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噶瑪蘭語空間認知之研究

Spatial Conceptualizations in Kavalan

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噶瑪蘭語空間認知之研究

Spatial Conceptualizations in Kavalan

經本委員會審議，符合碩士學位標準，特此證明。

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Abstract

Spatial reference, spatial concepts, and most importantly spatial conceptualizations have attracted a flurry of research over the past two decades. Spatial language, in particular, provides researchers with an access to the inner world of spatial concepts, which are difficult to investigate by mere observation of other human behaviors. This thesis thus investigates the spatial conceptualizations in Kavalan, and the aim here is twofold. On the one hand, we conduct a detailed investigation of all linguistic means available in Kavalan recruited for spatial reference. It is found that in Kavalan each of the morphosyntatic categories that express spatial meanings has its own interaction patterns with spatial semantic categories such as Path, Region, and Direction. Moreover, what Kavalan speakers need to interpret the local role and localization in a Motion event is normally their spatial knowledge about the canonical interaction between a given pair of Figure and Ground, which helps to "simplify" the coding of linguistic forms.

On the other hand, we study the structure of Motion events in narratives by looking into spontaneous speech produced by native speakers. This second perspective further divides into two dimensions. One is concerned with route knowledge as reflected in route instructions, with extra attention paid to the application of Frames of Reference (FoR). Our study shows that Kavalan speakers guide wayfinders en route by appealing largely to the Geocentric FoR (both cardinal directions and the up-down axis), though Viewpoint-centered and Object-centered FoR are also in use. This strategy is due to the nature of the geographical layout of Hsinshê Village, where the west-east axis corresponds to the land-sea and up-down axes while the north-south axis to the up-down axis. Consequently, these overlapping axes in the local environment enhance the prominent status of the Geocentric FoR in route directions.

The other dimension focuses on a semantic analysis of the Frog narratives. According to our data, Kavalan must be recognized as a fairly typical verb-framed language on a par with Tagalog and Cebuano, to which Kavalan bears the strongest resemblance in the semantic typology of Motion events in the six Western Austronesian languages investigated in Huang and Tanangkingsing (2005). In addition, the most significant construction type in Kavalan is the "*wiya*#V" serialization, which not only describes a Figure moving progressively away from the conceptualizer, but can also depict an emerging state of affairs or a continuous activity. Interestingly, the Motion verb *wi*(*ya*) 'leave, disappear' shares a parallel development of grammaticalization with the Motion verb *yau* 'exist, appear' by uniting place deixis, Motion, and aspect functions, which can be ultimately attributed to the conceptual analogy between space and time.

Key words: spatial conceptualizations, Motion events, Formosan languages

摘要

過去的二十年來，空間指涉、空間概念，以及最重要的，空間認知皆引發了一陣研究的風潮。由於空間概念難以藉由觀察人類行為來加以研究，空間語言便成為研究空間概念之內在世界的一個絕佳管道。因此，本論文旨在探索隱藏在噶瑪蘭語中的空間認知，而我們的目標主要有兩個。一方面，我們徹底分析噶瑪蘭語當中所有表現空間概念的語言手段。研究發現，噶瑪蘭語中表現空間概念的構詞句法類別和空間語意類別（諸如路徑、區塊、方向等）皆有各自的互動模式。此外，一般而言噶瑪蘭語使用者憑藉著他們對一組主體（Figure）和背景（Ground）之間的常態互動便能推知該運動事件當中所涉及的處所角色（local role）以及處所區塊（localization），因此某種程度上簡化了語言形式上的複雜度。

另一方面，藉由分析噶瑪蘭語母語使用者的自發性言談，我們研究敘事體故事中的運動事件之結構，而這第二個研究目標又可細分為兩個面向。第一個面向所關心的是反映在路線指示當中的路線知識（route knowledge），並且特別留心參照框架（Frames of Reference）的使用情形。我們的研究顯示，雖然噶瑪蘭語使用者也會使用觀點中心式（Viewpoint-centered）和物體中心式（Object-centered）參照框架，但是他們主要還是藉由地心式（Geocentric）參照框架來引導問路人，包含基本方位以及上下軸，而這項結果或可歸因於新社部落的地理佈局。在新社部落，東、西兩方位分別對應於海、陸以及下、上兩種座標軸，而南、北兩方位則分別對應於下、上兩軸。因此，這些不同的座標軸在當地彼此交互疊合後便突顯了地心式參照框架在路線指示中的重要地位。

另一個面向的研究重心則是針對噶瑪蘭語的《青蛙故事》進行語意分析。我們的語料顯示，噶瑪蘭語和塔加洛語以及宿霧語一樣是一種相當典型的動詞框架化語言（Verb-framed language），同時，在黃宣範及洪媽益（2005）所研究的六種西南島語的動作事件之語意類型當中，噶瑪蘭語和塔加洛語以及宿霧語也是最為相似。此外，噶瑪蘭語動作事件中最值得注意的句構是由「*wiya*#V」所表達的連動句，它除了描述主體（Figure）不斷朝遠離認知者的方向移動之外，還能表達一種狀態逐漸萌生或一項活動持續進行。有趣的是，動作動詞「*wiya* (離開、消失)」和「*yau* (存在、出現)」之間存在著某種類似的語法化過程—兩者皆帶有空間指示、動作、時貌等功能—而此一現象最終則可歸因於空間和時間之間的概念性類比。

關鍵字：空間認知、動作事件、台灣南島語

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Abbreviations and Conventions

1SG	1st Person Singular
1EPL	1st Person Exclusive Plural
1IPL	1st Person Inclusive Plural
2SG	2nd Person Singular
2PL	2nd Person Plural
3SG	3rd Person Singular
3PL	3rd Person Plural
AF	Actor Focus
ASP	Aspect
AUX	Auxiliary
CAU	Causative
CLF	Classifier
COMP	Complementizer
DEM	Demonstrative
DIST	Distal
DM	Discourse Marker
EPM	Epistemic
EXP	Experiential
FIL	Filler
FS	False Start
FUT	Future
GEN	Genitive
HUM	Human
IMP	Imperative
INT	Interjection
IRR	Irrealis
LF	Locative Focus
LNK	Linker
LOC	Locative
NAF	Non-Actor Focus
NEG	Negative
NHUM	Non-human
NMZ	Nominalizer
NOM	Nominative
OBL	Oblique
PART	Particle
PFV	Perfective
PN	Proper Noun
PNM	Personal Name Marker
POSS	Possessive
PROX	Proximal
Q	Interrogative
RED	Reduplication
REL	Relativizer
RF	Referential Focus

Chapter 1 Introduction

1.0 Research on Spatial Language

Spatial reference, spatial concepts, and most importantly spatial conceptualizations have attracted a flurry of research over the past two decades in a wide range of academic fields, ranging from philosophy to anthropology, and from psychology to neurology. Linguistics, of course, has also been devoted to unraveling the structure (syntactic and semantic) of spatial expressions, often with findings of both cognitive and typological implications.

As Levinson (2003) points out, there are at least two fundamental reasons why we study spatial language. One is the established fact that space, or spatial thinking, plays a central role in human cognition. This is evidenced by the tremendous number of cross-domain spatial metaphors across languages. The other reason is that language, as a system of communication, provides us with an access to the inner world of spatial concepts, which are difficult, if not impossible, to investigate by mere observation of other human behaviors.

Although the literature concerning spatial semantics in Indo-European or other well-known languages is copious, the research on non-Indo-European or other less well-known ones has been relatively under-explored. Austronesian languages, or specifically the Formosan subgroup, are no exceptions. In addition to a few papers by Huang (1998, 2001, 2002a), Tanangkingsing (2002, 2003, 2004), and most recently Huang and Tanangkingsing (2005), there are only two theses to date that are exclusively targeted at

spatial semantics in Formosan languages (i.e. Wu 2004 and Li 2004). Simply put, the research into Formosan spatial language is just in a rudimentary stage, in both the scope covered and the languages investigated. However, "to reach a description and analysis of the semantics of space and spatial reference", as Senft (1997: 22) urges, "we must know much more about this topic—and our knowledge must be based on research in many more languages!" It is exactly this call that we respond to in this present thesis by investigating the spatial reference and Motion events in Kavalan, a seriously endangered Formosan language.

1.1 Research Questions

In this thesis, we shall address the following three questions:

(1) How do morphosyntatic categories (different form classes, such as verbs, adverbials, particles, case markers, adpositions, or affixes, etc.) interact with spatial semantic categories (such as Path, Ground, Frames of Reference, etc.) in the Kavalan language?

(2) How do Kavalan speakers guide wayfinders from one location to another in their local environment? In addition, what coordinate systems do they appeal to in the conduct of their daily routines?

(3) What type of spatial language does Kavalan belong to with respect to Talmy's (2000b) Motion-framing typology? More specifically, what morphosyntatic mechanisms or what preferred construction type does Kavalan employ in the competition between core-schema (Path) and Co-event components (e.g. Manner)?

Based on these three questions, the aim of this present study is twofold. On the one hand, we shall conduct a fairly detailed investigation of all linguistic means available in Kavalan recruited for spatial reference. The central theme is thus the interaction between the morphosyntactic pole (i.e. form) and semantic pole (i.e. function) of spatial expressions. On the other hand, we study the structure of Motion events in narratives by looking into spontaneous speech produced by native speakers. This second perspective further divides into two dimensions. One is concerned with route knowledge as reflected in route instructions, with extra attention paid to the application of Frames of Reference (FoR). The other dimension focuses on a semantic analysis of the Frog narratives. Modeled after Huang and Tanangkingsing (2005), we propose to follow their line of research by adding one more piece, namely Kavalan, to the spatial puzzle of Motion events in Western Austronesian languages.

1.2 Database, Methodology, and Organization

The Kavalan data used in this thesis mainly come from two sources. For the purpose of a structural analysis, the present author has conducted a number of fieldtrips to Hsinshê Village for data elicitation from Kavalan informants. The main database of the present study, however, consists of five route instructions and eight Frog story narratives which the author tape-recorded and transcribed from Kavalan native speakers.

Equipped with the analytic tools in Cognitive Linguistics, we shall execute our investigation as follows. Following a brief introduction of the Kavalan grammar, Chapter 2 reviews the literature on spatial language in general and on Austronesian space studies in particular, which may help to situate this present thesis in a broader context. In Chapter

3, we endeavor to answer our first research question by examining the way the Kavalan language structures space. To answer the other two questions, Chapter 4 analyzes the way Kavalan speakers verbalize their spatial knowledge of the local environment and the way they express Motion events as revealed in the Frog narratives. Finally, in Chapter 5 we summarize some important findings in this study and attempt to evaluate their implications for the research on spatial language.

1.3 A Brief Sketch of Kavalan Grammar

For ease of reference, this section provides the readers with a sketch of basic Kavalan grammar in terms of its general background, phonemic inventory, Focus system and word order, case marking system, and finally pronominal system.

1.3.1 General background

The Kavalan language is spoken by the Kavalan people, who were once the dominant aboriginals across the Lanyang Plains in Ilan County.[1] Ever since the immigration of the Han people in late eighteenth century, however, most Kavalan people in Ilan County have been sinicized and thus lost their precious language. Fortunately (or unfortunately), about one hundred years ago there was one Kavalan tribe called Kaliwan, who was forced, under the oppression of the Han people, to move southwards to the coastal areas of Hualien and T'aitung County. Nowadays, descendants of the Kaliwan tribe still speak their mother tongue and live mainly in Chiali Village, Hsinshê Village, and Litê Village, Hualien County as well as in Changyüen Village, T'aitung County (Li

1996: 56). Since the Amis people is the dominant aborigine throughout Hualien and T'aitung County, most Kavalan people also have a good command of the Amis language, in addition to Mandarin Chinese, Holo (or Taiwanese Minnan), and sometimes Japanese, the last being the aftereffect of Japan's colonization of Taiwan from 1895 to 1945.

It was reported that the population of Hsinshê Village was 1,225 in 1984, with only 250 of Kavalan descent (Shimizu 1991, cited in Huang and Chang 1995). Under the threat of the increasing sinicization and urbanization, the number of the Kavalan people is decreasing and the use of the Kavalan language shrinking accordingly. Therefore, this present thesis, in addition to investigating the spatial conceptualizations in Kavalan, is also intended as a documentation of the Kavalan language, before its impending death.

Table 1.1 Background information of eight Kavalan informants

Kavalan names	Chinese names	Years of birth	Language abilities
abas	潘天利	1933	Kavalan, Amis, Japanese, Mandarin, and some Taiwanese Minnan
api'	朱阿比	1927	Kavalan, Amis, Japanese, and Taiwanese Minnan
buya	謝宗修	1958	Kavalan, Amis, Mandarin, and Taiwanese Minnan
imui	潘金妹	1952	Kavalan, Amis, Mandarin, and Taiwanese Minnan
ngengi	林阿份	1941	Kavalan, Amis, Japanese, Mandarin, and Taiwanese Minnan
pilaw	林愛玉	1940	Sakizaya, Kavalan, Amis, Japanese, Mandarin, and Taiwanese Minnan
Raciang	潘金英	1944	Kavalan, Amis, Mandarin, and Taiwanese Minnan
syulan	潘秀蘭	1957	Kavalan, Mandarin, and Taiwanese Minnan

The Kavalan data in this thesis are primarily based on recordings by and interviews with eight Kavalan informants from Hsinshê Village, Hualien County. Their background information is given in Table 1.1 above.

1.3.2 Phonemic inventory

Kavalan has sixteen consonants and four vowels, as respectively shown in Table 1.2 and Table 1.3 (adapted from Li 1996: 56 and Chang 2000: 43-44). For the convenience of typing, we shall replace special symbols in International Phonetic Alphabet (IPA) with conventional alternatives (those in parenthesis) when presenting our Kavalan data.

Table 1.2 Consonants in Kavalan

	Voiced	Bilabial	Alveolar	Palatal	Velar	Uvular	Glottal
Stop	–	p	t		k	q	ʔ (’)
Nasal	+	m	n		ŋ (ng)		
Fricative	–		s				
	+	β (b)	z			ʁ (R)	
	–		ɬ (d)				
Flap	+		ɾ (l)				
Glide	+	w		j (y)			

Table 1.3 Vowels in Kavalan

	Front	Central	Back
High	i		u
Mid		ə (e)	
Low		a	

1.3.3 Focus system and word order

Like most Western Austronesian and other Formosan languages, Kavalan is a predicate-initial language featuring the so-called Focus system[2], which is characterized by an inventory of affixes on verbs used to mark the thematic role of the grammatical subject. Since word order is inextricably related to the Focus construction employed, we shall introduce these two dimensions of grammar in this section, but only very briefly.

According to the literature (Li 1996: 72-77, Lee 1997: 58-78, Chang 2000: 99-112, and Huang and Sung 2006), there are four types of Focus constructions in Kavalan, as illustrated in Table 1.4[3].

Table 1.4 The Focus system in Kavalan

	AF	NAF (Non-AF)		
Functions	Actor Focus	MA Construction	Patient/Locative Focus (LF)	Benefactive/Instrumental Focus (RF)
Forms	φ , *m-* , <(*u*)*m*>	*ma-*	*-an*	*ti-*

In Actor Focus (AF) the grammatical subject, usually an agent of action verbs or an experiencer of psychological verbs, hence the capitalized label Actor (Chang 2000: 100-02), appears in the sentence-final position, as illustrated in (1) (examples from *ibid.*)[4]. Since the case marking (see Section 2.3) of the nominals in (1) has made clear the grammatical relations of each nominal, the word order is relatively free, as shown in (2).

(1) a. p<m>ukun tu sunis ya baqi
<AF>hit OBL child NOM old.man
'The old man is hitting a child.'
b. m-lizaq tu sunis ti-Rungay
AF-like OBL child PNM-PN
'Rungay likes children.'

(2) a. p<m>ukun ya baqi tu sunis
<AF>hit NOM old.man OBL child
'The old man is hitting a child.'
b. m-lizaq ti-Rungay tu sunis
AF-like PNM-PN OBL child
'Rungay likes children.'

When case markers are absent, however, the grammatical subject has to follow the predicate immediately, as contrasted in (3).

(3) a. p**<m>**ukun ti-utay ti-imui
<AF>hit PNM-PN PNM-PN
'Utay is hitting Imui.'
b. p**<m>**ukun ti-imui ti-utay
<AF>hit PNM-PN PNM-PN
'Imui is hitting Utay.'

On the other hand, in non-Actor Focus (NAF), including MA construction (MA), Patient/Locative Focus (LF), and Benefactive/Instrumental Focus (RF), the agent/ experiencer always follow the predicate immediately. First, in MA construction, the grammatical subject is typically an inanimate entity that undergoes some kind of action and then remains affected, as is the case in (4) (examples from Huang and Sung 2006: 4).

A more significant characteristic of MA construction is that the agent is optional (as in (4b)), which is not possible in other NAF constructions.

(4) a. **ma**-ziut-na ya taquq 'nay ta paRin-an
MA-hang-3SG.GEN NOM chicken that LOC tree-LOC
'He/She hung the chicken on the tree.'
b. **ma**-ziut ya taquq 'nay ta paRin-an
MA-hang NOM chicken that LOC tree-LOC
'The chicken hung on the tree.'

Next, in LF the grammatical subject is either a patient of an action or a location associated with that action, as illustrated in (5) and (6) respectively.

(5) qaRat-**an**-na na mutun 'nay ya qudus-ku
bite-LF-3SG.GEN GEN mouse that NOM clothes-1SG.GEN
'That mouse bit my clothes.'
(6) spez-**an**-ku tu biyat ya buduq unay
put-LF-1SG.GEN OBL frog NOM urn that
'I put frogs into that urn.'

Unlike most other Formosan languages, where PF and LF forms remain different, Kavalan has merged the PF form into the LF Form, thus causing PF and LF to share a common form. This phenomenon comes as a piece of evidence for the conceptual interpermeability between objects and locations (see Huang 2005).

Finally, in RF the grammatical subject is either a beneficiary of an action (BF) or an instrument with which to carry out that action (IF), as shown in (7) and (8) respectively.

(7) **ti**-sa'may na sunis ya tina-na
RF-cook GEN child NOM mother-3SG.GEN
'The child cooked for his mother.' (Benefactive Focus)

(8) **ti**-saulun-ku tu ulun na zna ya sauki a zau
RF-mow-1SG.GEN OBL grass GEN farmland NOM mower LNK this
'I mowed the grass on the farmland with this mower.' (Instrumental Focus)

In spite of the examples given above, the use of RF has been shrinking. Nowadays, there is a trend for Kavalan speakers to replace BF with the verb *mangmu* 'help' followed by another verb, and substitute IF for the *tu*-marked phrase in LF construction, as illustrated in (9) and (10) respectively.

(9) **mangmu** ya sunis **sa'may** tu tina-na
AF.help NOM child cook OBL mother-3SG.GEN
'The child cooked for his mother.'

(10) **saulun-an-ku** **tu** **sauki** a zau ya ulun na zna
mow-LF-1SG.GEN OBL mower LNK this NOM grass GEN farmland
'I mowed the grass on the farmland with this mower.'

To summarize, the word order in Kavalan is correlated with Focus constructions: the agent/experiencer in Actor Focus normally appears in the sentence-final position while that in non-Actor Focus always follows the predicate immediately. Moreover, word order can be relaxed when case markers are present; otherwise, the agent has to precede the patient, thus qualifying Kavalan as a VAP language (see Huang *et al.* 2006, Chapter 2 on word order in Kavalan).

1.3.4 Case marking system

There are four cases in Kavalan, as shown in Table 1.5 (see also Li 1996: 77, Chang 2000: 68, and Huang *et al*. 2006: 61).

Table 1.5 The case marking system in Kavalan

	NOM	GEN	OBL	LOC
Non-personal nouns	ya/a	na	tu	ta …-an 'in/on/at' sa/pasa 'to(ward)'
Personal names	ya/a	ni	tu	(ta) …-an

As their names suggest, the nominative case marks the grammatical subject, the genitive case the possessor, the oblique case non-core arguments, and finally the locative case a location. The nominative case tends to be absent from utterances, thus making it an optional case marker:

(11) Rasa-an-na ni pilaw **(ya)** u-zusa sudad
buy-LF-3SG.GEN GEN PN NOM CLF.NHUM.two book
'Pilaw bought two books.'

The genitive case, which distinguishes non-personal nouns (which require *na*) from personal names (which require *ni*), marks not just the possessor of a nominal (12a) but the agent of a NAF clause (12b), a feature characteristic of Western Austronesian and other Formosan languages:

(12) a. sunis **ni** **ipay**
child GEN PN
'Ipay's child'
b. pukun-an-na **ni** **ipay** tu tunun ya sunis-na
hit-LF-3SG.GEN GEN PN OBL stick NOM child-3SG.GEN
'Ipay hit her child with a stick.'

In addition to non-core arguments, the oblique case *tu* also marks patient and goal, as illustrated in (13) (examples from Chang 2000: 71).

(13) a. q<m>an **tu** **tamun** ya sunis
<AF>eat OBL vegetable NOM child
'The child is eating vegetables.'
b. bula ti-upa tu kelisiw **tu** **sunis-na**
give PNM-PN OBL money OBL child-3SG.GEN
'Upa gives money to his child.'

Finally, the locative case marker *ta* nearly always requires a suffix *–an* (except for some special cases), which is historically related to the Locative Focus marker. Regardless of the given English glosses, the *ta* …*-an* construction is in fact capable of marking all kinds of local roles, ranging from static to dynamic ones. In (14), for example, *ta* introduces a Goal of Motion, which can be a noun or a noun phrase.

(14) a. matiw=imi ta taypaq-an
AF.go=1EPL.NOM LOC Taipei-LOC
'We went to Taipei.'

b. matiw=imi ta [s<n>angi ni utay tu qadan=ay] qizuanan
AF.go=1EPL.NOM LOC <PFV>make GEN PN OBL chair=REL place
'We went to the place where Utay made chairs.'

Unlike *ta*, the locative case markers *sa* and *pasa* do not allow the presence of the locative suffix *–an* and mark only a Goal of Motion. However, while *sa* introduces only a noun, *pasa* introduces a noun or a noun phrase, as illustrated in (15).

(15) a. matiw=imi sa/pasa taypaq
AF.go=1EPL.NOM LOC Taipei
'We went to(ward) Taipei.'
b. matiw=imi *sa/pasa [s<n>angi ni utay tu qadan=ay] qizuanan
AF.go=1EPL.NOM LOC <PFV>make GEN PN OBL chair=REL place
'We went to(ward) the place where Utay made chairs.'

1.3.5 Pronominal system

In Kavalan, the pronominal system splits into two groups, one bound and the other free, as in Table 1.6 below (see also Li 1996: 80, Lee 1997: 38, and Chang 1997: 33, 2000: 84).

Bound pronouns further divide into two categories, one nominative enclitics (indicated by the equal sign) and the other genitive suffix (indicated by the dash), as respectively illustrated in (16a) and (16b).

Table 1.6 The pronominal system in Kavalan

Bound/Free	Bound forms		Free forms			
Case	NOM	GEN	NOM	OBL	LOC	POSS
Person/Number						
1SG	=iku	-ku	aiku	timaiku	timaikuan tamaiku	zaku
2SG	=isu	-su	aisu	timaisu	timaisuan tamaisu	zasu
3SG	---	-na	aizipna	timaizipana	tamaizipana	zana zani
1IPL	=ita	-ta	aita	timaita	timaitaan tamaita	zata
1EPL	=imi	-niq	aimi	timaimi	timaimian tamaimi	zaimi
2PL	=imu	-numi	aimu	timaimu	timaimuan tamaimu	zanumi
3PL	---	-na	qaniyau	qaniyau	taqaniyauan[5]	zana zani

(16) a. ’etung=pa=**iku** tu babuy
kill=FUT=1SG.NOM OBL pig
‘I am going to kill a pig.’
b. ’etung-an-**ku**=pa ya babuy a zau
kill-LF-1SG.GEN=FUT NOM pig LNK this
‘I am going to kill this pig.’

Free pronouns, on the other hand, have four members, namely, nominative, oblique, locative, and possessive. Since the choice of free pronominal cases corresponds to that of case markers for nominals, only the possessive case needs further explanation. The possessive case resembles the genitive case in their capability of marking the possessor of

a nominal, but differs from it in distribution. Chang (2000: 98), for instance, identifies the examples in (17) as equivalents:

(17) a. bawa'-ku
boat-1SG.GEN

= b. zaku=ay bawa'
1SG.POSS=REL boat

= c. bawa' zaku
boat 1SG.POSS
'my boat'

However, according to our informants, (17c) would be better rendered as "mine is a boat." In other words, the *zaku* in (17c) is a possessive pronoun serving as the subject rather than a possessive adjective functioning as a modifier (as is the *-ku* in (17a)). On the other hand, *zaku* in (17b) is a modifier linked to a modifiee (*bawa'*) with a relativizer *ay*. When *zaku* precedes a nominal and there is no relativizer connecting them, *zaku* function as the predicate of that nominal instead, as illustrated in (18).

(18) zaku wasu zau
1SG.POSS dog this
'This dog is mine.'

Therefore, although both the genitive case and the possessive case mark a possessor, the latter differs from the former in its capability of functioning as a pronoun as well as a predicate.

Finally, the possessive case for third person distinguishes *zana* from *zani*, a distinction quite similar to that between the genitive case *na* and *ni* (Lee 1997: 52). That

is to say, while *zana* is used for non-personal nouns, *zani* is exclusively reserved for personal names, as contrasted in (19) (examples from *ibid*.).

(19) a. kukuy ’nay zana sunis
candy that 3SG.POSS child
‘That candy belongs to the child.’ (lit. ‘That candy (is) the child’s.’)
b. lepaw ’nay zani abas
house that 3SG.POSS PN
‘That house belongs to Abas.’ (lit. ‘That house (is) Abas’.’)

As their English translations suggest, examples like these are clauses rather than phrases (*cf.* the genitive case *ni* in (12a) and the possessive case *zani* in (19b)). Moreover, phrases like “*zana*/*zani* + N” can only be predicates, but never subjects, as contrasted in (18).

(20) a. * kukuy ’nay ya zana sunis
candy that NOM 3SG.POSS child
Intended meaning: ‘What belongs to the child is that candy.’
b. zana sunis ya kukuy ’nay
3SG.POSS child NOM candy that
‘That candy belongs to the child.’

In other words, both *zana sunis* and *zani abas* in (19) are in fact predicates rather than subjects, though they appear in the sentence final position. To better illustrate the predicative nature of the phrase “*zana*/*zani* + N”, our informants tend to add the relativizer *ay* to the end of the noun, as shown in the dialogue below.

(21) A: kukuy ’nay, zaku=ay ni?
candy that 1SG.POSS=REL Q
‘Are these candies for me?’ (lit. ‘(Are) these candies mine?’)
B: usa. kukuy ’nay, zana sunis=ay.
no candy that 3PL.POSS child=REL
‘No. They are for the children.’ (lit. ‘No. They (are) the children’s.’)

