). For instance, it is shown that *beh* 'beside' is used when the Ground of the LATERAL Region

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is animate whereas *syaw* 'beside' is used when the that of the LATERAL Region is inanimate. In addition, regarding the SUPERIOR and INFERIOR Region, the locative terms vary in terms of the size of the Ground and the distance between two references. They are summarized as in Table 2.4.

Table 2.4 Locative terms of the SUPERIOR and INFERIOR Region in Squliq Atayal

	Ground of small size	Ground of large size	
		Near b/t F and G	Far b/t F and G
SUPERIOR Region	babaw	qlaya	yatux
INFERIOR Region	zik	qyahu	hogan

As illustrated in Table 2.4, as far as the size of the Ground is concerned, two different sets of locative terms of SUPERIOR and INFERIOR Region are used. Within the category of the Ground of large size, the closeness of distance between the Figure and the Ground is further applied to differentiate *qlaya* from *yatux* in SUPERIOR Region and *qyahu* from *hogan* in INFERIOR Region respectively. As for the cardinal orientation, the East and West in Squliq Atayal is based on the sunrise and sunset and the intensity of the wind whereas the South and North is related to the temperature and the snow.

Jiang (2006) conducted a detailed study exploring the spatial conceptualization in Kavalan. Two main findings in terms of the locative terms can be pointed out. First, three terms are used to denote the INFERIOR Region, *libeng* and *liab* refer to the Region lower than the Ground whereas *pusen* denotes the intrinsic part of the Ground. The first two is further differentiated depending on whether there is underside space of the Ground. For instance, it is ungrammatical to use *liab* to refer to the underside of the pillow, mountain or the river. Second, Kavalan also include three terms to denote the POSTERIOR Region. Two locative nouns, *tuRuz* 'in back of; behind' and *tuqeb* 'back', refer to the back of the body and of a house respectively whereas a locative term, *likuz*

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'behind' can function as either a verb or a noun when affixed differently. Regarding the cardinal directions, the source model of the East and West is based on the land-sea axis whereas that of the North and South is based on the Southeast Asian monsoons and north wind.

Spatial reference of Isbukun Bunun was thoroughly investigated in Chang (2018). In terms of the locative nouns, two interesting findings deserve attention. First, the UP and DOWN Region each can be denoted by three kinds of locative nouns depending on the Ground type and the semantic categories: Regio or Direction. Second, the BACK Region can also be denoted by three kinds of locative nouns, one general term *kinuz* 'back', another specific one *'iku* 'dorsal' used for the back side of an entity and the other specific one *'ulang* 'backyard' for the back side of a building. Pertaining to the cardinal directions, the East and West are associated with the model of sun whereas the South and North is related to the climate in which the North is 'the place where it is cold' and the South is 'the place where it is hot.'

Although few studies emphasizing the locative nouns and cardinal directions in Yami, Chen (2012) investigated how different FoRs are used in Yami through an experiment and picture elicitation. Results show that three frames of reference: object-centered, viewpoint-centered and geocentric are all used in Yami. However, the research also indicated that collecting data directly in the Orchid Island, where Yami people live, is better than eliciting data through the experiment and pictures, for informants are more aware of the fixed bearings in the Orchid Island.

2.3.2 Previous Formosan studies on motion events

Studies investigating motion typology of different Formosan languages are as illustrated in Table 2.5 (re-tabularized from Table 2.3). Of the six languages, Saisiyat, Squliq Atayal, Kavalan and Yami are claimed to be verb-framed languages

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(Tanangkingsing, 2004; Huang & Tanangkingsing, 2005; Jiang, 2006; Rau et al., 2012). Whereas Paiwan is argued to be an equipollently-framed language by Li (2004), Tsou is classified as a macro-event language by Huang and Tanangkingsing (2005). Although the aforementioned four languages belong to verb-framed languages, they all show some characteristic features in the clauses of motion events, which will be further elaborated in this section.

Table 2.5 Comparison of empirical Formosan studies on motion typology

Languages	Motion Typology
Saisiyat	Verb-framed language
Squliq Atayal	Verb-framed language
Kavalan	Verb-framed language
Yami	Verb-framed language
Tsou	Macro-event language
Paiwan	Equipollently-framed language

Huang and Tanangkingsing (2005) adopted four diagnostic tests for verb-framed languages, pointed out by Slobin (2004) and confirmed that Saisiyat is a less verb-framed language due to three reasons. First, it fails two of the four tests for verb-framed languages. This will be further explained and compared with other languages in Chapter 4. Second, Saisiyat shows incipient strategy of compounding Manner prefix with Path root like Tsou as mentioned in (2.32). Last, a serial verb strategy in which one Manner and one Path verb occur in one single clause is used, as shown in (2.35) and (2.36) cited from Huang and Tanangkingsing (2005).

(2.35) hiza ray hoeroe' oewi' h<oem>ayap kas'oehaz ila
that LOC hole owl <AF>fly move.out PFV
'The owl flew out from the hole.' (Constructed)

(2.36) hiza ray hoeroe' oewi' kas'oehaz ila
that LOC hole owl move.out PFV
'The owl came out from the hole.' (Saisiyat 1: 47-48)

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Huang and Tanangkingsing (2005) revealed that although the constructed sentence in (2.35), in which the Manner verb *hoemayap* 'fly' and the Path verb *kas'oehaz* 'move out' occur in one single clause, is grammatical, Saisiyat informants favor (2.36) over (2.35). This shows that the Manner verb *hoemayap* 'fly' is optional when expressing the owl's exit.

In addition to Saisiyat, Squliq Atayal was also examined and considered to be a verb-framed language by Huang and Tanangkingsing (2005) based on the four diagnostic tests. However, Squliq Atayal shows two phenomenon that are not typical for verb-framed languages. First, various types of Manner verbs are used in Squliq Atayal Frog narratives. A total of 16 types of Manner verbs are used compared to 12 types of Path verbs shown in the story. Second, a serial-verb strategy can also be used in a few clauses of motion events throughout the discourse data of Frog story according to Huang and Tanangkingsing (2005). As shown in (2.37), a Path verb *mge:* 'leave' precedes a Manner verb *mlaka* 'fly' in this clause of motion event. The Path verb also indicates the deictic center of the motion. This phenomenon can also be found in Budai Rukai, which will be further pointed out in Chapter 4.

(2.37) M-ge: m-laka' qu nguyaq qasa la.
AF-leave AF-fly NOM owl that PRTCL
'The owl flies away.' (Frog 4: 197-98) (Huang and Tanangkingsing, 2005)

By adopting the same methodology, Jiang (2006) demonstrated that Kavalan is also a verb-framed language and revealed that a unique construction in Kavalan motion events deserves attention. The clause consists of one Path verb *wiya* 'leave' and another Manner verb. Three semantic functions of the verb *wiya* 'leave' are shown as in (2.38) to (2.40) cited from Jiang (2006).

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(2.38) Ru-qa-wi-iku, mautu=ti aizipna
ASP-QA-leave-1SG.NOM come=PFV 3SG.NOM
'As soon as I left, he came.'

(2.39) wiya=ti m-linemnem ya peRasku a yau
leave=PFV AF-sink NOM bottle LNK that
'That bottle sank away.' (lit. 'That bottle left sinking.')

(2.40) a. wiya=ti Raya uzan
leave-PFV great rain
'The rain is getting heavier and heavier.' [Inchoative]

b. wi: satzay aimi, mai m-Ribang
leave sing 1EPL.NOM NEG AF-rest
'We sing on and on, without taking a rest.' [Continuative]

The verb *wi(ya)* can function independently in the clause, meaning 'leave' as in (2.38). It can also be used with another Manner verb such as *mlinemnem* 'sink' as shown in (2.39). However, *wiya* 'leave' here functions more like the English particle 'away' and frequently occurs throughout the narrative. With respect to (2.40), Jiang (2005) pointed out that the inchoative meaning is expressed when *wiya* 'leave' is affixed by the perfective marker *=ti* as in (2.40a) whereas the continuative meaning is conveyed when the vowel of the variant *wi:* 'leave' is lengthened. Because the Path verb 'leave' functions as the first verb is also frequently used in Budai Rukai, a more detailed description in this respect will be provided in Chapter 4.

It is confirmed that Yami is a path-salient language (more like a verb-framed language in Talmy's term) by Rau et al. (2012). Instead of investigating motion events only in Frog narratives, they analyzed motion events in 20 Yami texts by using VARBURL, a logistic regression analysis program, and found three main findings. First, tokens of Path verb outnumber those of Manner verb. Fifty-five percent of the Motion verbs encode the Path component whereas forty-five percent of the Motion verbs encode the Manner component. Second, Path verbs frequently cooccur with Ground information, with 70 percent of the motion events followed by a locative marker *do* and

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the Ground. As shown in (2.41), the Path verb *angay* 'go' is the only verb of the first clause and is followed by a locative-marked phrase *do Jiayo*, indicating the Ground of the first clause.

(2.41) Ji ko rana toda angay do Jiayo a,
NEG 1S.GEN already AUX SUB.go LOC PLN PAR
ji ko a-gcin.
NEG 1S.GEN SV.SUB-go.down (divorce)
'I'm going (back) to Jiayo, and I want a divorce.' (Rau et al., 2012)

Last, a few serial-verb constructions can still be found in Yami, with Path verb being the first verb and Manner verb the second, in contrast to typical verb-framed languages, where the Manner component is expressed by a prepositional adjunct. Since serial-verb constructions only account for a small proportion of the whole clauses of motion events, Rau et al. (2012) still considered Yami a path-salient language.

As elaborated in section 2.2.2, Tsou is argued to be a Macro-event language because the Manner and the Path component are encoded together in one verb compound (Huang & Tanangkingsing, 2005). Since an example is demonstrated as in (2.32), no further discussion is given here.

Paiwan was classified as an equipollently-framed language by Li (2004) because he indicated that Manner and Path verbs are in equal status in clauses of Paiwan motion events. Examples are given as in (2.42) cited from Li (2004).

(2.42) a. 'em-iyalan timadju a sa tua kakeDian
AF-cripple 3SG.NOM LNK <AF>go.to OBL child
= b. sa tua kakeDian timadju a 'em-iyalan
<AF>go.to OBL child 3SG.NOM LNK AF-cripple
'He hobbled to the child.'

Li (2004) suggested that Manner verbs and Path verbs are flexible in the word order in

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"matrix-complement" constructions. For instance, in (2.42a), the Manner verb *'emiyalan* 'cripple' functions as the first verb and the Path verb *sema* 'go.to' functions as the second one. The reversed order is also grammatical as shown in (2.42b). However, based on Li's discourse results, Jiang (2006) argued that Paiwan should be considered as a verb-framed language for two reasons. On the one hand, Manner verbs less frequently occur in Paiwan stories, accounting for only 3.5% of total verbs. On the other hand, clauses with Path verbs constitute the majority of the lexicalization pattern. Although serial-verb constructions are found in Paiwan, our viewpoint aligns with Jiang's. Because languages may share features of different types of the languages within the typological framework, it is better to classify them in terms of results from discourse data and to see which features account for the majority of clauses of motion events.

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Chapter 3 Spatial Expressions in Budai Rukai

Space is conceptualized as different linguistic structures in different languages. To see how Rukai native speakers view the three-dimension space, this chapter examines various spatial expressions in Budai Rukai. With the illustration of the spatial expressions either dynamic or static ones, it is hoped that it could not only help people understand how spatial information is encoded in Budai Rukai but also document these precious linguistic data for people who would like to learn or study Rukai languages in the future.

This chapter is divided into four sections. Section 3.1 introduces the basic locative constructions in Budai Rukai, elaborating different syntactic patterns when taking locative nouns and cardinal directions. Section 3.2 illustrates the semantic functions of the locative nouns that can be predicated in the locative constructions whereas section 3.3 explores the cardinal directions that can also be predicated in the locative constructions. Section 3.4 turns to spatial prefixes in Budai Rukai which is separated into prefixes of motion and location respectively and offers examples to see their rich morphological distribution.

3.1 Basic locative constructions

The locative construction in Budai Rukai consists of two syntactic patterns. Both patterns share the same locative prefix *i-* meaning 'be at'. In the first pattern as in (3.1) and (3.2), the prefix *i-* 'be at' is used with a finite infix *-a-* and the root *kay* 'this' to form a verb, followed by a locative noun or a cardinal direction. In the second pattern as in (3.3) and (3.4), the prefix is also used with a finite infix *-a-* but directly attached to a locative or a cardinal direction.

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(3.1) yakay (*ki) belenge ki cukui ka/ku dilrungu.
i-a-kay (*ki) belenge ki cukui
be.at-FIN-this (*OBL) upperness OBL table
ka/ku dilrungu
NOM/NOM clay.pot
'The clay pot is on the table.'

(3.2) yakay (*ki) belenge ka/ku dilrungu ki cukui.
'The clay pot is on the table.'

(3.3) yabelenge ki cukui ka/ku dilrungu.
i-a-belenge ki cukui ka/ku dilrungu
be.at-FIN-upperness OBL table NOM/NOM clay.pot
'The clay pot is on the table.'

(3.4) yabelenge ka/ku dilrungu ki cukui.
'The clay pot is on the table.'

As shown in (3.1), the verb *yakay* 'is at' is directly followed by the locative noun *belenge* 'upperness' to form the predicate. Using the oblique case *ki* preceding the locative noun *belenge* 'upperness' is ungrammatical. The predicate is then followed by the Ground *ki cukui* 'the table' and the Figure *ka dilrungu* 'the clay pot'. The word order of the Figure and the Ground can be reversed as in (3.2), showing the same meaning as (3.1). In addition, the locative prefix *i-* can also directly prefix the locative noun *belenge* 'upperness' and then precedes the Ground and the Figure, as in (3.3). The word order of the Figure and the Ground can also be reversed as in (3.4).

Similar syntactic patterns can also be revealed in predicates with cardinal directions as in (3.5) to (3.8). However, the place names as Ground informations cannot be marked by case marker[5]. In the examples below, the Ground *Taiwan* 'Taiwan' is preceded by *ikay* 'be at'.

[5] It is ungrammatical to precede case markers *ka/ku/ki* before the Ground information, which is different from the syntactic structure of basic locative constructions, as shown in (i) and (ii) below.

(i) yatalravane ka Tarumake ikay (*ki/*ka/*ku) Takau.
'Taitung is to the east of Kaohsiung.'

(ii) yatalravane ka Tarumake (*ki/*ka/*ku) Takau.
'Taitung is to the east of Kaohsiung.'

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(3.5) yakay (*ki) taliviri ka Taihuku ikay Taiwan.
i-a-kay (*ki) tali-viri ka Taihuku
be.at-FIN-this (*OBL) direction-left NOM Taipei
i-kay Taiwan
be.at-this Taiwan
'Taipei is in the north of Taiwan.'

(3.6) ikay Taiwan, yakay (*ki) taliviri ka Taihuku.
'Taipei is in the north of Taiwan.'

(3.7) yataliviri ka Taihuku ikay Taiwan.
i-a-tali-viri ka Taihuku
be.at-FIN-direction-left NOM Taipei
i-kay Takau
be.at-this Kaohsiung
'Taipei is in the north of Taiwan.'

(3.8) ikay Taiwan, yataliviri ka Taihuku
'Taipei is in the north of Taiwan.'

As can be seen in (3.5) and (3.6), the verb *yakay* 'is at' is also directly followed by the cardinal direction *taliviri* 'north' without the oblique case in between like (3.1) and (3.2). The difference between (3.5) and (3.6) lies in the word order. Whereas the predicate of the former is followed by the Figure and then the Ground, that of the latter is preceded by the Ground and then followed by the Figure. The locative prefix *i-* is directly attached to the cardinal direction *taliviri* 'north' and followed by a Ground and then a Figure in (3.7). With respect to (3.8), the *ikay* phrase is preposed to the sentence initial position and the predicate *yatalivri* 'is in the north' is followed by the Figure *Taihuku* 'Taipei'.[6]

In addition to being the predicate by prefixing the locative nouns or cardinal directions, the prefix *i-* can also function as a preposition-like word when prefixing *kay* 'this' as in (3.9). As shown in (3.9), the main verb *waapece* 'sleep' is followed by the Figure *ngiaw* 'cat' and the prepositional Ground phrase *ikay ki taapeapecane* 'at the

[6] Through elicitation, no semantic differences are found between (3.5) and (3.6), (3.7) and (3.8), and (3.9) and (3.10). However, whether there are pragmatic differences in discourse is left for future studies.

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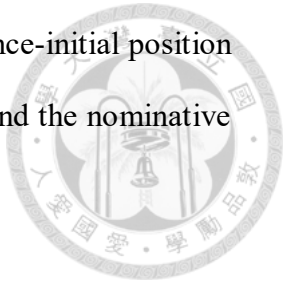
bed'. The whole prepositional phrase can be pre-posed to the sentence-initial position as in (3.10). The prepositional phrase is then followed by the verb and the nominative phrase of the sentence.



(3.9) waapece ka ngiaw [ikay ki/*Ø/*ka taapeapecane].
wa-apece ka ngiaw i-kay
ACT.FIN-sleep NOM cat be.at-this
ki/*Ø/*ka ta-ape-apece-ane
OBL/Ø/OBL LOC-RED-sleep-NMLZ
'The cat sleeps at the bed.'

(3.10) [ikay ki/*Ø/*ka taapeapecane] waapece ka ngiaw.
i-kay ki/*Ø/*ka ta-ape-apece-ane
be.at-this OBL/Ø/OBL LOC-RED-sleep-NMLZ
waapece ka ngiaw
ACT.FIN-sleep NOM cat
'The cat sleeps at the bed.'

The usage can also be applied to the locative construction in which the main verb is the prefix *i-* 'be at' attached to the locative noun as in (3.11) below. The main verb of this example is *yabelegne* 'is on', followed by the Figure *ka lrabu* 'knife' and then the prepositional phrase *ikay ki cukui* 'at the table'. Note that only using the oblique case *ki* between the preposition *ikay* 'at' and the Ground *cukui* 'table' is grammatical. The whole prepositional phrase can also be pre-posed to the sentence-initial position as shown in (3.12).

(3.11) yabelegne ka lrabu ikay ki/*Ø/*ka cukui.
i-a-belenge ka lrabu i-kay ki/*Ø/*ka cukui
be.at-FIN-upperness NOM knife be.at-this OBL/Ø/OBL table
'The knife is on the table.'

(3.12) ikay ki/*Ø/*ka cukui yabelegne ka lrabu.
i-kay ki/*Ø/*ka cukui i-a-belenge ka lrabu
be.at-this OBL/Ø/OBL table be.at-FIN-upperness NOM knife
'The knife is on the table.'

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3.2 Locative nouns predicated in locative constructions

This section deals with the locative nouns that can be predicated in the locative construction in Budai Rukai. Every aspect of Budai Rukai Spatial conceptualization including the UP and DOWN Region, the IN and OUT Region, the FRONT and BACK Region, the MIDDLE and SIDE Region and the LEFT and RIGHT Region will be discussed in the following sections. The overview of the locative nouns is demonstrated in Table 3.1. They can all be prefixed by two types of spatial prefix, *i-* and *sa-* as shown in the first and the third column of Table 3.2. In addition, another space-related prefix *tali-* 'direction' is used when a broader region is referred to as shown in in Table 3.3. The semantic and morphosyntactic differences between these three usages will be further illustrated in the following sections.

Table 3.1 Overview of the locative nouns in Budai Rukai

root	**meaning**	***root***	**meaning**	***root***	**meaning**
the UP and DOWN Region (3.2.1)					
belenge	upperness	***lebe***	downness	-	-
the FRONT and BACK Region (3.2.2)					
cucubungu	front	***lrilrikudru***	back	-	-
the IN and OUT Region (3.2.3)[7]					
adringi	inside	***daane***	house	***latadre***	outside
the MIDDLE and SIDE Region (3.2.4)					
kabicelrakane	middle	***thili***	side	***babiabila***	besideness
the LEFT and RIGHT Region (3.2.5)					
viri	left	***vanale***	right	-	-

[7] Budai Rukai exhibits an asymmetrical pattern of the IN and OUT Region like Paiwan. That is, two terms are used in the In Region. As for the cross-linguistic survey of the symmetrical/asymmetrical pattern of Formosan Region terms, the issue is left for future studies.