Notes

[1] Transliterations of Mandarin toponyms throughout this thesis are all based on Wade-Giles Romanization.

[2] The word Focus is capitalized here in order to distinguish it from the pragmatic focus in the literature of information theory.

[3] Generally speaking, Formosan languages, as well as Western Austronesian languages, distinguish four different types of Focus, namely, Agent Focus (-um- or m(a)-), Patient Focus (-en), Locative Focus (-an), and Referential Focus (si- or sa-), which includes Benefactive Focus and Instrumental Focus (Li 1996: 73).

[4] All the Kavalan data in this thesis are from our own field notes and transcriptions from recordings, unless otherwise specified.

[5] This form is not formerly documented, but it does occur in our recorded data, as shown below (in boldface):

53	yau=ti	s<m>anu	tu	biyat	a	yau	tu	
	EXIST=PFV	<AF>say	OBL	frog	LNK	that	DM	
54	ou	zau.. azu=ti==...	s<m>anu	tu	**taqaniyauan**		tu	
	INT	this like=PFV	<AF>say	OBL	3PL.LOC		DM	
55	a==	qangi-a-ika=ti	aimu		Raw			
	INT	well-NAF-IMP.NAF=PFV	2PL.NOM		PART			
56	qa=wiya=ti=imi..		wanay	zin	na	sunis	a	yau
	EPM=leave=PFV=1EPL.NOM		thank	say	GEN	child	LNK	that

'He is saying to those frogs, well, this is like talking to them, "Hey, take care, you guys, and we're leaving, thank you!" said the child.' (Frog_pilaw, IU 53-56)

Chapter 2 Literature Review

2.0 Preliminary

During the past few decades, spatial semantics has become the focus of research by specialists from a variety of scientific enterprises, ranging from philosophy to anthropology, and from psychology to neurology. Linguistics, of course, has also been researching the spatial meanings embedded in linguistic structures, or more specifically, spatial conceptualizations of the humans. Therefore, in order to situate this present thesis in a broader context we shall review in this chapter some significant results that have accumulated over the past two decades, especially from the field of Cognitive Linguistics and Linguistic Typology. First, Section 2.1 outlines and explains some basic spatial semantic categories. Next, in Section 2.2 we shall review and summarize some of the proposed typologies of Motion events and the issue of mappings between semantic and morphosyntactic categories, a promising topic extensive enough to connect various typologies. Section 2.3 reviews on previous empirical studies in Austronesian languages, where spatial semantics is less transparent than that in, say, Indo-European languages, partly due to the limited access to Austronesian data.

2.1 Basic Spatial Semantic Categories

Almost all research papers dealing with spatial language take as their point of departure the pioneering work of Talmy (1985, 1991, 2000b), who analyzes a Motion event into a Core-event consisting of Figure, Motion, Path, and Ground, and a Co-event

that bears various relations to the Core-event, such as Manner, Cause, etc., as schematized below:

(1) The Motion event schema (Talmy 1985, 1991, 2000b):

[Figure Motion Path Ground] Internal Core-event	[Relation] External Co-event
Move	Manner
BEloc	Cause
	Enablement

Of the components in a Core-event, Path, or "core-schema" as labeled by Talmy, is in fact a complex notion, which can be further analyzed into Vector, Conformation, and Deixis (Talmy 2000b). In a similar manner, Zlatev (2003) proposes there are seven universal spatial semantic categories that are widely accepted across different theoretical frameworks. They include Figure, Ground, Motion, Path, Region, Direction, and Frame of Reference, most of which coincide with the components in a Talmyan Core-event.

Since it is not uncommon that the same term is used by different authors to refer to different concepts or that the same concept is given different terms by different authors, in the following subsections we shall review the seven categories proposed by Zlatev and at the same time clarify the terms we shall adopt throughout this thesis.

2.1.1 Figure and Ground

The antithetic terms Figure and Ground was initiated by a Danish phenomenologist Edgar Rubin (1886-1951), and then widely circulated in the field of Gestalt Psychology (e.g. Kohler 1929, Koffka 1935), where the Figure refers to the foreground (or focus of

attention) and the Ground to the background, primarily in the context of visual perception. Later, Talmy (1983) introduced them into the research of spatial semantics, where the Figure refers to the entity that is situated or moving while the Ground to the reference object with respect to which the Figure is characterized. It is important to note that the distinction between Figure and Ground is a psychological or linguistic reality, and that whether an entity should be regarded as Figure or Ground is dependent on different construals or linguistic structures. In example (2), for instance, where two utterances portray the same spatial configuration in real world, the church comes as a Figure in (2a) but a Ground instead in (2b):

(2) a. [**The church]** is behind [the school].
b. [The school] is in front of **[the church]**.

The Figure-Ground dichotomy is maintained later in Talmy (2000a, 2000b), and followed by Levinson (1996, 2003) and many others. However, other corresponding sets of terms have emerged ever since Talmy's (1983) pioneering work. Langacker (1986), for example, replaces Figure and Ground with Trajector and Landmark respectively in order to emphasize the dynamic nature of a locating event where an entity moves along a trajectory, changing its locations from one to another. Researchers who adopt Langacker's terms include Lakoff (1987), Svorou (1994), Sinha and Thorsheng (1995), and Zlatev (1997), just to name a few.

In this thesis, we prefer Figure/Ground to Trajector/Landmark, not merely because of the simplicity of the former, but also on account of its wider currency.

2.1.2 Motion

Motion, as the term itself suggests, is generally assumed to involve a change in the position of an object with reference to time. In a broader perspective, however, some less perceptible form of motion is also going on even when an object remains where it was as time goes by. Therefore, Talmy (2000b: 25) characterizes Motion (capitalized to underline its more generalized application) as "the presence per se of motion or the locatedness in the event" (hence two subtypes under the category Motion in (1)). Motion is thus either *translational*, namely, involving translocation, or *self-contained*, in other words, concerning location only, with the presence of displacement as the determining feature.

Another feature commonly used to classify Motion events is the involvement of an agentive causer that impinges on a Figure some kind force dynamics that causes an eventual movement of the Figure. As a result, this general notion distinguishes *self-propelled motion*, where no causer of Motion is present, from *causative motion*, where such a causer plays a role, as illustrated by the English "lie-lay" contrast in (3).

(3) a. The baby is lying in the cradle. [Self-propelled motion]
b. The mother is laying her baby in the cradle. [Causative motion]

Last, sometimes imagined motion (or *abstract motion* in Langacker 1987 and *fictive motion* in Talmy 1996) receives no less attention than actual motion since the former is normally modeled after the latter, both linguistically and conceptually. Examples in (4) reveal the parallel between imagined motion and actual motion.

(4) a. John ran through the woods. [Actual motion]
b. The road runs through the woods. [Imagined motion]

For our purpose here, we shall place a heavy emphasis on self-propelled motion, including both self-contained and translational motion. Our discussions on causative or fictive motion, on the other hand, will only be sketchy.

2.1.3 Path

Of all the spatial categories, Path is perhaps the one that has acquired the most extensive interpretations in the literature. First, in its narrowest interpretation, Path refers to a particular type of Ground through which a Figure travels, in other words, some point on a complete trajectory (as the Ground in (4a) above). Since Fillmore (1971, 1975) seems to be one of the earliest researchers who adopt this sense, we dub it Fillmorian Path. In his sophisticated work on case, Black (2001) also takes the same position by classifying Path as one of his four local cases.[1]

Second, a broader interpretation is what we call Jackendoffian Path, due principally to Jackendoff (1990), where Path refers to *any* point of a trajectory that provides a vector for a movement, be it the beginning, the middle, or the end. Similarly, Path in Zlatev (1997, 2003) is a category that has such values as Beginning, Middle, End, or even Zero (i.e. no displacement), with the last included to account for the Path information in self-contained motion. That is to say, while Fillmorian Path is one particular point of a trajectory, Jackendoffian Path refers to any point of it, and that is exactly why the latter sense of Path is sometimes termed *local roles* (see Wälchli and Zúñiga 2003).

Last, Talmy (1983, 1985, and 2000b) is possibly the one who takes the initiative to interpret Path in a gestalt-like manner. Accordingly, Talmyan Path is roughly equivalent to a whole trajectory with its own shape or contour, which can be oblique, zigzag, vertical, or horizontal, and the like. Lakoff (1987) and Slobin (2004), among others, also assume this gestalt-like interpretation of Path. Figure 2.1 illustrates the three interpretations of Path that we just outlined.

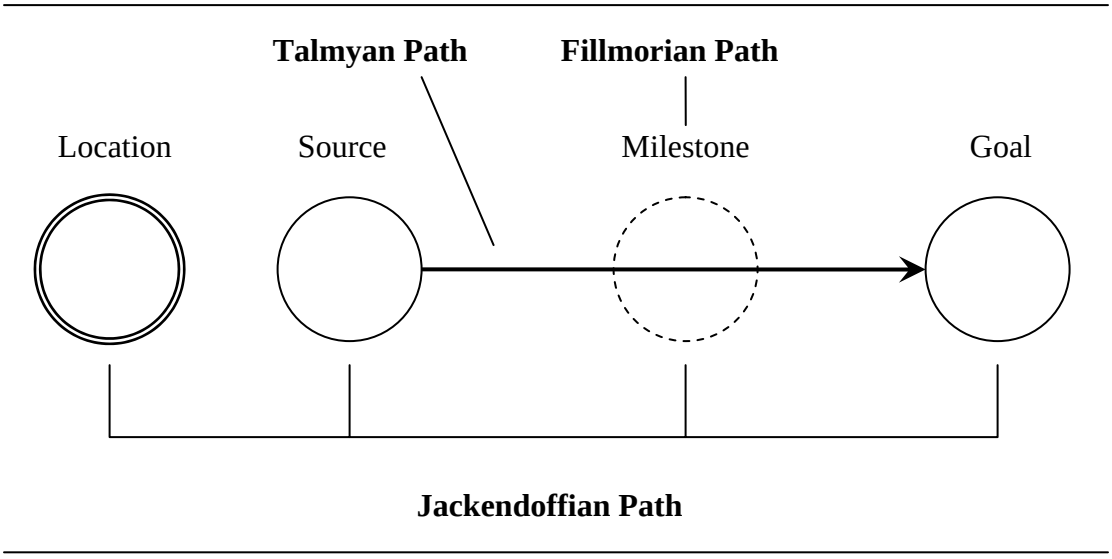


Figure 2.1 Three interpretations of Path

To avoid confusion, we shall term Fillmorian Path, or the traversed entity, as Milestone. Moreover, Jackendoffian Path will be referred to as either local roles or Vectors as in Talmy (2000b), whose Departure, Traversal, and Arrival respectively correspond to Source, Milestone, and Goal here. The local role will be Location when there is no displacement involved. By so doing, we shall reserve the term Path exclusively for Talmyan Path, which becomes relevant in such terms as Path of Motion or Path verbs. It is obvious that the three interpretations of Path in fact constitute a hierarchy, whereby

Talmyan Path includes Jackendoffian Path, which includes Fillmorian Path, as shown in (5) below.

(5) A hierarchy of the three interpretations of Path:
Talmyan Path (*Vector*, Conformation, Deixis) > **Jackendoffian Path** (*Vector*);
Jackendoffian Path (Location, Source, *Milestone*, Goal) > **Fillmorian Path** (*Milestone*)

2.1.4 Region and Direction

Pawlak (2003: 248) identifies two basic categories of locality; one is stationary/ directional meaning and the other spatial relationship. While the first category corresponds to Vectors such as Location, Source, Milestone, and Goal, the second coheres with *localization*, which typically involves such notions as inclusion, surface, adjacency, contact, front/back, and top/bottom. In other words, localization is associated with geometric notions that help to localize a Figure in relation to certain partition of a given Ground. Aware of this geometric dimension of locality, Talmy (2000b) terms it Conformation instead, which, like Vector, is a component of Talmyan Path. However, due to the obscurity of terms like localization and Conformation, we shall use the term Region for similar purpose, following Svorou (1994) and Zlatev (1997, 2003). The term Region is rather straightforward in that the semantic category it denotes normally refers to some partitioned area of a Ground, or the so-called "search domain".

The merits of separating Region from Vector may not seem apparent in languages like English or its Indo-European counterparts, where these two categories tend to merge in adpositions or affixes. For instance, in addition to Source Vector, English prepositions

out of and *from* also specify Interior Region and Non-interior Region respectively, as illustrated in (6).

(6) a. The farmer came out of his cottage. [**Vector**: Source; **Region**: Interior]
b. The farmer came from his field. [**Vector**: Source; **Region**: Non-interior]

Crosslinguistically speaking, however, the conflation of Region and Vector is in fact the exception rather than the norm (Wälchli and Zúñiga 2003: 5). That is to say, in many other languages Region and Vector are instantiated by different morphosyntactic categories. In Ewe, for example, Region takes form in postpositions while Vector is privileged for prepositions (Ameka 1995). It is exactly the different distribution of Region and Vector that validates the conceptual distinction between these two spatial categories.

Given that it is impossible for Region to be independent of Ground, what semantic category shall we come up with when there is no (explicit) Ground at all? For cases where the identification of Ground/Region is problematic or at least arbitrary, Zlatev (2003: 5) proposes the category of Direction, which can be defined as vectors "along the Axes provided by the different Frames of Reference". In (7) (examples from *ibid*) while there is no identifiable Ground with which the Figure interacts, there exists specific Direction that provides the Figure with a vector of a certain coordinate system.

(7) a. The plane is flying that way.
b. The plane is flying North.

Similar to the concept of Direction is Talmy's (2000b) Deixis, a component of Talmyan Path. However, Talmy's Deixis is more restricted in scope than Direction since it is only concerned with spatial deictic expressions (as in (7a)). On the other hand, Direction, aside from incorporating Deixis, includes earth-based axis, such as "north" and "south" on the horizontal plane (as in (7b)), or "up" and "down" on the vertical plane.

Region helps to offer an additional specification about the kinds of spatial dimensions when Ground is present. Direction, on the other hand, specifies speaker-based or earth-based vectors when Ground is not identifiable.

2.1.5 Frame of Reference

The last spatial category is Frame of Reference (FoR), which bears a close relationship with Region and Direction that we have just introduced. It is generally agreed that FoR constructs "a coordinate system of axes and angles" although opinions regarding the appropriate categories and labels of FoR tend to vary among researchers. First, Levinson (1996, 2003) claims that there are three types of FoR grammaticalized or lexicalized in spatial language, namely, Relative, Absolute, and Intrinsic. As exemplified in Figure 2.2, these three Frames of Reference differ in terms of the different sources of reference points adopted. Relative FoR makes use of the reference points projecting from an observer (with the speaker as the default); Absolute FoR employs the reference points that keep constant throughout the Earth (geo-cardinal positions); finally Intrinsic FoR appeals to the reference points demarcated by the geometry of the Ground (projective relations).

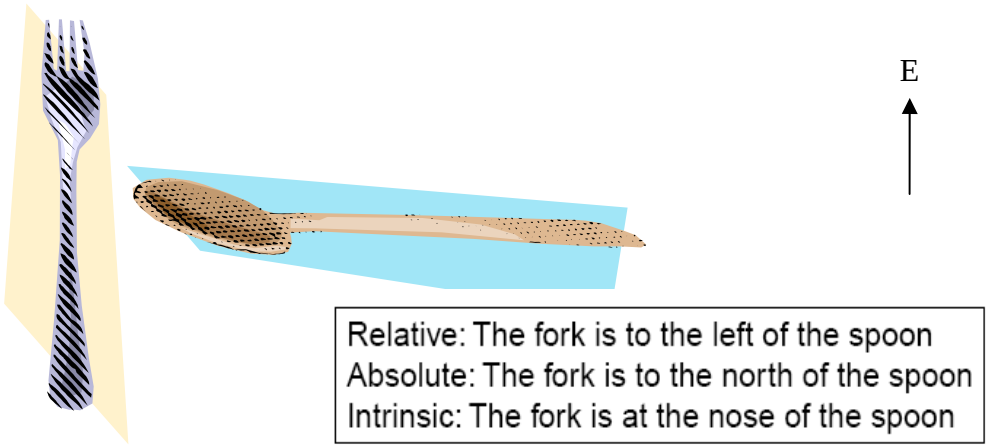


Figure 2.2 Three Frames of Reference (adapted from Majid *et al.* 2004)

While most of his observations on FoR are insightful, Levinson's application of the trichotomy is rather limited in terms of its coverage of Motion events. Zlatev (to appear), for instance, points out that Levinson's trichotomy cannot account for dynamic or non-projective (i.e. topological) relations, nor does it take into consideration Motion events on the vertical plane. Considering this limitation, Zlatev generalizes Levinson's Relative, Absolute, and Intrinsic FoR into Viewpoint-centered, Geocentric, and Object-centered FoR respectively. Zlatev's revision is not only terminological, but also substantial since it is applicable to both self-contained and translational motion, to both projective and non-projective relations, and finally to movement on both the horizontal and vertical planes. For illustration, both cases of translational motion in (8) (from *ibid.*) involve Geocentric FoR since the Figure moves along the planetary axes established by the gravity or magnetism on Earth.

(8) a. The plane flew upwards. [Translational motion on the vertical plane]
b. Go West! [Translational motion on the horizontal plane]

In addition to Levinson's and Zlatev's trichotomy of FoR, Talmy (1983, 2000a) suggests another category, namely, Guidepost-based FoR, thus rendering the system of FoR a quadrichotomy. Table 2.1 demonstrates the correspondence among these three categorizations of FoR as well as examples that illustrate each category.

Table 2.1 Correspondence among three categorizations of Frames of Reference

Levinson (1996, 2003)	Zlatev (to appear)	Talmy (1983, 2000a)	Examples from Talmy (2000a: Chap 3)
Intrinsic	Object-centered	Ground-based	The bike is in the church.
Absolute	Geocentric	Field-based	The bike is on the east side of the church.
Relative	Viewpoint-centered	Projector-based	The bike is in front of the silo.
N/A	N/A	Guidepost-based	The bike is toward the cemetery from the church.

Guidepost-based FoR bears a resemblance to Projector-based FoR as they both have a second reference object (SRO) other than and outside the Ground. However, Guidepost-based differs from Projector-based FoR in terms of whether the SRO is projective or non-projective. That is, when the SRO serves merely as a "punctual point" (i.e. non-projective as the cemetery in Table 2.1), the FoR involved is said to be Guidepost-based. Conversely, the FoR turns out to be Projector-based instead if the asymmetric geometry of the SRO is taken into account (i.e. projective as the front of an observer in Table 2.1).

Although Talmy's distinction between Projector-based and Guidepost-based FoR is insightful, Guidepost-based FoR might not be as popular as the other three types of FoR. One of the reasons is that Guidepost-based FoR requires one to know the locations of two reference objects (both non-deictic) in order to find out where one particular object (i.e. the Figure) is situated. Thus, we shall maintain a trichotomy of FoR and hereafter refer to

it as Object-centered, Geocentric, or Viewpoint-centered for the sake of their generalized implications.

2.2 Linguistic Typologies of Motion Events

Typologies are indispensable for any crosslinguistic studies, and there is no exception for those on Motion events. Most innovative and influential of all is perhaps Talmy's (1972, 1985, 1991, 2000b, 2005) typologies, which assume two converse but complementary perspectives on Motion events. In the following subsections, we shall first review Talmy's typologies, then outlines some of their refinements, and finally expounds their relations with other perspectives on Motion in terms of the mappings between form and function.

2.2.1 Talmy's typologies

Talmy's typologies of Motion events has assumed two converse but complementary perspectives, as recapitulated in Talmy (2000b, 2005). On the one hand, in his earlier investigations Talmy (1972, 1985) was most concerned with the lexicalization patterns of verbs. Accordingly, the methodology is to keep one particular morphosyntactic category constant (i.e. the verb) and see what spatial semantic categories are conflated with it. In other words, this is a from-form-to-function approach. This perspective shows that most languages *characteristically* conflate Path, Figure, or Manner/Cause (i.e. components in the Co-event) with the verb or the verb root. For example, while French and German tend to express Path and the Co-event respectively in the verb, Atsugewi (a Hokan language

spoken in northeastern California) typically places Figure in the verb root. Therefore, Talmy's first typology is a three-way classification, namely *path language*, *figure language*, and *Co-event* (e.g. Manner/Cause) *language*, depending on the lexicalization patterns of verbs.

Talmy (1991), on the other hand, turned his attention from lexicalization pattern to event integration. Contrary to the first perspective, the second perspective is to keep one particular spatial semantic category constant, in this case Path, and see what morphosyntactic categories are responsible for its realization. In other words, this is a from-function-to-form approach. This perspective demonstrates that languages *characteristically* realize Path either in the verb (*verb-framed* languages) or in the preposition (which Talmy generalizes to any adnominal category) and/or Satellite (*Satellite-framed* languages), a cover term for "any constituent other than a noun-phrase or prepositional-phrase complement that is in a sister relation to the verb root" (Talmy 2000b: 102). A famous example comes from Spanish, as in (9) (from Talmy 2000b: 49), where the Path is realized by the finite verb *entró*. Since this is the dominant tendency in this particular language, Spanish is claimed to be Verb-framed. On the contrary, since the Path in English is typically realized by the preposition instead (as suggested by the English translation in (9)), English is said to be a Satellite-framed language.

(9) La botella entró a la cueva (flotando)
the bottle moved.in to the cave (floating)
'The bottle floated into the cave.'

Taken together, Talmy's typologies are in fact two-fold, with one independent of the other. To keep distinct the two perspectives on Motion events, in a recent interview Talmy (2005) terms the first perspective "Motion-actuating typology" and the second "Motion-framing typology". The first typology "actuates" Motion because it is concerned with the verb (root), which is the very locus that triggers the proposition in a sentence. Likewise, the second perspective "frames" Motion since it rivets on the Path, which is the "core-schema", or the most prominent component, that constructs the whole Motion event. As a summary, Table 2.2 contrasts Talmy's two topologies of Motion events.

Table 2.2 Talmy's two topologies of Motion events

	Methodology	Focal category	Classification
Motion-actuating typology	from form to function	the verb (root)	path, figure, and Co-event languages
Motion-framing typology	from function to form	the Path	verb-framed and Satellite-framed languages

Converse as they are, Talmy's two typologies are complementary in the sense that they can be combined together to attain a clearer picture of spatial language. Specifically, while all verb-framed languages are path languages by definition (since they characteristically express the Path in the verb or the verb root), Satellite-framed languages are either figure languages or Co-event languages. Since figure languages are rather limited and Manner seems to be the most pervasive component in the Co-event, later discussions tend to equate Satellite-framed languages with manner languages. It is precisely when researchers split languages into a dichotomy—verb-framed/path languages on the one hand and Satellite-framed/manner languages on the other—that they come to merge or sometimes confuse one of Talmy's two typologies with the other.

2.2.2 Refinements of Talmy's typologies

Ever since Talmy's pioneering work, empirical data from a great many languages have been tested against the validity of Talmy's typologies, especially the Motion-framing typology. While some researchers maintain but generalize Talmy's dichotomy of Motion-framing typology, others suggest adding new categories to the dichotomy so that linguistic diversity and reality can be truly reflected. Matsumoto (2003), for instance, reformulates Talmy's verb-framed and Satellite-framed languages into *head-framed* and *nonhead-framed* ones respectively. His generalization is based on two criticisms of Talmy's Motion-framing typology. First, the term "verb" is somewhat misleading since it refers to a morphosyntatic category (as opposed to "noun" and "adjective", etc.) as well as a grammatical category (as opposed to "subject" and "object", etc.). What Talmy means by the term "verb" is in fact the verb as a grammatical category, i.e. the head of a clause. Back to the example in (9), while both *entró* and *flotando* are verbs, only the former is the head. Therefore, it would be more appropriate to speak of head-framed languages than of verb-framed ones. Second, to most linguists the term "Satellite" is less familiar than the term "nonhead", which is defined with respect to the head and which is capable of incorporating both Talmy's preposition and Satellite. For instance, the English translation in (9) is strictly speaking not Satellite-framed since the preposition *into* is not a Satellite at all, but it is obviously nonhead-framed.

Although research results suggesting adding new categories to Talmy's Motion-framing typology are numerous, Zlatev and Yangklang (2003), Slobin (2004), Huang (2001), and Huang and Tanangkingsing (2005) would suffice to demonstrate the emerging need for other revisions. First, based on the results from the discourse analysis,

Zlatev and Yangklang (2003: 188) concludes that Thai (and perhaps other serial-verb languages as well) is a language where "Path and Manner are expressed in two different verbs, which are *structurally and discursively of equal status*" (emphasis original). In other words, Thai should be granted a third category since it is neither verb-framed nor Satellite- framed.

Next, going further than Zlatev and Yangklang, Slobin (2004) proposes a third category termed "equipollently-framed" languages, where Path and Manner are encoded by equivalent grammatical forms. Specifically, equipollently-framed languages divide into three subtypes, as illustrated in (10) (adapted from *ibid.*: 25).

(10) a. MANNER VERB + PATH VERB: serial-verb languages (e.g. Niger-Congo, Sino-Tibetan, Austronesian, etc.)

b. $[\text{MANNER + PATH}]_{\text{VERB}}$: bipartite verb languages (e.g. Algonquian, Athabaskan, Hokan, etc.)

c. MANNER PREVERB + PATH PREVERB + VERB: Jaminjungan languages

Last, Huang (2001) identifies Tsou as a "Macro-event" language, somehow similar to Slobin's bipartite verb languages in (10b). In Tsou, what frames a Motion event is not simply the Path in the Core-event, but also the Manner in the Co-event. In other words, it is the Macro-event organized by the Path in the verb root and the Manner in the prefix altogether that constructs the Motion event in Tsou, as shown in (11) (from *ibid.*)[2].

(11) mo mea-eafo to feongo 'o pania
AUX.AF float-out OBL cave NOM bottle
'The bottle floated out of the cave.'

Subsequently, based on the narrative data in six Western Austronesian languages (Tagalog, Cebuano, Malay, Squliq Atayal, Saisiyat, and Tsou, with the latter three being Formosan) Huang and Tanangkingsing (2005) propose a four-way typology, which consists of verb-framed, Satellite-framed, Macro-event, and serial-verb languages. More importantly, since languages qualified as verb-framed turn out to vary considerably with respect to discourse features typical of verb-framed languages, there might be no "pure" verb-framed languages (nor "pure" Satellite languages). Therefore, they suggest thinking of the verb-framed language as a path-salient language and the Satellite-framed language as a manner-salient language.

When asked about the opinions on adding new categories to the Motion-framing typology, Talmy (2005) himself responds that if there are more criteria used for judging the main verb (root) status, equipollently-framed languages might not be as many as proposed, though he does not deny the possibility and validity of equipollence between Path and Manner. As a result, he establishes some criteria for judging the main verb status, including co-occurrence patterns, class size, phonology (e.g. phonological length and phonemic diversity), semantics (e.g. semantic substantiality and variety), and of course morphology and syntax, which have long been the popular means to test the verbhood. When it comes to cases where not all criteria converge on one particular constituent type (as in serial-verb languages), the solution would be to find out the constituent type favored by maximal factors from diverse criteria, considering that the main verb status is nothing but a matter of degrees. By applying the criteria just outlined, Talmy suggests that a certain constituent type can still be sorted out for the main verb

status even in languages that Slobin claims to be equipollently-framed, such as Mandarin (a Sino-Tibetan language as in (10a)) and Atsugewi (a Hokan language as in (10b)).