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Table 3.2 Locative nouns prefixed by two types of spatial prefixes

i-root	**meaning**	***sa-root***	**meaning**
i-belenge	'be on/above'	***sa-belenge***	'be on/above'
i-lebe	'be under'	***sa-lebe***	'be under'
i-cucubungu	'be in front of'	***sa-cucubungu***	'be in front of'
i-lrilrikudru	'be behind'	***sa-lrilrikudru***	'be behind'
i-adringi	'be inside'	***sa-adringi***	'be inside'
i-daane	'be inside' (a building)	***sa-daane***	'be inside' (a building)
i-latadre	'be outside'	***sa-latadre***	'be outside'
i-kabicelrakane	'be between'	***sa-kabicelrakane***	'be between'
i-thili	'be next to	***sa-thili***	'be next to
i-babiabila	'be beside'	***sa-babiabila***	'be beside'
i-vanale	'be to the right'	***sa-vanale***	'be to the right'
i-viri	'be to the left'	***sa-viri***	'be to the left'

Table 3.3 Locative nouns with *i-* and *tali-* prefixes

i-tali-root	**meaning**
i-tali-belenge	'be on' (a broader region denoted)
i-tali-lebe	'be under' (a broader region denoted)
i-tali-cucubungu	'be in the (broader) front region from'
i-tali-lrilrikudru	'be in the (broader) back region from'
i-tali-adringi	'be on the (broader) inside region of'
i-tali-daane	'be on the (broader) inside region of (a building)'
i-tali-latadre	'be on the (broader) outside region of'
i-tali-kabicelrakane	'be in the (broader) middle region of'
i-tali-thili	'be next to' (a broader region denoted)
i-tali-vanale	'be to the (broader) right-hand region of'
i-tali-viri	'be to the (broader) left-hand region of'

3.2.1 The UP and DOWN Region

This section illustrates words denoting the UP and DOWN Region in Budai Rukai. From section 3.2.1 to 3.2.5, examples containing locative nouns predicated in the

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locative constructions will be given in three types: *i-LOCATIVE NOUN*, *sa-LOCATIVE NOUN* and *i-tali-LOCATIVE NOUN*. In so doing, we aim to differentiate the meanings between these three types in the locative construction. As have been mentioned in 3.1, two syntactic patterns of the locative construction conveying the same semantic function can be used in Budai Rukai. In this section, only the second pattern in which the prefix is directly attached to the locative noun will be exemplified for explanatory and reading convenience. To denote the upside Region of the Ground, *belenge* 'upperness' is used in Budai Rukai. Examples are given in (3.13) to (3.15).

(3.13) yabelenge ka lrabu ki cukui.

i-a-belenge	ka	lrabu	ki	cukui
be.at-FIN-upperness	NOM	hunting.knife	OBL	table

'The hunting knife is on the table.'

(3.14) sabelenge ka lrabu ki cukui.

sa-belenge	ka	lrabu	ki	cukui
SA-upperness	NOM	hunting.knife	OBL	table

'The hunting knife is on the table.' (other things stacked under the knife)

(3.15) yatalibelenge ka lrabu ki cukui.

i-a-tali-belenge	ka	lrabu	ki	cukui
be.at-FIN-direction-upperness	NOM	hunting.knife	OBL	table

'The hunting knife is on the table.' (a broader region on the table)

As can be seen in (3.13), it is the most basic locative construction with *i-* prefixing the locative noun *belenge* 'upperness' and followed by two arguments, i.e., the Figure *lrabu* 'knife' and then the Ground *cukui* 'table'. With the prefix *sa-*, example (3.14) displays the same locational relationship between the Figure *lrabu* 'knife' and the Ground *cukui* 'table'. However, the meaning of example (3.14) is different from that of (3.13) in that there are other things stacked on the table and the hunting knife is conceived to be on the very top of those objects. When the prefix *sa-* is used, it to some extent triggers a context other than only describing the location of an object. This will be further

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elaborated by other examples below. In addition to the basic one in (3.13) and the *sa-* form in (3.14), the locative noun can also be prefixed by a *tali-* 'direction', referring to a broader upper Region of the Ground *cukui* 'table'. More examples with different locative nouns will be given to attest to the usage. The above three examples (3.13 to 3.15) are illustrated in Figure 3.1.

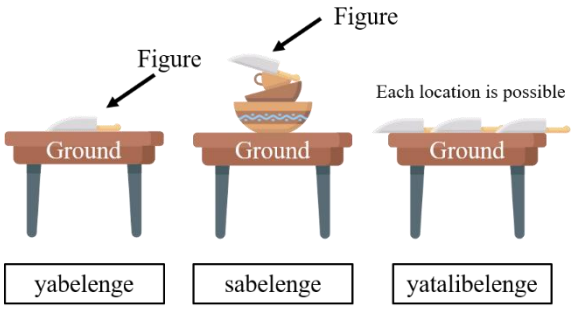

Figure 3.1 Illustration for *yabelenge*, *sabelenge* and *yatalibelenge*

In addition to the locational relationship of 'on' in Budai Rukai, instances related to 'above' by using the word *belenge* 'upperness' are given in (3.16) to (3.18). It is worth noting that words referring to the concepts of 'on' and 'above' are the same in Budai Rukai. They are both represented by the word *belenge* 'upperness'.

(3.16) yabelenge ka vai ki aulrusu.
i-a-belenge ka vai ki aulru=su
be.at-FIN-upperness NOM sun OBL head=2S.NOM
'The sun is above your head.'

(3.17) *sabelenge ka vai ki aulrusu.
sa-belenge ka vai ki aulru=su
SA-FIN-upperness NOM sun OBL head=2S.NOM
'The sun is on your head.'

(3.18) yatalibelenge ka vai ki aulrusu.
i-a-tali-belenge ka vai ki aulru=su
be.at- FIN-direction- upperness NOM sun OBL head=2S.NOM
'The sun is above your head.' (a broader region above your head)

As shown in (3.16), the locative construction is again predicated by *belenge* 'upperness',

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then followed by the Figure *vai* 'sun' and the Ground *aulrusu* 'your head'. In this case, the same word *belenge* 'upperness' when describing 'on' is used to indicate the meaning of 'above', showing that no clear distinction between 'on' and 'above' is made in Budai Rukai. Compared to (3.16), it is shown in (3.17) that the example is ungrammatical because *sa-* is used when the Figure is in contact with the Ground. Lastly, the *tali-* form displays the meaning that the sun is above the broader Region of somebody's head, as in (3.18). The above three examples (3.16 to 3.18) are illustrated in Figure 3.2.

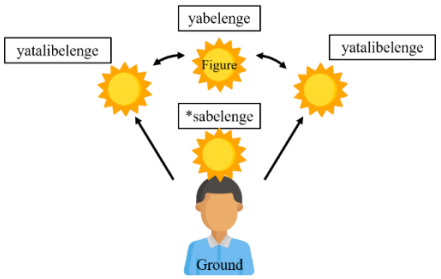

Figure 3.2 Illustration for *yabelenge*, **sabelenge*, *yatalibelenge*

After elucidating the usage of the locative noun *belenge* 'upperness', we now turn to its corresponding word, *lebe* 'downness'. The pattern of this locative noun is the same as that in *belenge* 'upperness' but it denotes the opposite meaning. A set of examples is given in (3.19) to (3.21) below.

(3.19) yalebe ka lrabu ki cukui.
y-a-lebe ka lrabu ki cukui
be.at-FIN-downness NOM hunting.knife OBL table
'The hunting knife is under the table.'

(3.20) salebe ka lrabu ki cukui.
sa-lebe ka lrabu ki cukui.
SA-downness NOM knife OBL table
'The hunting knife is under the table.' (in contact with the table)

(3.21) yatalilebe ka lrabu ki cukui.
i-a-tali-lebe ka lrabu ki cukui
be.at-FIN-direction-downness NOM hunting.knife OBL table
'The hunting knife is under the table.' (a broader region under the table)

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As can be seen in (3.19), the Figure *lrabu* 'hunting knife' is under the Ground *cukui* 'table' without touching the downside of the table. In contrast, the Figure *lrabu* 'hunting knife' is interpreted physically in contact with the downside of the Ground *cukui* 'table' as in (3.20). With respect to (3.21), by forming the predicate with the prefix *tali-* 'direction' and the locative noun *lebe* 'downness', a broader Region under the Ground *cukui* 'table' is referred to. The above three examples (3.20 to 3.21) are illustrated in Figure 3.3.

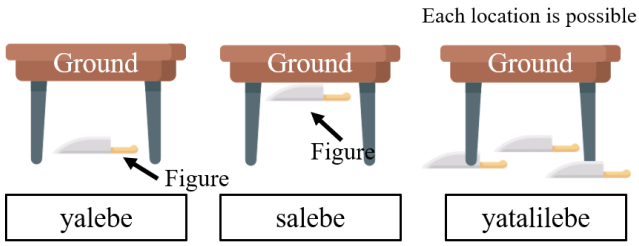

Figure 3.3 Illustration for *yalebe*, *salebe*, *yatalilebe*

In addition to the physically locational relationship between Figure and Ground, *belenge* 'upperness' and *lebe* 'downness' can also be semantically extended to the abstract concept of high and low social status. The following two examples each contain two interpretations. The first one is related to the physical location between two people whereas the second one refers to the official status of two people.

(3.22) sabebelenge nakuane kay Lavakaw.
sa-be-belenge nakuane kay Lavakaw.
SA-RED-upperness 1S.OBL this PN
'Lavakaw ('s position) is higher than mine.' (Physical location)
'Lavakaw ('s official status) is higher than mine.' (Abstract status)

(3.23) salelebe nakuane kay Lavakaw.
sa-le-lebe nakuane kay Lavakaw.
SA-RED-downness 1S.OBL this PN
'Lavakaw ('s position) is lower than mine.' (Physical location)
'Lavakaw ('s official status) is lower than mine.' (Abstract status)

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As shown in (3.22), the reduplicated locative noun *be-belenge* 'RED-upperness' prefixed by *sa-* as the predicate is followed by the Ground *nakuane* 'me' and the Figure *Lavakaw* when only taking the physical locational relationship into account. However, this example also displays the semantically extended meaning that Lavakaw's official status is higher than mine. In the same fashion, syntactically, the verb *salelebe* is followed by the Ground *nakuane* 'me' and the Figure *Lavakaw* to encode the virtual locational relationship as in (3.23). Nonetheless, the example also contains an abstract meaning that Lavakaw's official or social position is lower than mine.

3.2.2 The FRONT and BACK Region

This section illustrates words denoting the FRONT and BACK Region in Budai Rukai, namely *cucubungu* 'front' and *lrilrikudru* 'back' respectively. The former one in three types are given in (3.24) to (3.26).

(3.24) yacucubungu ka Kui ki Lavakaw.

i-a-cucubungu	ka	Kui	ki	Lavakaw
be.at-FIN-front	NOM	PN	OBL	PN

'Kui is in front of Lavakaw.'

(3.25) sacucubungu ka Kui ki Lavakaw.

sa-cucubungu	ka	Kui	ki	Lavakaw
SA-front	NOM	PN	OBL	PN

'Kui is in front of Lavakaw.'

(3.26) yatalicucubungu ka Kui ki Lavakaw.

i-a-tali-cucubungu	ka	Kui	ki	Lavakaw
be.at-FIN-direction-front	NOM	PN	OBL	PN

'Kui is in the (broader) front region from Lavakaw.'

As illustrated in (3.24), a basic locative construction containing *yacucubungu* 'in front of' is used to be the predicate that denotes the front Region of the Ground. The Figure and the Ground can be differentiated through the case marker. That is, *ka Kui* with the

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nominative case is the Figure while *ki Lavakaw* with the oblique one is the Ground. Similarly, the prefix *sa-* can also be used with the locative noun, *cucubungu* 'front' as in (3.25). It is expected that the predicate *sacucubungu* 'in front of' may carry the meaning that the Ground *Lavakaw* and the Figure *Kui* is in contact with each other. However, the meaning remains the same as in (3.24). Therefore, through this locative noun, it is hard to differentiate the usage between *sa-* form and the basic locative construction. Lastly, in (3.26), the example demonstrates how *cucubunugu* 'front' is used with the prefix *tali-*. The sentence also yields the meaning that a broader Region in front of the Figure *Kui* is referred to. The above three examples (3.24 to 3.26) are illustrated in Figure 3.4.

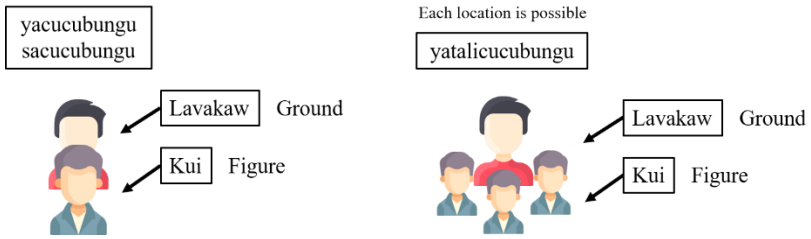

Figure 3.4 Illustration for *yacucubungu*, *sacucubungu*, *yatalicucubungu*

After explaining three types of the locative noun denoting FRONT Region, we now turn to discuss the locative noun that denotes the opposite meaning, i.e., *lrilrikudru* 'back'. Three types related to this term are as illustrated in (3.27) to (3.29).

(3.27) yalrilrikudru ka salawngane ki ama.

i-a-lrilrikudru	ka	sa-lawngu-ane	ki	ama
be.at-FIN-back	NOM	when-antler-NMLZ	OBL	father

'The deer is behind Dad.'

(3.28) salrilrikudru ka salawngane ki ama.

sa-lrilrikudru	ka	sa-lawngu-ane	ki	ama
SA-back	NOM	when-antler-NMLZ	OBL	father

'The deer is behind Dad.'

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(3.29) yatalilrilrikudru ka salawngane ki ama.

i-a-tali-lrilrikudru	ka	sa-lawngu-ane	ki	ama
be.at-FIN-direction-back	NOM	when-antler-NMLZ	OBL	father

'The deer is in the (broader) back region from Dad.'

As can be seen in (3.27), the Figure *salawngane* 'deer' is behind the Ground *ama* 'father', revealing the most unmarked locative construction with *lrilrikudru* 'back' as the verb. Comparing (3.27) with (3.28), syntactically, the only difference lies in the verb, which is replaced by *salrilrikudru*. Similar to the case of FRONT Region in (3.25), the example (3.28) does not reveal the meaning that the Figure *salawngane* 'deer' is physically in contact with the Ground *ama* 'father'. Last, in (3.29), the *tali-* form of *lrilrikudru* shows that the deer is in the broader back Region from the Ground *ama* 'dad'. The above three examples (3.27 to 3.29) are illustrated in Figure 3.5.

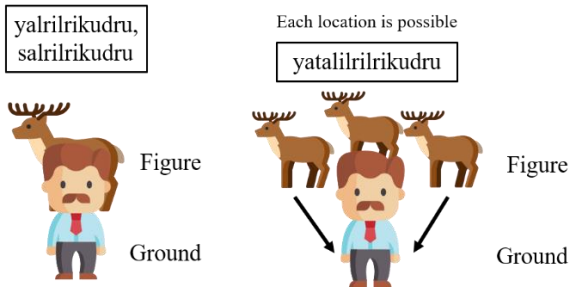

Figure 3.5 Illustration for *yalrilrikudru*, *salrilrikudru*, *yatalilrilrikudru*

3.2.3 The IN and OUT Region

This section illustrates words denoting the IN and OUT Region in Budai Rukai. Two locative nouns, i.e., *daane* 'house' and *adringi* 'inside', are used in Budai Rukai to denote the IN Region of the Ground. Two examples related to the word *daane* 'house' are first shown in (3.30) to (3.31) below.

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(3.30) yadaane ka ina.

i-a-daane	ka	ina
be.at-FIN-house	NOM	mother

'Mom is on the inside of the house.' or 'Mom is inside.'

(3.31) yadaane (*ki) kiwkai ka ina.

i-a-daane	(*ki)	kiwkai	ka	ina
be.at-FIN-house	(*OBL)	church	NOM	mother

'Mom is on the inside of the church.'

The word *daane* 'house' has semantically bleached to a locative noun only for the inside of the buildings. As can be seen in (3.30), *daane* 'house' is prefixed by *i-* 'be at' and infixed by *-a-* to form a verb, then followed by the Figure *ina* 'mother'. This example may contain two meanings because of its unspecified Ground information. The first meaning is 'Mom is on the inside of the house' whereas the second one is 'Mom is inside'. The second meaning can be assured by observing (3.31) when the verb can be used with another Ground information. In this instance, the Ground *kiwkai* 'church' is specified following the predicate *yadaane* without an oblique case and the meaning is 'Mom is on the inside of the church.' These examples show that *daane* 'house' is bleached to convey the Region inside the buildings.

After elaborating the semantically bleached meaning of *daane* 'house', how it is used with the prefix *sa-* and *tali-* is presented in (3.32) to (3.33).

(3.32) sadaane (*ki) kiwkai ka ina.

sa-daane	(*ki)	kiwkai	ka	ina
SA-house	(*OBL)	church	NOM	mother

'Mom is inside the church.' (because there are many people outside)

(3.33) yatalidaane ka ina.

i-a-tali-daane	ka	ina
be.at-FIN-direction-house	NOM	mother

'Mom is on the (broader) inside region of the house.'

As shown in (3.32), the prefix *sa-* is used with the locative noun *daane* 'house' to form

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the predicate of the sentence, followed by the Figure *ina* 'mother' and the Ground *kiwkai* 'church'. The example is semantically different from (3.31) because the prefix *sa-* triggers a context that there are many people outside the church so that the Figure *ina* 'mother' is inside. This is different from the basic locative construction in (3.31) where the focus of the construction only specifies the locational relationship between the Figure *ina* 'mother' and the Ground *kiwkai* 'church'. Last, the locative noun used in *tali-* form is shown in (3.33), revealing that the Figure may be on the broader inside Region of the church. Examples 3.31 to 3.33 are illustrated in Figure 3.6 below.

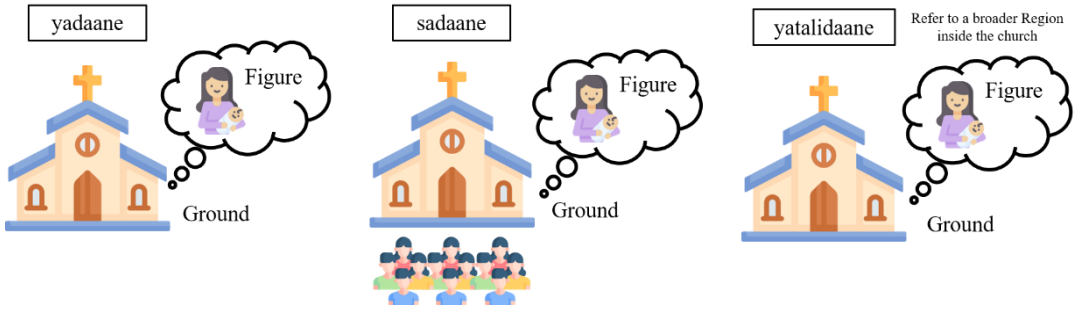

Figure 3.6 Illustration for *yadaane*, *sadaane*, *yatalidaane*

After explaining three types of *daane* 'house', the other term *adringi* 'inside' used to denote the IN region in Budai Rukai is illustrated in (3.34) to (3.36) below.

(3.34) yaadringi ki barungulu ka takurauru.

i-a-adringi	ki	barungulu	ka	takurauru
be.at-FIN-inside	OBL	cave	NOM	frog

'The frog is inside the cave.'

(3.35) saadringi ki barungulu ka takurauru.

sa-adringi	ki	barungulu	ka	takurauru
SA-inside	OBL	cave	NOM	frog

'The frog is inside the cave.' (where objects block the cave entrance.)

(3.36) yataliadringi ki barungulu ka takurauru.

i-a-tali-adringi	ki	barungulu	ka	takurauru
be.at-FIN-inside	OBL	cave	NOM	frog

'The frog is on the (broader) inside region of the cave.'