Overall, in face of the dialectics of opposing opinions we seem to have two choices. One is to delineate more distinguishing criteria for judging the main verb (root) status so that the dichotomy of verb-framed versus Satellite-framed languages could be maintained, as is the stance taken by Talmy (2005). Alternatively, we add new categories to the inventory of Motion-framing typology whenever coming across languages that barely behave like "canonical" verb-framed and Satellite-framed languages, as proposed by Zlatev and Yangklang (2003), Slobin (2004), Huang (2001), and Huang and Tanangkingsing (2005). Crucially, whatever road one chooses to take, converging evidence all point to the fact that "not all verb-framed languages are created equal" (see Sugiyama (in press)), which is perhaps one of the fascinating reasons that keep the research of Motion events "moving" on and on.

2.2.3 Other perspectives on Motion events

Talmy's typologies as well as their refinements, though illuminating, seem to be restricted in terms of the range of spatial semantics and its interaction with linguistic structure. First, they primarily deal with certain morphosyntatic and semantic categories, that is, the verb and the Satellite on the one hand, and Path and Manner on the other hand. Second, they draw heavily on conflation, where multiple semantic categories are lexicalized in one particular morphosyntatic category, such as Motion plus Path in the verb. Therefore, to overcome these two limitations some researchers have put forward perspectives other than Talmy's typologies. For instance, Zlatev (1997, 2003) and

Bowerman *et al.* (2002) both suggest that relations between spatial situations and linguistic utterances be viewed as mappings between spatial semantic categories and morphosyntactic ones. In this regard, no semantic and morphosyntactic categories would be privileged, and conflation would turn out to be one of the interaction modes possible between form and function.

For illustration, Zlatev (2003) devises a figure that explains the interaction between spatial semantics and linguistic structure, which is repeated in Figure 2.3.

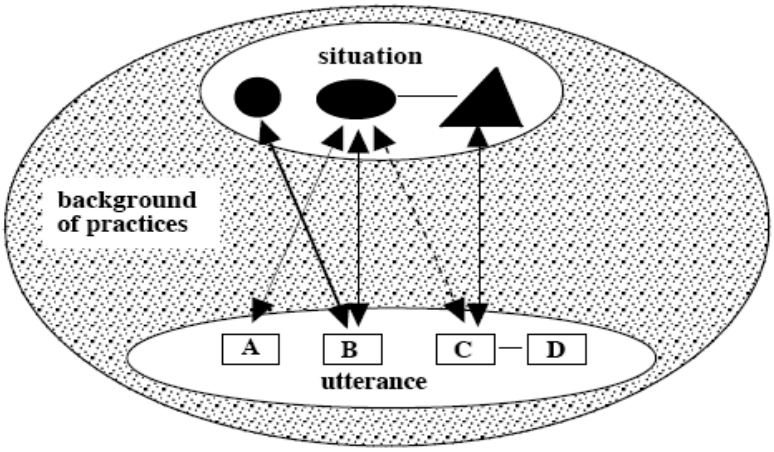


Figure 2.3 Mappings between spatial semantic and morphosyntactic categories (Zlatev 2003)

As illustrated by the arrows therein, there exist many interaction modes between form and function. Firstly, multiple categories on the semantic pole (the upper oval) may be mapped onto one particular category on the morphosyntactic pole (the lower oval), and this is the many-to-one mapping that accounts for the conflation in Talmy's topologies. Conversely, one particular category on the semantic pole may be mapped onto multiple categories on the morphosyntactic pole, which constitutes a one-to-many mapping that explains meaning distributions. A typical example of this type of mapping comes from

German, where Caused motion is encoded by both the verb and the accusative marking of the determiner (or the article for that matter) of a Ground nominal. Patterns like this have been subsumed under the rubric "distributed spatial semantics" (Sinha and Kuteva 1995). Lastly, one-to-one mappings that characterize compositionality are also possible, whereby one semantic category is mapped exclusively to a single morphosyntactic category. Ameka (1995), for instance, indicates that in Ewe Region and Vector are respectively instantiated as postpositions and prepositions.

Aside from the three interaction modes (i.e. conflation, distribution, and compositionality) just outlined above, inferencing plays no less important a role in the form-function mapping (Bowerman *et al.* 2002) since it helps elucidate the said and supplement the unsaid. Borrowing a term by the philosopher Hubert Dreyfus, Zlatev (2003) recognizes the effect of inferencing as "background of practices", which the form-function mapping presupposes (indicated by the outer oval in Figure 2.3). Very often, the same utterance triggers different spatial scenes as the Figure and/or Ground varies from one to another, and this is when inferencing comes into play.

To summarize, the model in Figure 2.3 identifies the factors that determine the mapping between spatial semantic and morphosyntactic categories, including conflation (many-to-one mapping), distribution (one-to-many mapping), compositionality (one-to-one mapping), and inferencing (background of practices). Given this model, the panorama of spatial semantics may be constructed. Moreover, it is expected that all the interaction modes between spatial semantics and grammatical structure may weigh differently across and within languages.

2.3 Empirical Studies in Austronesian Languages

Although the literature dealing with Motion events is considerable, studies specifically targeting at Austronesian languages are rare.[3] Among them, two lines of research can be identified. One is to synthesize the way one particular language refers to space by investigating all the elements that provide spatial information, particularly the directional system and spatial deixis. This line of research often bases the argumentation on deliberately elicitated data, such as the selected papers in Senft (1997) and Bennardo (2002), most of which concern Malayo-Polynesian languages.

The other line of research, however, appeals to spontaneous narratives that contain native speakers' spatial knowledge and perhaps their "thinking for speaking" as well (see Slobin 1996). Usually informants are asked to give instructions on how to travel from one location to another within their local geography so that the route knowledge or specifically the deployment of Frames of Reference can be examined (e.g. Wassmann 1997). When it comes to the investigation of Talmy's typologies in discourse, researchers take advantage of two widely circulated tools that have almost become the standard method. One is a wordless picture book entitled *Frog, where are you?* (Mayer 1969), of which the main plot is about a boy and his dog searching everywhere for his missing pet frog. The other is the Pear story (Chafe 1980), a six-minute-long color film without dialogues that depicts a farmer harvesting his pears, a boy stealing some of them, and most of all the adventures that the boy has experienced before the farmer finally finds his pears stolen. Since there are more potential Motion events in the Frog story than in the Pear story, many studies on Motion typologies in Formosan languages hinge on the Frog

story, such as Huang (2001, 2002a), Tanangkingsing (2002, 2003, 2004), Huang and Tanangkingsing (2005), and Li (2004).

In this section, we shall review previous studies on Malayo-Polynesian (i.e. non-Formosan Austronesian) and Formosan languages separately since they seem to receive different concerns from researchers with different training.

2.3.1 Malayo-Polynesian languages

2.3.1.1 Spatial reference

Research in Malayo-Polynesian languages is mainly concerned about spatial reference in language, and most fruitful results of it appear in the anthologies edited by Senft (1997) and Bennardo (2002). In his introduction, Senft (1997: 18-22) outlines some earlier studies on Austronesian (mostly Oceanic) and Papuan languages. For instance, Bowden (1991) finds out that locative expressions in more than 100 Oceanic languages almost exclusively derive from body-part terms or nouns that denote environmental landmarks, a result of a diachronic process of grammaticalization. Another interesting study comes from Teljeur (1987), who examines the orientation system in Giman (spoken in Moluccas, Indonesia). In this language spatial reference adheres to s a three-scale distinction (i.e. the home-scale, the village-scale, and the world-scale), which is able to localize all the entities in the whole world regardless of its original dependence on local landscape. In other words, the orientation system in Giman is highly culture-specific, for it segments the real world into three scales in its conventional manner.

As for the contributions in Senft (1997), three groups of studies can be identified. The first group offers overviews on conceptions of space in Austronesian languages. Blust (1997) and Adelaar (1997), for instance, both indicate that the land-sea asymmetry in local geography and the Southeast Asian monsoons serve as the reference sources of directional systems across Austronesian languages, which is quite different from the case in Indo-European languages. Other than directional systems, which Blust terms "macro-orientation", in Austronesian languages notions like 'inside, outside, front, back', which Blust terms "micro-orientation", also differ from their Indo-European counterparts at the conceptual level (Blust 1997). Next, studies in the second group adopt interdisciplinary approaches. For example, Hill (1997) assumes an anthropological perspective on the geographical reference in Longgu, an Austronesian language spoken on the Solomon Islands. It is found that spatial reference in Longgu depends mainly on two axes (i.e. a sea-inland axis and a sunrise-sunset axis), which predominate over other competing systems of spatial reference that are not based on local landmarks, such as the hither/thither system and the left/right system. Given that these two axes have developed into a directional system applicable in both small and large scales and on both horizontal and vertical planes, and that they have acquired some cultural associations, the knowledge of the local environment and of people's daily routines in that environment become the prerequisites for understanding such a geographical reference system. Last, the third group of studies undertakes structural linguistic approaches. An interesting case is found in Broschart (1997), who argues that nominals such as 'inside region, outside region, lower region' in Tongan would be better considered "locative classifiers" in

certain constructions since they structurally and semantically, in terms of the theory of classification, parallel numeral classifiers and possessive classifiers.

Likewise, studies in Bennardo (2002) also divide into three sections. The first section focuses on language and space. Hyslop (2002), for instance, investigates the directional system in Ambae (an Oceanic language of Vanuatu), where there are directionals for up/landward, down/seaward, and across/traverse. It is interesting that the vertical axis (i.e. 'up' and 'down') plays more important a role than the horizontal axis ('landward' and 'seaward'), for the horizontal axis has been equated with the vertical axis due to the physical layout of the island. Aside from the three geocentric directionals, Ambae has two deictic ones, one for direction toward the deictic center and the other for direction toward the addressee. While it is possible to say something like 'up toward the addressee' in Ambae (by combining the two types of directionals), a literal translation of something like 'behind a tree' is utterly unfeasible since Viewpoint-centered FoR is absent from this language.[4]Papers in the second section tackle topics on space in mind. Of them Palmer (2002) is perhaps the most extensive, who analyses the Geocentric FoR (the land-sea axis in particular) in languages from Austronesian to Papuan and from Australian to Mayan (*cf.* Adelaar 1997). Unlike Hyslop's findings in Ambae, Palmer concludes that the horizontal landward/seaward axis is prevalent in Austronesian languages while the elevational up/down axis is merely peripheral. Finally, the theme in the third section is about space and culture. Keating (2002) examines the influence of spatial relations over social stratification in Pohnpei (in Micronesia). As a rule, spatial superiority and anteriority (i.e. 'up' and 'front') are associated with social superiority (i.e. high social status) whereas spatial inferiority and posteriority (i.e. i.e. 'down' and 'back')

are interpreted as social inferiority (i.e. low social status). Crucially, the link between spatial and social relations is also reflected in the seating arrangements inside a house. Hence, "the further one sits inside horizontally and the higher one sits vertically, the more elevated one's status" (*ibid.*: 204).

Overall, research in Senft (1997) and Bennardo (2002) in one way or another challenges the traditional Indo-European conception of space or spatial reference, which was once believed to be of universal status. It seems that the more languages (especially less-known ones) we look into, the more inclined we are to modify our previous conception about space, and the more successful we will be in understanding human beings' understanding of space. Consequently, researchers investigating spatial reference in language, as Senft (1997: 23) puts it following Ebert (1985), are comparable to "hunter-gatherers" in the forest of spatial semantics.

2.3.1.2 Motion in discourse

Studies on spatial reference in Malayo-Polynesian languages are rare, and those on Motion typologies in discourse pertaining to Malayo-Polynesian languages are even rarer. To the best of our knowledge, Tanangkingsing (2002, revised in 2004) and Tanangkingsing (2003) are the only few exemplars of this kind. By analyzing the Frog stories in Cebuano, Tanangkingsing (2002, 2004) concludes that Cebuano is a verb-framed language, but at the same time highlights the uniqueness in Cebuano with respect to other verb-framed languages. Specifically, although Cebuano allows both the Manner and the Path component in a single clause, only either of them is present in spontaneous narratives. More importantly, when both the Manner and the Path component appear in a

single clause, cases are that the Manner component occupies the main verb slot while the Path complement manifests itself in subordination, as illustrated in (12) (from Tanangkingsing 2004: 205, where PA marks the subordinate status of a verb).

(12) **mi-lutaw** ang botilya **pa-gawas** sa langub
AF-float NOM bottle PA-exit LOC cave
'The bottle floated out of the cave.'

On the other hand, Tanangkingsing (2003) conducts a comparative study on Tagalog and Cebuano (as well as Saisiyat and Squliq Atayal, see below). It is found that Tagalog, like Cebuano, is also a verb-framed language that allows both the Manner and the Path component in a single clause, with either of them surfacing as the main verb. Interestingly, when the Manner component is the main verb, a construction similar to (12) is employed, as in (13a); however, when it comes to the Path component taking on the main verb slot, a relativization construction is used instead, as in (13b) (examples both from *ibid.*: 9). Nevertheless, sentences in (13) are in fact unusual in spontaneous speech, where normally only one of the two Motion components is expressed.

(13) a. **l<um>utang** ang bote **pa-labas** ng kuweba
<AF>float NOM bottle PA-exit OBL cave
b. **l<um>abas** ang bote [na **pa-lutang** galing sa kuweba]
<AF>exit NOM bottle REL PA-float from LOC cave
'The bottle floated out of the cave.'

2.3.2 Formosan languages

2.3.2.1 Seediq

Huang (2001) as well as Huang *et al.* (2004) points out that Seediq, like Mandarin, is a language that favors the serial-verb strategy in constructing Motion events. However, unlike Mandarin, where Manner verbs precede Path verbs, Seediq places Path verbs before Manner ones, as illustrated in (14), where three successive verbs are serialized in the very beginning (example from Huang *et al.* 2004: 12).

(14) **wada mukukesa muquri** gakko ka Takun
leave walk move.toward school NOM PN
'Takun has left walking toward the school.'

Since Seediq has no prepositions, notions like 'to, from, on' all turn out to be verbs (as the *muquri* in (14)) or locative nouns. In cases where the (extralinguistic) context is clear enough, even no equivalent linguistic forms are required at all, as demonstrated in (15) (example from Huang *et al.* 2004: 13). Inferencing of this kind, so to speak, compensates for the lack of prepositions (or their counterparts) in Seediq, which are fundamental means to constructing Motion events in most Indo-European languages.

(15) wada tuting yayung ka Takun
leave fall river NOM PN
'Takun fell into the river.'

Finally, according to Huang *et al.* (2004), although Seediq has terms like *alang daya* 'uphill village' and *alang turahuc* 'downhill village', *daya* and *turahuc*, reflexes of the Proto-Malayo-Polynesian etymons *daya 'upriver' and *lahud 'downriver' respectively, are never used to refer to space. Based on this mere fact, they (*ibid.*: 14) make a hasty conclusion that "no modern Formosan Austronesian languages utilize a land-sea axis for

spatial reference, suggesting that the Formosan system is one adapted to a life on land-locked hills and mountains in which access to the sea has been entirely absent following their split from Proto-Austronesian several millennia ago." As we shall see in Chapter 3 (Section 3.2.4), this is in fact not an accurate statement since Formosan languages spoken in coastal areas (including Kavalan) do or did (considering some are already dead) make use of the land-sea axis for macro-orientation. What's more, mountainous as it is, Taiwan is after all an island, where access to the sea is never a problem.

2.3.2.2 Squliq Atayal

Huang *et al.* (2004) also has some brief discussions on the spatial representations in Squliq Atayal. Of them most interesting is perhaps the observation that spatial reference in Squliq Atayal has much to do with the semantic animacy of the Ground, the physical properties of the Ground, or even the distance between the Figure and the Ground. For instance, the lateral Region of an animate Ground is *beh* 'beside' while that of an inanimate one is *syaw* 'beside'. Moreover, for the superior and inferior Region of a Ground, three pairs of terms are in use, depending on the size of the Ground as well as the distance between the Figure and the Ground, as compared in Table 2.3.

Table 2.3 Terms for the superior and inferior Region in Squliq Atayal

	G of small size	G of large size	
		Near b/n F and G	Far b/n F and G
Superior Region	*babaw*	*qlaya*	*yatux*
Inferior Region	*zik*	*qyahu*	*hogan*

As for the conceptual sources in the directional system, Squliq Atayal draws on the path of the sun (sunrise vs. sunset) or the intensity of the wind (strong vs. weak) for the cardinal east and west, and on high temperature and snow for the cardinal south and north. Briefly put, Squliq Atayal conceptualizes directions by reference to the movement of a celestial body (i.e. the sun) and some meteorological phenomena specific in the local area.

Regarding Motion typologies, Tanangkingsing's (2003) study shows that Squliq Atayal is in general a verb-framed language, but with some discourse properties atypical of verb-framed languages. For one, like its closely related counterpart Seediq, Squliq Atayal adopts the serial-verb strategy when both the Path and Manner components are present. Nevertheless, though the serial-verb strategy itself is quite popular, serial-verb constructions depicting Motion events are not frequent at all. One of the few examples comes from (16) (from *ibid.*: 12), where a Manner verb immediately follows a Path verb in Intonation Unit (IU) 197.

(16) 195 … *ktey*,
lo.and.behold
196 .. *wal* *m-laka'* *qu*,
ASP AF-fly NOM
197 … ***m-ge:*** ***m-laka'*** *qu* *ka*,
AF-leave AF-fly NOM KA
198 …(1.1) *nguyaq* *qasa* *la*,
owl that PART
'Lo and behold, (it) flew (out). The owl flew away.'

Although such a serial order "Path verb before Manner verb" as in (16) is rare in Squliq Atayal, in Kavalan it turn out to be a most frequent strategy to present two Motion components at the same time, as we shall see in Chapter 4. For the time being, suffice it

to say that the verb *wiya* ‘leave’ in Kavalan, when followed by another Motion verb, functions like the English particle ‘away’, just like the case in Squliq Atayal.

For another thing, Squliq Atayal pays heed to the Manner component in a way quite different from other verb-framed languages. For instance, compared with other three verb-framed Austronesian languages, namely, Cebuano, Tagalog, and Saisiyat, Squliq Atayal demonstrates a much larger number of Manner components, both in types and tokens. More importantly, Tanangkingsing’s (2003) notices a case of a Manner verb repairing a Path verb in the Squliq Atayal Frog stories, as illustrated in (17) (from *ibid.*: 13), where the Path verb in IU 22 is truncated in favor of a Manner verb, *m-karaw* ‘climb’.

(17) 22 … (1.6) ***htuw***- ***m-karaw*** *sa*
come.out AF-climb LOC
23 .. *yuyut* *qu*,
bottle NOM
24 … *patong* *qasa* *ga.*
frog that PART
‘The frog would climb out of the bottle.’ (Squliq Frog 2:22-24)

In addition, example (17) also shows that Squliq Atayal does not observe the so-called “boundary-crossing constraint”, which states that verb-framed languages constrain the use of Manner verbs in the description of Motion events involving crossing boundaries (see Slobin 1996, 1997, 2000 for detail).

Considering all the characteristics mentioned above, Tanangkingsing (2003) concludes that Squliq Atayal is situated in the middle of a continuum that has languages

frequently encoding Manner on the verb at one end and those rarely encoding Manner or typically downgrading Manner to subordination at the other.

2.3.2.3 Saisiyat

Wu (2004) does a detailed research on the semantic structuring of space in Saisiyat (as well as Tsou, see below). By adopting the methodology employed in Bowerman (1996) she investigates the way Saisiyat speakers categorize "separating" and "joining" scenes. It is found that Saisiyat demonstrates a rather fine-grained strategy in categorizing a series of closely related spatial scenes, especially those "interlocking" actions. What's more, the Figure or Ground components are typically conflated with verbs relating to putting on clothing items by way of some morphological means. For example, while *ha-habah* (where the first syllable is a partial reduplication of the root) is a noun meaning 'button', *habah* denotes the action to buckle a button.

Moreover, based on the Pear stories and face-to-face conversations, Wu (2004) shows that Saisiyat is highly dependent on demonstratives for the purpose of spatial reference and discourse anaphora. First, deictic spatial adverbs in Saisiyat consist of demonstrative pronouns and the morpheme *ri'*, a contracted form of the multifunctional locative marker *ray*. For instance, the term for "here" is *ri'hani*, where *hani* is the proximal demonstrative pronoun that specifically refers to invisible entities. Second, Wu's Saisiyat corpus data displays a considerable difference in distribution with respect to token frequency between distal demonstratives (*hiza/isahiza/isza/isaa*) and the proximal one (*hini*), with the former outnumbering the latter. Thus, it is quite common in

Saisiyat for distal demonstratives (and sometimes proximal ones as well) to co-occur with other locative phrases, as illustrated in (18) (example from *ibid.*: 19).

(18) ...(1.9) tatini' ha:o ray
old.man there LOC
…(1.0) kahoey babaw 'okay sa-sahoeroei
tree top NEG RED-see.AF
'The old man was up in the tree, so he didn't see (the child).' (Pear 1: 56-57)

Apart from their prevalence in discourse, some distal demonstratives even display indications of grammaticalization. The distal demonstrative *isaa*, for instance, has grammaticalized into a discourse marker that helps to bracket one unit of talk from another. As we shall demonstrate in due course, all these characteristics of demonstratives in Saisiyat can also be found in Kavalan, except for some variations in detail.

As for Motion typologies, Tanangkingsing (2003) (as well as Wu 2004) claims that Saisiyat is basically a verb-framed language. However, Saisiyat also differs from other verb-framed languages in some aspects. First, like Seediq, Saisiyat expresses the Path and Manner component in a single clause by use of the serial-verb strategy, save that the order of these two Motion components is different, as in (19a) (example from *ibid.*: 10, *cf.* (16) above). Nevertheless, Saisiyat still sides with verb-framed languages since examples like (19a) are, though acceptable, quite rare in discourse data. In fact, Saisiyat speakers tend to disregard the Manner component and heed the Path component, as illustrated in (19b) below (example from *ibid.*).

(19) a. 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)
b. 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)

In addition to encoding the Manner component in the verb, Saisiyat also has some affixes on the verb that express Manner or other Co-event components. For example, since *al-* suggests the use of some kind of force, *al-'oehaz* means 'to cause to get out' or simply 'take out'. The very existence of Manner affixes and Manner verbs in Saisiyat increases the percentage of Manner components in discourse, and this result is incompatible with Slobin's (1997, 2000) generalization that speakers of verb-framed languages tend to leave out manner phrases since they pay more attention to path of motion than manner/cause of motion.

2.3.2.4 Tsou

Aside from Saisiyat, Wu (2004) also investigates the spatial conceptualizations in Tsou, a language so unique as to challenge our previous conceptions about spatial reference and Motion typologies. Firstly, she points out that Tsou exhibits some lexical gaps in spatial terms that are believed to be universal due to their "cognitive basicness" (see Svorou 1994). A surprising case is that Tsou has a locative noun for the notion "back" (*f'uhu*) but lacks a counterpart for the notion "front", which is expressed instead by viewpoint-bound phrases (such as *mi-usni* 'where the deictic center is looking at' or *tan'e* 'here'), as contrasted in (20) and (21) (examples from *ibid*.: 11-12).

(20) 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.'

(21) 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.'

That is to say, while the notion "back" is either relative or intrinsic, the notion "front" is always relative. Wu (2004) interprets this front-back asymmetry in Tsou as a challenge to the universality claim of the front-back lexical distinction.

Secondly, unlike Saisiyat, which draws heavily on the demonstrative system (see above), Tsou depends on the pronominal and case marking system to achieve the same end. Case markers, for instance, reveal a large amount of spatial information, including the visibility of an entity, the distance between the speaker and the entity, and even the speaker's evidential knowledge about the entity (e.g. whether the speaker knows about the entity through visual or auditory perception) (see Zeitoun 1993 and Yang 2001 for detail). The rich spatial information in case markers and pronominals, as it were, witnesses the crosslinguistic diversity with regard to the alignment of semantic and grammatical categories.

Finally, as mentioned above (Section 2.2.2), Huang (2001, 2002) argues that Tsou should be better considered a "Macro-event" language, a new category which is neither verb-framed nor Satellite-framed. The foremost reason is that Tsou characteristically conflates Motion with both Manner/Cause and Path, and that the verbal complex as a

whole integrates a Motion event, with neither the Co-event nor the core schema playing a dominant role. The following are some of the bound morphemes that express Manner/Cause and Path.

(22) Affixes encoding Motion components in Tsou (adapted from Wu 2004: 124)

Manner/Cause	*smo-* 'move fast'; *so(o)-* 'put'; *ti-/tU-* 'with hands/fingers'; *to-* 'throw'
Path	*-skopu(a)* 'on'; *-(o)eo* 'in'; *-aemonU(a)* 'in'; *-epe* 'up'; *-peoha* 'down'

Affixes like those in (22), as Wu (2004: 33) indicates, are qualitatively different from Atsugewi Cause prefixes (e.g. *tu-*/*ci-* 'from the hand(s)') or the Manner prefixes in Nez Perce since they are constituents of the main verb rather than Satellites. Equipped with a large repertoire of such affixes, Tsou is apt to build multiple Motion components into the verb, thus enhancing the degree of semantic specificity in the verb.

2.3.2.5 Paiwan

The investigation of spatial semantics in Paiwan seems to be restricted to Li (2004), who deals with both spatial reference and Motion topologies. First, like other Formosan languages, Paiwan presents some "unusual" facts of its own in referring to space. For instance, although distinguishing the interior Region of a house (*tjuma'*) from that of a container (*taljatj*), Paiwan has only the term for the exterior Region of a house (*casaw*), thus making the exterior Region of a container a lexical gap (*cf.* lack of the locative noun "front" in Tsou). Moreover, there is also a lexical gap in the directional system. While Paiwan adopts a path-of-sun model for the cardinal east and west (respectively *ka-cedas* 'KA-sun.peep' and *ka-letjep* 'KA-dive'), there are no corresponding terms for the

cardinal north and west. Alternatively, the north and the south are respectively identified as left and right or Taipei and Kaohsiung. In other words, the cardinal north-south axis in Paiwan is conceptualized as the left and right or two major cities to the northern and southern part of Taiwan.