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As can be seen in (3.34), the basic locative construction contains a predicate *yaadringi* 'is inside', preceding the Ground *barungulu* 'cave' and then the Figure *takurauru* 'frog'. The Ground information in the above three examples are different from those in (3.30) to (3.33) since they are not buildings. Therefore, only the locative noun *adringi* 'inside' can be used to be their verb. Compared to (3.34), the predicate *saadringi* 'is inside' is followed by the same Ground *barungulu* 'cave' and then the Figure *takurauru* 'frog' in (3.35). Nonetheless, their meaning is different in that *saadringi* 'is inside' is used to express that there are many things outside the cave blocking the entrance of the cave and at the same time the Figure *takurauru* 'frog' is inside the cave. Last, in (3.36), the prefix *tali-* is again used to denote that the Figure *takurauru* 'frog' is on the broader inside Region of the Ground *barungulu* 'cave'. The above three examples (3.34 to 3.36) are illustrated in Figure 3.7.

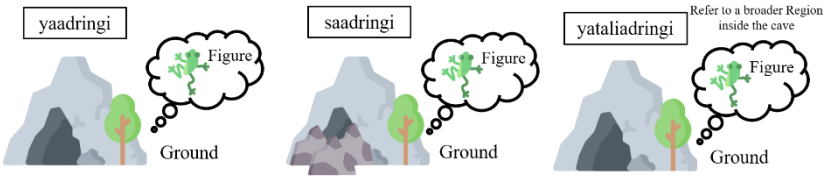

Figure 3.7 Illustration for *yaadringi*, *saadringi*, *yataliadringi*

By substituting for the Ground of the locative construction, the difference between *yaadringi* and *saadringi* can be further pointed out. The examples are given in (3.37) and (3.38) below.

(3.37) yaadringi ka takurauru ki dilrungu.

i-a-adringi	ka	takurauru	ki	dilrungu
be.at-FIN-inside	NOM	frog	OBL	clay.pot

'The frog is inside the clay pot.'

(3.38) saadringi ka takurauru ki dilrungu.

SA-adringi	ka	takurauru	ki	dilrungu
SA-inside	NOM	frog	OBL	clay.pot

'The frog is under the clay pots.'

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As shown in (3.37), *yaadringi* is used in this basic locative construction because the Ground is a non-building object *dilrungu* 'clay pot'. The verb is then followed by the Figure *takurauru* 'frog' and the Ground *dilrungu* 'clay pot'. On the other hand, it is *saadringi* that functions as the verb in (3.38), followed by the same Figure *takurauru* 'frog' and the Ground *dilrungu* 'clay pot'. It is originally expected that *saadringi* renders a similar 'inside' meaning that something blocks the entrance of the clay pot and the frog is inside, as in (3.35); however, the meaning becomes 'the frog is under the clay pots'. That is, there are a lot of clay pots and the frog is dead inside the stack of those clay pots. This may be because the *sa-* form can result in the meaning that the Figure is in contact with the Ground just as the case in *salebe* and *sabelenge* in section 3.2.1 above. The above two examples (3.37 to 3.38) are illustrated in Figure 3.8.

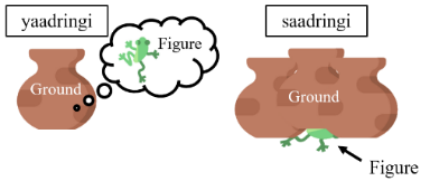

Figure 3.8 Illustration for *yaadringi*, *saadringi*

After elaborating two words denoting the IN Region, the term *latadre* 'outside' denoting the OUT Region is discussed here. Three types of *latadre* 'outside' with and without specifying the Ground in the locative construction are exemplified in (3.39) to (3.41).

(3.39) yalatadre ka ina (ki kiwkai).
i-a-latadre ka ina (ki kiwkai)
be.at-FIN-outside NOM mother (OBL church)
'Mom is outside (the church).'

(3.40) salatadre ka ina (ki kiwkai).
sa-latadre ka ina (ki kiwkai)
SA-outside NOM mother (OBL church)
'Mom is outside (the church).' (because there are many people inside.)

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(3.41) yatalilatadre ka ina (ki kiwkai).

i-a-tali-latadre	ka	ina	(ki	kiwkai)
be.at-FIN-direction-outside	NOM	mother	(OBL	church)

'Mother is on the (broader) outside region (of the church).'

As illustrated in (3.39), the example shows a locative construction with *latadre* 'outside' denoting the OUT Region as the predicate. The verb is then followed by the Figure *ina* 'mother' but the Ground information such as *kiwkai* 'church' can be omitted. In contrast, *salatadre* is used when the speaker knows that there are many people inside the Ground *kiwkai* 'church' so that Mom has to stay outside as in (3.40). Last, the example (3.42) indicates that a broader outside Region is denoted. The above three examples (3.39 to 3.41) are illustrated in Figure 3.9.

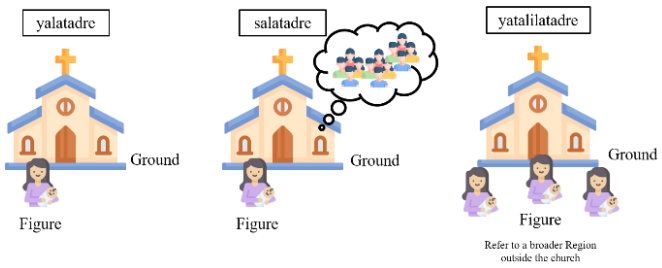

Figure 3.9 Illustration for *yalatadre*, *salatadre*, *yatalilatadre*

3.2.4 The MIDDLE and SIDE Region

This section discusses three words denoting the MIDDLE and SIDE Region in Budai Rukai. Overall, the distinction between the *i-* form and the *sa-* form is not salient in this type of Region. The term denoting the MIDDLE Region *kabicelrakane* 'between' is first given in (3.42) to (3.44).

(3.42) yakabicelrakane ka taupungu ki Lavurase si Muni.

i-a-kabicelrakane	ka	taupungu	ki	Lavurase	si	Muni
be.at-FIN-middle	NOM	dog	OBL	PN	and	PN

'The dog is between Lavurase and Muni.'

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(3.43) sakabicelrakane ka taupungu ki Lavurase si Muni.

sa-kabicelrakane	ka	taupungu	ki	Lavurase	si	Muni
SA-middle	NOM	dog	OBL	PN	and	PN

'The dog is between Lavurase and Muni.'

(3.44) yatalikabicelrakane ka taupungu ki Lavurase si Muni.

i-a-tali-kabicelrakane	ka	taupungu	ki	Lavurase
be.at-FIN-direction-middle	NOM	dog	OBL	PN

si Muni
and PN

'The dog is in the (broader) middle region of Lavurase and Muni.'

As can be seen in (3.42), the basic locative construction contains the verb *yakabicelrakane* 'is between' and three arguments, i.e., the Figure *taupungu* 'dog' and the Grounds *Lavurase si Muni* 'Lavurase and Muni'. On the other hand, the verb in (3.43) is replaced to *sa-* form; nevertheless, the meaning is not much different from (3.42). Lastly, in (3.44), the *tali-* form of *kabicelrakane* 'between' is used to express that the exact position between the two Grounds, *Lavurase* and *Muni* is unknown because a broader middle region is denoted. The above three examples (3.42 to 3.44) are illustrated in Figure 3.10.

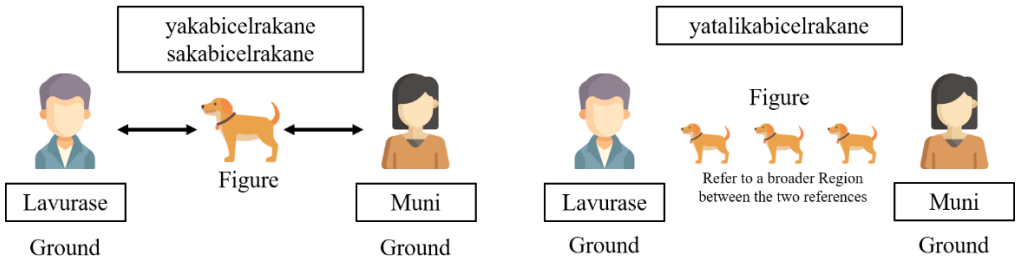

Figure 3.10 Illustration for *yakabicelrakane*, *sakabicelrakane*, *yatalikabicelrakane*

We now turn to discuss two locative nouns denoting the SIDE region. They are *thili* 'side' and *babiabila* 'besideness'. When depicting the relationships between the Figure and the Ground, the closer distance is expressed by the word *thili* 'side'. The examples are given in (3.45) to (3.46).

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(3.45) yathili ka Lavurase ki tinaini.

i-a-thili	ka	Lavurase	ki	t-ina=ini
be.at-FIN-side	NOM	PN	OBL	T-mother=3S.GEN

'Lavurase is next to his/her mother.'

(3.46) sathili ka Lavurase ki tinaini.

sa-thili	ka	Lavurase	ki	t-ina=ini
SA-side	NOM	PN	OBL	T-mother=3S.GEN

'Lavurase is next to his/her mother.'

(3.47) yatalithili ka Lavurase ki tinaini.

i-a-tali-thili	ka	Lavurase	ki	t-ina=ini
be.at-FIN-direction-side	NOM	PN	OBL	T-mother=3S.GEN

'Lavurase is next to his/her mother.' (a broader region next to the Ground)

As can be seen in (3.45), affixed with the locative noun *thili* 'side', the predicate is used to describe the Figure *Lavurase* is next to the Ground *tinaini* 'his/her mother'. Note that *tina* refers to another person's mother; thus, 'his/her' mother is glossed. With regard to (3.46), it is originally expected that the *sa-* from *sathili* may produce a meaning that the Figure *Lavurase* is in contact with the Ground *tinaini* 'his/her mother'. However, the meaning is not much different from that in (3.45). We speculate that the meaning is not distinguished because the word *thili* 'side' is originally a term denoting that something is right next to the side of another thing. Therefore, there is no need to use *sa-* to further point out the Figure is in contact with the Ground. Lastly, the *tali-* form *yatalithili* is used when the Figure *Lavurase* is conceived to be at a broader SIDE of the Ground *tinaini* 'his/her mother'.

Compared to *thili* 'side', the locative noun *babiabila* 'besideness' encodes farther distance between the Figure and the Ground. Examples are given in (3.48) and (3.49).

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(3.48) yababiabila ka Lavurase ki tinaini.[8]

i-a-ba-bia-bila		ka	Lavurase
be.at-FIN-RED-RED-edge		NOM	PN
ki	t-ina=ini		
OBL	T-mother=3S.GEN		

'Lavurase is beside his/her mother.'

(3.49) sababiabila ka Lavurase ki tinaini.

sa-ba-bia-bila		ka	Lavurase
SA-RED-RED-edge		NOM	PN
ki	t-ina=ini		
OBL	T-mother=3S.GEN		

'Lavurase is beside his/her mother.'

As shown in (3.48) and (3.49), *yababiabila* and *sababiabila* function as the predicate of the two examples respectively, both preceding the Figure *Lavurase* and then the Ground *tinaini* 'his/her mother'. The meanings of these two examples are virtually the same, both displaying that the Figure is beside the Ground. However, when using *babiabila* 'besideness', the distance between two references is farther than that of *thili* 'side'. Figure 3.11 illustrates examples of *thili* 'side' (3.45 to 3.47) and compares them with those of *babiabila* 'besideness' (3.48 to 3.49).

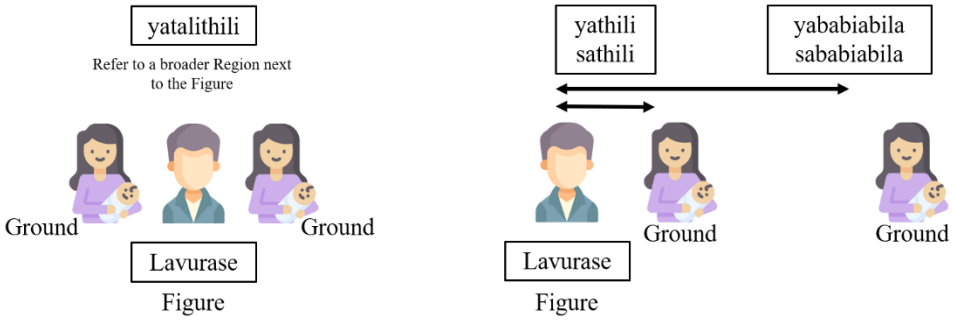

Figure 3.11 Illustration for *yatalithili, yathili, sathili*, *yababiabila*, *sababiabila*

3.2.5 The LEFT and RIGHT Region

This section deals with the terms denoting LEFT and RIGHT Region, namely *viri*

[8] Among all the locative nouns in Budai Rukai, only the root of the word *babiabila* 'besideness'is reduplicated. The root cannot be used solely to display the meaning of 'beside'.

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and *vanale* respectively. Overall, the semantic function of the *sa-* form is similar to that in the basic locative construction. Consider examples in (3.50) to (3.53).

(3.50) yavanale/savanale ka Lavurase ki ina.

i-a-vanale/sa-vanale	ka	Lavurase	ki	ina
be.at-FIN-right/SA-right	NOM	PN	OBL	mother

'Lavurase is to the right of Mom.'

(3.51) yaviri/saviri ka Lavurase ki ina.

i-a-viri/sa-viri	ka	Lavurase	ki	ina
be.at-FIN-left/SA-left	NOM	PN	OBL	mother

'Lavurase is to the left of Mom.'

(3.52) yatalivanale ka Lavurase ki ina.

i-a-tali-vanale	ka	Lavurase	ki	ina
be.at-FIN-direction-right	NOM	PN	OBL	mother

'Lavurase is at the (broader) right-hand region of Mom.'

(3.53) yataliviri ka Lavurase ki ina.

i-a-tali-viri	ka	Lavurase	ki	ina
be.at-FIN-direction-left	NOM	PN	OBL	mother

'Lavurase is at the (broader) left-hand region of Mom.'

As shown in (3.50), both *yavanale* 'is to the right' and *savanale* 'is to the right' can function as the predicate in these examples, then followed by the Figure *Lavurase* and the Ground *ina* 'mother'. The predicate prefixed by either *i-* or *sa-* displays the same semantic functions. In the same vein, example (3.51) demonstrates how *yaviri* 'is to the left' and *saviri* 'is to the left' function as the predicate in this example, also followed by the Figure *Lavurase* and the Ground *ina* 'mother'. Both *yaviri* and *saviri* also convey the same meaning. Therefore, the distinction between *i-* and *sa-* is not salient in terms of the RIGHT and LEFT Region. In addition, when the locative noun *vanale* 'right' and *viri* 'left' are prefixed by *tali-*, the verbs *yatalivanale* and *yataliviri* also result in a broader LEFT or RIGHT Region between the Figure *Lavurase* and the Ground *ina* 'mother' as in (3.52) and (3.53). The above four examples (3.50 to 3.53) can be as illustrated in Figure 3.12.

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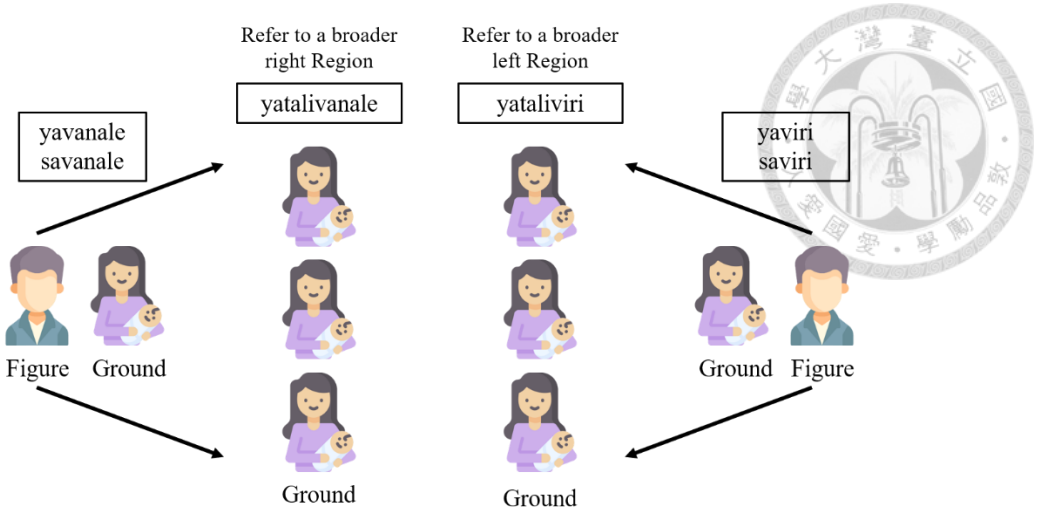

Figure 3.12 Illustration for *yavanale, savanale, yatalivanale, yaviri, saviri, yataliviri*

3.3 Cardinal directions predicated in locative constructions

The cardinal system of PMP (termed as macro-orientation by Blust (1997)) is mainly based on two orienting features: a land-sea axis and the south-east Asian monsoons. The former one contains the reflexes: **lahud* 'downriver, towards the sea', **daya* 'upriver, towards the interior' while the latter comprises the reflexes: **habaRat* 'west/north-west monsoon', **timuR* 'east/south-east monsoon'. Previous studies indicated that some Formosan languages such as Siraya (Li, 2006), Taivoan (Li, 2006), Pazih (Sin. Arch.), Paiwan (Ferrell, 1982), Kavalan (Jiang, 2006) also share the same reflexes in the land-sea axis.

However, the macro-orientation in Budai Rukai does not follow the system in PMP. Instead, the cardinal directions are based on the position of the sun and one's orientation facing the sunrise as in Indo-European (IE) (Buck, 1949). Actually, the meaning is similar to another Formosan language, Isbukun Bunun, which lacks of those terms related to the land-sea axis or the south-east Asian monsoons. The comparison of the cardinal directions in IE, Budai Rukai and Isbukun Bunun is demonstrated in Table 3.4.

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Table 3.4 Comparison of macro-orientation in two Formosan languages with IE

	East	West	South	North
Indo-European (Buck, 1949)	sunrise, dawn, morning	sunset, evening	midday	-
	in front	behind	right	left
Budai Rukai	***talravane*** ta-lraw-ane LOC-sunrise-NMLZ 'the place of sunrise'	***talriwgane*** ta-lriwgu-ane LOC-sunset-NMLZ 'the place of sunset'	***talivanale*** tali-vanale direction-right 'right direction'	***taliviri*** tali-viri direction-left 'left direction'
Isbukun Bunun (Chang, 2018)	***insumasvali*** 'the place where the sun comes from'	***uhaivasvali*** 'the place where the sun turns over'	***makalangan*** 'the place where it is hot'	***makazavan*** 'the place where it is cold'

As can be observed from Table 3.4, it is shown that the meanings of cardinal directions in Budai Rukai are similar to those in Indo-European. On the one hand, the east and the west refer to the place of sunrise and sunset. The word denoting east *talravane* is formed by the locative nominalized circumfix *ta-…-ane* and the root *lraw* 'sunrise' while the word denoting west *talriwgane* is formed by the circumfix *ta-…-ane* and the root *lriwgu* 'sunset'. On the other hand, the south and the north refer to right and left respectively. The root of *vanale* 'right' and *viri* 'left' in Budai Rukai are prefixed by *tali-* 'direction' to denote a broader Region and semantically extends to 'south' and 'north'. The reason why the right denotes the south while the left denotes the north is based on Rukai people's orientation towards the sun. When facing the sunrise at the east side, people's right-hand side is south while their left-hand side is north.

How these cardinal directions are used in the locative constructions is further elaborated below. All of the cardinal directions can be predicated in the locative constructions as given in (3.54) to (3.57).

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(3.54) yatalravane ka Tarumake ikay Takau.
i-a-ta-lraw-ane ka Tarumake
be.at-FIN-LOC-sunrise-NMLZ NOM Taitung
i-kay Takau
be.at-this Kaohsiung
'Taitung is to the east of Kaohsiung.'

(3.55) yatalriwgane ka Taiciw ikay Tarumake.
i-a-ta-lriwgu-ane ka Taiciw
be.at-FIN-LOC-sunset-NMLZ NOM Taichung
i-kay Tarumake
be.at-this Taitung
'Taichung is to the west of Taitung.'

(3.56) yatalivanale ka Takau ikay Taihuku.
i-a-tali-vanale ka Takau
be.at-FIN-direction-right NOM Kaohsiung
i-kay Taihuku
be.at-this Taipei
'Kaohsiung is to the south of Taipei.'

(3.57) yataliviri ka Taihuku ikay Takau.
i-a-tali-viri ka Taihuku
be.at-FIN-direction-left NOM Taipei
i-kay Takau
be.at-this Kaohsiung
'Taipei is to the north of Kaohsiung.'

As shown in (3.54) to (3.57), the cardinal directions, i.e., *talrawane* 'east', *talriwkane* 'west', *talivanale* 'south' and *taliviri* 'north', are predicated respectively in each example. The four predicates are all followed a place noun first, i.e., *Tarumake* 'Taitung', *Taiciw* 'Taichung', *Takau* 'Kaohsing' and *Taihuku* 'Taipei' as the Figure of the sentence. The Figure in each example is further followed by *ikay* 'is at' and the Ground, i.e., Takau 'Kaohsiung', Tarumake 'Taitung, Taihuku 'Taipei', and Takau 'Kaohsiung'. The cities in Taiwan are illustrated in Figure 3.13 for reference.

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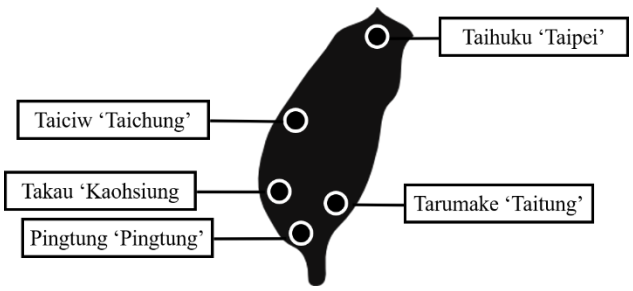

Figure 3.13 Cities in Taiwan for reference

3.4 Spatial prefix

After illustrating the usages of various locative nouns and cardinal nouns predicated in locative constructions of Budai Rukai, we now turn to the other related morphological representation of spatial expressions, namely, the spatial prefix in Budai Rukai. According to Blust (2003), five reflexes related to space are attested in Thao, Puyuma and Paiwan. Based on the examples of these languages, the reflexes of Proto Austronesian (PAn) are reconstructed as in Table 3.5.

Table 3.5 Reflexes of PAn **mu-, *pu-, *i, *mi-* and **pi-* in Thao, Puyuma, and Paiwan (cited from Blust (2003))

Proto-Austronesian	Function	Thao	Puyuma	Paiwan
**mu-*	motion	*mu-*	*mu-*	-
**pu-*	causative of motion	*pu-*	*pu-*	*pu-*
**i*	location	*i*	*i*	*i*
**mi-*	intransitive verb	*mi-*	-	*mi-*
**pi-*	causative of location	*pi-*	-	*pi-*

As shown in Table 3.5, it is shown that Puyuma and Paiwan share three and four reflexes of PAn respectively whereas all of the prefixes can be found in Thao. Several words formed with these prefixes are given in Blust (2003) in direct and indirect meanings. For instance, in Puyuma, *mu-enai* means 'enter the water' but the motion sense can also be indirect or metaphorical such as *mu-pisaH* 'broken into two or three large pieces' (Tsuchida, 1980). Although many examples with these prefixes are attested in these

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three languages, examples from other languages are not discussed in Blust (2003). Therefore, this section aims to demonstrate verbs with these prefixes in Budai Rukai. It will be shown that Budai Rukai has rich examples of the aforementioned prefixes ranging from concrete meanings to more semantically extended ones except the intransitive one, **mi-*. The morphological distribution and semantic functions of each prefix except for **mi-* will be discussed in sections that follow.

3.4.1 The prefix of motion *mu-*

This section discusses five different categories of *mu-* based on their morphological formation and semantic functions. These five categories are illustrated in Figure 3.14.

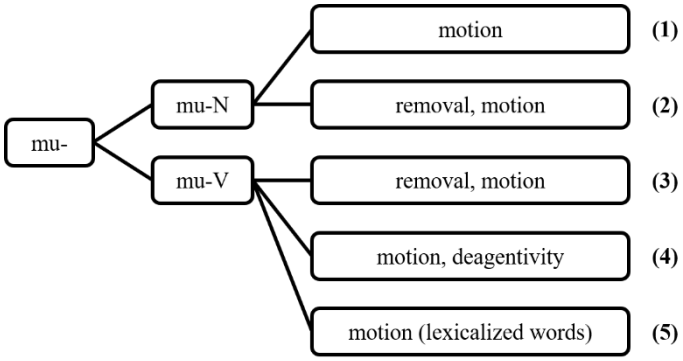

Figure 3.14 Five categories of the prefix *mu-*

As demonstrated in Figure 3.14, *mu-* can take either a verb or a noun root. Affixed with the root, the whole word functions as a verb whose meaning are related to motion or removal. The function of *mu-* is similar to that of *de-* in Romance languages. Hebblethwaite (2001) investigated the semantic generalization of the motion prefix *de-* in Latin and Gallo Romance and found that the prefix consists of the meaning 'motion down/away' (e.g., deflecto = "to bend down or aside) and 'removal' (e.g., despolio = "to plunder, despoil", deiungo = "to separate, untie"). Therefore, in the subsequent discussions, our data also show that meanings between motion and removal sometimes

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are inseparable.

3.4.1.1 *mu*-N: motion

The first category is a verbalized prefix *mu-* attached to the Ground or Region noun root. This type of verb compound contains the most concrete meaning of motion and is the most common one. The possible compound verbs are summarized in Table 3.6 and 3.7

Table 3.6 *mu*-N verb compounds I (Ground root)

root	**meaning**	**non-finite**	**finite**	**meaning**
lregelrege	mountain	*(m)u-lregelrege*	*mu-a-lregelrege*	go to the mountain
payrange	plain	*(m)u-payrange*	*mu-a-paryange*	go to the plain
balriw	home	*(m)u-balriw*	*mu-a-balriw*	go home
barate	flat road	*(m)u-barate*	*mu-a-barate*	walk on flat roads
lricungu	toilet	*(m)u-lricungu*	*mu-a-lricungu*	go to the toilet
taetale	chair	*(m)u-taetale*	*mu-a-taetale*	go to the chair (sit)

Table 3.7 *mu*-N verb compounds I (Region root)

root	**meaning**	**non-finite**	**finite**	**meaning**
belenge	upperness	*(m)u-belenge*	*mu-a-belenge*	go to the upper part
lebe	downness	*(m)u-lebe*	*mu-a-lebe*	go to the lower part
latadre	outside	*mu-latadre*	*mu-a-latadre*	go to the outside
adringi	inside	*mu-adringi*	*mu-a-adringi*	go to the inside

It is shown that when *mu-* is prefixed with a noun root, it can either take a Ground as in Table 3.6 or a Region noun as in Table 3.7. Overall, if the noun is the place either a building (e.g., *lricungu* 'toilet', *kiwkai* 'church', or *gaku* 'school') or a natural Ground (e.g., *lregelrege* 'mountain' or *payrange* 'plain'), it can be prefixed by *mu-* to convey the meaning 'go to a place'. In addition, *mu-* conveys the similar meaning of motion when it prefixes locative nouns like *lebe* 'downness', *belenge* 'upperness' as shown in Table 3.7.

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In Table 3.6 and 3.7, though they are viewed as the verb compound in the same category, their syntactic structures are slightly different. Take *belenge* 'upperness' as an example. Related verbal compounds are given in (3.58) to (3.62).

(3.58) muabelenge ka Lavakaw.
mu-a-belenge ka Lavakaw
go-FIN-upperness NOM PN
'Lavakaw goes up.'

(3.59) *mubelenge ka Lavakaw.
'Lavakaw goes up.' (intended meaning)

(3.60) walaylay ka Lavakaw (m)ubelenge ki sataetaele.
wa-laylay ka Lavakaw (m)u-belenge ki sataetaele
ACT.FIN-run NOM PN go-upperness OBL ladder
'Lavakaw runs up the ladder.'

(3.61) muabelenge ka Lavakaw laylay ki satatetale.
mu-a-belenge ka Lavakaw laylay ki satatetale
go-FIN-upperness NOM PN run OBL ladder
'Lavakaw runs up the ladder.'

(3.62) *walaylay ka Lavakaw mua belenge/muabelenge ki sataetaetale
'Lavakaw runs up the ladder.' (intended meaning)

It is shown in (3.58) that *mu-* compound can serve as the only verb of the sentence with the finite infix *-a-*; without the finite marker, the sentence will be ungrammatical as in (3.59). In addition, in a serial-verb construction in (3.60), the *mu-* compound *(m)ubelenge* 'go to the upper part' is the second verb of the sentence in a non-finite form. It is worth noting that, in the non-finite form, both *mubelenge* and *ubelenge* are acceptable. Therefore, in the following discussions, these two forms are seen to contain the same semantic function. As can be seen in (3.61), the *mu-* verb compound can also serve as the first verb *mu-a-belenge* 'go to the upper part', with the non-finite verb *laylay* 'run'. However, when used as the second verb in (3.62), the *mu-* verb compound fails to take the finite infix *-a-*.

We now turn to the verb compounds taking a Ground root. Take *lregelrege*

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‘mountain’ for example. Related verbal compounds are given in (3.63) to (3.66)

(3.63) mualregelrege ka Lavakaw.
mu-a-lregelrege ka Lavakaw
go-FIN-mountain NOM PN
‘Lavakaw goes to the mountain.’

(3.64) *mulregelrege ka Lavakaw.
‘Lavakaw goes to the mountain.’ (intended meaning)

(3.65) walaylay ka Lavurase (m)ulregelrege.
wa-laylay ka Lavurase (m)u-lregelrege
ACT.FIN-run NOM PN go-mountain
‘Lavurase runs to the mountain.’

(3.66) walaylay ka Lavurase mua lregelrege.
wa-laylay ka Lavurase mua lregelrege
ACT.FIN-run NOM PN go mountain
‘Lavurase runs to the mountain.’

Compared (3.63) to (3.64), the *mu-* compound *mualregelrege* ‘go to the mountain’ can only be used as the only verb when infixed with the finite marker *-a-*. As shown in (3.65), the *mu-* compound serves as the second verb of the sentence without the finite marker. However, as can be seen in (3.66), the example is still grammatical when the *mu*-compound serves as the second verb of the sentence. It is speculated that two types of syntactic structures are used in Budai Rukai when the prefix *mu-* taking the Ground root as the second verb. The first type is as shown in (3.65) in which an expected *mu-* verbal compound without the infix *-a-* is used. The second type shows that *mu-* is conceived as *mua* when taking the finite infix as in (3.66) because the phonetic realization between mu-a ‘go-FIN’ and mua ‘go’ are the same. Consider (3.67) and (3.68) for further information of *mua* ‘go’

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(3.67) kay Muni kiathareve mua ki cekeleta Vedai.
kay Muni ki<a>thareve mua ki cekele=ta Vedai
this PN <FIN>marry go OBL tribe=1P.GEN Wutai
'Muni is married to the Wutai tribe.'

(3.68) wamua kay Muni kithareve ki cekeleta Vedai.
wa-mua kay Muni kithareve ki cekele=ta Vedai
ACT.FIN-go this PN marry OBL tribe=1P.GEN Wutai
'Muni is married to the Wutai tribe.'

As shown in the examples above, *mua* 'go' is the second full verb in (3.67) while *wamua* 'go' is the first verb in (3.68). *mu-* is actually grammaticalized from a full verb *mua* 'go'. Therefore, the second verb *mua* 'go' in (3.66) is not a prefix but a single word and it is gradually becoming preposition-like because the element following the word is nominal in nature. However, the whole *mua* phrase cannot be pre-posed to the sentence-initial position so it seems that the *mu-* is still in the process of the grammaticalization.

All in all, it can be assured that *mu-* 'go' can take either Ground or Region noun root to form a verb compound. When the verb compound is used as the second verb of the sentence, the one with Region root can only be prefixed by *mu-* 'go' while the one with Ground root could not only be prefixed by *mu-* 'go' but also preceded by a full verb *mua* 'go' (though becoming preposition-like) as the second verb.

3.4.1.2 *mu*-N: removal with motion

The second category of the *mu-* compound takes a non-Ground or non-Region noun. Nevertheless, the meanings of these verb compounds are semantically extended to removal with motion as illustrated in Table 3.8.

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Table 3.8 *mu*-N verb compounds II

root	meaning	non-finite	finite	meaning
dralri	slate	*(m)u-dralri*	*mu-a-dralri*	pull away the slate
caki	shit	*(m)u-caki*	*mu-a-caki*	defecate
kiame	debt	*(m)u-kiame*	*mu-a-kiame*	repay the debt
ricingi	branch	*(m)u-ricingi*	*mu-a-ricingi*	cut the branch
kateme	iron clip	*(m)u-kateme*	*mu-a-kateme*	untie the iron clip
bakuru	tree bark	*(m)u-bakuru*	*mu-a-bakuru*	peel off the bark
kece	shoes	*(m)u-kece*	*mu-a-kece*	take off the shoes
laymay	clothes	*(m)u-laymay*	*mu-a-laymay*	take off the clothes
kacingi[*]	kacingi	*(m)u-kacingi*	*mu-a-kacingi*	take off the kacingi

*The *kacingi* is a kind of Rukai traditional pants.

As shown in Table 3.8, affixed with *mu-*, the whole verb compound is conceived to convey the meaning of 'removal'. Examples of these verbal compounds are shown in (3.69) to (3.72) below.

(3.69) muadralri/*mudralri ka Muni.
mu-a-dralri/*mudralri ka Muni
go-FIN-slate/*go-slate NOM PN
'Muni pulls away the slates.'

(3.70) arapuku (m)udralri/*muadralri ka Muni
Ø-ara-puku (m)u-dralri/*mu-a-dralri ka Muni
FIN-use-power go-slate/*go-FIN-slate NOM PN
'Muni tries hard to pull away the slates.'

(3.71) mualaymay/*mulaymay ka Lavakaw.
mu-a-laymay/*mu-laymay ka Lavakaw
go-FIN-clothes/*go-clothes NOM PN
'Lavakaw takes off the clothes.'

(3.72) kiararimu ka Lavakaw (m)ulaymay/*mualaymay.
ki<a><ra>rimu ka Lavakaw
<FIN><CaRED>quickly NOM PN
(m)u-laymay/*mu-a-laymay
go-clothes/*go-FIN-clothes
'Lavakaw quickly takes off the clothes.

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As can be seen in (3.69), this example shows that the *mu-* compound *muadralri* 'pull away the slate' is used as the only verb of the sentence, in which the object *dralri* 'slate' is encoded in the verbal compound. By using another adverbial verb *arapuku* 'try hard to', the *mu-* compound *mudralri* 'pull away the slate' is used as the second verb of the sentence without the finite marker *-a-* and the object *dralri* 'slate' is also encoded in the compound. In the same vein, example (3.71) contains another *mu*-compound *mualaymay* 'take off the clothes' in which the object *laymay* 'clothes' is encoded. Also, when the adverbial verb *kiararimu* 'quickly' functions as the first verb of the sentence, the second *mu-* verbal compound *mulaymay* 'take off the clothes' cannot take the finite infix *-a-*.

3.4.1.3 *mu*-V: removal with motion

The third category of the *mu-* compound includes the *mu-* prefix attached to a verb root, also conveying the meaning of removal with motion. The examples are as shown in Table 3.9.

Table 3.9 *mu*-V verb compounds I

root	**meaning**	**non-finite**	**finite**	**meaning**
kerenge	tie	*(m)u-kerenge*	*mu-a-kerenge*	untie
kabungu	cover	*(m)u-kabungu*	*mu-a-kabungu*	lift off
caebe	cover	*(m)u-caebe*	*mu-a-caebe*	uncover
balrulru	roll	*(m)u-balrulru*	*mu-a-balrulru*	unwind
emenge	imprison	*mu-emenge*	*mu-a-emenge*	release
elebe	close	*mu-elebe*	*mu-a-elebe*	open (the door)
renere	flood	*(m)u-renere*	*mu-a-renere*	drain
kilrungu	bend	*(m)u-kilrungu*	*mu-a-kilrungu*	make it straight
erece	tie (a knot)	*mu-erece*	*mu-a-erece*	untie (a knot)

In Table 3.9, the roots are all verbs because they can take the active voice marker as in

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(3.73) and (3.74) below. Take *kabungu* 'cover' and *elebe* 'close' for examples. In (3.73) and (3.74), the verbs are prefixed by the active marker *wa-*, simultaneously revealing the finiteness of the verb. However, when affixed with *mu-* to become *mukabungu* 'lift off and *muelebe* 'open', the verb conveys the opposite meaning of the verb root *kabungu* 'cover' and *elebe* 'close', showing the meaning of removal with motion. The examples are given in (3.75) to (3.78).

(3.73) wakabungu ki aga ka Kui.
wa-kabungu ki aga ka Kui
ACT.FIN-cover OBL rice NOM PN
'Kui covers the rice.' (with a lid)

(3.74) waelebe ka Lavurase ki lrawlrawdru.
wa-elebe ka Lavurase ki lrawlrawdru
ACT.FIN-close NOM PN OBL door
'Lavurase closes the door.'

(3.75) muakabungu/*mukabungu ka Kui kay makalrilaw.
mu-a-kabungu/*mu-kabungu ka Kui kay makalrilaw
go-FIN-cover/go-cover NOM PN this textile
'Kui lifts off the textiles.'

(3.76) ngiabalay (m)ukabungu/*muakabungu ka Kui kay makalrilaw.
Ø-ngiabalay (m)u-kabungu/*mu-a-kabungu
FIN-slowly go-cover/*go-FIN-cover
ka Kui kay makalrilaw
NOM PN this textile
'Kui slowly lifts off the textiles.'

(3.77) muaelebe/*muelebe ka Lavurase ki lrawlrawdru.
mu-a-elebe/*mu-elebe ka Lavurase ki lrawlrawdru
go-FIN-close/*go-close NOM PN OBL door
'Lavurase opens the door.'

(3.78) kiararimu muelebe/*muaelebe ka Lavurase ki lrawlrawdru.
ki<a><ra>rimu mu-elebe/*mu-a-elebe
<FIN><CaRED>quickly go-close/*go-FIN-close
ka Lavurase ki lrawlrawdru
NOM PN OBL door
'Lavurase slowly opens the door.'

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In (3.75), affixed with *mu-*, the verb compound conveys the opposite meaning *muakabungu* 'lift off' of the verb root *kabungu* 'cover'. By using an adverbial verb *ngiabalay* 'slowly' functioning as the first verb of the sentence, the *mu-* compound *mukabungu* 'lift off' is used as the second verb without the finite infix *-a-* as in (3.76). Similarly, the verb root *elebe* 'close' becomes 'open' when being prefixed by *mu-* in (3.77). Being at the second verb position, the verbal compound *muelebe* 'open' cannot take the finite marker *-a-* as in (3.78). What different from (3.77) is that the non-finite form can only be *muelebe* 'open' due to the phonotactic constraints in Budai Rukai

3.4.1.4 *mu*-V: motion, deagentivity

The fourth category of *mu-* compound contains the *mu-* prefix attached to the verb root and the meaning of the whole compound is similar to its root, in contrast to the third category. That is to say, the compound still produces the meaning of the original verb root either related to motion or adding a sense of motion to the whole phrase. In addition, affixed with *mu-*, verbal compounds of this type convey the middle voice as in Table 3.10 or the non-volitionality of the sentence as in Table 3.11.