Next, with respect to Motion typologies Li (2004) claims Paiwan to be an equipollently-framed language, following Slobin's (2004) term. Considering the results in other Formosan languages, we find this claim rather unexpected. As Li (2004) himself points out, the percentage of Manner verbs in Paiwan Frog stories is rather low (3.5%, *cf.* 18% in Spanish and 45% in English) and the percentage of Path verbs for describing the "owl's exit" is 100%. In addition, the lexicalization pattern of Motion plus Path in eight Myth stories is the highest (66.67%, as opposed to 28.07% for Motion plus Co-event and 5.26% for Motion plus Figure). Given all these facts, one is tempted to classify Paiwan as a verb-framed language, with which Li also agrees.

Unsatisfied with the results gained from discourse, however, Li (2004) goes on to provide some syntactic evidence for saying Path verbs and Manner verbs are in fact of equal status in Paiwan. For example, he indicates that the Macro-event in Paiwan is realized as the "matrix-complement" construction, where a finite verb (the matrix) is followed by a "reduced infinitive complement" (*ibid.*: 84), which consists of a linker and a nonfinite verb. What's special about this construction is that both a Path verb and a Manner verbs are appropriate candidates for the matrix verb slot. In other words, the order of the Path verb and the Manner verb is interchangeable, as illustrated in (23) (examples from *ibid.*: 80).

(23) 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.’

Nevertheless, the mere existence of the so-called “matrix-complement” construction is not convincing evidence for categorizing Paiwan as an equipollently-framed language, for the determining factor of Talmy’s Motion-framing typology does not lie so much in the existence of some particular construction as in its prevalence in real use. Thus, the evidence would be more convincing had Li provided his reader with the distribution of the two alternative orders in (23) as reflected in discourse data. More significantly, if Paiwan is truly an equipollently-framed language, it is expected that Paiwan would assign roughly equal salience to the Path and Manner component, which is in fact not supported by the Frog and Myth stories. Therefore, in view of the many features that Paiwan shares with other verb-framed languages, Li’s (2004) argument for analyzing Paiwan as an equipollently-framed language seems rather weak, if not faulty.

Notes

[1] Blake (2001: 33) identifies four local cases, including Location ('at'), Destination ('to'), Source ('from'), and Path ('through').

[3] See, for example, the bibliography compiled by Yo Matsumoto and Dan Slobin in March, 2005.

[4] As Palmer (2002) rightly indicates, the category Deixis is entirely independent of the category Frames of Reference since any of the three FoRs can be deictic. The clincher lies in the distinction between "relatum deixis" (i) and "relation deixis" (ii) (examples from *ibid.*: 11):

(i) *The desk is in front of me*. [Geocentric FoR]

(ii) *The red ball is to the left of the blue ball*. [Viewpoint-centered FoR]

The Ground in (i) (i.e. *me*) is deictic, but neither the Figure nor the Ground in (ii) is deictic. Instead, it is the relationship between the Figure and the Ground that is deictic. Therefore, it seems that the Ambae language is able to express relatum deixis (by means of deictic directionals) but never relation deixis.

Chapter 3 Structuring a Kavalan Space: where Form Meets Function

3.0 Preliminary

Languages differ from one to another in terms of the way they refer to space, or more exactly, the way they structure a spatial scene where one entity stays or moves with respect to another or within some coordinate system. Since space is a three-dimensional existence in nature whereas language is simply two-dimensional due to its linearization constraint (Ehrich 1991: 234), language is predestined to forsake some aspects of space while maintaining others as it constructs a spatial scene. Although the spatial information every language heeds may vary, a common repertoire of linguistic means is believed to exist. Among them, Senft (1997: 8) outlines seven categories, including local and directional adpositions (prepositions or postpositions), local or place adverbs, dimensional or spatial adjectives (e.g. *high, low*), demonstratives (pronouns or adjectives), static and dynamic verbs, presentatives (e.g. *voici*, *voilà*), and finally case markers. In this chapter, therefore, we shall investigate the linguistic strategies to encode spatial information in the Kavalan language. We shall pay special attention to how spatial semantic categories, such as Region and Vector, are mapped onto various morphosyntactic categories. The central focus is on the interaction between the morphosyntactic pole (i.e. form) and semantic pole (i.e. function) of spatial semantics, or simply, a juncture where form meets function.

This chapter divides into four major sections, drawing heavily on the elicitated data from our fieldwork. Section 3.1 offers an overview of basic locative constructions in

Kavalan, both static and dynamic. In Section 3.2, we shall investigate the spatial information embedded in closed-class forms, inclusive of spatial locatives, directional verbals, locative nouns, cardinal directions, and demonstratives. Section 3.3 will explore the spatial information encoded by open-class forms, which include place nouns and Motion verbs (specifically Path verbs). Section 3.4 is a summary of the mappings between morphosyntactic categories and spatial semantic ones.

3.1 Basic Locative Constructions

Broadly speaking, locative constructions can be either static or dynamic. In Kavalan, a basic static locative construction consists of the static locative predicate *yau* 'to be located' and the locative phrase *ta* …*-an*. For instance, the Figure (in boldface) in (1) is the grammatical subject while the Ground (underlined) is surrounded by the *ta* …*-an* construction, which indicates the local role of Location in neutralized contexts.

(1) yau ta <u>Rupu</u>-an-na ya **wasu a yau**
EXIST LOC livestock.shelter-LOC-3SG.GEN NOM dog LNK that
'The dog is at the doghouse.'

Although (1) does not specify the topological relationship between the Figure and the Ground, it is clear enough for hearers to infer that the dog is in fact *inside* the doghouse, for that is the most plausible and most frequent, albeit not the only, spatial configuration between a dog and a doghouse. In other words, Kavalan places emphasis on non-linguistic inference, which compensates for the information loss of topological relations.

In cases where speakers intend to distinguish one topological relation from another, the search domain of the Ground would come into play in the form of locative nouns in genitive phrases. Take the genitive phrase in (2) (in square bracket) for example. The possessor noun (underlined) is the Ground while the possessed noun (in italics) is the search domain of the Ground, with respect to which the Figure (in boldface) is located.

(2) yau ta [*RasuR*-an na <u>Rupu</u>] ya **wasu a yau**
EXIST LOC inside-LOC GEN livestock.shelter NOM dog LNK that
'The dog is inside the doghouse.'

In daily conversations, however, (2) is only reserved for distinguishing purposes since its functionally equivalent (1) would be communicative enough due to the effect of pragmatic inference.

As in many other Formosan languages, the static locative construction in Kavalan coincides with the existential and possessive constructions. Take Amis for example. There is a transparent parallel between the Kavalan sentences in (3) and the Amis ones in (4) (examples from Wu 2000: 93). Therefore, in addition to specifying that some entity is located with respect to another, *yau* in Kavalan, as well as *ira* in Amis, is capable of expressing the existence of some entity and the possession of some entity by some animate possessor.

(3) a. yau a u-tulu taqsian tazian
EXIST NOM CLF.NHUM-three school here
'There are three schools here.' [Existential]

b. yau kelisiw-ku
EXIST money-1SG.GEN
'I have money.' [Possessive]

(4) a. ira ci aki itira
EXIST NOM PN there
'Aki is there.' [Locative]

b. ira=tu ku tulu pitilidan itini
EXIST=PFV NOM three school here
'There are three schools here.' [Existential]

c. ira ku paysu-nira
EXIST NOM Money-3SG.GEN
'He has money.' [Possessive]

On the other hand, basic dynamic locative constructions differ from static ones only in terms of the different predicates used. Replacing the predicate *yau* in (1) with translocative verbs such as *m-zukat* 'exit' and *s<m>usuR* 'enter', we get the following two examples.

(5) m-zukat ta Rupu-an-na ya wasu a yau
AF-exit LOC livestock.shelter-LOC-3SG.GEN NOM dog LNK that
'The dog came out of the doghouse.' [**Vector**: Source]

(6) s<m>usuR ta Rupu-an-na ya wasu a yau
<AF>enter LOC livestock.shelter-LOC-3SG.GEN NOM dog LNK that
'The dog went into the doghouse.' [**Vector**: Goal]

Interestingly, the same phrase *ta …-an* is maintained although the local roles are quite the opposite (Source in (5) and Goal in (6)).

As a summary, basic locative constructions in Kavalan are composed of the static locative predicate *yau* or any Motion verb followed by the all-purpose locative phrase *ta …-an*, whose interpretation of local roles depends on the semantics of the predicate. In addition, the static locative predicate *yau* is also applicable in existential and possessive constructions, a characteristic typical of Formosan languages.

3.2 Spatial Information in Closed-class Forms

Crosslinguistically speaking, linguistic expressions of spatial relations are often made possible by a small number of elements, ranging from adpositions to affixes, and from case inflections to spatial adverbs. Whatever their syntactic status is in a given language, these elements not only constitute a finite set of closed-class forms but also tend to be short in form. Svorou (1994) terms them *spatial grams*, intending to establish an iconic relationship between the signifier (the abbreviated form "gram" for "grammatical") and the signified (the closed-class forms whose phonological size are typically small). In this section, we shall focus not only on spatial grams in Kavalan, but also on other closed-class forms that bear spatial meanings.

Based on some morphosyntactic grounds, spatial closed-class forms in Kavalan can be classified into five categories, namely, spatial locatives (Section 3.2.1), directional verbals (Section 3.2.2), locative nouns (Section 3.2.3), cardinal directions (Section 3.2.4), and demonstratives (Section 3.2.5). While spatial locatives are adnominals that occur preceding a Ground/Region expression, directional verbals are lexicalized complexes that combine spatial locatives and spatial deictic nouns. Locative nouns and cardinal directions, on the other hand, are both nominal in nature and provide certain Frames of

Reference (FoR), with the latter necessarily Geocentric and the former either Object-centered or Viewpoint-centered. Last, demonstratives are pronominal, adnominal, or adverbial, thus ranging across three morphosyntactic categories, and more importantly they involve a Viewpoint-centered FoR due to their deictic nature.

3.2.1 Spatial locatives

As far as distribution and function are concerned, spatial locatives occur preceding a Ground/Region expression and specify the local role assumed by that Ground/Region expression, be it Location, Source, Milestone, or Goal. We would like to start the discussion of spatial locatives by first citing Lee (1997: 26-35), who identifies three locatives in Kavalan, that is, *ta*, *sa*, and *maq*. Although they are all locative expressions, they differ from one another in terms of syntactic distribution and semantic extension. Lee summaries their differences in Table 3.1 below, with which we agree for the most part, except for some details.

According to Table 3.1, *ta* and *sa* are locative case markers while *maq* is a proclitic. There are two reasons why Lee (1997) treats *maq* as a proclitic, rather than a case marker, as is the case for *ta* and *sa*. First, since *maq* can co-occur with *ta* as in (7) (example from *ibid.*: 32), she finds it conflicting for a sentence to have two locative case makers encoding a single local role, and thus concludes that it is better not to regard *maq* as a locative case marker.[1]

Table 3.1 Locative expressions in Kavalan (Lee 1997: 35)[2]

morpheme	*ta*	*sa*	*maq*
grammatical function	case marker	case marker	proclitic
theta-role	Location Source Goal	Goal/Destination Reason	Source
co-occurring verb/predicate	Loc: *yau* Sou: *nizi/maq=zi* Goal : *qatiw/wiya*	*qatiw/wiya* (Goal)	———
distribution	*ta* CN *-an* (*ta*) *ti* PsName-*an*	*sa* CN/place name (Goal) *sa* N (Reason)	*maq*=N/NP

(7) a. maqzi=iku mautu ta taqsian
hence=1SG.NOM AF.come LOC school
= b. maq-taqsian=iku mautu
be.from-school=1SG.NOM AF.come
'I came from the school.'

However, the *maqzi* 'hence, from here' in (7) is in fact a special case of *maq*. As we shall see in Section 3.2.2, *maqzi*, as well as other similarly formed words in the same paradigm such as *pasazi* 'hither, toward here' and *paqazi* 'via here', is a directional verbal which usually occurs preceding the locative phrase *ta …-an*, and which results from the coalescence of the spatial locative *maq* and the proximal deictic noun *-zi* 'here'. Despite the morphological transparency, the deictic meaning therein has been lost, thus suggesting the grammaticalization of the proximal deictic noun. In other words, *maqzi ta taqsian* in (7) means essentially the same as *maq-taqsian* in (7b). Similar examples are given in (8), where *pasazi* and *paqazi* say nothing about the directionality with respect to

the speaker and their sole function is to assign a local role to the Ground in the locative phrase *ta …-an*.

(8) a. qatiw=pa=iku pasazi [ta kalinku-an]
IRR.go=FUT=1SG.NOM hither LOC PN-LOC
'I am going to Hualien.'
b. paqazi=iku [ta kalinku-an] t<m>anan
via.here=1SG.NOM LOC PN-LOC <AF>return.home
'I came back home by way of Hualien.'

The other reason that encourages Lee to take *maq* as a proclitic is the fact that it can attach not only to a noun, but also to a noun phrase followed by a pronominal enclitic, as shown in (9) (example from *ibid.*: 33). This description is true as far as it goes, but it does not apply to *maq* only. The spatial locative *ta*, for instance, may also behave exactly like *maq*, as illustrated in (10a), an alternative formulation of (10b).

(9) maq-[lepaw-ni-abas]=iku mautu
be.from-house-GEN-PN=1SG.NOM AF.come
'I came from Abas' house.'

(10) a. ta-[lepaw-ni-abas]=iku maynep
be.at-house-GEN-PN=1SG.NOM AF.sleep
'In Abas' house I slept.'
b. maynep=iku ta [lepaw ni abas]
AF.sleep=1SG.NOM LOC house GEN PN
'I slept in Abas' house.'

Since the two pieces of evidence with which Lee (1997) supports her analysis of *maq* as a proclitic do not apply exclusively to *maq*, we would like to adopt a more moderate view

by regarding both *maq* and *ta* as a locative verbal prefix (based on the parallel in (9) and (10a)) and treating *ta* as a locative case marker (as in (10b)). Therefore, it seems that in Kavalan while some spatial locatives tend to function as locative verbs (such as *maq*), others can be either locative verbs or locative case makers (such as *ta*).[3]

As for the theta-roles that the three locatives encode as shown in Table 3.1, there is only one thing that may come as a surprise. That is, aside from Goal, the locative marker *sa* can also encode the role of Cause (or in Lee's (1997: 35) term, Reason). The examples with which Lee (1997) illustrates this are repeated below (examples from *ibid*.: 31):

(11) m-zizi=ti qudus-ku sa uzan
AF-wet=PFV clothes-1SG.GEN LOC rain
'My clothes are wet because of the rain.'

(12) m-ngasan=iku q<m>an tu baut sa tiRan
AF-slow=1SG.NOM <AF>eat OBL fish LOC bone
'I ate the fish slowly because of its bones.'

However, according to one of our informants, who has an excellent command of Kavalan, (11) is not acceptable, and (12) is incomplete. To express the equivalent idea in (11), our informant makes use of the oblique marker *tu*, rather than the locative marker *sa*, as illustrated in (13). This is rather expectable since the oblique marker *tu* can introduce a variety of "non-core" arguments, such as Instrument, as in (14) below.

(13) a. m-zizi=ti qudus-ku tu uzan
AF-wet=PFV clothes-1SG.GEN OBL rain
'My clothes got wet because of the rain.'

b. m-zizi=ti qudus-ku tu Rumzang
AF-wet=PFV clothes-1SG.GEN OBL sweat
'My clothes got wet because of sweat.'

(14) ngid-an-ku pukun ya sunis-ku tu sinap
want-LF-1SG.GEN IRR.hit NOM child-1SG.GEN OBL broom
'I want to hit my child with a broom.'

On the other hand, if we replace the locative marker *sa* in (12) with the oblique marker *tu*, the result turns out to be even worse, as shown in (15). The reason is that (12) in fact consists of two clauses, and that the subject of the second clause is missing. When we put the missing subject back to its position, its acceptability increases dramatically, as illustrated in (16), where the comma indicates the noticeable pause.

(15) * m-ngasan=iku q<m>an tu baut tu tiRan
AF-slow=1SG.NOM <AF>eat OBL fish OBL bone
Intended meaning: 'I ate the fish slowly because of its bones.'

(16) m-ngasan=iku q<m>an tu baut, sa-tiRan baut 'nay
AF-slow=1SG.NOM <AF>eat OBL fish SA-bone fish that
'I ate the fish slowly (because) it has bones.'

Obviously, the data shown above make embarrassing Lee's analysis of the locative marker *sa* as indicating the theta role of Reason, even though she recognizes the relationship between Location and Reason by citing examples from other Austronesian languages, such as Seediq and Yami. A better alternative might be to treat the *sa* in (12) as a prefix that attaches to nouns to form predicates, such as *sa-tiRan* 'to have bones'. In other words, the concept Reason is not encoded by the morpheme *sa*, but instead inferred

from the context. More importantly, the *sa*-N complex functions independently as a predicate, as confirmed by the synonymous pair of sentences in (17), and it conveys a number of meanings, depending on the semantics of the noun to which *sa-* is prefixed (see Section 3.2.1.3 for more details).

(17) a. sa-tiRan baut zau
SA-bone fish this
'This fish has bones.'
= b. yau tiRan na baut zau
EXIST bone GEN fish this
'There are bones in this fish.' (lit. 'This fish's bones exist.')

Finally, regarding the distribution of the three locatives in Table 3.1, an important distinction is that the suffix *-an*, historically a Locative Focus marker in Austronesian languages, must be attached to nouns following *ta* (except for some special cases), but the same kind of operation is prohibited for *maq* or *sa*, as contrasted in (18).

(18) a. qaynep=pa=iku ta kalinku*(-an)
IRR.sleep=FUT=1SG.GEN LOC PN(-LOC)
'I am going to sleep in Hualien.'
b. qatiw=pa=iku sa kalinku(*-an)
IRR.go=FUT=1SG.GEN LOC PN(-LOC)
'I am going to Hualien.'
c. maq-kalinku(*-an)=iku mautu
be.from-PN(-LOC)=1SG.NOM AF.come
'I came from Hualien.'

Moreover, if the noun following *ta* bears a prenominal modifier, the suffix *-an* is either dispensable or affixed to the modifier, but never to the end of the whole phrase, as contrasted again in (19).

(19) a. ta Raya=ay/u-siq=ay iRuR(*-an) ma-tita-ku tazungan zau
LOC big=REL/CLF.NHUM-one=REL river(-LOC) MA-see-1SG.GEN girl this
'I saw this girl by the great river/by one river.'

b. ta Raya-**an**/u-siq-**an** iRuR ma-tita-ku tazungan zau
LOC big-LOC/CLF.NHUM-one-LOC river MA-see-1SG.GEN girl this
'I saw this girl by the great river/by one river.'

In the next section, we will examine spatial locatives in more detail with reference to the local roles they encode. Moreover, we shall focus on a comparison of alternative expressions that specify the same local role, and on the extension of spatial locatives into non-spatial domains, where relevant.

3.2.1.1 Location

As has been demonstrated in Section 3.1, the interpretation of the spatial locative *ta* depends on its co-occurring predicate. When no other predicate is present, however, the default local role that *ta* marks is Location, the place where a static Motion event takes place, as in (20), where *ta* functions as a locative verb.

(20) ta-liab-an-na-paRin ya sunis a yau
be.at-underside-LOC-GEN-tree NOM child LNK that
'That child is under the tree.'

An interesting behavior of the spatial locative *ta* is its interchangeability with the oblique case marker *tu* under certain circumstances. To illustrate their different functions, Table 3.2 compares these two grammatical markers.

Table 3.2 Comparison between two grammatical markers: *ta* and *tu*

	ta	*tu*
Grammatical function	locative case marker	oblique case maker
Thematic role	Location (default); Source/Goal/Milestone (depending on the co-occurring predicate)	Patient, Recipient, Instrument, Comitative, etc.

Regardless of the fact in Table 3.2, the oblique case marker *tu* is a perfect alternative to the spatial locative *ta* when the predicate requires a Goal of motion, as in the following examples:

(21) a. t<m>uzus=ti ya kebalan ta damu-an-na
<AF>reach=PFV NOM Kavalan LOC tribe-LOC-3PL.GEN
b. t<m>uzus=ti ya kebalan tu damu-an-na
<AF>reach=PFV NOM Kavalan OBL tribe-LOC-3PL.GEN
'Kavalan reached their tribal village.'

In addition to Motion events, the spatial locative *ta* and the oblique case marker *tu* are also interchangeable when the nominal that follows is a Goal of activity (usually an event of physical contact), as in (22). The same alteration can also apply to personal pronouns, as borne out in (23) (example from Huang 2005: 788).

(22) a. p<m>ukun tu wasu unay ya sunis-su
<AF>hit OBL dog that NOM child-2SG.GEN
b. p<m>ukun ta wasu-an unay ya sunis-su
<AF>hit LOC dog-LOC that NOM child-2SG.GEN
'Your child hit that dog.'

(23) babal ti-utay timaiku/timaikuan
AF.punch PNM-PN 1SG.OBL/1SG.LOC
'Utay punched me.'

The merger between *ta*, which canonically marks LOCATION (in the sense of all kinds of places on the ontological level) and *tu*, which introduces OBJECT (in the sense of all kinds of entities on the ontological level), has been drawn attention to in Huang (2005), who suggests it is the conceptual contiguity of LOCATION and OBJECT that makes this possible. In a broader perspective, all Patient Focus verbs now take the Locative Focus marker *-an* (see Section 1.3.4), and this phenomenon also underscores the conceptual correlation between LOCATION and OBJECT.

3.2.1.2 Source

To indicate the local role of Source, the point of departure in a dynamic Motion event, there are two strategies in Kavalan. One is by means of the spatial locative *maq*, followed by a nominal phrase (example (24), repeated from (9)), or the use of *maq* in conjunction with the bound morpheme *-zi* 'here' followed by a locative phrase *ta* …*-an* (example (25)):

(24) maq-[lepaw-ni-abas]=iku mautu
be.from-house-GEN-PN=1SG.NOM AF.come
'I came from Abas' house.'

(25) maqzi=iku ta lepaw-an ni abas mautu
hence=1SG.NOM LOC house-GEN GEN PN AF.come
'I came from Abas' house.'

A second strategy is the use of *nizi* or *nayzi*, where *-zi* is probably also glossable as 'here' on analogy with *maqzi.* Unfortunately, unlike *maq*, neither *ni* nor *nay* is an independent morpheme, so we cannot be sure about the correctness of the analogy between *nizi*/*nayzi* and *maqzi*. There are some pieces of indirect evidence to support this analogy, however. First, in terms of distribution, both *nizi*/*nayzi* and *maqzi* must be followed by a locative phrase *ta* …*-an* when encoding a Source (*cf.* (25) and (26)):

(26) nizi/nayzi=iku ta lepaw-an ni abas mautu
move.from=1SG.NOM LOC house-GEN GEN PN AF.come
'I came from Abas' house.'

Second, in Northern Amis the term for "from" is *na*, which must be followed by a locative case marker *i* when introducing a location, as shown in the following dialogue:

(27) a. na i cuwa=ay kisu tayni?
from LOC where=REL 2SG.NOM come
'Where did you come from?'

b. na i kaliawan kaku tayni.
from LOC PN 1SG.NOM come
'I came from Hsinshê.'

Likewise, “from here” in Amis is *na i-tini*, where the initial *i* in the second word corresponds to the locative case marker in (27). It might be possible that Kavalan has borrowed the “*na* plus *i* plus N” schema from Amis, and has made it lexicalized with the spatial deictic noun *-zi*, thus resulting in *na-i-zi*, or eventually *nayzi*. If this is the case, we might as well view *nizi* as a shortened form of *nayzi*, with the vowel “*a*” dropped out in rapid speech. Another language that offers similar evidence is Saisiyat, where one of the terms for “from” is *’inay*.

The next question we address is the possible meaning differences between *nizi*/*nayzi* and *maqzi*. At first, our informants report that there is no distinction at all between them. After repeated probing, however, we finally came up with a conversation scenario, where *nizi*/*nayzi* and *maqzi* do suggest subtle differences:

(28) A: maqni=isu?
whence-2SG.NOM
‘Where did you (come) from?’
B: maqzi=iku ta taypaq-an.
hence=1SG.NOM LOC PN-LOC
‘I (came) from Taipei.’ (i.e. Speaker B lives in Taipei.)

(29) A: matiw=iku sa lepaw-su, mai=isu.
AF.go=1SG.NOM LOC house-2SG.GEN NEG=2SG.NOM
nizi=isu tanian?
move.from=2SG.NOM where
‘I went to your house, (but) you weren’t there. Where have you been?’
B: nizi=iku ta taypaq-an.
move.from=1SG.GEN LOC PN-LOC
‘I (came back) from Taipei.’ (i.e. Speaker B went to Taipei and just came back.)

In (28), Speaker A is simply asking about the source of Speaker B's translational motion to the present location where the conversation takes place, which happens to be Speaker B's hometown in this particular case. In (29), however, Speaker A implies that Speaker B has stayed where she was from for a certain period of time (thus the English translation "where have you been?"). In other words, Speaker A is asking about the location where Speaker B went earlier and just came back from. Consequently, the semantic information in *nizi*/*nayzi* seems to be richer than that in *maqzi*.

Finally, although spatial source is frequently extended to temporal source due to their conceptual similarity, there are certain lexical restrictions in Kavalan. As first pointed out in Lee (1997: 34), phrases like "from/since yesterday" cannot be rendered as "*maq-siRab*". Likewise, neither "*maqzi ta siRab-an*" nor "*nizi ta siRab-an*" is acceptable. Instead, Kavalan uses the expressions "*zana siRab*" and "*qeni-siRab-an*", as illustrated in (30).[4]

(30) a. zana siRab t<m>uzus tu tangi uzan a zau, mai muRti
from yesterday <AF>reach OBL today rain LNK this NEG AF.stop

= b. qeni-siRab-an t<m>uzus tu tangi uzan a zau, mai muRti
QENI-yesterday-AN <AF>reach OBL today rain LNK this NEG AF.stop
'It has been raining from yesterday till today, without stopping.'

Nevertheless, both *nizi*/*nayzi* and *maqzi* still have some applications in non-spatial domains. While *maqzi* also means "about, regarding", *nizi* is associated with a temporal meaning of (recent) past event when occurring with stative or activity predicates, as illustrated in (31) and (32) respectively.

(31) ma-ipil-ku maqzi/*nizi ti-buya-an sikawma-an ni abas
MA-hear-1SG.GEN hence/move.from PNM-PN-LOC speak-NMZ GEN PN
'I heard (something) about Buya from Abas's talk'

(32) nizi/*maqzi tayan ya tama-ku Ra-tayzin
move.from/hence there NOM father-1SG.GEN RA-policeman
'My father used to be a policeman there.'

Obviously, the spatial meaning of *maqzi* in (31) has weakened to a considerable extent, and the following ambiguous example further testifies to both the spatial and the non-spatial senses [5]:

(33) ma-ipil-ku maqzi ti-buya-an ti-abas
MA-hear-1SG.GEN hence PNM-PN-LOC PNM-PN
'I heard that Abas came from Buya's place.' [Spatial]
'I heard (something) about Buya and Abas.' [Non-spatial]

On the other hand, that *nizi/nayzi* comes to be associated with the past as in (32) is conceptually motivated since the starting point of movement is comparable to the starting point of an event, normally a moment that has gone by[6].