Table 3.10 *mu*-V verb compounds II (middle voice)

root	**meaning**	**non-finite**	**finite**	**meaning**
gugu	pour	*(m)u-gugu*	*mu-a-gugu*	flow out
thene	soak	*(m)u-thene*	*mu-a-thene*	sink
cilri	throw	*(m)u-cilri*	*mu-a-cilri*	fall

Table 3.11 *mu*-V verb compounds II (non-volitionality)

root	**meaning**	**non-finite**	**finite**	**meaning**
taluvayvay	appear	*(m)u-taluvayvay*	*mu-a-taluvayvay*	come out
pungupungu	hit	*(m)u-pungupungu*	*mu-a-pungupungu*	bump

Table 3.10 contains three verbs that can display the middle voice of Budai Rukai

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whereas Table 3.11 contains two verbs used in sentences to reveal non-volitionality of the subject. Take *cilri* ‘thorw’ and *pungupungu* ‘bump’ for examples respectively as shown in (3.79) to (3.82) for elaboration.

(3.79) wacilri ku ubulu ka Lavakaw.

wa-cilri	ku	ubulu	ka	Lavakaw
ACT.FIN-thorw	OBL	trash	NOM	PN

‘Lavakaw throws out the trash.’

(3.80) muacilri/*mucilri ka lrenege.

mu-a-cilri/*mu-cilri	ka	lrenege
go-FIN- throw/*go-throw	NOM	stone

‘The stone falls.

(3.81) wapungupungu ka Lavakaw ki cukui.

wa-pungupungu	ka	Lavakaw	ki	cukui
ACT.FIN-bump	NOM	PN	OBL	table

‘Lavakaw bumps the table.’ (intentionally/volitionally)

(3.82) muapungupungu ka Lavakaw ki cukui.

mu-a-pungupungu	ka	Lavakaw	ki	cukui
go-FIN-bump	NOM	PN	OBL	table

‘Lavakaw bumps the table.’ (accidentally/non-volitionally)

As can be seen in (3.79), when the verb root *cilri* ‘throw’ is prefixed by the active finite marker *wa-*, the sentence contains two arguments, a subject *Lavakaw* and an object *unbulu* ‘trash’. In contrast, prefixed with *mu-* and infixed with *-a-*, the verb becomes *muacilri* ‘fall’ followed by only one argument, i.e., *lrenege* ‘stone’ without any agent as in (3.80), showing that the sentence is a representation of middle voice in Budai Rukai. In the same fashion, the verb *pungupungu* ‘bump’ is prefixed by the active finite marker *wa-* to become *wapungupungu* ‘bump’ as in (3.81). Two arguments, i.e., *Lavakaw* as the subject and *cukui* ‘table’ as the object are also found in this instance. Nevertheless, affixed with *mu-* and *-a-* as in (3.82), the verb compound *muapungupungu* ‘bumps (accidentally)’ conveys different meaning when taking the same two arguments. That is, the agent does not volitionally bump the table but just accidentally bumps it.

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Therefore, the prefix *mu-* enables the verb in this category to convey a non-volitional meaning of the verb root. More examples are given below to elucidate the usage of middle voice in Budai Rukai as in (3.83) and (3.84).

(3.83) muagugu ka acilay ka yakay ki kece.

mu-a-gugu	ka	acilay	ka	i-a-kay	ki	kece
go-FIN-pour	NOM	water	REL	be.at-FIN-this	OBL	shoe

'The water in the shoes flows out.'

(3.84) muathene ka varukuru.

mu-a-thene	ka	varukuru
go-FIN-soak	NOM	boat

'The boat sinks.'

As can be seen in (3.83), the *mu-* compound *muagugu* 'pour out' is used with only one core argument *acilay* 'water' in this example. The sentence does not contain any agent that volitionally pours out the water; instead, the water flows out itself through the shoes. In the same vein, examples (3.84) contains another *mu-* compound *muathene* 'sink' with only one argument *varukuru* 'boat'. Semantically, the boat is not sunk by an agent overtly occuring in the example; rather, the boat sinks itself. These two examples show how middle voice is used in Budai Rukai.

3.4.1.5 *mu*-V: motion (lexicalized words)

The last category of the *mu-* compound contains words whose root is inseparable from the prefix but still conveys the meaning of motion either 'down' or 'away' as shown in table 3.12.

Table 3.12 *mu*-V verb compounds III

root	meaning	non-finite	finite	meaning
-	-	(m)ubere	mu-a-bere	run away
-	-	(m)ururu	mu-a-ruru	fall down
-	-	(m)usururu	mu-a-sururu	inherit

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In Table 3.12, three verb bound roots are inseparable from the prefix *mu-*. However, their non-finite and finite forms are similar to those of the previous four categories. Consider (3.85) to (3.88) below.

(3.85) muabere ka babuy.
mu<a>bere ka babuy
<FIN>run.away NOM boar
'The boar runs away.'

(3.86) tuavesevese (m)ubere ka babuy.
tu<a>vesevese (m)ubere ka babuy
<FIN>rampage run.away NOM boar
'The boar rampages to run away.'

(3.87) muaruru ka madru.
mu<a>ruru ka madru
<FIN>fall.down NOM fruit
'The fruit falls down.'

(3.88) kiararimu (m)ururu ka madru.
ki<a><ra>rimu (m)ururu ka madru
<FIN><CaRED>quickly fall.down NOM fruit
'The fruit quickly falls down.'

As can be seen in (3.85), *muabere* 'run away' is the only verb of the example, followed by the nominative-marked subject *ka babuy* 'boar'. Example (3.86) shows that *mubere* 'run away' functions as the second verb of the sentence preceded by a manner verb *tuavesevese* 'rampage' taking the finite infix *-a-*. In the same vein, *muaruru* 'fall down' takes the infix *-a-* and functions as the first verb of (3.87). With regard to (3.88), the lexicalized verb *mururu* 'fall down' functions as the second verb without the finite infix *-a-*, preceded by an adverbial verb *kiararimu* 'quickly'.

3.4.2 The prefix of causative motion *pu-*

This section deals with the causative of motion *pu-*, the corresponding prefix of the motion *mu-*. It is shown in Blust (2003) that *pu-* is a counterpart of the prefix *mu-*

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in Thao and Puyuma. Two pairs of examples in the two languages respectively are extracted from Blust (2003) in Table 3.13.

Table 3.13 *mu-* and *pu-* compounds in Thao and Puyuma

	mu-	*pu-*
Thao	*mu-laun* 'go into the shade' *mu-nay* 'come'	*pu-laun-in* 'be put into the shade' *pu-nay* 'put here, let someone come here'
Puyuma	*mu-enai* 'to enter the water' *mu-Taqi* 'defecate'	*pu-enai* 'to water' *pu-Taqi* 'spread manure on the fields'

As shown in Table 3.13, the *mu-* prefix is paired with the *pu-* prefix. While the one with the *mu-* prefix conveys the motion, the one with the *pu-* prefix conveys the causative of motion. This can also be shown in Budai Rukai as in Table 3.14.

Table 3.14 *mu-* and *pu-* compounds in Budai Rukai

	mu-	*pu-*
Budai Rukai	*mu-thili* 'go aside' *mu-balriw* 'go home' *mu-cayli* 'postpone to the next year'	*pu-thili* 'put aside' *pu-balriw* 'take something home *pu-cayli* 'have a New Year'

In Table 3.14, three pairs of *mu-* and *pu-* compounds are shown. The first two possess the concrete meaning of motion and causative motion whereas the last pair derives a temporal meaning of extended motion and causative motion. This semantic extension can also be found in Paiwan. For instance, Blust (2003) provided examples of this sort: *pu-tsaviL* 'New Year (West dialect)'.

In addition to three pairs of *mu-* and *pu-* compounds, it is also found that *pu-* can prefix other nouns to convey the meaning of causative motion, e.g., *pu-acilay* 'to water', *pu-valisi* 'put on denture, teethe', *pu-niake* 'inflate (balloons)' and *pu-vaga* 'said something out'.

In terms of the syntactic position of the aforementioned *pu-* compounds, its

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morphosyntax is similar to that in *mu-* compounds. Examples are given as (3.89) to (3.92).

(3.89) puathilaku/*puthilaku ki kupu.
pu-a-thili=aku/pu-thili=aku ki kupu
put-FIN=1S.NOM/put=1S.NOM OBL cup
'I put the cup aside.'

(3.90) pangiabaladhaku ki kupu puthili/*puathili.
pa-Ø-ngiabalay=aku ki kupu pu-thili/pu-a-thili
PA-FIN-slowly=1S.NOM OBL cup put-side/put-FIN-side
'I slowly put the cup aside.'

(3.91) puacilay/*puacilay ki bengelay ka Muni.
pu-a-acilay/*pu-acilay ki bengelay ka Muni
put-FIN-water/put-water OBL flower NOM PN
'Muni waters the flower.'

(3.92) kiaragay pucilay/*pu-a-acilay ki bengelay ka Muni.
ki<a>ragay pu-acilay/*pu-a-acilay ki bengelay ka Muni
<FIN>happy put-water/put-FIN-water OBL flower NOM PN
'Muni happily waters the flower.'

As can be seen in (3.89) and (3.91), the sentences contain one *pu-* compound as the only verb respectively, i.e., *puathili* 'put aside' and *puacilay* 'to water'. When adverbial verbs like *pangiabalay* 'slowly' and *kiaragay* 'happily' are expressed as the first verb of the sentence, the *pu-* compounds *puthili* 'put aside' and *pucilay* 'to water' function as the second verb without the finite infix *-a-* as in (3.90) and (3.92) respectively.[9]

3.4.3 The prefix of location *i-*

After dealing with the dynamic prefixes including motion and causative motion, we now turn to discuss the static prefix: location and causative location. The third section of 3.4 includes the prefix of location *i-*. In fact, this prefix has already been

[9] In above four instances, *pu-* is glossed as 'put' since it is considered to be a grammaticalized shortened form of the word *pua* 'put'. The gloss 'put' is adopted in this paper because the meaning is related to the causative of motion but it can also be seen as a causative prefix *p-* with the prefix of motion *u-*.

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introduced in the section of basic locative constructions. In section 3.1, the prefix *i-* is attached to locative nouns denoting Region. Nonetheless, *i-* compounds prefixing verbs or nouns denoting Ground are introduced here. The examples are first given in Table 3.15 and 3.16.

Table 3.15 *i-* verb compounds (Noun roots: Ground)

root	**meaning**	**non-finite**	**finite**	**meaning**
tavanane	inside the house	*i-tavanane*	*i-a-tavanane*	at the inside of the house
balriw	home	*i-balriw*	*i-a-balriw*	at home; having a day-off

Table 3.16 *i-* verb compounds (Verb roots)

root	**meaning**	**non-finite**	**finite**	**meaning**
taluvayvay	appear	*i-taluvayvay*	*i-a-taluvayvay*	appear, outstanding
rubu	gather	*i-rubu*	*i-a-rubu*	gather
pelay	float	*i-peapelay*	*i-a-peapelay*	floating
sarare	lay down	*i-sarare*	*i-a-sarare*	lay on the ground
seleke	precipitate	*i-seleke*	*i-a-seleke*	precipitate

In Table 3.15, two *i-* verbal compounds attaching to Noun roots and denoting Ground are illustrated whereas five verbal compounds attaching to verb roots are shown in Table 3.16. Consider (3.93) and (3.96) for the morphosyntax of *i-* attaching to verb roots.

(3.93) yapelay/*ipelay ka vasaw.
i-a-pelay/*i-pelay ka vasaw
be.at-FIN-float/*be.at-float NOM leaf
'The leaves float.'

(3.94) wadreelaku sa ipelay/*yapelay ku vasaw ki acilay.
wa-dreele=aku sa i-pelay/*i-a-pelay
ACT.FIN-see=1S.NOM when be.at-float/be.at-FIN-float
ku vasaw ki acilay
OBL leaf OBL water
'I see leaves floating on the water.' (Lit. when floating on the water)

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(3.95) yataluvayvay ku garagarange.
i-a-taluvayvay ku gara-garange
be.at-FIN-appear NOM RED-brave
'The warrior appears. (in a conversation) /The warrior is outstanding.'

(3.96) muataluvayvay ku garagarange.
mu-a-taluvayvay ku gara-garange
go-FIN-appear NOM RED-brave
'The warrior appears.'

The first two examples show that the *i-* compound *yapelay* 'float' is used as the only verb of the sentence in (3.93) whereas it can also be the second verb without the finite marker as in (3.94). Also, as can be seen in (3.95), the sentence contains a *i-* compound *yataluvayvay* 'appear' followed by the subject *garagarange* 'warrior'. Recall the example in Table 3.11 where *mu-* can also be attached to *taluvayvay* to become *mutaluvayvay* 'come out'. The difference lies in whether the agent literally shows up when the sentence is spoken. The *i-* compound *yataluvayvay* 'appear' in (3.95) is used only when the speaker is only mentioned in the conversation whereas the *mu-* compound *muataluvayvay* 'appear' is used when the interlocuters genuinely sees that the agent appears on sight as in (3.96). The distinction shows that *i-* is a static prefix while *mu-* is a dynamic one.

3.4.4 The prefix of causative location *pi-*

The last section of 3.4 deals with the prefix of causative location. This prefix is the counterpart of both the prefix of location and the prefix of causative of motion. Before delving into comparing these three prefixes, the examples of *pi-* are given in Table 3.17 and 3.18.

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Table 3.17 *pi-* verb compounds (concrete meaning)

root	meaning	non-finite	finite	meaning
lumasane	bag	*pi-lumasane*	*pi-a-lumasane*	put in the bag
kay	this	*pi-kay*	*pi-a-kay*	place

Table 3.18 *pi-* verb compounds (extended meaning)

root	meaning	non-finite	finite	meaning
gathimi	thought	*pi-gathimi*	*pi-a-gathimi*	think about
vai	day	*pi-vai*	*pi-a-vai*	every day
cayli	year	*pi-cayli*	*pi-a-cayli*	every year

As shown in Table 3.17, these two *pi-* compounds best display the meaning of causative location. The noun root *lumasane* 'bag' is prefixed by *pi-* to form the verb *pi-lumasane* 'put in the bag'. The second one, *pi-kay* 'place' is formed by the prefix *pi-* and the demonstrative *kay* 'this'. Table 3.18 show three words displaying extended meaning of causative location. The first one *pi-a-gathimi* 'think about' is related to mind whereas the second two are associated with time. The former one conveys the meaning that human beings think about something, metaphorized from putting thoughts inside our mind or head. The latter two will be further explained with other prefixes in examples below. The most typical *pi-* verb compound is shown in (3.97) and (3.98) below. In these two examples, it is shown that the whole compound can be used as the only verb *pialumasane* 'put in bag' of the sentence (3.97) and the second verb *pilumasane* 'put in bag' without a finite infix *-a-* as in (3.98)

(3.97) pialumasanaku ku paysu.

p-i-a-lumasane=aku	ku	paysu
CAUS-be.at-FIN-bag=1S.NOM	OBL	money

'I put the money in the bag.'

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(3.98) kiararimuaku pilumasane ku paysu.

ki<a><ra>rimu=aku		p-i-lumasane	ku	paysu
<FIN><CaRED>quickly=1S.NOM		CAUS-be.at-bag	OBL	money

'I quickly put the money in the bag.'

The examples of *pi-*, *pu-* and *mu-* compound with the same root related to time is given in (3.99) to (3.101).

(3.99) piacayli mubalriw ka Lavaruse.

p-i-a-cayli	mu-balriw	ka	Lavaruse
CAUS.be.at-FIN-year	go-home	NOM	PN

'Lavurase goes home every year.'

(3.100) muabalriw pucayli ka Lavakaw.

mu-a-balriw	pu-cayli	ka	Lavakaw
go-FIN-home	put-year	NOM	PN

'Lavakaw goes home to have a new year.'

(3.101) muacaycaylane ku atulisinsiane.

mu-a-cay-cayli-ane	ku	atulrisinsiane
go-FIN-RED-year-NMLZ	NOM	harvest.festival

'The harvest festival has been postponed to the next year.'

As can be seen in (3.99), the meaning of the first verb compound *piacayli* is semantically extended to 'every year.' It is relatively static than (3.100) in which the meaning of the second verb *pucayli* is 'have a new year'. In (3.101), the verb is also formed by the root *cayli* 'year' but the whole verb compound *muacaycaylane* means 'postpone to the next year.' These three examples show how spatial expression can be semantically extended to the time dimension in Budai Rukai.

3.5 Interim Summary

In this chapter, the dynamic and static spatial expressions in Budai Rukai are investigated. The basic locative construction is first introduced in section 3.1. Further, locative nouns and cardinal directions that can be predicated in the locative construction

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are further demonstrated in section 3.2 and 3.3 respectively.

Section 3.2 consists of the following different Regions: the UP and DOWN Region, the FRONT and BACK Region, the IN and OUT Region, the MIDDLE and SIDE Region and the LEFT and RIGHT Region. The locative nouns in each Region are discussed in three types: *i-root, sa-root* and *i-tali-root*. Whereas *i-root* is the most basic and neutral one to express the relations between the Figure and the Ground, *sa-root* triggers an extra contextual meaning, especially salient in the UP and DOWN and the IN and OUT Region. In addition, *i-tali-root* is used when a broader Region is denoted.

Section 3.3 compares Budai Rukai with other Formosan and PMP languages in terms of their cardinal directions and points out that the cardinal terms are more similar to that in Indo-European languages in which they use the position of the sun and one's orientation facing the sunrise as the reference point for cardinal terms.

In addition to words conveying spatial expressions, section 3.4 discusses four spatial prefixes attested in PAn, especially in Puyuma, Tsou and Paiwan. From our elicited data, it is found that these prefixes: *mu-, pu-, i-,* and *pi-* are productive in Budai Rukai. Examples are given to demonstrate their ability to verbalize noun or verb roots to verb compounds. Each prefix is also discussed in term of the most concrete meaning to the semantically extended one. In particular, the prefix of motion, *mu-*, is classified to five types to discuss its combination of noun and verb roots with different but related meanings.

This whole chapter can be illustrated in Figure 3.15 and 3.16. Figure 3.15 illustrates the syntax of the basic locative constructions with locative nouns or cardinal directions as the root of the predicate.

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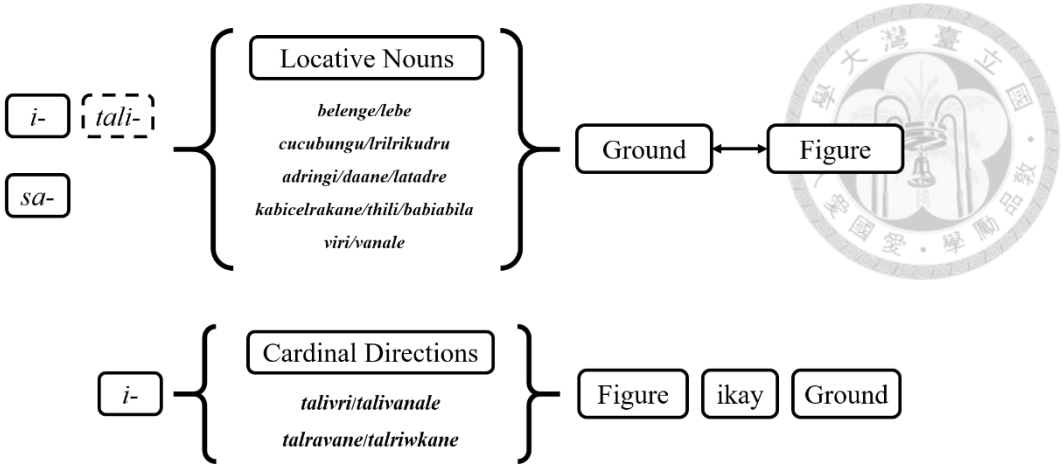

Figure 3.15 Illustration for locative constructions in Budai Rukai

Figure 3.16 illustrates all the usages of section 3.4 including the morphological distribution and the meaning of the whole verb compound.