Altogether, although both *maqzi* and *nizi*/*nayzi* mark a Source of Motion, *nizi*/*nayzi* implies the Figure has stayed in the source location for a period of time while *maqzi* does not. In addition to the spatial sense, these two Source-marking terms are also associated with non-spatial senses, wherein *maqzi* means "about, regarding", and *nizi*/*nayzi* indicates (recent) past, which is consistent with its temporal implication in the spatial sense. Table 3.3 summaries all the points made in this section.

Table 3.3 Comparison between two Source-marking terms: *maqzi* and *nizi/nayzi*

	maqzi	*nizi/nayzi*
Morphological structure	*maq-zi* ‘from-here’	*ni-zi* < *nay-zi* < *na-i-zi* ‘from-LOC-here’ (*cf.* Amis: *na i-tini* ‘from LOC-here’; Saisiyat: *’inay* ‘from’)
Spatial sense	simply specifies the source of motion	implies the stay in the source location for a period of time
Non-spatial sense	means “about, regarding”	indicates (recent) past

3.2.1.3 Goal

Kavalan has two morphologically related locatives that mark the local role of Goal, the place of arrival in a dynamic Motion event. One is *sa* ‘to’ and the other *pasa* ‘toward’. As their English translations suggest, a general distinction between *sa* and *pasa* is that the former specifies motion that reaches the Goal while the latter only indicates motion directed in the direction of the Goal, as shown in (34).

(34) qatiw=pa=iku sa/pasa sazan
go=FUT=1SG.NOM LOC bridge
‘I’m going to/toward the bridge.’

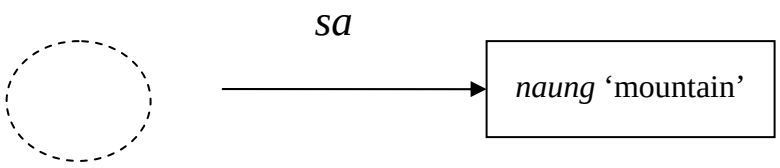
Due to the same rationale, the orientation of a stationary object is expressed by *pasa*, which specifies direction, but never by *sa*, which is restricted to the destination of a journey. This contrast is illustrated in (35) below.

(35) yau *sa/pasa zaya tangan na lepaw-ku
EXIST LOC west door GEN house-1SG.GEN
'The door of my house is toward the west.'

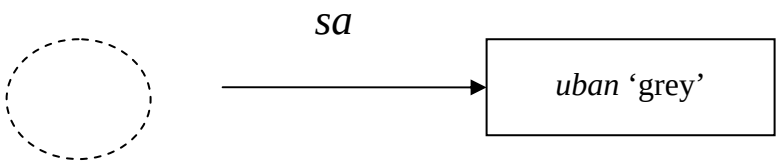
Interestingly, *sa* is more varied than *pasa* in terms of their semantic extensions. In addition to destination of movement, the morpheme *sa* also expresses transition from a state of affairs into another (example (36)), emergence or appearance (37), manufacture or production (38), and finally existence of some entities or materials (39), with each having the "*sa*-N" construction in common:

(36) a. *sa-uban* 'SA-gray' → (of hairs) to become gray
b. *sa-puli* 'SA-green' → (of vegatables) to become green
(37) a. *sa-'esi* 'SA-fruit' → (of trees) to bear fruits
b. *sa-pakus* 'SA-wing' → (of birds) to grow wings
(38) a. *sa-sunis* 'SA-child' → to give birth to children
b. *sa-qadan* 'SA-chair' → to make chairs
(39) a. *sa-zanum* 'SA-water' → to have water
b. *sa-paRin* 'SA-tree' → to have trees

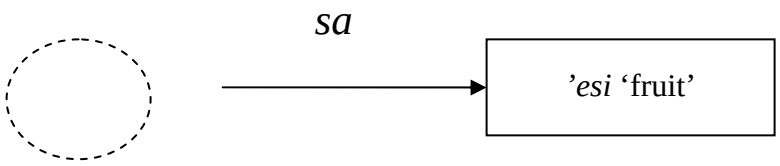
It is speculated that the usages of *sa* from (36) to (39) are derived from its spatial meaning since movement to a location is conceptually analogous to transition into a state of affairs or to emergence, generation, and existence of an entity, as illustrated in Figure 3.1 below[7].



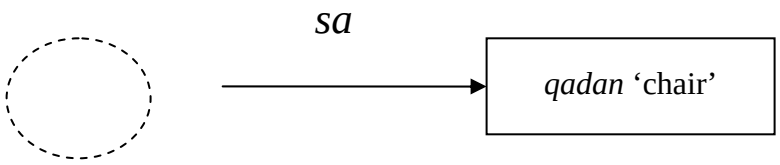
A. Ground as target location of motion: *sa-naung* ‘to go to the mountain’



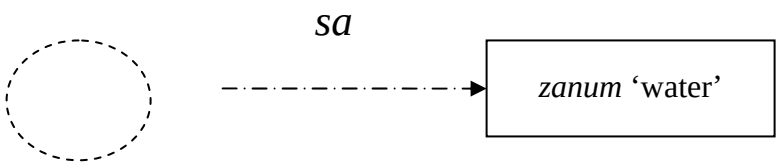
B. Ground as target state of transition: *sa-uban* ‘to become grey’



C. Ground as target result of cultivation: *sa-’esi* ‘to bear fruit’



D. Ground as target outcome of generation: *sa-qadan* ‘to make chairs’



E. Ground as the existing substance: *sa-zanum* ‘to have water’

Figure 3.1 Conceptual correlations among the multiple functions of *sa*

Since *sa* has multiple functions as shown in Figure 3.1 while *pasa* always maintains its spatial meaning regardless of the syntactic structure or semantic components involved, the two morphemes may have quite different meanings even though the same syntactic structure is involved, as shown in (40).

(40) a. sa-sazan=pa=iku
SA-bridge=FUT=1SG.NOM
'I'm going to build a bridge.'
b. pasa-sazan=pa=iku
PASA-bridge=FUT=1SG.NOM
'I'm going toward the bridge.'

While *pasa* in (40b) has a spatial meaning, *sa* in (40a) does not. In other words, only the presence of Motion verbs assures the morpheme *sa* of a spatial meaning (as in (34)). Moreover, although most "*sa*-N" complexes have only one particular meaning prompted by the noun, it is also possible that the same "*sa*-N" complex is ambiguous between the spatial and the non-spatial meanings. For example, *sa-sa'mayan* 'SA-kitchen' means either "to go to the kitchen" or "to build a kitchen", depending on the context, as illustrated in (41) and (42).

(41) sa-sa'mayan=pa=iku ta
SA-kitchen=FUT=1SG.NOM PART
'I'm going to the kitchen for a while.'
(42) Q: sa-sa'mayan=pa=isu, angaw?
SA-kitchen=FUT=2SG.NOM PN
'Angaw, are you going to build a kitchen?'

A: en, sangi=pa=iku tu sa'mayan.
yes make=FUT=1SG.NOM OBL kitchen
'Yes, I'm going to build a kitchen.'

The presence of the particle *ta* in (41), which roughly means "for a while" in this case, gives *sa-sa'mayan* its spatial meaning; otherwise, the same token *sa-sa'mayan* would have a non-spatial reading, as evidenced by the dialogue in (42).

After the discussion of *sa* and *pasa*, we now go on to deal with some further complexities. As mentioned before, spatial locatives can combine with spatial deictic nouns or the interrogative particle to develop into directional verbals. However, *sa* and *pasa* demonstrate different productivity with respect to the possible forms of directional verbals, as contrasted in Table 3.4:

Table 3.4 Different forms of directional verbals that involve Goal

Goal	A: without *pa-*	B: with *pa-*
C: without-glide	**sazi,* sazui,*sani*	*pasazi, pasazui, pasani*
D: with-glide	*syazi, *syazui, *syani*	*pasyazi, pasyazui, pasyani*

Surprisingly, in Column A only the form *syazi* 'reach' is possible, and its typical function is to foreshadow an upcoming event after movement to a new location, as in (43) below.

(43) syazi=iku tazian nani, ngid=iku nanum
reach=1SG.NOM here DM want-1SG.NOM AF.drink.water
'When I got here, I felt like drinking some water.'

If there is no second clause following *syazi*, the result seems incomplete to our informants. This is partly because *syazi* means reaching some location on a journey, so it is expected that some subsequent event be provided in the second clause. When the location involved is the destination of a journey instead, the verb *maszeq* 'arrive', rather than *syazi*, is required. The following examples are illustrative:

(44) a. syazi=ti=iku tazian, mautu ta paw-an-su
reach=PFV=1SG.NOM here AF.come LOC house-LOC-2SG.GEN
'When I got here, I came to your house (i.e. to visit you).'
b. maszeq=ti=iku ta paw-an-ku
AF.arrive=PFV=1SG.NOM LOC house-LOC-1SG.GEN
'I got home.'

As for Column B, on the other hand, all the six forms are attested, which makes one wonder what functional differences might exist between the *pasa-* group (in Row C) and the *pasya-* group (in Row D). It is anticipated that their functional difference, if there is any, would be quite subtle, as is the case for *maqzi* and *nizi* mentioned in the previous section.

Under most circumstances, the *pasa-* group and the *pasya-* group are nearly interchangeable with each other. For instance, our informants find it equally acceptable to replace *pasazi* with *pasyazi*, or vice versa, both meaning "hither" or "toward here". In spite of this, the following examples provided by some informants point to possible differences between them. While (45a) is a question about the location in the local neighborhood, (45b) is a question about places that are more distal.

(45) a. pasani=pa=isu
whither=FUT=2SG.NOM
'Where are you going (to the seashore or to the mountains)?'
b. pasyani=pa=isu
whither=FUT=2SG.NOM
'Where are you going (to Taipei or to Kaohsiung)?'

Another similar example is (46), where two speakers are arguing about the right way to go. While the first speaker uses *pasazi* to indicate "this way", the second speaker uses *pasyazi* instead to indicate a direction different from the one intended by the first speaker.

(46) pasazi zin-ku, usa pasyazi zin-su
hither say-1SG.GEN no hither say-2SG.GEN
'I said, "It's this way", but you said, "No, it's *this* way."'

As a summary, although both *sa* and *pasa* marks the local role of Goal, only the former possesses a variety of non-spatial functions, which probably stem from the spatial meaning. In addition, *pasa* displays greater productivity than *sa* in forming directional verbals, wherein the "without-glide" group (*pasa*-) is almost interchangeable with the "with-glide" group (*pasya*-) except in some special cases. A plausible explanation is that the palatal glide might have been a separate morpheme with a meaning of its own that distinguishes *sa* from *sya* and *pasa* from *pasya*, but just what the distinction is has been buried in the historical past.

3.2.1.4 Milestone

As is the case of locatives for Goal, Kavalan has two morphologically related locatives that mark the local role of Milestone, the trajectory of the theme in a dynamic Motion event. As seen in (47), both *qa* and *paqa* encode the traversed pathway:

(47) a. qa/paqa-taypaq=pa=iku t<m>anan
QA/PAQA-Taipei=FUT=1SG.NOM <AF>return.home
'I am coming back home by way of Taipei.'
b. qa/paqa-sazan=iku s<m>aqay
QA/PAQA-bridge=1SG.NOM <AF>walk
'I walked through the bridge.'

In terms of the expression of a traversed pathway, there seems to no discernible distinction between *qa* and *paqa*. However, our informants seem to prefer the use of *paqa* in imperative sentences and favor the use of *qa* in indicative ones (though the reverse is still acceptable), as shown in (48), where both examples demonstrate self-propelled motion.

(48) A: paqa-dengat-ka t<m>ayta tu wasu-su ta libeng
PAQA-window-IMP.AF <AF>see OBL dog-2SG.GEN LOC downside
'Look through the window at your dog below.'
B: qa-dengat=ti=iku situRku t<m>ayta tu wasu-ku
QA-window=PFV=1SG.NOM look.down <AF>see OBL dog-1SG.GEN
'I have looked downward at my dog.'

Interestingly, this differential preference concerning the two related forms is also found in some lexical verbs. For example, although both *m-RaRiw* and *pa-RaRiw* mean "run"

(but not “cause to run” despite the causative prefix in the latter form), our informants tend to use *m-RaRiw* in indicative sentences and *pa-RaRiw* in imperative ones, as in (49), where both examples illustrate self-propelled motion again.

(49) A: pa-RaRiw-ka mautu sa lazing
CAU-run- IMP.AF AF.come LOC sea
‘Come running to the sea.’
B: m-RaRiw=iku matiw sa lazing
AF-run=1SG.NOM AF.go LOC sea
‘I am running to the sea.’

These contrasts above may be accounted for if we recognize that the prefix *pa-* in (48) and (49), by preserving the residue of a causativizer that has lost its causative meaning in some special cases, helps to inject some force-dynamic element into imperative mood, where some external causation is required in order to fulfill a command. The idea that the morpheme *pa-* in *paqa* ‘through’, as well as in *pasa* ‘toward’, has something to do with the causativizer *pa-* in other lexical verbs (e.g. *qan* ‘eat’ vs. *pa-qan* ‘feed’) is confirmed by the parallels between self-propelled motion and causative motion in (50) and (51) (see Li 2004: 161 for similar examples in Paiwan).

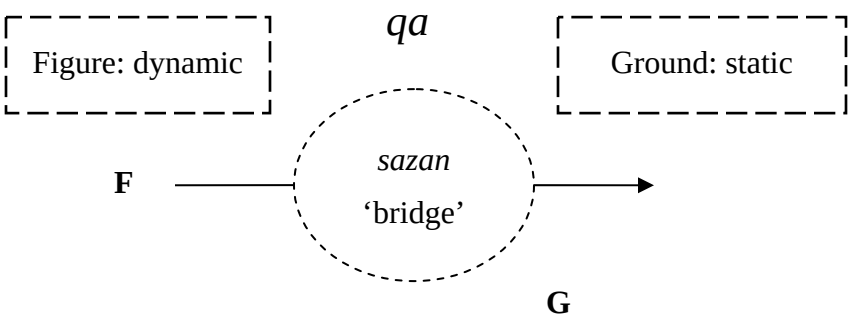
(50) a. **paqa**-paR-paRin=iku s<m>aqay
PAQA-RED-wood=1SG.NOM <AF>walk
‘I walked through the woods.’ [Self-propelled motion]
b. **pa-qa**-paR-paRin=iku tu qabaw-ku pa-saqay
CAU-QA-RED-wood=1SG.NOM OBL cow-1SG.GEN CAU-walk
‘I walked my cow through the woods.’ [Causative motion]

(51) a. **pasa**-iRuR=iku nanum
PASA-river=1SG.NOM drink.water
'I went toward the river to drink (some) water.' [Self-propelled motion]
b. **pa-sa**-iRuR=iku tu qabaw-ku pa-nanum
CAU-SA-river=1SG.NOM OBL cow-1SG.GEN CAU-drink.water
'I led my cow toward the river to drink (some) water.' [Causative motion]

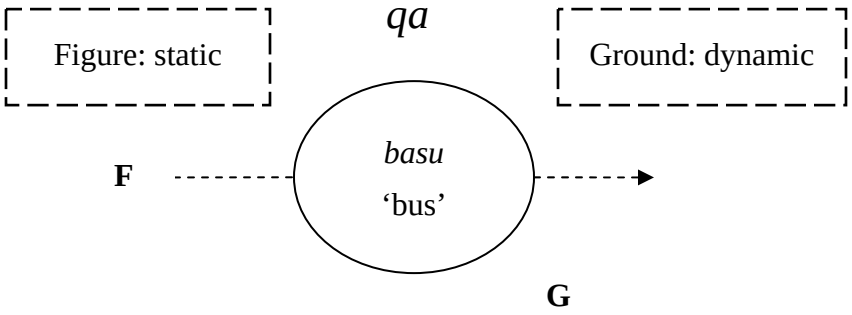
Aside from indicating path of Motion, the morpheme *qa*, but not *paqa*, also expresses means of conveyance, as illustrated in (52).

(52) qa-basu/*paqa-basu=pa=iku qatiw ti-abas-an
QA-bus/PAQA-bus=FUT=1SG.NOM IRR.go PNM-PN-LOC
'I will go to Abas' place by bus.'

We are convinced that this non-spatial meaning originates from the spatial one since either traversed pathway of Motion or means of conveyance may be conceptualized as some form of medium that transports a Figure from one location to another. As illustrated in Figure 3.2 below, when the Ground is static and the Figure dynamic, the Ground functions as a medium that the Figure traverses from one end of the Ground to another; conversely, when the Ground is dynamic and the Figure static, the Ground turns out to be a medium that transports the Figure from one place to another. In both cases, the Ground facilitates the Figure's movement, either by offering a pathway or by supplying force-dynamics. This phenomenon may be interpreted as a special case of convergence, where Path and Medium share a common linguistic form.



A. Ground as the path: *qa-sazan* 'to move through the bridge'



B. Ground as the medium: *qa-basu* 'to move by bus'

Figure 3.2 Conceptual correlations between the two functions of *qa*

As a final point, we would like to summarize this section by referring to the previous section on Goal. For one thing, both Goal and Milestone are each encoded by a pair of morphologically related locatives (respectively *sa*/*pasa* and *qa*/*paqa*), with the distinguishing parameter being the presence/absence of the prefix *pa-*, which may be historically a causative marker.

For another thing, while the two locatives prefixed by *pa-* (i.e. *pasa* and *paqa*) are restricted to uses in spatial domain only, their non-prefixed counterparts (i.e. *sa* and *qa*)

are both associated with some meanings in non-spatial domain, as recapitulated in Table 3.5 below.

Table 3.5 Comparison between Goal and Milestone

	Goal	Milestone
Spatial domain	*sa*/*pasa* 'destination of Motion'	*qa/paqa* 'path of Motion'
Non-spatial domain	*sa* 'transition to a state; emergence, generation, and existence of an entity'	*qa* 'means of conveyance'

To summarize Section 4.2.1, we diagram the four Kavalan spatial locatives and the local roles they mark in Figure 3.3 below, where the generic locative marker *ta* encodes not only Location, but also Source, Milestone, or Goal, depending on the semantics of the predicates involved.

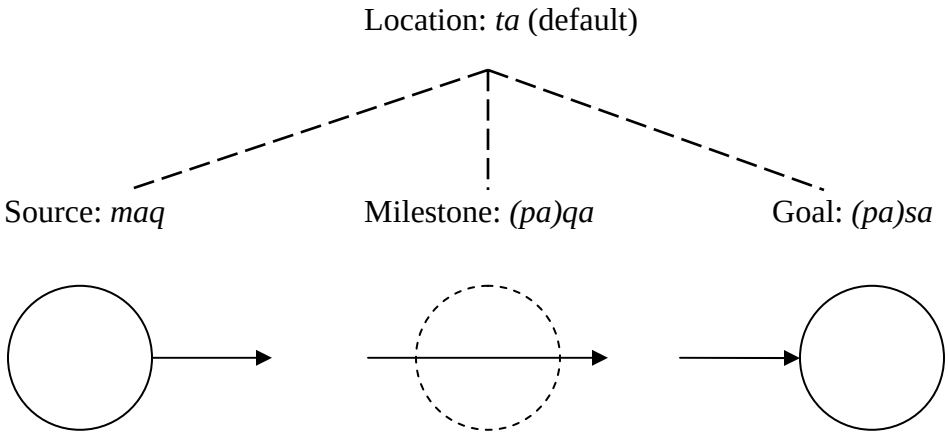


Figure 3.3 Kavalan spatial locatives and their local roles

3.2.2 Directional verbals

Directional verbals are a special case of spatial locatives combined with spatial deictic nouns (*-zi* 'here' for proximal and *-zui* 'there' for distal) or the interrogative particle *ni*. Table 3.6 illustrates a paradigm of directional verbals in Kavalan, and functionally they may be comparable with directional adverbs in English, as shown in Table 3.7 below (though they sound rather archaic in Modern English).

Table 3.6 Paradigm of directional verbals in Kavalan

	Source	Goal	Milestone
Demonstrative			
Proximal	*maq**zi***	*pasa**zi***	*paqa**zi***
Distal	*maq**zui***	*pasa**zui***	*paqa**zui***
Interrogative	*maq**ni***	*pasa**ni***	*paqa**ni***

Table 3.7 Paradigm of directional adverbs in English

	Source	Goal
Demonstrative		
Proximal	***h**ence*	***h**ither*
Distal	***th**ence*	***th**ither*
Interrogative	***wh**ence*	***wh**ither*

However, unlike English directional adverbs, Kavalan directional verbals either co-occur with Motion verbs or function independently as verbs, as illustrated in (53) and (54) respectively.

(53) a. qatiw=pa=iku pasazui ta kalinku-an
IRR.go=FUT=1SG.NOM thither LOC PN-LOC
'I will go thither to Hualien.'

b. maqzui=iku ta kalinku-an mautu
thence=1SG.NOM LOC PN-LOC AF.come
'I came thence from Hualien.'

(54) a. Q: quni=pa=isu
go.where=FUT=2SG.NOM
A: pasazi=pa=iku ti-abas-an
hither=FUT=1SG.NOM PNM-PN-LOC
'Where are you going?' 'I'm going to Abas' place.'

b. Q: maqni=isu tanian
whence=2SG.NOM where
A: maqzi=iku ta taypaq-an
hence=1SG.NOM LOC PN-LOC
'Where are you from?' 'I am from Taipei.'

Another characteristic of directional verbals is that they are very likely to be optional when co-occurring with Path verbs, as shown in (55), where the parenthesis indicates optionality.

(55) a. m-zukat=ti (maqzi) ta lepaw-an-na ya wasu a yau
AF-exit=PFV hence LOC house-LOC-3SG.GEN NOM dog LNK that
'The dog went out of its doghouse.' [**Vector**: Source]

b. s<m>usuR=ti (pasazi) ta lepaw-an-na ya wasu a yau
<AF>enter=PFV hither LOC house-LOC-3SG.GEN NOM dog LNK that
'The dog got into its doghouse.' [**Vector**: Goal]

Since Path verbs such as *m-zukat* 'exit' and *s<m>usuR* 'enter' have provided the spatial information needed for local roles, the role played by directional verbals is therefore curtailed. This is especially true for proximal directionals since their deictic meaning (as in *-zi* 'here') has been lost to a considerable degree, as pointed out in Section 3.2.1. When

co-occurring with (pure) Manner verbs, however, directional verbals play a more important role since they help to distinguish one local role from another, as contrasted in (56), where the Manner verb *t<m>anbaseR* 'fly' is neutral with respect to local roles.

(56) a. t<m>anbaseR=ti ta Rupu-an-na ya adam 'nay
<AF>fly=PFV LOC nest-LOC-3SG.GEN NOM bird that
'The bird started flying in its nest.' [**Vector**: Location]

b. t<m>anbaseR=ti maqzi ta Rupu-an-na ya adam 'nay
<AF>fly=PFV hence LOC nest-LOC-3SG.GEN NOM bird that
'The bird flew out of its nest.' [**Vector**: Source]

c. t<m>anbaseR=ti pasazi ta Rupu-an-na ya adam 'nay
<AF>fly=PFV hither LOC nest-LOC-3SG.GEN NOM bird that
'The bird flew into its nest.' [**Vector**: Goal]

Finally, in addition to Motion verbs, directional verbals also co-occur with a number of other verb types, as illustrated from (57) to (59).

(57) Verbs of transfer

a. bula=iku tu kelisiw-ku **pasazi ti-abas-an**
give=1SG.NOM OBL money-1SG.GEN hither PNM-PN-LOC
'I gave my money to Abas.'

b. bula=iku tu kelisiw-ku **pasazi ta kyukay-an**
give=1SG.NOM OBL money-1SG.GEN hither LOC church-LOC
'I gave my money to the Church.'

(58) Verbs of perception, cognition, and utterance (PCU)

a. t<m>ayta=iku **pasazi ta iRuR-an**
<AF>see=1SG.NOM hither LOC river-LOC
'I looked toward the river.'

b. kasianem=iku **pasazi ta ni-qa-patay-an ni ulaw**
think=1SG.NOM hither LOC PFV-QA-die-NMZ GEN PN
'I thought about Ulaw's death.'

c. sanu-an-ku danas-ku **pasazi ta tayzin-an**
say-LF-1SG.GEN thing-1SG.GEN thither LOC police-LOC
'I told my story to the police (e.g. to report a case).'

(59) Verbs of emotion

a. m-laydaw=iku **pasazi ta ni-qa-patay-an ni ulaw**
AF-grieve=1SG.NOM hither LOC PFV-QA-die-NMZ GEN PN
'I grieved over Ulaw's death.'

b. q<um>nut=iku **pasazi ta ni-pukun-an-na=iku**
<AF>rage=1SG.NOM hither LOC PFV-hit-NMZ-3SG.GEN=1SG.NOM
ni angaw
GEN PN
'I raged over Angaw's hitting me.'

In the above examples, the directional verbal *pasazi* 'hither' indicates the recipient of transfer, the object of perception/cognition, the addressee of utterance, and finally the object of emotion. Ultimately, all these functions of *pasazi* may be attributed to its spatial meaning, namely, the Goal of Motion. This illustrates that directional verbals, though spatial in nature, are not restricted to co-occurring with Motion verbs, and that the spatial schemas of directional verbals account for their extensions in non-Motion events.

3.2.3 Locative nouns

Like other Formosan as well as most Altaic and Sino-Tibetan languages, Kavalan expresses the spatial semantic category Region by means of locative nouns in a possessed-NP construction rather than adpositions or affixes, as in most Indo-European

languages.[8] Listed in Table 3.8 are the Kavalan locative nouns expressing Region, together with their English meanings and historical origins.

Table 3.8 Kavalan locative nouns expressing the spatial semantic category Region

Kavalan	**English meanings**	**Historical origins**
The Superior and Inferior Region		
babaw	on top of; over; above; up	the upside
libeng	below; down	the downside
liab	underneath; under	the space under the bed
pusen	on the bottom of	the bottom of artifacts
The Exterior and Interior Region		
tati	out; outside	outdoor; outside a house
teRaq	in; inside	indoor; inside a house
RasuR	inside	the space inside a house
The Anterior and Posterior Region		
ngayaw	before; in front of	the front of the body
tuRuz	after; behind; in back of	the back of the body
likuz	after; behind	behind; late
tuqeb	back	the back of a house
The Medial and Lateral Region		
tebteb	between; among	the middle region
kinil	beside; next to; near	either side of the body
pawis	beside; at the edge of	the edge
The Left-Right Axis		
kawili	left	left hand
kawanan	right	right hand

With regard to these locative nouns, there are two observations worth making. First, as pointed out by Wu (2004:12), there are four locative nouns in Saisiyat, namely, top, back, left, and right, that are very likely to be shared cognates with Proto-Malayo-

Polynesian (PMP) as reconstructed by Blust (1997). Likewise, Kavalan demonstrates a close affinity with PMP in this regard since the linguistic realizations of those four terms in Kavalan are nearly identical to those in PMP. Table 3.9 compares five Formosan languages with PMP in terms of the four locative nouns.

Table 3.9 Comparison of five Formosan languages with Proto-Malayo-Polynesian (PMP) in terms of four locative nouns

Languages	Top	Back	Left	Right
PMP (Blust 1997)	***babaw**	***likud**	***ka-wiRi**	***ka-wanan**
Saisiyat (Wu 2004)	**babaw**	**hikor**	**kayri**	**ka'anal**
Kavalan (Table 3.8)	**babaw**	**likuz**	**kawili**	**kawanan**
Squliq (Huang *et al.* 2004)	**babaw**	suruw	'zin	lelaw
Seediq (Huang *et al.* 2004)	**bobo**	bukuy	**irin**	narac
Tsou (Wu 2004)	skoskop'-na	f'uhu	vei-na	vho-na

Obviously, this comparison divides the five Formosan languages into two categories: one that completely aligns with PMP, including Saisiyat and Kavalan, and the other that partially or barely sides with PMP, including Squliq (with *babaw* 'top' identical to PMP), Seediq (with *bobo* 'top' and *irin* 'left' possible cognates), and Tsou. A comparison like this may reveal that Kavalan, as well as Saisiyat, bears a closer resemblance to Malayo-Polynesian languages at the level of what Blust (1997) calls "micro-orientation" than other Formosan languages, such as Squliq and Tsou.

Second, the historical origins of the locative nouns in Table 3.8 can be subsumed into two major types: one that involves artifacts such as houses and beds, including *liab*, *teRaq, RasuR*, *tati*, and *tuqeb*, and the other that refers to the human body, such as *ngayaw*, *tuRuz, kawili,* and *kawanan*. These two sources constitute two of the three

crosslinguistically common categories of reference objects recurrent in spatial grams, namely, geographic entities, body parts, and artifacts (see Svorou 1994).

3.2.3.1 The superior and inferior Region

Like Saisiyat and Squliq, Kavalan expresses the superior Region by means of reflexes of the Proto-Austronesian (PAN) etymon **babaw*, which refers to a comparatively higher region in relation to the Ground in an earth-based vertical axis regardless of whether there is contact or support between the Region and the Ground. Accordingly, the term *babaw* in Kavalan has a wide range of applications, such as the horizontal surface of a table (example (60a)), the midair region above a mountain (60b), the higher (but not necessarily the top) region of a tree (60c), and the geographically higher area of a river running from high to low (60d):

(60) a. ta babaw na takan
LOC upside GEN table
'on the table'

b. ta babaw na naung
LOC upside GEN mountain
'above the mountain'

c. ta babaw na paRin
LOC upside GEN tree
'on (top of) the tree'

d. ta babaw na iRuR
LOC upside GEN river
'at upstream area'

It has to be pointed out that the term *babaw* is qualitatively different from the English preposition *on* (or its Indo-European counterparts) even in cases when they both refer to the surface of a Ground. For example, when the vertical surface of a Ground is referred to, it is appropriate to say "on the wall" in English while *ta babaw na lineng* 'LOC upside GEN wall' in Kavalan is impossible unless the region where the wall and the ceiling meet is intended.[9] Moreover, the fact that *babaw* is capable of referring to a region on or over/above the Ground does not mean that the Kavalan language has no means to distinguish one situation from the other. The examples in (61), for instance, offer such a way of disambiguation. Both the term *babaw* and the additional predicate (*t<m>anbaseR* 'fly') in (61b) help to construct a scenario different from the one in (61a).

(61) a. yau langaw [ta uRu-an-ku]
EXIST fly LOC head-LOC-1SG.GEN
'There is a fly on my head.' [With contact]
b. yau langaw [ta babaw na uRu-ku] t<m>anbaseR
EXIST fly LOC upside GEN head-1SG.GEN <AF>fly
'There is a fly flying over my head.' [Without contact]

On the other hand, Kavalan has three terms for the inferior Region, including *libeng*, *liab*, and *pusen*, with each referring to different dimensions or partitions of a Ground. As shown in (62), while *libeng* and *liab* both denote a region lower than the Ground, *pusen* refers to an intrinsic part of the Ground.

(62) a. ta libeng na takan
LOC downside GEN table
'below the table'

b. ta liab-an na paRin
LOC underside-LOC GEN tree
'under the tree'

c. ta pusen-an na peRasku
LOC bottom-LOC GEN bottle
'at the bottom of the bottle'

Although both *libeng* and *liab* denote a region lower than the Ground, the latter is compatible only with some particular Grounds. Specifically, since *liab* originally refers to the empty space under the bed, the Ground co-occurring with *liab* must have such an underside space as the bed does, whether it is a table, a tree, or a cave. Otherwise, only *libeng* is acceptable, as illustrated in (63), where none of three Grounds (i.e. the pillow, the mountain, and the river) has an empty space under it.

(63) a. ta libeng/*liab-an na ingRuan
LOC downside/underside-LOC GEN pillow
'beneath the pillow'

b. ta libeng/*liab-an na naung
LOC downside/underside-LOC GEN mountain
'under the mountain'

c. ta libeng/*liab-an na iRuR
LOC downside/underside-LOC GEN river
'at the downstream area'

In other words, *libeng* is more general in use, and may be considered a counterpart of *babaw*, whose distribution is equally wide-ranging. Another reason that makes *babaw* and *libeng* a good antonymous pair is that they form a property predicate when prefixed by the morpheme *i-*, a reflex of the generic locative marker **i* in PAN (Blust 1997: 43).

As a result, *i-babaw* means “tall” and *i-libeng* “short”, but there is no such word as “*i-liab*”.

Furthermore, even in cases where *libeng* and *liab* do co-occur with the same Ground, they denote different areas with respect to it. Take the table for an example. Returning to (59a), the *libeng* of a table refers to any region lower than and adjacent to the table. The *liab* of a table, on the other hand, specifically indicates the space enclosed by the leg of the table, that is, its lower base. Accordingly, *liab* is preferred over *libeng* in situations like those in (64), where the Figure is underneath the Ground, whether or not there is contact between these two.

(64) a. yau ta liab-an na takan pa-kupit-an-ku Rabis ’nay
EXIST LOC underside-LOC GEN table CAU-paste-LF-1SG.GEN knife that
‘I attached the knife to the underside of the table.’ [With contact]

b. yau a wasu ta liab-an na takan maynep
EXIST NOM dog LOC underside-LOC GEN table AF.sleep
‘There is dog sleeping underneath the table.’ [Without contact]

3.2.3.2 The exterior and interior Region

Much like the antonymous pair *babaw* and *libeng* that expresses the top and bottom Region respectively, *tati* and *teRaq* is another antonymous pair, which signifies the respective exterior and interior Region. These two terms refer specifically to the outside and inside of a house when there is no Ground following them in a postnominal genitive phrase (example (65a)) or to the exterior and interior region of a Ground other than a house (65b).[10]

(65) a. m-Ra-RaRiw a sunis ’nay pasa tati pasa teRaq
AF-RED-run NOM child that LOC outside LOC inside
‘The child keeps running in and out (of the house).’

b. ta tati/teRaq na qaysing yau u-siq luzem
LOC outside/inside GEN bowl EXIST CLF.NHUM-one ant
‘There is an ant outside/inside the bowl.’

In addition, there is more than one term for the interior Region, as is the case in the inferior Region (recall *libeng* and *liab*). Aside from *teRaq*, *RasuR* is another alternative. For example, the interior Region of a house can be either *teRaq* or *RasuR*:

(66) a. ta teRaq na lepaw
LOC inside GEN house
‘in the house’

b. ta RasuR-an na lepaw
LOC inside-LOC GEN house
‘inside the house’

However, these two terms are not functionally equivalent under all circumstances. In order to appreciate the subtle difference between them, it is revealing to first inspect the meaning of the word *neRasuR*, which is morphologically related to *RasuR*. The word *neRasuR* refers to anything that is inside a house, be it people or objects, and thus might be rendered as “what’s contained in a house” or simply “the content of a house.” Accordingly, the term *RasuR* is also associated with the container schema and refers to the space inside a container. Examples in (67) are illustrative of *neRauR* and *RasuR* respectively.

(67) a. neRasuR na lepaw-niq kin-lima aimi
content GEN house-1EPL.GEN CLF.HUM-five 1EPL.NOM
'There are five people in our family.'

b. t<m>alauma=iku tu RasuR na lepaw ni abas
<AF>traverse=1SG.NOM OBL inside GEN house GEN PN
'I am traversing Abas' house (e.g. by passing through it from the front door to the back door).'

Coming back to the difference between *teRaq* and *RasuR*, we draw on the examples in (68) for illustration. Although both *teRaq* and *RasuR* are applicable to the interior Region other than a house, our informants show different preferences as the Ground involved differs: the interior of the body or the head is *RasuR* (68a) while that of a river or a book is *teRaq* (68b), but not vice versa.

(68) a. ta *teRaq/RasuR-an na izip-ku/uRu-ku
LOC inside/inside-LOC GEN body-1SG.GEN/head-1SG.GEN
'inside my body/head'

b. ta teRaq/*RasuR-an na iRuR/sudad
LOC inside/inside-LOC GEN river/book
'in the river/book'

The explanation is that there is no vacant space inside a river or a book (since a river is filled with water and a book with pages) while there exists some within the body and the head which contain internal organs and the brain respectively. Therefore, it might be safe to say that the Kavalan people construe the interior of the human body (either the trunk or the head) in the same manner as they do for the interior of a house (by means of the term *RasuR*), thus exemplifying the BODY-AS-A-CONTAINER metaphor.

3.2.3.3 The anterior and posterior Region

The asymmetrical front-back axis of the human body provides language with an excellent source of terms expressing the anterior and posterior Region of any Ground, and this is exactly the case in Kavalan. The antonymous pair *ngayaw* and *tuRuz* are terms for the body-parts front and back respectively. They refer not only to the front/back of a human body (example (69a)), but also to the anterior/posterior Region of entities with such intrinsic asymmetrical geometry as is inbuilt in the human body (example (69b)) and the anterior/posterior Region as projected out from the perspective of some viewing center (example (69c)), thus crossing over two types of frames of reference (FoR).

(69) a. yau ta ngayaw/tuRuz-an-ku s<m>aqay wasu a zau
EXIST LOC front/back-LOC-1SG.GEN <AF>walk dog LNK this
'The dog is walking in front of/behind me.' [Object-centered FoR]

b. yau ta ngayaw/tuRuz-an na qadan t<m>alungbi sunis a zau
EXIST LOC front/back-LOC GEN chair <AF>hide child LNK this
'The child is hiding in front of/behind the chair.' [Object-centered FoR]

b. yau ta ngayaw/tuRuz-an na paRin masengat sunis a zau
EXIST LOC front/back-LOC GEN chair AF.hide child LNK this
'The child is standing in front of/behind the tree. [Viewpoint-centered FoR]

The saliency of the body parts *ngayaw* 'front' and *tuRuz* 'back' in constructing a spatial scene is also manifested in their propensity to be prefixed by the causative morpheme *pa-* when the Figure has its front/back face the Ground, as illustrated below[11]:

(70) a. pa-tu-ngayaw=iku tu lepaw ni utay
CAU-TU-front=1SG.NOM OBL house GEN PN
'I face Utay's house.'

b. pa-tuRuz=iku tu lepaw ni utay
CAU-back=1SG.NOM OBL house GEN PN
'I face Utay's house backwards.'

The "*pa*-N" construction in (70) is in fact a mechanism to transform a nominal into a predicate that executes the action mediated by the referent of that nominal. In other words, nominals in the "*pa*-N" construction are something like an instrument with which to carry out an action, as illustrated in (71).

(71) a. pa-pisa'=imi tu babuy na naung
CAU-gun=1EPL.NOM OBL pig GEN mountain
'We (excluding you) shoot the mountain pig with a gun.'
b. pa-Ra'is=iku tu paRin
CAU-rope=1SG.NOM OBL tree
'I tie the tree with a rope.'

If we recognize the structural similarities between (70) and (71), the predicates *patungayaw*/*patuRuz* might as well be interpreted as "to execute certain action to the Ground by means of the anterior/posterior Region of the Figure," where the action involved in most cases is simply to direct the front/back of the body toward the Ground.

Aside from the spatial domain, this pair of body-parts *ngayaw*/*tuRuz* can also be extended to the temporal domain via a spatio-temporal isomorphism. In (72), for example, there are two events, with one (E1: "I bought this book") taking place before the other (E2: "I stumbled"), and the anteriority and posteriority in space is iconically mapped onto the respective anteriority and posteriority in time.

(72) a. ngayaw na [ni-qa-suRaw-ku]E2 tu [ni-Rasa-ku tu sudad zau]E1
front GEN PFV-QA-stumble TU PFV-buy-1SG.GEN OBL book this
'Before I stumbled, I bought this book.'

b. tuRuz na [ni-Rasa-ku tu sudad zau]E1 tu [ni-qa-suRaw-ku]E2
back GEN PFV-buy-1SG.GEN OBL book this TU PFV-QA-stumble-1SG.GEN
'After I bought this book, I stumbled.'

Furthermore, there is more than one term for the posterior Region, as in the inferior and interior Region. First, in cases where the Ground involved is a house or some kind of building, its posterior Region would turn out to be *tuqeb* instead of *tuRuz*:

(73) yau ta tuqeb-an na lepaw-ku/taqsian ya iRuR zau
EXIST LOC back-LOC GEN house-1SG.GEN/school NOM river this
'This river is at the back of my house/the school.

More importantly, Kavalan has another term for the posterior Region, namely *likuz*, a possible reflex of the Proto-Austronesian **likuj* 'back, behind'. Unlike *tuRuz*, which normally functions as a noun in the locative phrase *ta …-an*, *likuz* tends to be prefixed by the AF marker *m-*, thus behaving more like a verb, as contrasted in (74), where both the spatial and temporal reading are acceptable.[12]

(74) a. m-likuz=ti=iku masengat
AF-behind=PFV=1SG.NOM AF.stand
= b. ta-Ri-tuRuz=ti=iku masengat
be.at-RI-back=PFV=1SG.NOM AF.stand
'I stood at the farthest back.' [Spatial reading]
'I stood up last.' [Temporal reading]

Generally speaking, *likuz* refers to the farthest posterior Region with respect to an assembly of some unexpressed but understood reference objects while *tuRuz* denotes the posterior Region of some entity. Therefore, in the temporal domain the antonym of *tuRuz* is *ngayaw* 'front; before' (as in (72) above), whereas that of *likuz* is *muna* 'first' as illustrated below.

(75) muna=ay/Ri-likuz=ay aizipna mautu
AF.first=REL/RI-behind=REL 3SG.NOM AF.come
'He came first/last.'

It is worth pointing out that while reflexes of the Proto-Austronesian etymon **likuj* in some languages refer to both the back as a body-part (BACK) and the back as a posterior Region (BEHIND), its reflexes in others may denote the latter only. A survey of the comparative Austronesian dictionary edited by Tryon (1995) (which includes about eighty languages) yields the results shown in Table 3.10, which illustrates two patterns of reflexes of the etymon **likuj*.

Table 3.10 Patterns of reflexes of the Proto-Austronesian etymon **likuj* (based on Tryon *et al*. 1995)

	BACK (body-part)	BEHIND (posteriority)	Examples
Type A	*likuj	*likuj	Yami, Tagalog, Aklanon, Palawan, etc.
Type B	X	*likuj	Isnag, Molbog, Da'a, Wolio, etc.

In Type A, reflexes of the etymon **likuj* refer to both BACK and BEHIND, whereas they designate only BEHIND in Type B, thus leaving BACK to some other term. Since *likuz*

in Kavalan refers only to BEHIND and that BACK is expressed by *tuRuz*, Kavalan goes with such languages as Isnag and Molbog under Type B.

The final point about reflexes of **likuj* in Kavalan is that they usually constitute part of some verbal roots that are semantically related to the posterior Region. For example, *kulikuz* means "follow, move behind", where the meaning of the morpheme *ku-* is obscure, as in (76).

(76) a. k<m>ulikuz=iku timaisuan s<m>aqay
<AF>follow=1SG.NOM 2SG.LOC <AF>walk
'I walk behind you.'
b. kulikuz-an-ku aizipna kelawkaway
follow-LF-1SG.GEN 3SG.NOM work
'I followed him to work.'

Another possibly related word is *tadikud* 'return, go back', where *dikud* might be another reflex of **likuj* (since the sound change between *likuz* and *dikud* is not impossible). The semantics of the morpheme *ta-* is again unknown, just like the *ku-* in *kulikuz*. An instance of *tadikud* is shown in (77).

(77) tadikud-an-na=ti ni buya m-ala kelisiw-na
return-LF-3SG.GEN=PFV GEN PN AF-take money-3SG.GEN
'Buya went back to take his money.'

3.2.3.4 The medial and lateral Region

The medial Region is indicated by the term *tebteb*, a reduplicated disyllabic word referring to a location at equal distance from two ends along a stretch of distance. It is

very likely that the reduplicated form is meant to mimic the two equal halves of distance, thus demonstrating the isomorphism between form and function.[13] On the other hand, the non-reduplicated form is used instead when extended to the temporal domain, as contrasted in (78).

(78) a. ta **tebteb**-an/bataz na lazan
LOC middle-LOC/halfway GEN road
'halfway on the road' [Equal distance in the spatial domain]
b. **teb**-an na tasaw
middle-LOC GEN year
'(in) the middle of the year' [Equal span of time in the temporal domain]

The term *tebteb* is also applicable in situations where a Figure is situated somewhere in the space defined by a Ground, when the Ground consists of two or more discontinuous parts, as illustrated in (79a) and (79b) respectively.

(79) a. ti-buya atu ti-abas ta tebteb-an-na aiku miRi
PNM-PN and PNM-PN LOC middle-LOC-3PL.GEN 1SG.NOM AF.stand
'I am standing between Buya and Abas.'
b. ta tebteb-an na mazmun=ay lazat ti-buya miRi
LOC middle-LOC GEN many.HUM=REL person PNM-PN AF.stand
'Buya is standing among many people.'

As for the lateral Region, the most frequently employed term is *kinil*, referring not only to either side of a Ground when laterality is pertinent, but to the neighborhood of a Ground when the Ground has no intrinsic sides at all, as respectively shown in (80a) and (80b).[14]

(80) a. yau ta kinil-an ni utay lazat a yau maded
EXIST LOC side-LOC GEN PN person LNK that AF.sit
'That man is sitting beside Utay.'

b. yau ta kinil-an na paRin sunis unay mauRat
EXIST LOC side-LOC GEN tree child that AF.play
'That child is playing in the vicinity of the tree.'

In addition to *kinil*, the term *pawis* is also capable of denoting a lateral Region, but in a different manner. As contrasted in (81), *pawis* refers to an intrinsic lateral part or the periphery of the Ground (in this case the gunnel of the boat) while *kinil* demarcates a location next to but apart from the Ground.

(81) a. masengat=ti=iku ta pawis-an na bawa'
AF.stand=PFV=1SG.NOM LOC edge-LOC GEN boat
'I was standing on the edge of the boat.' [The Figure within the Ground]

b. masengat=ti=iku ta kinil-an na bawa'
AF.stand=PFV=1SG.NOM LOC side-LOC GEN boat
'I was standing near the boat.' [The Figure outside the Ground]

3.2.3.5 The left-right axis

Inherited from the Proto-Austronesian language, the left-right axis in Kavalan makes reference to the upper limbs of the human body. Accordingly, *kawili* and *kawanan* not only denote the left and right hand respectively (example (82)), but also localize one entity with respect to another when used in the locative phrase *ta* …*-an* (example (83) and (84)), just like other locative nouns[15]:

(82) isis-an-na na kawili-ku/kawanan-ku
hold-LF-3SG.GEN GEN left.hand-1SG.GEN/right.hand-1SG.GEN
ya tunun unay
NOM stick that
'I held that stick in my left/right hand.'

(83) ta kawili-an/kawanan(-an) na kyukay ya paRin a yau
LOC left-LOC/right-LOC GEN church NOM tree LNK that
'That tree is to the left/right of the church.' [Object-centered FoR]

(84) ta kawili-an/kawanan(-an) na paRin ya lazat a yau
LOC left-LOC/right-LOC GEN tree NOM person LNK that
'That man is at the left/right of the tree.' [Viewpoint-centered FoR]

Since a church has an inherent left-right axis just like the human body (prompted by the asymmetrical front-back axis), the description in (83) is always true regardless of where the speaker is making this utterance. When the reference object has no salient asymmetrical geometry (e.g. a tree), however, the left-right axis is then projected from the perspective of some viewing center, as in (84), whose validity is susceptible to variations as the speaker changes her location or orientation.

To summarize, Figure 3.4 below recapitulates the Kavalan locative nouns introduced throughout Section 3.2.3 by visualizing the Regions they denote as well as specifying the Frames of Reference they involve. Out of this figure emerges an interesting pattern. Explicitly, as far as asymmetrical spatial relations (superior vs. inferior, exterior vs. interior, and anterior vs. posterior) are concerned, the number of linguistic terms expressing members of an asymmetrical pair is likewise asymmetric. For instance, while there are three terms for the inferior and posterior Region (*pusen*/*liab*/*libeng* and *tuqeb*/*tuRuz*/*likuz* respectively), there is only one single term for the superior and anterior

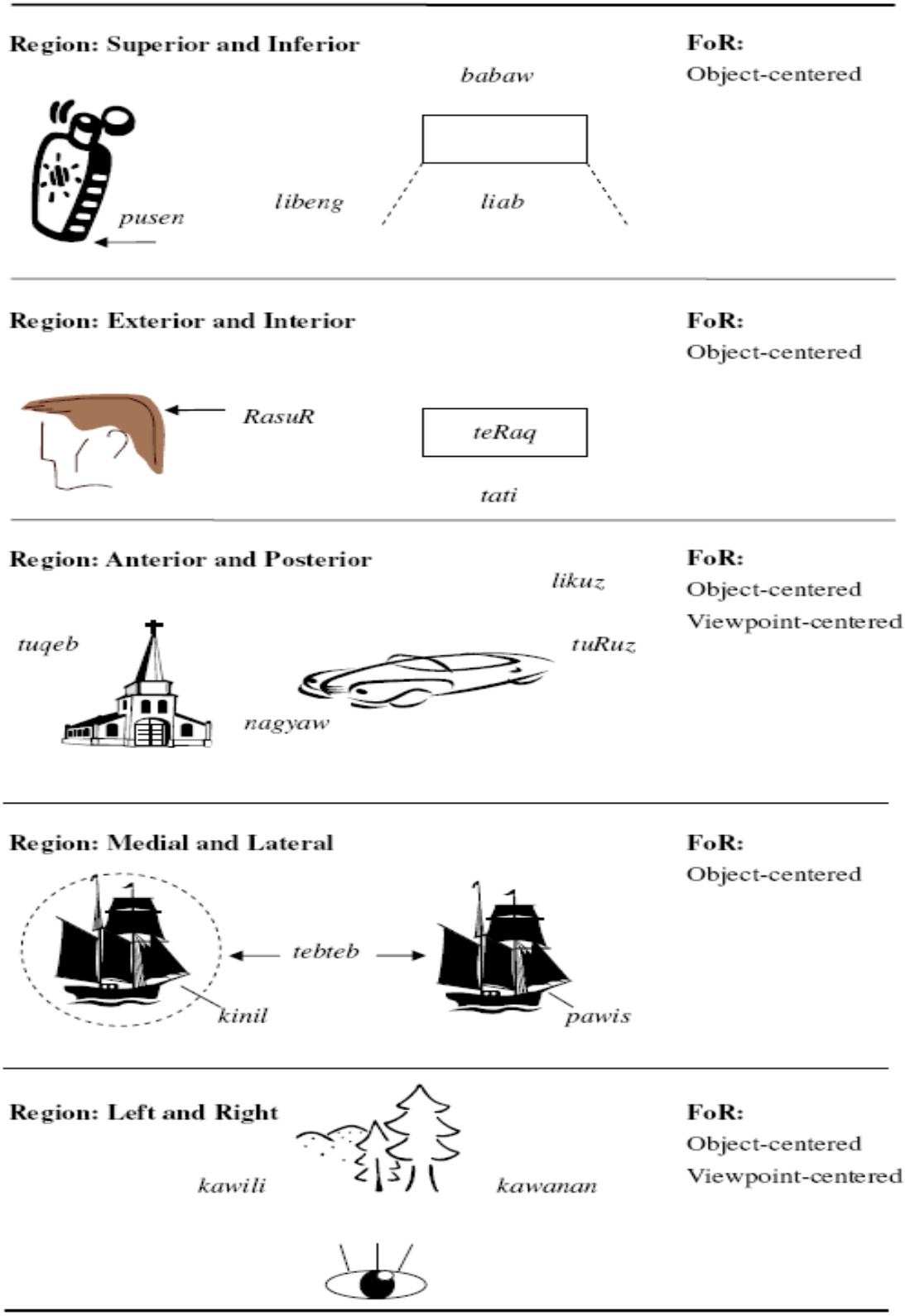


Figure 3.4 Kavalan locative nouns expressing the spatial semantic category Region

Region (*babaw* and *ngayaw* respectively). The asymmetrical categorization of rudimental spatial concepts in Kavalan might challenge the idea that there exists an invariable inventory of innate spatial concepts which are universally differentiated and ubiquitously encoded across languages.

3.2.4 Cardinal directions

An influential paper by Blust (1997) indicates that the cardinal system across Austronesian languages usually refers to two orienting features, which can be traced back to Proto-Malayo-Polynesian (PMP). One is a land-sea axis and the other the Southeast Asian monsoons. First, an investigation of the Formosan reflexes of the two PMP etymons *daya 'upriver, towards the interior' and *lahud 'downriver, towards the sea' is shown in Table 3.11.

Table 3.11 Reflexes of two PMP etymons that pertain to the land-sea axis in five Formosan languages

PMP (Blust 1997)	Siraya (Li 2006)	Taivoan (Li 2006)	Pazih (Sin. Arch.)[16]	Paiwan (Ferrell 1982)	Kavalan
*daya	saija 'east'	raija 'east'	daya 'east'	zaya 'upland'	zaya 'west'
*lahud	raos 'west'	raor 'west'	rahut 'west'	lauz 'seaward'	lauz 'end, tip'

Although these reflexes in some languages (e.g. Paiwan and partially Kavalan) remain pertinent to geographical features, in others they have developed into components of a cardinal system. More importantly, even when these reflexes have been established as cardinal points, local geography still plays a considerable role. To be specific, reflexes of the same etymon in different languages may end up referring to different cardinal directions as the geographical features vary from one language to another. Take Pazih

and Kavalan for example. While *daya* in Pazih refers to cardinal east, *zaya* in Kavalan stands for cardinal west. This is because Pazih is spoken in the western part of Taiwan, where the upriver region is to the east, while Kavalan is spoken in the eastern part of Taiwan, where the upriver region is to the west instead.