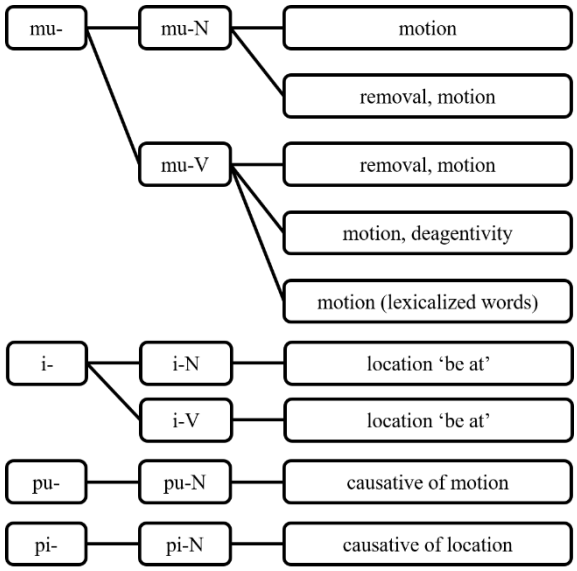

Figure 3.16 Summary of spatial prefixes in Budai Rukai

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Chapter 4 Motion Events in Budai Rukai

In the previous chapter, words and prefixes related to static and dynamic space are thoroughly investigated. Nonetheless, the data are primarily based on elicitations. Hence, how spatial expressions are used in natural discourse still remains unknown. This chapter investigates the motion events in Rukai Frog stories. Based on the semantic typology proposed by Talmy (2000) and further refined by Slobin (2004) and Huang and Tanangkingsing (2005), the status of Budai Rukai in the typology can be revealed.

The chapter consists of the following sections. Our database will be introduced in section 4.1. Section 4.2 presents the lexicalization patterns of motion verbs in Budai Rukai Frog stories and provides an overview of the morphosyntactic patterns of Rukai motion events in the Frog stories and see whether Budai Rukai is a path- or manner-salient language. Section 4.3 examines Budai Rukai with four diagnostic tests provided by Slobin (2004) and used in Huang and Tanangkingsing (2006) to see whether it is a verb-framed language. Section 4.4 provides an interim summary of this chapter.

4.1 Database

The data examined in this chapter are comprised of seven Frog stories from different Budai Rukai native speakers cited from National Taiwan University Corpus of Formosan Languages (2008). The wordless book, *Frog, where are you?* published by Mayer (1969) was provided for the speakers to narrate the story. The stories were further transcribed into Intonation Units (IUs) based on Du Bois et al. (1993). The Lengths of time and IU numbers from each narration are provided in Table 4.1 below. The reason why the Frog story is chosen as the topic for the investigation of motion events is mainly due to its richness of motion events and comparability. On the one

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hand, plots in the Frog story contain numerous events describing the motion of the protagonists so it is often used to study motion events in languages. On the other hand, previous studies investigating motion events in Austronesian languages also chose the Frog story as the topic so it is apparent that the present study needs to compare these languages based on the same standard.

Table 4.1 Lengths of time, IUs and clauses of motion events from each narration

Frog Story	Chinese name	Rukai First name	Gender	Spans of time	IUs	Numbers of motion clauses
1	巴清一	undocumented	Male	3’20”	69	31
2	王朝賢	Kainguane	Male	8’44”	229	48
3	巴山光	Legeai	Male	6’16”	181	38
4	柯啟川	Salrabu	Male	6’26”	146	38
5	杜山雄	Waecacane	Male	5’57”	97	27
6	巴佳英	undocumented	Female	5’04”	88	37
7	柯菊英	Tuku	Female	9’52”	159	41
			Total	45’39”	900	260

A total of seven adult native Budai Rukai speakers including two females and five males narrated the Frog story. Seven narratives running to 45 minutes and 39 seconds for a total of 900 IUs formed the database for the research. A total of 260 clauses of motion events were further identified.

4.2 Morphosyntax of motion components

Before delving into the morphosyntactic patterns of motion components, we will first present the lexicalization patterns of motion verb among all the motion-event clauses we found in 7 narrated frog stories. Of the 260 motion-event clauses, four lexicalization patterns of motion verbs are identified, including Path verbs, Deictic-Path verbs, Path-plus-Ground/Region verbs, and Manner verbs. The type and token frequencies for each lexicalization pattern are illustrated from Table 4.2 to Table 4.5.

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Table 4.2 Path verbs

V [Path] 20 types and 88 tokens		
Budai Rukai	English	Tokens
tuverevere	fall down	17
ubere	run away	15
muadreke	fall over	11
(m)utaluvayvay	come out	7
pubelenge	put (sth.) on	6
ngibuale	come out	5
(m)ucilri	fall down	4
tupalra	follow	4
(t)ururu	fall down	4
ngidrakale	raise up	3
pulebe	put (sth.) down	2
ukelary	hang up	2
ngukakay	pass by	1
sarare	lay down	1
kitapay	be thrown up	1
angeale	lift up	1
uthene	sink	1
puadringi	put (sth.) inside	1
puatuvevere	shake off	1
dungudungu	be towards	1
Total		88

Table 4.3 Deictic-Path verbs

V [Deictic-Path] 4 Types and 144 Tokens		
Budai Rukai	English	Tokens
katuase	leave, move away	75
kaynganay	come	28
mua	go	28
kela	come	13
Total		144

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Table 4.4 Path prefix with Ground/Region root

V [Path prefix+ Ground/Region] 12 Types and 51 Tokens		
Budai Rukai	English	Tokens
(m)ubelenge	go to the upper part (of sth.)	21
(m)uadringi	go to the inside (of sth.)	9
(m)ulebe	go to the lower part (of sth.)	7
mulatadre	go to the outside (of sth.)	3
mubabiabila	go to the side (of sth.)	2
mucakena	go to the ground	2
mukamamealane	go to the dry land	2
mubulane	go to the bush	1
mulregelrege	go to the mountain	1
mulrilrikudru	go to the back	1
mutavanane	go home	1
muvalru	go to the river	1
Total		51

Table 4.5 Manner verbs

V [Manner] 23 Types and 72 Tokens		
Budai Rukai	English	Tokens
alra	take	17
laylay	run	8
ngibalay	fly	5
kiraysi	grasp	5
verevere	shake	4
kurisi	chase	4
velevele	move	4
pua	put	3
lrungu	shake	3
saladha	chase	3
kebere	hug	2
ecenge	touch	2
ituku	jump	2
puatugu	peck	1
gugu	pour	1
lredepe	swim	1
peapelay	float	1
ututhu	remove	1

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iluku	carry	1
dingidingi	pat	1
takilili	hang	1
garawcu	scratch	1
vetevete	remove	1
Total		72

As can be observed from Table 4.2 to Table 4.5, the distribution of the motion verbs in each lexicalization pattern is highly skewed. That is, some of the verbs are favored and more frequently used in Budai Rukai. For example, the following words: *(m)ubelenge* 'go to the upside', *tuverevere* 'fall down', *katuase* 'leave, move away' and *alra* 'take' are the most frequently used words in each pattern respectively. This phenomenon may be due to the repeated actions and scenes in the Frog stories. For instance, speakers definitely need to use *tuverevere* 'fall down' to depict various falling scenes of the dog, the boy and the beehives throughout the stories.

It is also worth noting that the first three tables (Table 4.2 to Table 4.4) actually belong to a broader category of Path verbs since they all encode Path information. The total token frequency of this broader category of Path verbs outnumbers that of Manner verbs, which shows that Path verbs are highly favored in Budai Rukai. This phenomenon will be further elaborated in the next section when taking morphosyntactic patterns of motion components into account.

We now turn to the morphosyntactic patterns of motion components in Budai Rukai stories. By delving into different verb expressions in Budai Rukai motion events, we aim to see which semantic component is salient throughout the whole story. The percentages of motion components in Budai Rukai Frog narratives as well as other Austronesian languages and Mandarin cited from Huang and Tanangkingsing (2005) and Jiang (2006) are compared and tabularized in Table 4.6.

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Table 4.6 Percentages of the Motion components in the Frog stories**

(%)	Path	Manner	M=P	MP	P#M	M#P	P#P	M#P#D*
Tagalog	72.2	34.4	5.2	0	0	0	0	0
Saisiyat	63.3	19.7	6.3	8.4	0.4	1.6	0	0
Cebuano	60.7	27.4	11.9	0	0	0	0	0
Squliq	57.1	32.1	10	0	0.4	0.4	0	0
Malay	49.2	25.9	10.8	14.2	0	0	0	0
Tsou	39	25.6	0	35	0	0	0	0
Mandarin	6.5	36.3	0	0	0	5.6	0	48.4
Kavalan	55.8	23.8	8.3	0	3.4	0.8	7.9	0
Budai Rukai	47.7	19.6	0	0	8.5	1.9	22.3	0

*M#P#D includes three types of combinations of motion components, i.e., M#P#D, M#D, and P#D, used in Mandarin.
**Figures of the first nine languages are from Huang and Tanangkingsing (2005) and that of Kavalan is from Jiang (2006).

As illustrated in Table 4.6, a variety of morphosyntactic strategies to encode motion events are adopted by Austronesian languages and Mandarin. It is apparent that all of the language in Table 4.6 can encode motion events by using solely one Path or Manner verb. The third category, M=P, refers to verbs that simultaneously embed Manner and Path information. For instance, some manner verbs (e.g., run, walk or fly) are claimed to coerce Path information. As elaborated by Huang and Tanangkingsing (2005: 327), the phenomenon seems to result from the mutual predictability of Manner and Path of the verbs. This occurs in most of the Austronesian languages in Table 4.6, except for Tsou and Budai Rukai. Because Manner verbs that tend to coerce Path information in other Austronesian languages are often used with Path verbs in Budai Rukai, which reveals Manner or Path information respectively, verbs of this type are excluded in our research. The fourth category, MP, refers to a unique compounding strategy of verb expression in Tsou and, to a lesser extent, in Malay and Saisiyat, which includes a Manner prefix and a Path verb root, having discussed in section 2.2.2. The last four categories indicate four serialization patterns, namely P#M, M#P, P#P, M#P#D. As shown in Table 4.6, Budai Rukai appears to favor the third verb serial strategy by juxtaposing two Path verbs to encode a motion event, accounting for 22.3% of all

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motion clauses. Some motion events can also be displayed by utilizing a Path verb plus a Manner verb or the reversed order, which constitutes 8.5% and 1.9% of all motion clauses. Finally, the M#P#D strategy in which the third component represents a deictic verb in Mandarin is not employed in Budai Rukai.

Since the morphosyntactic strategies are diverse in Rukai, in the following sections, examples will be provided to see how Budai Rukai encode various motion events with different verbs and strategies.

4.2.1 Path verb

As shown in Table 4.6, Path verb as the only verb account for 47.7% of all motion clauses, revealing that Path component is crucial to Budai Rukai narratives. This category can be further divided into three types according to their morphological formation and semantic function. First, there are as many bare Path verbs in a motion event in Budai Rukai as in other Austronesian languages. Second, some Path verbs convey deictic information shown in Table 4.3. Third, a Path compound as the only verb can also be found in Rukai narratives because *mu-* 'go' in Budai Rukai can prefix other noun roots which usually denotes Ground. These three types are exemplified in (4.5) and (4.7) below.

(4.5) 045 .. **tuverevere** kuini taupungu si,\
tu-verevere kuini taupungu si
TU-throw that.VIS.PROX dog and
'The dog fell down.' (RukaiNr-frog_ Legeai)

(4.6) 018 …(0.8) kuini takurauru yaie,\
kuini takurauru yaie
that.VIS.PROX frog TOP
019 ... la **katuase**,\
la ka-tuase
then STAT.NFIN-leave

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020 ... tualay kuini ki didilrungu.\
talay kuini ki di-dilrungu
from that.VIS.PROX OBL RED-jar
'That frog then left from the small jar. (RukaiNr-frog_ Legeai)

(4.7) 023 …(0.9) e== ala **muadringi** ki keceli._
ala mu-adringi ki la-kece=li
then go-inside OBL P-shoe=1S.GEN
'(The frog may) go inside my shoes.' (RukaiNr-frog_Salrabu)

As can be seen in (4.5), only one verb *tuverevere* 'fall down' encodes the Path information in this clause. Similarly, in (4.6), *katuase* 'leave' is used as the only verb of the motion clause, encoding Path and also deictic information. The phenomenon that *katuase* 'leave' encode deictic information can be further elaborated when it is used with another verb in section 4.2.3. Last, as can be observed in (4.7), the only verb of the motion clause is *muadringi* 'go inside'. It is the prefix *mu-* 'go' compounded with the noun root *adringi* 'inside' to form the whole verb. This phenomenon has been discussed in 3.4.1.1 in which the prefix can form a compound either with a Ground or a Region noun root. Another clause containing only one Path verb compound is illustrated in (4.8).

(4.8) 060 … sa **mukameameale** la dreele kuini angatu,_
sa mu-kameameale la dreele
when go-dry.land then see
kuini angatu
that.VIS.PROX wood
061 .. kiapeapeapelay._
ki-a-pea-peapelay
PASS-FIN-RED-float
'When (they) went to the dry land, (they) saw the floating wood.'
(RukaiNr-frog_Baqingyi)

As shown in (4.8), there is another Path verb in a motion clause which is formed by the prefix *mu-* 'go' and a noun root *kameameale* 'dry land'. However, the noun root

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indicates not the Region but the Ground here. This formation can also be found when the Path verb is used as the second verb in a serial-verb construction, which will be further elaborated in 4.2.3.

4.2.2 Manner verb

The second morphosyntactic pattern of motion components in Budai Rukai story is the use of Manner verb as the sole predicate, accounting for 19.6% of all motion clauses. Two verbs of this type are exemplified in (4.9) and (4.10).

(4.9) 141 ... ala **malra** kuini e,_
ala malra kuini e
then take that FIL
142 .. ti- takurauruini si,\
ti- takurauru=ini si
FS frog=3S.GEN and
'Then (he) took his frog.' (RukaiNr-frog_Salrabu)

(4.10) 043 … la **kiraysi** la ka lawngu ki salawngane._
la kiraysi la ka lawngu ki
then grasp then OBL antler GEN
sa-lawngu-ane
when-antler-NMLZ
'Then (he) grasped the deer's antler.' (RukaiNr-frog_Baqingyi)

As shown in (4.9), there is only one Manner verb, i.e., *malra* 'take', in this motion event. This verb occurs in every Budai Rukai Frog story in the last scene in which the boy finally finds his frog behind the wood and 'takes' one of the frogs back to his house. Another high frequency Manner verb which deserves attention is *kiraysi* 'grasp' as in (4.10). In the Frog story, there is a scene that the deer hooks the boy at its back after its antler is grasped by the boy. Thus, the Manner verb *kiraysi* 'grasp' will be inevitably used to describe the scene. Some other Manner verbs such as *tupalra* 'follow', *kurisi* 'chase' or *laylay* 'run' are also frequently used in Budai Rukai. However, some of these

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Manner verbs often follow a Path verb, which will be discussed in the following sections.

4.2.3 Verb serialization of motion clauses

Serial-verb strategies are also favored in Budai Rukai in encoding motion events when narrating the Frog story. As have been illustrated in Table 4.6, three serial-verb morphosyntactic patterns of motion components can be found in our data, namely P#M, M#P and P#P. Among these three, the last one is the most frequently used pattern. Examples of these three types will be presented in the sections that follow.

4.2.3.1 A Path verb with a Manner verb (P#M)

The first type of serial-verb construction include a Path verb followed by a Manner verb, accounting for 8.5% of all motion clauses. Most of this pattern consist of the Path verb *katuase* ‘move away’ with another Manner verb as demonstrated in (4.11) and (4.12).

(4.11) 047 … sa **katuase laylay**,_
sa ka-tuase laylay
when STAT.NFIN-move.away run
048 .. kay lasu,/
kay lasu
this boy
049 .. si kuini taupungu…
si kuini taupungu
and that.VIS.PROX dog
‘When the boy and the dog ran away, …’(RukaiNr-frog_Baqingyi)

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(4.12) 095 …(0.9) la **katuase tupapapalra** kuini angatu si.\

e	la	ka-tuase			
FIL	then	STAT.NFIN-move.away			
tu-pa-pa-palra		kuini		angatu	si
TU-RED-RED-companion		that.VIS.PROX		wood	and

'That dog followed the wood away.' (RukaiNr-frog_Salrabu)

As seen in (4.11), two verbs are used in the subordinating clause, namely a Path verb *katuase* 'move away' and a Manner verb *laylay* 'run', and they are juxtaposed together without any conjunctions in between. This pattern also reveals that M=P verbs in Table 4.2 embedding Path interpretation in Manner verbs should not be counted in Budai Rukai because the Manner verb *laylay* 'run' often cooccurs with another Path verb to convey its Path information. In the same vein, it is shown in (4.12) that the Path verb *katuase* 'move away' is followed by another Manner verb *tupapapalra* 'follow' to encode the motion of this clause. The Path verb *katuase* 'move away' can be used with either a Manner or a Path verb. More examples will be given in 4.2.3.3 when two Path verbs are juxtaposed together.

In addition to the pattern that the Path verb *katuase* 'move away' is used as the first verb and another Manner verb as the second one, other Path verbs are also found to serve as the first verb of the pattern P#M. Examples are given in (4.13) and (4.14).

(4.13) 042 .. **kaynganay kurikurisi** kuini sigu iniane…

kaynganay	kuri-kurisi	kuini	sigu	iniane
come	RED-chase	that.VIN.PROX	hornet	3SG.OBL

'The hornets came (and) were chasing him.' (RukaiNr-frog_Bajiaying)

(4.14) 078 ... taupungu la **mua lrungalrungalrungu** kuini ki angatu.\

taupungu	la	mua	lrunga-lrungalrungu
dog	then	go	RED-shake
kuini		ki	angatu
that.VIS.PROX		OBL	tree

'The dog then went shaking that tree.' (RukaiNr-frog_Legeai)

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As shown in (4.13), a different Path verb *kaynganay* 'come' is followed by a Manner verb *kuri-kurisi* 'chasing'. Similarly, the verb *mua* 'go' serves as the first verb followed by another Manner verb *lrungalrungu* 'shaking', as in (4.14). These two examples reveal that Path verbs like *kaynganay* 'come' and *mua* 'go' in the first position not only encode the Path information but also seem to encode deictic information in terms of the protagonists' spatial orientation. Among all the 260 motion clauses as illustrated in Table 4.1, 22 clauses show the pattern of P#M and the frequency of the Path verb plus another Manner verb is tabularized in Table 4.7 below.

Table 4.7 The token frequency of a Path verb with a Manner verb

Path verb + Manner verb	Token Frequency
katuase 'move away' + Manner	14
kaynganay 'come' + Manner	4
mua 'go' + Manner	2
pubelenge 'put (sth.) on' + Manner	1
pulebe 'put (sth.) down' + Manner	1

Table 4.7 illustrates that 14 of the 22 motion clauses containing *katuase* 'move away' as the first verb constitutes the pattern of P#M, indicating that 'leave' is genuinely a crucial word in Budai Rukai to narrate motions. Even when the Manner information is revealed, *katuase* 'move away' will also occur to help depict the Path of the motion. Moreover, though *mua* 'go' and *kaynganay* 'come' are less frequently used than *katuase* 'move away', they can also be used to encode the deictic information of the motion.

4.2.3.2 A Manner verb with a Path verb (M#P)

Motion clauses that include a Manner verb followed by a Path verb account for only 1.9% of all motion clauses. Most instances of this pattern contain the Manner verb *alra* 'take' as the first verb with another Path verb. Examples are as given in (4.14) and (4.15).

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(4.14) 093 .. kikay,_
kikay
this
094 …(1.6) lalake si,_
lalake si
kid and
095 …(2.6) **kialra** ki e,_
ki-alra ki e
PASS-take FS FIL
096 …(1.3) **pubelenge** taiyane ki lawngu kikay vavalake…
pu-belenge ta-i-ane ki lawngu kikay
put-upperness LOC-be.at-NMLZ GEN antler this
vavalake
kid (RukaiNr-frog_Tuku)
'The boy is taken away (and) put up to the place of the antler.'

(4.15) 037 … ala **malra pulebe** kuini ki sigu…
ala malra pu-lebe kuini
then take put-downness that.VIS.PROX
ki sigu
OBL hornet (RukaiNr-frog_Bajiaying)
'Then (the boy) takes down the hornet.'