The reflex *lauz* in Kavalan, which refers neither to the downriver region (as in Paiwan) nor to a cardinal direction, has evolved into a rather abstract meaning, as illustrated in (85). In lieu of *lauz*, Kavalan employs *waRi* to refer to cardinal east, somewhat related to *sa-qa-wali* 'east' in Amis.

(85) a. lauz na iRuR
end GEN river
'the end of a river, or the downriver region'
b. lauz na paRin
end GEN tree
'the tip of a tree'
c. lauz na tasaw
end GEN year
'the end of a year'

As for the Southeast Asian monsoons, Blust (1997) reconstructs two terms in PMP, namely, *habaRat 'west/north-west monsoon' and *timuR 'east/south-east monsoon'. In Kavalan there are two reflexes of the etymon *timuR, each having a meaning of its own. While *timuR* refers to the south/south-west wind in summer, *tibuR* designates cardinal south. It is well known that the monsoons change their wind directions when crossing over the Equator. As a result, the summer monsoon, for instance, blows east/south-east in areas between the Equator and the Tropic of Capricorn (e.g. Java), and turns to

south/south-west when reaching areas between the Equator and the Tropic of Cancer (e.g. southern Taiwan). This phenomenon, therefore, explains the different extensions of *timuR 'east/south-east monsoon' in PMP and *timuR* 'south/south-west monsoon' or *tibuR* 'south' in Kavalan. On the other hand, no reflexes of *habaRat are found in Kavalan. In its place, Kavalan uses *syaRaR* for north wind and *imis* for cardinal north, with the latter related to *sa-amis* "north" in Amis.

Since the original meanings of the four cardinal directions all seem obscure to present-day Kavalan people, some linguistic evidence, direct or indirect, is required in order to unravel the conceptualizations hidden in the cardinal system. Table 3.12 illustrates the four cardinal directions in Kavalan and the linguistic evidence for their historical origins.

Table 3.12 The four cardinal directions in Kavalan and their historical origins

English	Kavalan	Historical origins	Linguistic evidence
east	*waRi*	toward the sea	Kavalan: *wi suaRi* 'go out to sea' < *wi sa waRi* 'leave LOC sea'; cf. Amis: *sa-qa-wali* 'east'
west	*zaya*	uphill, upland	PAN **Daya* (Adelaar 1997: 53), PMP **daya* (Blust 1997), Paiwan *zaya* (Ferrell 1980 and Li 2004: 139) 'upriver, upland, toward the interior'
south	*tibuR*	south/south-west monsoon (summer wind)	PMP: **timuR* 'east/south-east monsoon'; Kavalan: *timuR* 'south wind'; cf. Amis: *sa-timur* 'south'
north	*imis*	north wind (winter wind)	Saisiyat: *kap'na'-amiS-an* 'north', where *amiS* means 'chilly wind' (Wu 2004: 14); cf. Amis: *sa-amis* 'north'

The results in Table 3.12 may help to clarify two things. First, that the Kavalan cardinal system appeals to environmental features (the east-west axis) and wind names (the north-south axis) supports two of the four source models identified in Brown (1983).[17] Second, when investigating the cardinal system in Austronesian languages, Blust (1997: 48) concludes, "within the monsoon region the land-sea axis is restricted to cardinal north and south, (since cardinal east-west is pre-empted by the monsoon terms), while outside the monsoon region this need not be the case". Considering the case in Kavalan, this generalization may need some qualification. Although Taiwan is within the monsoon region, the land-sea axis in Kavalan does not refer to cardinal north and south, but to cardinal east and west instead. This is partly due to the geographical features in Taiwan, where mountain ranges run from north to south. In addition, the monsoons in Taiwan blow roughly along the north-south axis rather than the east-west axis, and thus becomes an excellent orienting feature for the north-south axis. Therefore, Blust's generalization above seems to hold only for the monsoon region in the Southern Hemisphere, where the monsoons blow primarily east and west.

When specifying cardinal points, the four directions in Kavalan participate in two constructions, as listed in Table 3.13.

Table 3.13 Two constructions for the cardinal directions

English	Kavalan	*ta* + N Construction	*ta* + *qa*-N-*an* Construction
East	*waRi*	*ta waRi*	*ta qauRi-an* < *ta qa-waRi-an*
West	*zaya*	*ta zaya*	*ta qa-zaya-an*
South	*tibuR*	*ta tibuR*	*ta qa-tibuR-an*
North	*imis*	*ta imis*	*ta qa-imis-an*

While the "*ta* + N" construction, in which the suffix *-an* is prohibited, refers to geo-cardinal positions in a large scale without providing specific locations, the "*ta* + *qa*-N-*an*" construction, which requires not only the suffix *-an* but also the prefix *qa-*, identifies directions or orientations with respect to another reference object indicated by a genitive phrase. The following paired examples illustrate the point:

(86) a. yau ta tibuR ya lepaw-ku
EXIST LOC south NOM house-1SG.GEN
'My house is in the south.'

b. yau ta qa-zaya-an na paRin lazat a zau miRi
EXIST LOC QA-west-AN GEN tree person LNK this AF.stand
'This man is standing to the west of the tree.'

The prefix *qa-* here, which is a reflex of the PAN etymon *ka-, may need some clarifications. First, while marking stativity on verbs (see Zeitoun and Huang 2000), the prefix *qa-* (plus the suffix *-an*) associates concrete nouns with generalized notions. For instance, while *zapan* refers to "foot", *qa-zapan-an* means "where the feet are placed", i.e. any kind of footrest, such as treadles of a bike or pedals of a car. In this regard, phrases such as *qa-zaya-an* (as in (86b)) might have been conceptualized as something like "where the upland is situated", and then eventually metonymically generalized into "the direction of cardinal west".

Another point about the prefix *qa-* is that it seems to reinforce some directionality to the specified location or cardinal point. For example, while *ta zaya* is "in the west", *ta qa-zaya-an* may be better rendered as "to the west of something" since it must be followed by a genitive phrase that indicates the reference object.[18] A more interesting example is the contrast between two groups of spatial deictic terms. For the proximal pair,

while *tazian* is “here”, *taqazian* means “toward here” and always refers to the west side of an entity, a distinctive function not found in another similar term *pasazi* ‘hither’. For the distal pair, on the other hand, *tawian* is “over there” whereas *taqazuian* means “toward there” and functionally indicates the surrounding area away from an entity. The following examples illustrate the point:

(87) a. ta-zi-an na kyukay
LOC-here-LOC GEN church
‘here at the church.’
b. ta-qa-zi-an na kyukay
LOC-QA-here-LOC GEN church
‘to the west of the church’ (lit. ‘toward this side of the church’)
c. ta-wi-an na kyukay
LOC-there-LOC GEN church
‘there at the church.’
d. ta-qa-zui-an na kyukay
LOC-QA-there-LOC GEN church
‘away from the church’ (lit. ‘toward that side of the church’)

It is suggested that the unique functions of *taqazian* and *taqazuian* have much to do with Kavalan people’s conceptualization of cardinal east and west, that is, the land-sea axis. If we take as the reference point Hsinshê Village, which faces the Pacific Ocean to the east (see Figure 3.9), “toward here” will be the inland direction, which is metonymically related with cardinal west, and “toward there” will be the seaward direction, that is, the direction away from the village. Accordingly, the original deictic meanings in *taqazian* and *taqazuian* yield the meanings of cardinal west and the surrounding area respectively.

Lastly, Kavalan makes use of the prefix *Ra-* and partial reduplication of directional terms when referring to directions that deviate from the four cardinal points. For instance, *Ra-i-imis* refers to directions extending from northwest to northeast. All the Kavalan terms for cardinal directions are illustrated in Figure 3.5 below.

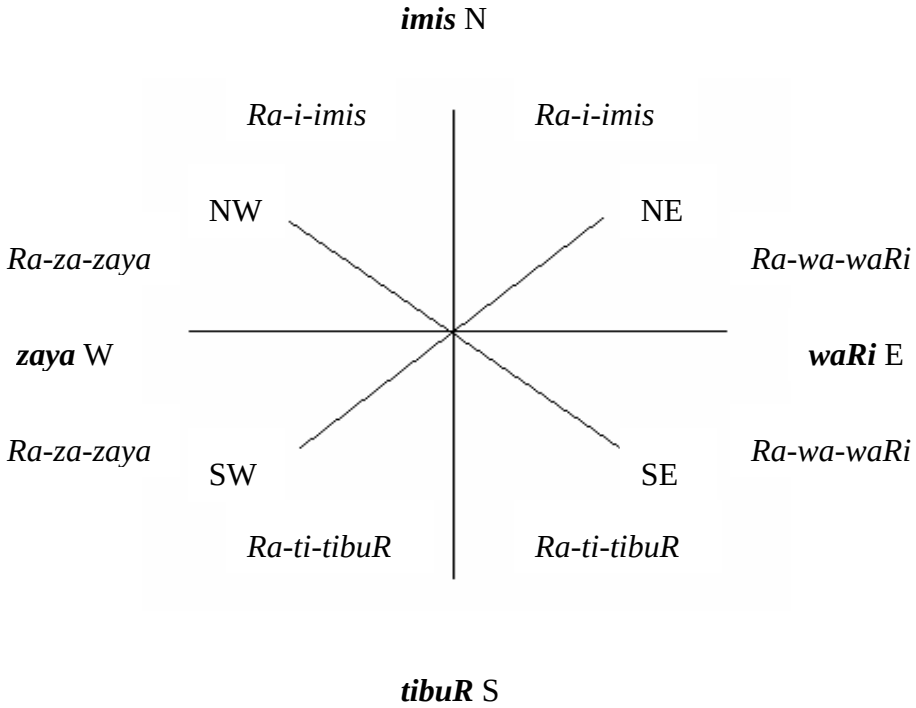


Figure 3.5 Kavalan terms for cardinal directions

There are two things unique to the prefix *Ra-*. First, it disallows the presence of the generic locative marker *ta*, which is required in all the other locative phrases. This suggests that *Ra-* may be a verbal prefix. Second, the morpheme *Ra-* is prefixed only to directional terms and never to common nouns. The examples in (88) illustrate these points.

(88) a. (*ta) Ra-za-zaya (tu kiya) lepaw-ku
LOC RA-RED-west OBL little house-1SG.GEN
'My house is to the direction deviating (a little) from cardinal west.'
b. * Ra-na-naung lepaw-ku
RA-RED-mountain house-1SG.GEN
Intended meaning: 'My house is to the direction of the mountains.'

3.2.5 Demonstratives

Demonstratives are "a subclass of deictic expressions that function to *focus* the hearer's attention on elements in a (spatial) reference frame" (Diessel 2003: 4, emphasis original). In a typological study, Diessel (1999) distinguishes demonstratives into four types in terms of their syntactic distribution and grammatical category. Specifically, as far as only distribution is concerned, demonstratives can be identificational, pronominal, adnominal, and adverbial whereas they divide into identifiers, pronouns, determiners, and adverbs respectively when both distribution and form are taken into consideration.

Table 3.14 shows the demonstratives and interrogatives in Kavalan.

Table 3.14 Demonstratives and interrogatives in Kavalan

Distribution		Iden./Pronom./Adnom. Dem.	Adverbial Dem.	
Ontology		Entity	Place	Manner[19]
Proximal + visible	+ speaker/ - hearer	zau	ta**zi**an	(s)na**zau**
	- speaker/ + hearer	unay/'nay; yau	ta**unay**an/tayan	(s)na**yau**
Distal +/- visible	- speaker/ - hearer	wi'u	ta**wi**an	*nawi
Interrogative		mayni	tanian	(s)naquni

As is the case in most languages (see Diessel 1999: 40), identificational, pronominal, and adnominal demonstratives in Kavalan share a common morpheme while adverbial demonstratives assume separate forms. Examples in (89) compare the first three types of demonstratives in Kavalan with those in French, where each type requires a different form.

(89) a. zau inpan-ku
this room-1SG.GEN
= **Voilà** ma chambre
there.is 1SG.GEN room
'Here is my room.' [Identificational demonstrative]

b. inpan-ku ya zau
room-1SG.GEN NOM this
= **Cette-ci** est ma chambre
this is 1SG.GEN room
'This is my room.' [Pronominal demonstrative]

c. zaku ya inpan a zau
1SG.POSS NOM room LNK this
= **Cette** chambre est la mienne
this room is the 1SG.POSS
'This room is mine.' [Adnominal demonstrative]

In spite of their different forms, identificational/pronominal/adnominal demonstratives on the one hand and adverbial ones on the other display striking morphological similarities. For instance, the near-hearer demonstratives *unay* and *yau*, which denote entities, are morphological components of adverbial demonstratives that respectively express place (*ta-unay-an* 'there near the hearer') and manner (*na-yau* 'that way, in that manner'). More importantly, the fact that identificational/pronominal/adnominal demonstratives are

morphologically simpler than adverbial ones is consistent with the conventional idea that entity is ontologically more primitive than place or manner.

In addition, Kavalan adopts a three-term system for demonstratives, that is, three different terms locating a referent along the dimension of distance.

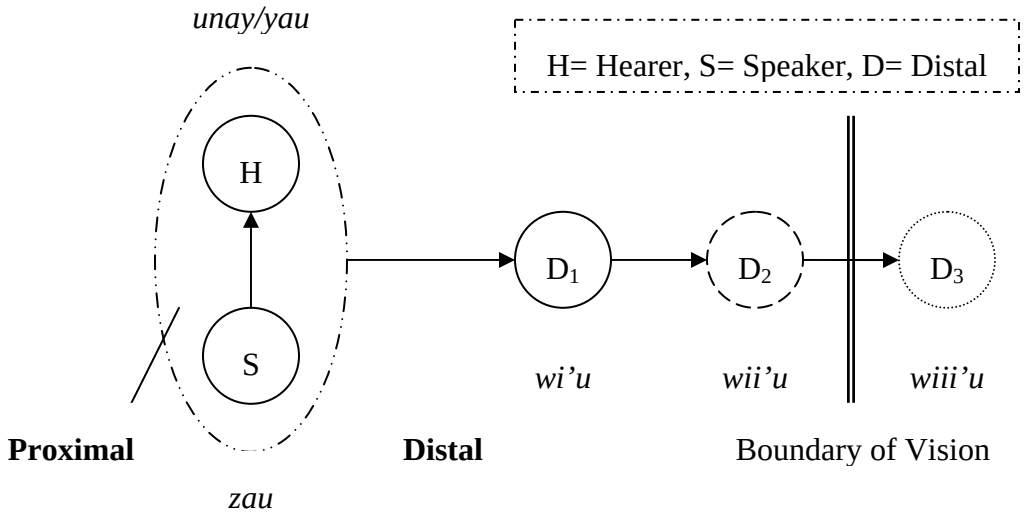


Figure 3.6 Conceptualizations of deictic space in Kavalan (a person-oriented three-term system)

According to Diessel (2003), three-term systems divide into two subtypes. One is called "distance-oriented", where proximal, medial, and distal are distinguished with respect to the distance away from a deictic center (e.g. *este*, *ese*, and *aquel* in Spanish). The other is termed "person-oriented", which takes into consideration the perspective of interlocutors, thus differentiating locations that are "near speaker", "near hearer", and "away from both speaker and hearer" (e.g. *kore*, *sore*, *are* in Japanese). As illustrated in Figure 3.6 above, Kavalan demonstrates a person-oriented three-term system, on a par with Japanese and

Bunun (see Zeitoun 2000: 76).[20] What's more interesting, the distal term *wi'u* can refer to locations that are variously distant from the speaker, either inside or outside the speaker's field of vision, and the vowel *i* receives a greater degree of lengthening (indicated by the increasing number of the vowel) as the location to be specified is farther away from the speaker.

Of great significance in constructing a spatial scene are the proximal near-hear *yau* and the distal *wi'u* in Figure 3.6 since they are morphologically identical or at least related to two spatial predicates, respectively *yau* and *wi*(*ya*).[21] In locative constructions *yau* refers to being in locations near the speaker while *wi* means being in locations away from the speaker, as contrasted in (90).[22]

(90) yau=iku ta libeng, wi=isu ta babaw
DEM.PROX=1SG.NOM LOC downside DEM.DIST=2SG.NOM LOC upside
'I am down here (while) you are up there.'

On the other hand, when these two predicates are cliticized by the perfective aspect marker *ti*, *yau* suggests motion into the speaker's visual field whereas *wiya* indicates motion out of the speaker's visual field. In other words, *yau=ti* and *wiya=ti* constitute something like a presentative construction, as illustrated below.

(91) a. yau=ti sunis 'nay
DEM.PROX=PFV child that
'Here comes the child.'
b. wiya=ti sunis 'nay
DEM.DIST=PFV child that
'There goes the child.'

Compared with deictic verbs *mautu* ‘to come’ and *matiw* ‘to go’, which are restricted to predicating over animate subjects, *yau=ti* and *wiya=ti* have wider applications. For example, the coming and going of seasons require the use of *yau=ti* and *wiya=ti*, rather than *mautu=ti* and *matiw=ti*, as in (92).

(92) a. yau=ti/*mautu=ti seqawalu
DEM.PROX=PFV/AF.come=PFV summer
‘The summer has come.’
b. wiya=ti/*matiw=ti seqawalu
DEM.DIST=PFV/AF.go=PFV summer
‘The summer has gone.’

Figure 3.7 below explains the conceptual correlations between these two demonstrative predicates *yau* and *wi*(*ya*) on the one hand and their related demonstrative pronouns on the other hand (see Section 4.2.3 for more discussions on *wi*(*ya*)). Basically, the semantic opposition between spatial predicates *yau* and *wi*(*ya*) is in accord with the deictic meanings of the two demonstrative pronouns, *yau* for proximal and *wi’u* for distal. To be more specific, although both *yau* and *wi* are capable of characterizing a static locative event, they differ in terms of the location of the Figure with respect to the deictic center. When the Figure is proximal to the deictic center, *yau* is used; however, when the Figure is distal to the deictic center, *wi* is used instead. Likewise, since *yau* is a proximal demonstrative, the predicate *yau=ti* may be conceptualized as “to move into the speaker’s proximity”, hence “to come, to appear”. On the other hand, as *wi’u* is a distal demonstrative, the predicate *wiya=ti* might be interpreted as “to move away from the speaker’s proximity”, hence “to go, to leave”. In either case, the perfective marker *ti*

helps to highlight a transitional movement, either arriving at or departing from the speaker's proximity.

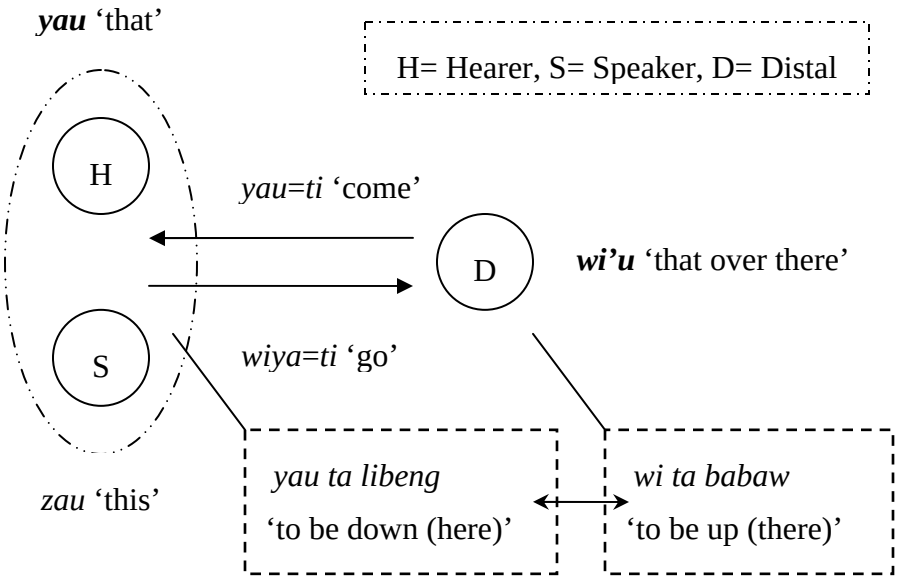


Figure 3.7 Conceptual correlations between demonstrative pronouns and demonstrative predicates

Moreover, it has to be noted that manner demonstratives *nazau* 'this way' and *nayau* 'that way' are in fact verbs which are inflected for Focus, as in (93). This result is not surprising, considering the fact that most adverbial modifiers in fact function like verbs in Kavalan, as in (94) (examples from Chang 2004: 3).

(93) mana nayau-an-su biyat-ku zin-na sunis 'nay
why that.way-LF-2SG.GEN frog-1SG.GEN say-3SG.GEN child that
'The child said, "Why did you (treat) my frog that way?"' (frog_ngengi, IU 19)

(94) a. paqanas=iku t<m>ayta tu sudad
AF.slow=1SG.NOM <AF>see OBL book
'I read books slowly/carefully.'

b. paqanas-an-ku t<m>ayta ya sudad
slow-LF-1SG.GEN <AF>see NOM book
'I read the book slowly/carefully.'

Likewise, the manner interrogative *naquni* 'what way, how' is also a verb, where *quni* has different meanings in different Focus constructions. The realis AF forms *q<um>uni* and *muni* ask about where one went or what one did. Similarly, the irrealis AF form *quni* asks about where one is going or what one is going to do. The following examples illustrate the point.[23]

(95) Q: q<um>uni=isu/muni=isu stángi
<AF>go.where=2SG.NOM/AF.go.where=2SG.NOM just.now
'Where did you go just now' or 'What did you do just now?'
A: matiw=iku m-Rasa tu tamun
AF.go=1SG.NOM AF-buy OBL vegetables
'I went to buy (some) vegetables.'

(96) Q: quni(=pa)=isu stangí
go.where=FUT=2SG.NOM today
'Where are you going today?' or 'What are you going to do today?'
A: stangi, qatiw=pa=iku sa bakung
today IRR.go=FUT=1SG.NOM LOC PN
'Today, I am going to Bakung.'

On the other hand, the LF forms *naquni-a/naquni-an* or simply *quni-a*/*quni-an* ask about what to do or how to do something, as illustrated in (97) and (98), where *-a* is the irrealis maker for NAF constructions and *-an* the LF marker.

(97) a. (na)quni-a-kita
do.what-IRR.NAF-1IPL.GEN
= b. (na)quni-an-ta
do.what-LF-1IPL.GEN
'What shall we do?' or 'How shall we do it?'

(98) Q: quni-an-su=pa qatiw sa bakung
do.what-LF-2SG.GEN=FUT IRR.go LOC PN
'How will you go to Bakung?' (lit. 'What will you do to go to Bakung?')
A: zaqis=pa=iku tu basu matiw sa bakung
take=FUT=1SG.NOM OBL bus AF.go LOC PN
'I will go to Bakung by bus.'

The different forms and functions of *quni* are illustrated in Figure 3.8.

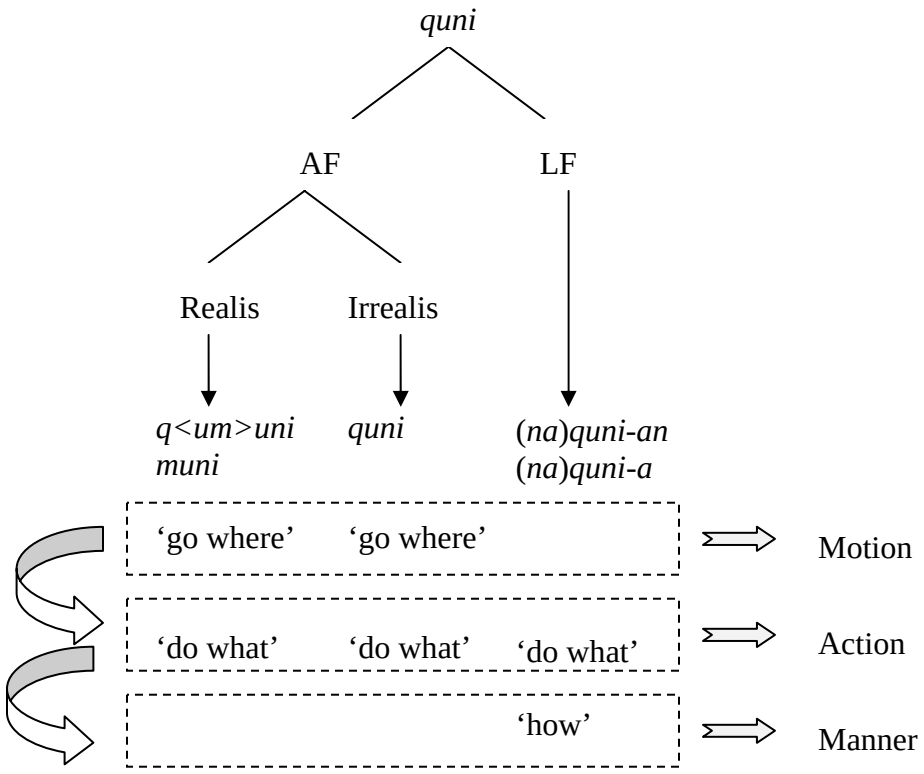


Figure 3.8 Metonymic relationships among motion, action, and manner: the case of *quni*

It is suggested that the multiple functions of *quni* root in its spatial meaning “go where”, and extends to the non-spatial meaning “do what” and then to “how” via two metonymies. Questions about one’s goal of motion and those about one’s action are metonymically related since normally one has to go somewhere in order to execute some action. On the other hand, since knowledge of one’s action metonymically implies the way one executes that particular action, it is motivated that the LF form of *quni* is used to ask about both.

3.3 Spatial Information in Open-class Forms

After introducing the closed-class forms that encode spatial information, we proceed to investigate open-class forms, which have received less attention in the literature, but which often provide too copious spatial information to be excluded from a complete discussion of spatial semantics. Spatial open-class forms in Kavalan can divide into two major categories: one is place nouns or toponyms, and the other Motion verbs. Since it is impossible to exhaust all the members in open-class forms, we shall only introduce some representative instances that serve to demonstrate the spatial semantic capacity therein.

3.3.1 Place nouns

Place nouns in Kavalan are more often than not derived from a lexical root plus the locative suffix *-an*, which is a morphological process commonly shared across Formosan languages. Beginning with toponyms, we plot three locations in Hsinshê Village, the hometown of the Kavalan people, as in Figure 3.9.