As can be observed in (4.14), the Manner verb (m)*alra* 'take' in its passive form is followed by a Path verb *pubelenge* 'put (sth.) on'. In (4.15), the Manner verb (m)*alra* 'take' is in its active form followed by the opposite Path verb *pulebe* 'put down'. Based on these two examples and many other examples in our data, it is found that *(m)alra* 'take' plays an important role in Budai Rukai story. These two examples show that the second Path verbs are all associated with the prefix *pu-* 'put', indicating the causative motion. It is interesting to note that some motion clauses of M#P patterns have *pu-* compound as their second verb. *Pu-* 'put' often prefixes locative words encoding Region information, e.g., *belenge* 'upperness', *lebe* 'downness', or *adringi* 'inside'.

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4.2.3.3 A Path verb with another Path verb (P#P)

Two Path verbs juxtaposed within one motion clause account for 22.3% of all motion clauses. The relatively high percentage indicates that Path component are highly salient in Budai Rukai Frog stories. This pattern can be further divided into two types: one full Path verb with another Path compound and two full Path verbs. The former type is first exemplified as in (4.16) and (4.17) below.

(4.16) 022 …(3.4) ki kuini tadrusa yaie,\
ki kuini ta-drusa yaie
NOM that.VIS.PROX HUM-two TOP
023 .. la kai makakindringai ikay latadre **katuase mubulane**.\
la kai maka-kidringay i-kay latadre
then NEG POSS.MOD-search be.at-this outside
ka-tuase mu-ubulu-ane
STAT.NFIN- move.away go-grass-NMLZ
'The two then cannot find (anything) outside (and) went away to the bushes.' (RukaiNr-frog_Waecacene)

(4.17) 043 ...(0.8) ala kudra sa==,_
ala kudra sa
then that.INV when
044 ...(1.3) **kaynganaynga mulatadre** la katuase,_
kaynganay=nga mu-latadre la ka-tuase
come=PFV go-outside then STAT.NFIN-leave
'Then when they came, went outside (and) left, …' (RukaiNr-frog_Salrabu)

Both examples above consist of one full Path verb and a Path verb compound, i.e., *katuase* 'leave' and *mubulane* 'go to bushes' as in (4.16), and *kaynganay* 'come' and *mulatadre* 'go outside' as in (4.17). The first Path verbs in the two examples are the most frequently used Path verbs in the pattern of P#P. The distinction between these two examples lies in the root of the semantic category of the second verb compound. The verb compound in (4.16) is formed by prefixing a root denoting the Ground,

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ubulane ‘bush’ whereas that in (4.17) is formed by prefixing a root referring to the Region, *latadre* ‘outside’.

The second type of the pattern P#P is comprised of two full Path verbs in one motion clause, which is less common than the one with a compound as a second verb in our data. The examples are as shown in (4.18) and (4.19).

(4.18) 013 ...(0.9) ala kuini takurauru,_
ala kuini takurauru
then that.VIS.PROX frog
014 ... ala **katuase**,_
ala ka-tuase
then STAT.NFIN-move.away
015 ... **mubere**.\
mubere
run.away
‘Then that frog ran away.’ (RukaiNr-frog_Salrabu)

(4.19) 078 …(1.0) **kaynganay** kudra== kuici **ngibuale** si,\
kaynganay kudra kuici ngi-buale si
come that.INV owl REFL-come.out and
‘That owl came.’ (RukaiNr-frog_Salrabu)

As shown in (4.18) and (4.19), two Path verbs *katuase* ‘move away’ and *kaynganay* ‘come’ are used again as the first Path verb of the two motion clauses. Nonetheless, different from (4.16) and (4.17), the second verbs of these two examples are two full Path verbs, *mubere* ‘run away’ and *ngibuale* ‘come out’ respectively. Note that *mubere* ‘run away’ is a lexicalized form and cannot be separated into *mu-* ‘go’ prefix and *-bere* root as mentioned in 3.4.1.5. From these four examples, it is shown that *katuase* ‘move away’ and *kaynganay* ‘come’ are used most frequently as the first verbs in the P#P pattern. Among 58 clauses of P#P pattern, 34 motion clauses contain *katuase* ‘move away’ as the first Path verb in P#P pattern, accounting for more than half of the clauses in P#P pattern. In addition, there are 14 clauses containing *kaynganay* ‘come’ as the

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first verb and 10 clauses containing other Path verbs as the first verb. The results are summarized in Table 4.8.

Table 4.8 The token frequency of a Path verb with another Path verb

Path verb + Path verb	Token Frequency
katuase 'move away' + Path	34
kaynganay 'come' + Path	14
Other verbs + Path	10

The fact that the high-frequency verb 'leave' precedes either Manner or Path verbs is also found in Kavalan (Jiang, 2006). In his thesis, Jiang (2006) categorized three functions of the verb *wiya* 'leave' (or its variant *wi*) in Kavalan. That is, *wiya* can (a) simply mean 'leave, move away' when used as the only verb, (b) convey the function of the English particle 'away' when used with a Motion verb, and (c) possess aspectual meanings like inchoative aspect when used with the perfective marker *=ti* and continuative aspect when the vowel of the variant *wi* is lengthened.

In the same vein, it is found that *katuase* 'leave, move away' in Budai Rukai Frog narratives also have the aforementioned first two functions. Since the first two have been discussed in the above sections, they will not be repeated here. As for the third one, although *katuase* 'leave, move away' in Budai Rukai does not convey the inchoative meaning by being used with a perfective marker, the vowel of the verb can be lengthened to convey the continuative meaning as in (4.20).

(4.20) 056 …(1.0) la **katu==ase laylay** kela kuini ki,\
la ka-tuase laylay kela kuini ki
then STAT.NFIN-leave run come that.INV.PROX OBL
055 … tuatukadrane …
tua-tukadrane
RED-cliff (RukaiNr-frog_Waecacane)
'Then (the deer) ran on and on (and) came to the steep cliff.'

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As can be seen in (4.20), the first verb is a Path verb *katuase* 'leave' whereas the second one is a Manner verb *laylay* 'run'. The vowel 'u' of the verb *katuase* 'leave' is lengthened in IU 056 marked by two equal signs. The meaning of *katuase* 'leave' here is bleached and conveys the continuative aspectual meaning to reveal that the deer ran on and on to the steep cliff.

4.2.4 Discussions from Huang and Tanangkingsing's perspective

From section 4.2.1 to 4.2.3, five morphosyntactic patterns of motion in Budai Rukai Frog stories components are presented. The percentages of each pattern are summarized as in Table 4.9 (repeated from Table 4.6).

Table 4.9 Percentages of motion components in Budai Rukai Frog story

	Path	Manner	M=P	MP	P#M	M#P	P#P	M#P#D	Total (%)
Budai Rukai	47.7	19.6	0	0	8.5	1.9	22.3	0	100

In Table 4.9, Budai Rukai favors using Path components in motion events. The results can be further compared with other 8 Austronesian languages and Mandarin, provided by Huang and Tanangkingsing (2005) and Jiang (2006), as illustrated in Table 4.10 and 4.11. Percentages of expressions containing at least one Path component are shown in Table 4.10 whereas those of expressions containing at least one Manner component are shown in Table 4.11.

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Table 4.10 Percentages of path expressions in the Frog story

	Path	M=P	MP	P#M	M#P	P#P	M#P#D	Total (%)
Tagalog	72.2	5.2	0	0	0	0	0	77.4
Saisiyat	63.3	6.3	8.4	0.4	1.6	0	0	80
Cebuano	60.7	11.9	0	0	0	0	0	72.6
Squliq	57.1	10	0	0.4	0.4	0	0	67.9
Malay	49.2	10.8	14.2	0	0	0	0	74.2
Tsou	39	0	35	0	0	0	0	74
Mandarin	6.5	0	0	0	5.6	0	48.4	60.5
Kavalan	55.8	8.3	0	3.4	0.8	7.9	0	76.2
Budai Rukai	**47.7**	**0**	**0**	**8.5**	**1.9**	**22.3**	**0**	**80.4**

Table 4.11 Percentages of manner expressions in the Frog story

	Manner	M=P	MP	P#M	M#P	M#P#D	Total (%)
Tagalog	34.4	5.2	0	0	0	0	39.6
Saisiyat	19.7	6.3	8.4	0.4	1.6	0	36.4
Cebuano	27.4	11.9	0	0	0	0	39.3
Squliq	32.1	10	0	0.4	0.4	0	42.9
Malay	25.9	10.8	14.2	0	0	0	50.9
Tsou	25.6	0	35	0	0	0	60.6
Mandarin	36.3	0	0	0	5.6	48.4	90.3
Kavalan	23.8	8.3	0	3.4	0.8	0	36.3
Budai Rukai	**19.6**	**0**	**0**	**8.5**	**1.9**	**0**	**30**

In so doing, the path-saliency and manner-saliency of each language can be revealed, which are used to discuss the status of these languages in Huang and Tanangkingsing's (2005) typological framework. They argued that the two-way typology of motion events proposed by Talmy (2000b) or the three-way typology refined by Slobin (2004) should be conceived as a continuum because it is difficult to ensure that a language is purely verb-framed or satellite-framed. Furthermore, they viewed the dichotomy as a continuum because a language can possess features of either the verb-framed language's or the satellite-framed language's as long as we know that verb-framed languages are path-salient whereas satellite-framed languages are manner-salient.

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Under these circumstances, a grid is proposed with the vertical axis as path salience and horizontal axis as manner salience.

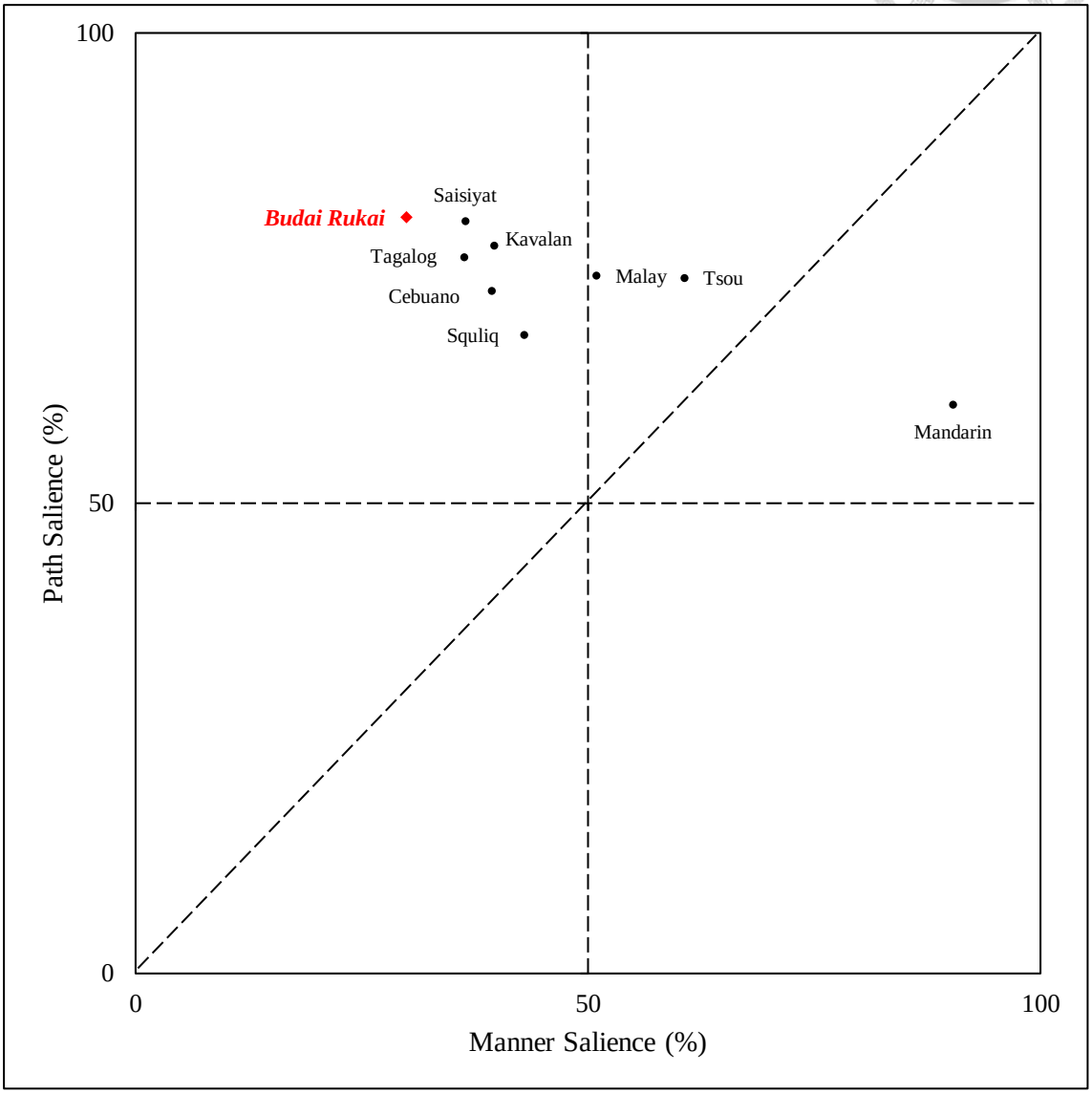

Figure 4.1 Semantic typology of motion events in nine languages

The total percentages of path and manner expressions in Table 4.10 and 4.11 are further plotted in Figure 4.1. Huang and Tanangkingsing (2005: 335) pointed out that 'languages differ not so much in their focus on path.' Therefore, the crucial difference between languages lies in their manner-saliency. Among these languages in Figure 4.1, Mandarin is viewed as the most manner-salient one in that over 90 percent of the motion

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clauses contain a manner component. Tsou, the closest to the sloping dotted line, is more manner-salient than the rest of the Austronesian languages, having both path- and manner-salience. Malay and Squliq are more manner-salient than Saisiyat, Tagalog and Cebuano. These least manner-salient three languages are claimed by Huang and Tanangkingsing (2005) to be purely path-salient languages. Further, Jiang (2006) pointed out that Kavalan resembles Cebuano and Tagalog in terms of their manner- and path-salience so it can be also considered as a purely path-salient language.

With respect to Budai Rukai, it is the farthest language from the dotted line. This shows that Budai Rukai has the least manner-salience and the most path-salience among these nine languages. Therefore, Budai Rukai is seen as an even more path-salient language than the other path-salient languages like Saisiyat, Kavalan, Cebuano and Tagalog.

Section 4.2 examines the lexicalization and morphosyntactic patterns of motion clauses in Budai Rukai Frog stories and the results of the data are discussed from Huang and Tanangkingsing's perspective. In the next section, we will further examine the data through the four criteria provided by Slobin (2004) and see whether the results echo Huang and Tanangkingsing's model.

4.3 Diagnostic tests

In order to examine whether a language is a verb-framed language or not, Slobin (2004) provided four diagnostic tests based on his typological results from different language families including Slavic languages, Romance languages, Germanic languages and so forth. The results show discrepancies between languages in terms of the following four criteria: (a) the emergence of the owl, (b) the Ground information in motion events, (c) the Ground information in downward motion and (d) the event segmentation in the cliff scene. These criteria are also used in Huang and

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Tanangkingsing (2005) and Jiang (2006) to see whether some of the Austronesian languages are verb-framed or not. In this section, we will examine the motion events in Budai Rukai and compare it with other languages according to these criteria.

4.3.1 The emergence of the owl

The owl's exit is considered a significant scene in the Frog story to differentiate whether a language is verb-framed or not. According to Slobin's survey (2004), verb-framed languages tend to use a single Path verb to describe the scene whereas satellite-framed languages use a Manner verb as well as a Path satellite to depict the emergence of the owl. Based on our Budai Rukai data, all informants use at least one Path verb to refer to the owl's exit. The percentages of using Manner or Path verbs in Budai Rukai compared to those in other languages are tabularized in Table 4.12 below.

Table 4.12 Percentages of Manner and Path verbs for the Owl's Exit*

Type	Language	Manner verb	Path verb
Verb-framed language	Hebrew	3%	97%
	Spanish	0%	100%
	Saisiyat	0%	100%
	Squliq Atayal	0%	100%
	Tagalog	0%	100%
	Cebuano	0%	100%
	Malay	0%	100%
	Kavalan	0%	100%
	Budai Rukai	**0%**	**100%**
Satellite-framed language	Russian	100%	0%
	English	32%	68%
	German	18%	82%
	Dutch	17%	83%
Macro-event language	Tsou	83.4%	16.6%
Serial verb language	Mandarin	83.4%	16.6%

*Percentage figures for Spanish, English, Russian and German are based on Slobin (2000, 2004) and Ozcaliskan and Slobin (1999), that for Kavalan is based on Jiang (2006) and the rest are based on Huang

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and Tanangkingsing (2005). Manner-verb in this table refers to MP verbs for Tsou and to M#P or M#P#D for Mandarin. (Adapted from Huang and Tanangkingsing 2005)

As illustrated in Table 4.12, similar to most of the verb-framed languages (except for Hebrew), 100 percent of the motion clauses describing the emergence of the owl contain at least one Path verb, as shown in (4.21) and (4.22).

(4.21) 063 … la **kaynganay** kikay … kuici.\
la kaynganay kikay kuici
then come this owl
'Then this owl came out.' (RukaiNr-frog_Tuku)

(4.22) 119 ... **ngibuale** ala iya kudra lu twalay adringi,\
ngi-buale ala iya kudra lu twalay adringi
REFL-come.out then say that.INV owl from inside
'Then (the boy) said 'that owl came out from inside.' (RukaiNr-frog_Kaingungane)

As can be seen in (4.21), the Path verb *kaynganay* 'come' is the only verb of the motion clause which is followed by the phrase *kikay kuici* 'this owl'. Similarly, in (4.22), another verb *ngibuale* 'come out' is used to describe the emergence of the *lu* 'owl'.

In addition to using only one Path verb to describe the owl's exit, one of the narrations contain two Path verbs to describe this scene, as shown in (4.23).

(4.23) 078 …(1.0) **kaynganay** kudra== kuici **ngibuale** si,\
kaynganay kudra kuici ngi-buale si
come that.INV owl REFL-come.out and
'That owl came.' (RukaiNr-frog_Salrabu)

As elaborated in 4.3.3.3, verb serialization of two Path verbs is frequently used in Budai Rukai. It is shown in (4.23) that two Path verbs *kaynganay* 'come' and *ngibuale* 'come out' are used simultaneously in one motion clause.

To sum up, Budai Rukai aligns with verb-framed languages like other

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Austronesian languages to use Path verbs (though not always a single Path verb) to describe the emergence of the owl.

4.3.2 The Ground information in motion events

In terms of the second diagnostic test, Ground information throughout the whole Frog story is counted to see whether Budai Rukai reveals the tendency of being a verb-framed language. According to Slobin's typological analysis (2004), Ground information is less frequently specified in verb-framed languages than in satellite-framed languages. This can be elucidated by observing the English example 'He went into the house'. Since a preposition is often used with the motion verb in satellite-framed languages like English, the Ground argument is usually specified after the preposition. Hence, in this example, 'the house' is obligatory owing to the occurrence of the preposition 'into'. However, since only few prepositions are found in Budai Rukai, using prepositions as a criterion to identify the Ground information is not easily adopted. Therefore, the Ground component can only be identified through the meaning of the motion clause once no prepositions occur in the clause. Examples are given from (4.24) to (4.26) to see how the MINUS-GROUND and PLUS-GROUND clauses are identified and counted.

(4.24) 025 .. la ucilri kuini sigu._ [MINUS-GROUND]
la u-cilri kuini sigu
then go-throw that.INV.PROX hornet/beehive
'That hornet/beehive fell down.' (RukaiNr-frog_Baqingyi)

(4.25) 092 …(1.2) sa tuverevere kudra ala **ikay** ki aciacilay,\ [PLUS-GROUND]
sa tu-verevere kudra ala i-kay ki aci-acilay
when TU-throw that.INV then be.at-this OBLRED-water
'when that (the child) then fell down into the pond, … (RukaiNr-frog_Salrabu)

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(4.26) 053 …(1.2) la uthene ki,_ [PLUS-GROUND]

la u-thene ki

then go-sink OBL

054 …(1.4) kadravane.\

kadraw-ane

big-NMLZ

'(they) sank into the river.' (RukaiNr-frog_Baqingyi)

As can be seen in (4.24), no Ground information is expressed in this narrative. Syntactically, the verb *ucilri* 'fall down' is followed by the subject *kuini sigu* 'that hornet/beehive' without a prepositional-like phrase indicating where the beehive fell. In contrast, a Ground information is shown in (4.25). The verb *tuverevere* 'fall down' is followed by *kudra* 'that' as the subject and the underlined prepositional-like phrase *ikay ki acilay* 'at the pond' as the Ground. In addition, in some cases, Ground is expressed without the use of *ikay* 'be at' as in (4.26). As can be seen in IU 053 and 054, the verb *uthene* 'sink' is followed by the Ground *ki kadravane* 'river' without a preposition-like word in between.

The overall percentages of MINUS-GROUND and PLUS-GROUND clauses in Budai Rukai are compared with other Austronesian languages along with Spanish, English and Mandarin and shown in Table 4.13.

Table 4.13 Percentages of Minus-ground and Plus-ground clauses*

Type	Language	MINUS-GROUND	PLUS-GROUND
Verb-framed language	Saisiyat	61%	39%
	Squliq Atayal	64%	36%
	Tagalog	55%	45%
	Cebuano	59%	41%
	Malay	42%	58%
	Spanish	37%	63%
	Kavalan	58%	42%
	Budai Rukai	**60.2%**	**39.8%**

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Satellite-framed language	English	18%	82%
Macro-event language	Tsou	52%	48%
Serial verb language	Mandarin	43%	57%

* Percentage figures for Spanish and English are withdrawn from Slobin (1996) and the rest are based on Huang and Tanangkingsing (2005) and Jiang (2006).

As illustrated in Table 4.13, similar to other verb-framed Austronesian languages like Saisiyat, Squliq Atayal, Tagalog and Cebuano, Budai Rukai reveals high tendency of using Minus-Ground motion clauses (60.2% of the clauses). Furthermore, Budai Rukai is even more verb-framed than Spanish since only 37% of the Spanish motion clauses express motion events with Ground information. The reason why Spanish is still counted as a verb-framed language in Slobin (1996) is because it is less satellite-framed compared to English with 82% of the motion clauses revealing Ground information. All in all, Budai Rukai again aligns with other verb-framed Austronesian languages to encode less Ground information in its motion clauses.

4.3.3 The Ground information in the downward motion

Speaking of the Ground information, four scenes depicting the downward motion are further pointed out to see the difference between verb-framed and satellite-framed languages. As has been mentioned in section 4.3.2, verb-framed languages tend to express the motion event with a bare verb while satellite-framed languages often use the motion verb with a Ground adjunct. Therefore, four scenes associated with the downward motion are chosen as the criteria. Table 4.14 summarized the overall results of these scenes.

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Table 4.14 Verbs with or without Ground in four falling events

	Events	Bare verb	Verb with Ground
1.	The dog falls.	2	1
2.	The beehive falls.	2	0
3.	The boy falls from the tree.	6	3
4.	The boy and his dog fall.	3	5
	Total	13	9

As can be observed in Table 4.14, among 22 clauses of downward motion, 13 clauses contain only the bare verb. It is also found that it is more possible to see the downward motion is described with a Ground when the protagonists, the boy and his dog, are falling down to the pond. More than half of the motion clauses in the fourth scene are depicted with Ground information. This may be due to the storyline that referring to the pond is necessary in order to continue to depict the following scenes.

After presenting the overall results of the clauses related to the downward motion, we now provide examples of the action of falling down from the narrations, given from (4.27) to (4.29). The action can be expressed by the following verbs in Budai Rukai: *muadreke* 'fall over/down', *tuverevere* 'fall down', *(m)ucilri* 'fall down' and *tururu* 'fall down'. They all convey the meaning of 'falling down' but their word formation is slightly different from each other.

(4.27) 077 …(0.8) la **muadreke** kay vavalake si kaynganay utaluvayvay kikay kuici.\
la mu-adreke kay vavalake si
then go-fall.over this kid and
kaynganay u-taluvayvay ki kay kuici
come go-appear OBL this owl
'Then the kid fell over and the owl appeared.'(RukaiNr-frog_Tuku)

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(4.28) 173 .. **tuverevere** kay taupungu,\
tu-verevere kay taupungu
TU-throw this dog
174 ... la **tuverevere** mua kavay ki acilay kudra==,_
la tu-verevere mua kavay ki acilay kudra
then TU-throw go that.VIS.DIST OBL water that.INV
'Then the dog fell down into the water.' (RukaiNr-frog_Kaingungane)

(4.29) 084 .. kuini vavalake la ngituluku si e,\
kuini vavalake la ngituluku si e
that.INV.PROX kid then shocked and FIL
085 ...(1.4) la kayngangay,\
la kayngangay
then come.out
086 ... e== **tururu mucilri** kuini ki angatu.\
e tu-ururu mu-cilri kuini ki angatu
FIL TU-fall go-throw that.INV.PROX OBL tree
'That kid was shocked and came out (and) fell down from the tree.' (RukaiNr-frog_Salrabu)

As shown in (4.27), it is the Path verb *muadreke* 'fall over/down' that is used to indicate the falling action of the clause. The verb is formed by the prefix *mu-* 'go' and the root *adreke* 'fall over'. In this case, no Ground information is depicted in this clause. On the other hand, the Ground information *kavay ki acilay kudra* 'that river' is indicated in (4.28). In this example, another verb *tuverevere* 'fall down' is used to denote the falling action. The verb is primarily formed by the prefix *tu-* and the root *verevere* 'throw' but the meaning of the prefix still remains unknown. This prefix is also used in another Path verb with the root *ururu* 'fall' to denote the falling action, i.e., *tururu* 'fall down', as in (4.29). Example (4.29) demonstrates two verbs to denote the action of falling down. As can be seen in IU 086, *tururu* 'fall down' is followed by another Path verb *mucilri* 'fall down' and then the Ground *kuini ki angatu* 'that tree'. Overall, only (4.27) is counted as an example of using the bare verb to depict the downward motion whereas the other two are counted as the verb with a Ground adjunct.

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When comparing the percentage of downward motion descriptions with other languages, we found that Budai Rukai also aligns with some of the verb-framed Austronesian languages. The results are as summarized in Table 4.15.

Table 4.15 Percentages of downward motion descriptions

Type	Language	Percentages of bare verb
Verb-framed language	Saisiyat	27.3%
	Squliq Atayal	52.2%
	Tagalog	62.5%
	Cebuano	62.9%
	Malay	26.9%
	Spanish	36%
	Kavalan	58.3%
	Budai Rukai	**68.1%**
Satellite-framed language	English	15%
Macro-event language	Tsou	55.6%
Serial verb language	Mandarin	41.9%

* Percentage figures for Spanish and English are withdrawn from Slobin (1996) and the rest are based on Huang and Tanangkingsing (2005) and Jiang (2006).

As can be observed in Table 4.15, 68.1% of the downward clauses in Budai Rukai use bare verbs to denote the downward motion. This is similar to Squliq Atayal, Tagalog Cebuano and Kavalan as their percentages all exceed 50%. However, some Austronesian languages like Saisiyat and Malay do not pass this diagnostic test since only 27.3% and 26.9% of the clauses respectively use bare verbs to encode the downward motion.

4.3.4 The event segmentation in the cliff scene

The last diagnostic test refers to the event segmentation in the cliff scene. This scene is comprised of a series of motion events and analyzed by Slobin (1997) into the following “four potential event components”:

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(i) change of location: deer moves, runs, arrives at cliff;
(ii) negative changes of location: deer stops at cliff;
(iii) cause of change of location: deer throws boy, makes boy/dog fall;
(iv) change of location: boy/dog fall into water.

Slobin (1997) pointed out that satellite-framed languages display higher averages of event segments compared to verb-framed languages. The overall event segments mentioned in our seven narrations are illustrated in Table 4.16. Four of the seven speakers mentioned more than three segments, i.e., Story 2 to Story 5. The fourth segment is the most recurrent one in that every informant speaks of the falling action of the boy and the dog. The second segment, negative changes of location, was less mentioned by our speakers as only two of them describe how the deer stops at the cliff. English Excerpts of each story are given in (4.30) with the mentioned segments in parenthesis.

Table 4.16 Event segments of the "cliff scene" mentioned across stories*

Story	Deer moves	Deer stops	Deer throws the boy	Boy/dog fall
1	√			√
2	√	√	√	√
3	√		√	√
4	√		√	√
5	√	√		√
6				√
7				√

*Segments mentioned in the narrative are marked by the symbol ' √ '.

(4.30) Excerpts of each story

Story 1: (i) When the kid was hung by the deer's antler, that deer got up and ran away. (iv) When the deer ran away, the boy and that dog fell down the cliff.

Story 2: (i) Then the deer moved and held up the kid. The kid was hung on the deer's antler. The deer ran away and jumped simultaneously and took away the kid. The kid was hung by the deer. The deer ran away and the child left too. The

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dog asked the deer, “he is my host, why do you want to take him away?” When they ran away, they arrived at the cliff. (ii) (iii) When the deer arrived at the cliff, he stopped and threw the kid out. (iv) The kid fell down into the river.

Story 3: (i) When the kid went up to the deer, it was angry and ran away. It seems that the kid grasped its antler. (iii) When he did this, the deer threw him into the river. (iv) When it left, the kid fell into the river.

Story 4: (i) Then when the kid was shaking the deer’s antler, the deer moved. It found that his antler was shaken. The deer ran away. His dog saw and wanted to help the kid. (iii) When the deer came to the cliff, it caused the kid to fall down. The dog wanted to help. (iv) They fell down into the water.

Story 5: (i) That deer ran away and wanted to put down the kid (but) it cannot do so. It ran to the cliff. (ii) When it came to the cliff and almost fell over, it stopped its legs and he (the boy) fell down. (iv) The kid and his dig fell down right to the river.

Story 6: When he grasped the branch, then he sat onto it. The branch left and was shivering. It turned out to be a female deer. When the kid saw it, he did not know what it is. It turned out to be a deer. Then, the dog came and kept barking. The dog came to the mountain and then left for cliff. (iv) The kid and the dog fell down.

Story 7: The kid was held up to the deer’s antler. The kid released the antler and he and his dog fell down to the ground. (iv) The kid and the dog seem to fall down into the river.

As indicated in the above excerpts, speakers of Story 2 to 5 mentioned at least 3 segments of the cliff scene, especially Story 2 with greater details of the description. In Story 6, though many details are narrated by the speaker, only one segment of the cliff scene is mentioned.

Compared to other languages, the average number of segments and percentages of mentioning more than three segments are tabularized in Table 4.17.

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Table 4.17 The average number of event segments and percentages of narrators mentioning more than three segments in the "cliff scene" *

Type	Language	Average number	Percentages
Verb-framed language	Saisiyat	3.0	50%
	Squliq Atayal	3.6	100%
	Tagalog	1.8	17%
	Cebuano	2.2	33%
	Malay	2.5	50%
	Kavalan	1.9	25%
	Budai Rukai	**2.6**	64%
Satellite-framed language	Germanic	3.0	86%
	Slavic	2.8	76%
Macro-event language	Tsou	3.1	83%
Serial verb language	Mandarin	3.0	100%

* Percentage figures for Germanic and Slavic languages are taken from Slobin (1997) and the rest are based on Huang and Tanangkingsing (2005) and Jiang (2006).

Compared to other Austronesian languages, Budai Rukai shows lower average numbers than Saisiyat, Squliq Atayal and Tsou that do not pass this diagnostic test from Huang and Tanangkingsing's (2005) perspective. The average number of Budai Rukai resembles that of Malay but higher than that of Kavalan, Tagalog and Cebuano. Although the average number and the percentage mentioning more than three segments both only slightly lower than those of satellite-framed languages like Germanic and Slavic languages, it is still concluded that Budai Rukai passes this diagnostic test of being a verb-framed language because of the following reasons. First, previous research of Huang and Tanangkingsing (2005) revealed that Malay also passes the diagnostic test though its average number is only 0.3 to 0.5 lower than that of satellite-framed languages. Second, the average number of Budai Rukai is influenced by the extreme results of the narrations. That is, some narratives mention all of the segments whereas some only mention one of them. This condition reveals that Slobin's (1997) fourth test

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might need more data to show the tendency of the language in terms of this scene. However, since this thesis is not a quantitative study examined by statistics, we rely on the judgement of previous studies to conclude that Budai Rukai passes this test because it resembles Malay.

4.3.5 Discussions from Slobin's perspective

As have been demonstrated from section 4.3.1 to 4.3.4, we discuss four diagnostic tests for verb-framed languages in terms of Budai Rukai narratives. The results show that Budai Rukai aligns with some of the verb-framed Austronesian languages, as summarized in Table 4.18 below.

Table 4.18 Summary of the results of the diagnostic tests for verb-framed languages*

Language	Owl's exit	Ground information	Downward motion	Cliff scene
Tsou	×	√	√	×
Saisiyat	√	√	×	×
Squliq	√	√	√	×
Tagalog	√	√	√	√
Cebuano	√	√	√	√
Malay	√	√	×	√
Kavalan	√	√	√	√
Budai Rukai	√	√	√	√

*Results of Kavalan are based on Jiang (2006) and those of the rest are withdrawn from Huang and Tanangkingsing (2005).

As can be observed in Table 4.18, Budai Rukai is apparently a verb-framed language like Tagalog, Cebuano and Kavalan since they all pass four of the diagnostic tests. Furthermore, as argued by Huang and Tanangkingsing (2005), Saisiyat is a less verb-framed language since it fails two of the four diagnostic tests. Squliq Atayal and Malay are virtually a verb-framed language since they fail one of the tests. As for Tsou, it is still considered a Macro-event language due to its MP compounding strategy as argued

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by Huang and Tanangkingsing (2005). All in all, the result that Budai Rukai is a verb-framed language echoes the model of Huang and Tanangkingsing (2005) because verb-framed languages are more path-salient and less manner-salient.

4.4 Interim summary

In this chapter, seven Budai Rukai Frog narratives were examined in terms of the lexicalization patterns of Motion verbs, the morphosyntactic patterns of Motion components, and four diagnostic tests.

As have been noted in 4.2, four lexicalization patterns of Motion verbs, i.e., Path verbs, Path prefix with Ground/Region roots, Deictic-Path verbs and Manner verbs, are found in Budai Rukai Frog narratives. Among these four patterns, the first three patterns can be categorized into a broader term for Path verbs. Path verbs are more frequently used than Manner verbs in terms of either type or token frequencies.

Morphosyntactic patterns of Motion components in motion events in Budai Rukai Frog narratives are also scrutinized in section 4.2. Five patterns of motion components are found in the Frog stories, including motion events containing an only Path verb (P), an only Manner verb (M), a Path verb followed by a Manner verb (P#M), a Manner verb followed by a Path verb (M#P) and two juxtaposed Path verbs (P#P). Motion events with at least one Path verb occur frequently throughout the whole Frog story, giving rise to the fact that Budai Rukai is a path-salient language like other Austronesian languages examined in Huang and Tanangkingsing (2005). This result also aligns with the perspective from Slobin's viewpoint since verb-framed languages are path-salient.

Therefore, as have been demonstrated in section 4.3, we also employed Slobin's four diagnostic tests to see whether these two perspectives are consistent. Data of Frog narratives are then examined in terms of specific scenes such as the owl's exit, the falling scene of the child, the dog and the beehive, and the cliff scene. The results of the

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diagnostic tests show that Budai Rukai is a purely verb-framed language on a par with Kavalan, Tagalog and Cebuano.

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Chapter 5 Conclusion

5.1 Recapitulations

This present study attempted to address the following three research questions. To recapitulate the main findings of the research, answers to each question are provided in this section.

(i) How are locative nouns, cardinal directions and spatial prefixes used in Budai Rukai?

First, the locative nouns in Budai Rukai differ in terms of UP/DOWN, FRONT/BACK, IN/OUT, MIDDLE/SIDE, and LEFT/RIGHT Regions. Each category of the locative nouns can all be prefixed by spatial prefix *i-* and *sa-* in the locative construction, schematized as *i-ROOT* and *sa-ROOT*, in which the former one is more frequently used as the basic locative construction whereas the latter is used when an additional context is pointed out. For instance, whereas the verb *i-daane* 'is inside' used with the Figure and the Ground denotes basically that the Figure is inside the Ground, the verb *sa-daane* 'is inside' used with the same Figure and Ground denotes that the Figure is inside the Ground because there are too many people outside the Ground. However, the difference between the two types can only be differentiated in terms of UP/DOWN and IN/OUT Regions. In addition, the *i-ROOT* type can also be used with another prefix *tali-* 'direction' to denote a broader Region of the Ground.

Second, the cardinal directions in Budai Rukai can also be prefixed by the spatial prefix *i-* to indicate the absolute directional system. Basically, the cardinal directions in Budai Rukai are not based on the widely attested land-sea axis and the south-east Asian monsoons, but based on the sun model and one's orientation towards the sun, similar to Saisiyat, Isbukun Bunun, Paiwan and Squliq Atayal.

Last, spatial reflexes attested in Paiwan, Puyuma and Thao by Blust (2003) can

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also be found in Budai Rukai. Four prefixes related to space are discussed in the present thesis. The prefix of motion, *mu-*, can be divided into five types in terms of morphological formation and semantic functions. The prefix of causative motion *pu-*, the prefix of location, *i-*, and the prefix of causative location, *pi-*, are also highly productive in Budai Rukai. The semantic functions of the above four prefixes range from concrete meanings of motion or location to semantically extended abstract meanings of motion or location.

(ii) What morphosyntactic patterns in motion events are expressed in Budai Rukai narratives?

Based on our data of Budai Rukai narratives, five morphosyntactic patterns of motion clauses are found. First, almost 50% of the motion clauses include only one Path verb (P). Second, one-fifth of the motion clauses include only one Manner verb (M). Third, a small number of clauses denote the motion by using a verb-serial strategy, either a Path verb followed by a Manner verb (P#M) or the reversed order (M#P). Last, about 22% of the motion clauses contain two Path verbs (P#P) to indicate a motion event. Among these five syntactic patterns, the verb *katuase* 'leave, move away' is the most frequently used one, as either the only verb or the first verb of the serial-verb construction in motion events.

(iii) Is Budai Rukai a verb- or satellite-framed language based on Talmy's typology of motion events and does it align with the distinction of path-salient and manner-salient languages from Huang and Tanangkingsing's perspective?

The results show that Budai Rukai is a highly path-salient language with two-third of the motion clauses containing at least one Path verb. In addition to investigating the morphosyntactic patterns of motion clauses, this study also adopted four diagnostic tests in Slobin's (2004) research and found that Budai Rukai passed all of the tests. It

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uses Path verbs to describe the emergence of the owl, describes motion events without Ground information less frequently, especially in downward motions, and involves low event segmentation in the cliff scene. These results show that Budai Rukai is a verb-framed language, aligning with the perspective from Huang and Tanangkingsing (2005).

5.2 Limitations and recommendations for future research

The present study investigates the spatial conceptualizations in Budai Rukai. Future studies regarding the same research topic can focus on the frame of references and the interaction between space and time dimension.

To begin with, though this research provides a detailed description of the usages of locative nouns, cardinal directions, and spatial affixes, frames of reference in Budai Rukai needs further investigation. Since exploring the frames of reference (FoR) in languages needs a more well-designed experiment or methodology as pointed out in Chen's (2012) investigation of spatial orientations in Yami, it is beyond the scope of this descriptive study. Additionally, it seems that three types of FoR are acceptable in Budai Rukai. Thus, researchers definitely need to conduct fieldtrips to the informants' tribes where they will be more familiar with the spatial orientations around them so that a more natural data targeting at the topic of FoR can be elicited.

Secondly, although this research mentions some interaction between the space and time dimension, e.g., the usage of prefix of motion and location with the noun root *cayli* 'year', a further research by adopting a time-related model is needed. The relation and interaction between space and time are highly researchable because it is often found that the spatial concepts can be mapped to the temporal concepts in languages. In previous studies, Chen (2008) presented some data of temporal expressions in Budai Rukai. However, since the temporal concepts were not the main foci of his study, the description was limited. It is hoped that future studies can further investigate this topic

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to provide a better understanding of the cognition and culture hidden behind the Rukai languages.

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