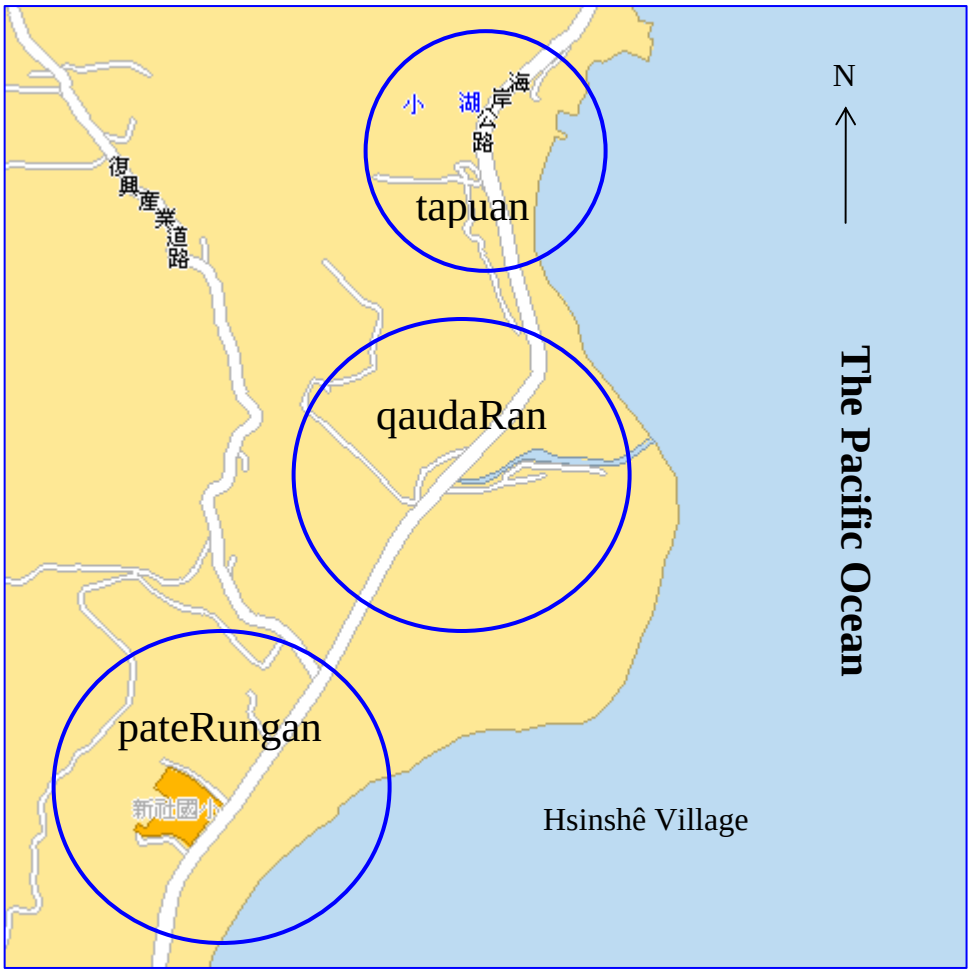


Figure 3.9 Three toponyms in Hsinshê Village

It is clearly shown that the three toponyms all end with the suffix *-an*, which marks them as locations. The literal meanings of these toponyms are, however, not as clear. First, since *tapu* is still a productive verb meaning "to block, to obstruct", *tapuan* (named Hsiaohu 'little lake' in Mandarin) probably means "the place that is blocked." As for *qaudaRan*, its meaning is a mystery, even to the local people. The third location *pateRungan* (named Hsinshê 'new settlement' in Mandarin), which centers at the Hsinshê Elementary School, means "where people temporarily stay" according to our informants, though the root *pateRung* is not in use anymore.[24]

In addition to toponyms, common terms for locations, especially those for modern facilities, also derive from verbal roots plus the suffix *-an*. Accordingly, a kitchen is where one cooks, a bathroom where one washes, and a school where one studies, as illustrated in (99) below. Aside from such activity verbs as in (99), stative verbs are also suitable for a similar derivation, which results into locations that are associated with some attributes, as in (100).

(99) a. sa'may-an 'cook-LOC' → 'kitchen'
b. uzis-an 'wash-LOC' → 'bathroom'
c. taqsi-an 'study-LOC' → 'school'

(100) a. ta Raya-an 'LOC big-LOC' → 'at a big place'
b. ta kitut-an 'LOC small-LOC' → 'at a small place'
c. ta seseng-an 'LOC cold-LOC' → 'at a cold place'

Given the productivity of the locative suffix *-an*, place terms in Kavalan tend to be derived morphologically, rather than monomorphemic. Interestingly, this is also true for the linguistic form expressing the notion WHERE/PLACE, which is claimed to be a semantic prime by some researchers (e.g. Wierzbicka 1989, 1986; Goddard and Wierzbicka 1994, 2002). Initially, the word *qizuan* is an independent verb meaning "to stay somewhere for some period of time", as in (101).

(101) qizuan=pa=iku ta pateRungan
stay=FUT=1SG.NOM LOC PN
'I am going to stay in Paterungan (for some period of time).'

However, its LF counterpart *qizuan-an* functions like the English relative adverb *where* when followed by other predicates, as illustrated in (102).

(102) a. tangan a yau, qizuan-an na ku a yau m-zukat
hole LNK that stay-LF GEN owl LNK that AF-exit
'That hole, it is where the owl comes out from.'
b. q<n>izuan-an-ku m-Rasa tu sudad zau ya tiam zau
<PFV>stay-LF-1SG.GEN AF-buy OBL book this NOM store this
'This store is where I bought this book.'

As it were, the Kavalan people may conceptualize the location where an event takes place as the location where the protagonist of that event temporarily stays.[25] In fact, Kavalan has, arguably, no generic term for the notion PLACE. If one wants to express something like "I have been to many places", the literal translation in Kavalan turns out to be "Where I have been to is many" (which is of course a bit awkward in English). Therefore, due to the pervasiveness of the suffix *-an*, either as a locative marker or as a Focus marker, notions like "place/location" are embedded right in the grammatical system, suggesting that they need not be conceptual primitives.

3.3.2 Motion verbs

Theoretically speaking, it is possible for each of the spatial semantic categories or their combinations to be encoded in Motion verbs. However, as Talmy's (1972, 1985, 2000b, 2005) typology of motion language reveals, only Path, Figure, or Co-event components are typically conflated with Motion. Although it is common for all these three types of lexicalization patterns to simultaneously appear in a single language, only

one of them is nevertheless the characteristic strategy adopted in that language. In other words, it is the preferred lexicalization pattern in a particular language that interests us most. To avoid an impressionistic conclusion, we shall approach this question with the help of a corpus since a hunter-gatherers' way of data elicitation is otherwise arbitrary. Therefore, we would like to postpone this issue in Kavalan until Chapter 4, where analyses are mostly based on spontaneous narratives by native speakers.

Nonetheless, for the purpose of demonstration we would like to exemplify an interesting case of Motion verbs, namely, those expressing upward and downward Motion. As a rule, the lexical choice varies from one case to another as the Ground or Figure involved in the upward/downward Motion differs. First, to describe a Figure moving upward/downward in the water, the two verbs *m-linamaw* 'float (up)' and *m-linemnem* 'sink' are used, as respectively illustrated in (103a) and (103b).

(103) a. Ringu=ti zata kebalan tu qa-linamaw-an
cannot=PFV 1IPL.POSS Kavalan OBL QA-float-NMZ
'Our Kavalan (stones) cannot float.' (Conv_abas&Raciang, IU 338)

b. wiya=ti m-linemnem mai=ti sudad-ta aita
leave=PFV AF-sink NEG=PFV writing-1IPL.GEN 1IPL.NOM
kebalan zin-na kwa aita
Kavalan say-3PL.GEN PART 1IPL.NOM
'Away sank (the stones), and thus our Kavalan writing was gone, thus they said. Alas, we…' (Conv_abas&Raciang, IU 339)

Second, since Path of vision often parallels Path of motion, it would be appropriate to look as well at movement in the visual domain, a typical kind of imagined Motion (see Section 2.1.2). The words responsible for the upward and downward movement of vision

are *situqaw* ‘look up’ and *situRku* ‘look down’ respectively. Though not allowing the prefixation of the Actor Focus marker *m-*, they are undoubtedly verbs since they are inflected for at least two different foci, as shown below:

(104) a. …(1.0) yau wasu ’nay situqaw pasazi ta babaw-an na paRin, /
EXIST dog that look.up hither LOC top-LOC GEN tree
‘The dog is looking up at the tree.’ (Frog_imui, IU 61)

b. situqaw-an-na ya tuliq a yau
look.up-LF-3SG.GEN NOM wasp LNK that
m-za-zukat=ti ya lazat-na
AF-RED-exit=PFV NOM person-3PL.GEN
‘So it looks up at the wasps when their members are coming out one by one.’ (Frog_api, IU 49)

Before going any further, we would like to have a brief discussion on the morphology of these two pairs of verbs: *m-linamaw* vs. *m-linemnem* and *situqaw* vs. *situRku*. On the one hand, the shared syllable *si* in the second pair is in fact a prefix, though the meanings of the roots *tuqaw* and *tuRku* are unknown. As for the meaning of the prefix *si-* in this case, only indirect evidence is available, which is given in the following contrast:

(105) a. m-quling=ti peRasku a yau
AF-lie.down=PFV bottle LNK that
‘The bottle went down (from upright to lying position).’

b. si-quling=pa=iku
SI-lie.down=FUT=1SG.NOM
‘I am going to lie down.’ (i.e. I am going to take a rest.)

As opposed to *m-quling*, which describes the falling down of an object, *si-quling* seems to involve some volition or intention on the part of the one who lies down. If this is true, we may likewise interpret the prefix *si-* in *situqaw* and *situRku* as the volition/intention necessary for directing one's vision upward or downward. On the other hand, the *li* in the first pair *m-linamaw* vs. *m-linemnem* is probably a prefix as well. The evidence comes from the reduplication pattern in Kavalan, where only (part of) the root is reduplicated. Accordingly, *situtuqaw* 'to keep looking upward' is acceptable, but *sisituqaw* is not. Likewise, while *m-linanamaw* 'to keep moving up (from inside the water)' is acceptable, but *m-lilinamaw* is not. This fact confirms the *li* here is a prefix and that *namaw* is the root. However, since the prefix *li* is not a productive form and has been fossilized in this pair of verbs (perhaps elsewhere as well), we could only guess at its possible meaning. A reasonable surmise is that it has something to do with the medium that makes the upward/downward motion possible, that is, the water.

Third, other than the two special cases mentioned above (i.e. moving in the water and guiding the path of vision), upward/downward Motion is for the most part expressed by the following verbs: *t<m>uqaz* 'ascend, enter' and *m-zaqis* 'ascend, climb' for upward Motion, and *s<um>niz* 'descend, exit' and *s<m>aRuR* 'descend, decline' for downward Motion. At first sight, members of these two groups seem interchangeable with each other, as illustrated in (106), which depicts motion up into or down out of a car.

(106) a. m-zaqis/t<m>uqaz tu qitun ni utay ya sunis-ku
AF-ascend/<AF>ascend OBL car GEN PN NOM child-1SG.GEN
'My child is getting into Utay's car.'

b. s<um>niz=iku/s<m>aRuR=iku ta qitun-an ’nay
<AF>descend=1SG.NOM/<AF>descend=1SG.NOM LOC car-LOC that
‘I’m getting out of the car.’

As the Ground changes, however, distribution patterns begin to emerge. For instance, while *t<m>uqaz* is acceptable for motion up to the mountains, *m-zaqis* is absolutely not, as contrasted in (107).

(107) t<m>uqaz=iku/*m-zaqis=iku tu naung
<AF>ascend=1SG.NOM/AF-ascend=1SG.NOM OBL mountain
‘I’m going up to the mountains.’

Conversely, when it comes to moving up a tree, *m-zaqis* is preferred over *t<m>uqaz*, as is evidenced in the following repair:

(108) .. **t<m>uqaz** pasazi ta- **m-zaqis** ta babaw na paRin, /
AF-ascend hither LOC AF-ascend LOC upside GEN tree
‘The child went up…, climbed up a tree.’ (Frog_imui, IU 67)

Given the examples above, it seems that *m-zaqis* is used for upward motion to a Ground that is so steep that one is forced to climb up to it with both hands (e.g. a tree, a cliff, etc.) whereas *t<m>uqaz* is upward motion to a Ground that involves only the use of feet (e.g. a hill, the stairs, etc.).

In addition, *t<m>uqaz*, rather than *m-zaqis*, is the counterpart of *s<um>niz*, since they express not only upward and downward motion respectively, but also inward and outward motion:

(109) a. *tuqaz-ka* ‘ascend-IMP.AF’: Go up; Get in.
b. *sniz-ka* ‘descend-IMP.AF’: Go down; Get out.

In spite of this, the antonymous pair *t<m>uqaz/s<um>niz* is restricted only to bounded entities that are large enough for humans to go into/out of, such as a house, a room, a car, and the like. Take the inward motion for example. If the Ground is large enough but is unbounded (e.g. a tunnel), the inward motion would require the verb *s<m>uRum* ‘enter’, rather than *t<m>uqaz*. Alternatively, if the Ground is bounded but not large enough (e.g. a bottle), the inward motion would require the verb *s<m>usuR* ‘enter’, instead of *t<m>uqaz*. A possible explanation of all these is that the Kavalan people associated motion into/out of a house with upward/downward motion at the time when their houses were once higher than the ground. Moreover, even when the referential identity between inward/outward motion and upward/downward motion has been disconnected, the conceptualization of taking the house as a reference point is equally significant, which explains the selectional restrictions on *t<m>uqaz/s<um>niz.* An indirect support for our explanation comes from Embaloh, spoken in Borneo. According to Adelaar (1997: 56), in Embaloh *anait* means both “up (away from the river)” and “into the house.” Similarly, *andoor/indoor* expresses both “down (towards the river)” and “leaving the house”. Crucially, many houses in Borneo are still built on posts ten to twenty feet from the ground, thus higher than the river or the ground.

To summarize this section, Figure 3.10 illustrates the conceptualizations of the four pairs of Path verbs that we have just discussed.

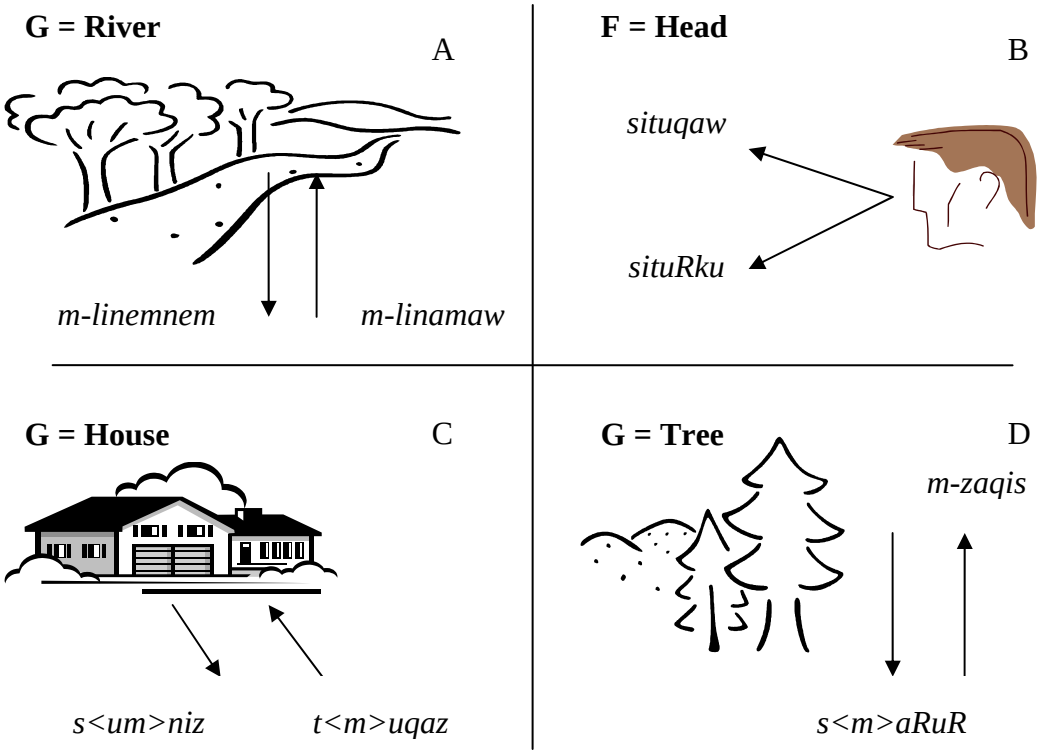


Figure 3.10 Verbs of upward/downward Motion in Kavalan

A demonstration like this makes clear two things. First, verbs expressing upward/ downward Motion at a schematic level are nonexistent since the lexical choice is dependent on some physical properties of the Ground/Figure. Second, the verb alone is sufficient for the expression of upward/downward Motion, without requiring other accompanying verbs (as in serial-verb languages) or Satellite-like elements (as in Satellite-framed languages).

3.4 Finale

In this chapter, we have investigated a variety of formal categories that express spatial meanings, including spatial locatives, directional verbals, locative nouns, cardinal directions, demonstratives, place nouns, and Motion verbs (specifically verbs of upward/downward Motion). Some important findings concerning each category are recapitulated as follows:

1. Spatial locatives: Kavalan has four types of spatial locatives, each assigning different local roles to a following nominal. Of these, the locative *ta* appears most dominant since it encodes not only Location but also Source, Goal, and Milestone given appropriate contexts. As a result, the interpretation of the local roles indicated by *ta* relies heavily on the semantics of the predicates, the contextual information about the "natural" interaction between Figure and Ground, and above all language users' world knowledge about space. Interestingly, spatial locatives *sa* 'to' and *qa* 'through' have evolved into some non-spatial meanings, which probably result from the shared schematizations between the spatial and non-spatial domain (see Figure 3.1 and Figure 3.2).

2. Directional verbals: Directional verbals are combinations of spatial locatives with spatial deictic nouns or the interrogative particle *ni*, and they either co-occur with Motion verbs or function independently as predicates. In addition to Motion verbs, directional verbals also co-occur with a number of other verb types, including verbs of transfer, verbs of perception/cognition/

utterance, and verbs of emotion, with each type resembling the conceptual structure of Motion verbs.

3. Locative nouns: Kavalan locative nouns delineate a specific Region of the Ground with which the Figure interacts. In terms of historical origins, they typically refer to artifacts (such as houses and beds) or the human body, both of which are common categories of reference objects recurrent in spatial grams (Svorou 1994). More importantly, as some asymmetrical Regions (such as anterior vs. posterior) display a larger repertoire of lexical items than their counterparts do, Kavalan reveals an asymmetrical categorization of asymmetrical spatial concepts.

4. Cardinal directions: Like locative nouns, cardinal directions are nouns in nature, but they possess characteristics of their own, both morpho-syntactically and semantically. In terms of the source model, cardinal east and west refer to the land-sea axis while cardinal north and south appeal to terms for the winds (Southeast Asian monsoons and north wind), a pattern consistent with most Malayo-Polynesian languages but divergent from other Formosan languages investigated.

5. Demonstratives: Kavalan adopts a person-oriented three-term system for demonstratives, that is, three different terms locating a referent along the distance between the speaker/hearer and the referent. Interestingly, there seems to be some conceptual correlations between the proximal near-hearer demonstrative *yau* and the distal demonstrative *wi'u* on the one hand and the

spatial predicates *yau* ‘exist, appear’ and *wi(ya)* ‘leave, disappear’ on the other hand (as in Figure 3.7).

6. Place nouns: Due to the pervasiveness of the suffix *-an* (either as a locative marker or as a Locative Focus marker), toponyms, place nouns, or even notions like “place/location” tend to be derived morphologically in Kavalan, rather than monomorphemic. This suggests that notions like “place/location” need not be conceptual primitives.

7. Motion verbs: Verbs expressing upward/downward Motion differ from one to another in terms of the physical properties of the Ground/Figure. An interesting example is the antonymous pair *t<m>uqaz* ‘ascend, enter’ vs. *s<um>niz* ‘descend, exit’, which has associated inward/outward Motion on the horizontal plane with upward/downward Motion on the vertical plane. Moreover, the expression of upward/downward Motion requires nothing but Path verbs, and other accompanying verbs or Satellite-like elements play much less important a role than in serial-verb or Satellite-framed languages.

In his typology of displacement (in the sense of Jackendoffian Path, or Talmy’s Vector), Wälchli (2001: 301) distinguishes three types of encoding: “verbal encoding (i.e. by the verb stem), adnominal encoding (i.e. by prepositions, postpositions, or case marking), and adverbal encoding (i.e. by verb affixes or verb particles)”. Each type of encoding is the locus of the expression of displacement. In a similar manner, we classify the morphosyntatic categories that express spatial information into three types of encoding: nominal, adnominal, and verbal. Table 3.15 below (the rows in gray are open-class forms while those in white are closed-class forms) demonstrates the mappings

between spatial semantic categories (i.e. function) and morphosyntatic ones (i.e. form) in Kavalan.

Table 3.15 The mappings between morphosyntatic and spatial semantic categories

Spatial semantic categories		**Motion**	**Vector**	**Region**	**Direction**	**FoR**
Morphosyntactic categories						
Nominal	Locative nouns			✓		✓
	Cardinal directions				✓	✓
	Demonstrative pronouns				✓	✓
	Place nouns					✓
Adnominal	Spatial locatives		✓			
	Demonstrative determiners				✓	✓
Verbal	Path verbs	✓	✓		✓	✓
	Demonstrative predicates (including directional verbals, *yau*/*wi*(*ya*), and place deictics)	✓	✓		✓	✓

Demonstrative predicates in this table include directional verbals (e.g. *pasazi* ‘hither’ and *maqzi* ‘hence’), two spatial predicates *yau*/*wi*(*ya*), and place deictics (e.g. *tazian* ‘here’ and *tawian* ‘over there’) since all of them are morphologically and semantically related to primitive demonstrative terms, such as -*zi* ‘here’ and -*zui*/*wi* ‘there’.

According to Table 3.15, we can identify two interaction modes between form and function. On the one hand, multiple check marks in the same row indicate the encoding of multiple spatial semantic categories in a single morphosyntatic category. For instance, Path verbs encode Motion, Vector, Direction, and Frames of Reference (FoR). On the other hand, multiple check marks in the same column suggest the distribution of one

spatial semantic category over multiple morphosyntatic categories. For example, Direction is distributed over cardinal directions and demonstrative pronouns in the nominal encoding, demonstrative determiners in the adnominal encoding, and finally Path verbs and demonstrative predicates in the verbal encoding.

In addition to multiple encoding and distribution, inferencing also plays an important role in the interaction between form and function, as emphasized in Bowerman *et al.* (2002). To illustrate the intricacy of these three factors, we would like to finish this chapter with the following examples:

(110) The same verb vs. different locatives

a. wi ta babaw ti-buya
DEM.DIST LOC upside PNM-PN
'Buya is up there.' [**Vector**: Location]

b. wi pasa babaw ti-buya
DEM.DIST LOC upside PNM-PN
'Buya goes up there' [**Vector**: Goal]

(111) Different verbs vs. the same locative

a. m-zukat=ti ta inpan-an-ku ya sunis-su
AF-exit=PFV LOC room-LOC-1SG.GEN NOM child-2SG.GEN
'Your child went out of my room.' [**Vector**: Source]

a. t<m>uqaz=ti ta inpan-an-ku ya sunis-su
<AF>ascend=PFV LOC room-LOC-1SG.GEN NOM child-2SG.GEN
'Your child entered my room.' [**Vector**: Goal]

(112) The same verb vs. the same locative

a. t<m>ibuq=ti ta denagt-an ya wasu a yau
<AF>fall=PFV LOC window-LOC NOM dog LNK that
'That dog fell down off the window.' [**Vector**: Source]

b. t<m>ibuq=ti ta zanum-an ya wasu a yau
<AF>fall=PFV LOC water-LOC NOM dog LNK that
'That dog fell into the water.' [**Vector**: Goal]

When the Path verb is held constant, the Vector information is determined by the spatial locative, as in (110). Conversely, if the spatial locative is held constant, it is the Path verb that is responsible for the Vector information, as in (111). If we hold constant both the Path verb and the spatial locative, inferencing would come into effect, as in (112). Since it is impossible to "fall down off the water", nor is it ordinary to "fall into the window" (unless obliquely), the Vector information in (112) is unambiguous regardless of the shared Path verb and spatial locative in both examples. Therefore, while the morphosyntatic categories in Table 3.15 are of significant status in spatial semantics, the role played by inferencing should never be underestimated. Meanings, after all, arise from our knowledge about the world in which we live.

Notes

[1] If the verb *mautu* ‘come’ is replaced by *matiw* ‘go’, the interpretation of the locative phrase *ta taqsian* will be different, as shown below.

maqzi=iku matiw ta taqsian

hence=1SG.NOM AF.go LOC school

‘I came from here and went to school.’

[2] The original table has two extra roles, named “optional presence” and “Locative continuum”, but they have been left out here since they are not relevant to our current discussion. The abbreviations in this table given by the original author are as follows:

Loc: location; Sou: Source; N: noun; NP: noun phrase; V: verb; CN: common noun; PsName: personal name.

[3] This is somewhat similar to Mandarin coverbs, or bleached verbs that indicate case relations. In Mandarin, while some coverbs are verb-like, others are more preposition-like.

[4] Both “*zana* N” and “*qeni*-N-*an*” express temporal source. Although the grammatical category and exact function of *zana* are temporarily unknown, it should not be confused with the third person possessive pronoun *zana* ‘his/hers/theirs’. Also, when the noun in “*qeni*-N-*an*” is absent, *qenian* constitutes a word by itself meaning ‘never’, as in the following example:

qenian mai=iku u-matiw sa taypaq

never NEG=1SG.NOM EXP-AF.go LOC Taipei

‘I have never been to Taipei.’

[5] Notice that “*ti-abas*” is not marked for the same case in these two readings. It is covertly marked for nominative case in the spatial reading, but locative case in the non-spatial reading.

[6] The temporal sense of *nizi*/*nayzi* is in a way similar to the recent past construction *venir de* in French, which also has a spatial origin. The following paired examples suffice for a rough comparison.

a. nizi=iku m-nanguy ta lazing-an

move.from=1SG.NOM AF-swim LOC sea-LOC

b. Je viens de nager dans la mer

1SG.NOM come from INF.swim in the sea

‘I just swam in the sea.’ (lit. ‘I just came back from swimming in the sea.’)

[7] We may consider the polysemous English verb "bear" in a similar manner, which means, just to name a few, "to move while holding up (objects)", "to bring forth (fruits)", "to give birth to (children)", "to have (something) as an inherent feature", all of which can be attributed to a spatial meaning "to move onward by pressure".

[8] In the literature, nouns used as locative markers has been variously labeled as "spatial orientation" (Frajzyngier 1989: 179), "locative relational words" (Schuh 1998: 213), "spatial relationship" (Pawlak 2001: 364), "genitive prepositions" (Newman 2000: 470), and "spatial region" (Svorous 2002: 124).

[9] Even in this exceptional situation, most of our informants have a second thought about this particular phrase.

[10] That interiority makes reference to a house is rather common across several Formosan languages (Blust 1997: 46). For example, "house" is *romaq* in Amis and *lumah* in Bunun while "inside, in" is *rarumaq* in the former and *i-lumah* in the latter.

[11] Unlike *pa-tuRuz* 'to face backwards', *pa-tu-ngayaw* 'to face' contains an extra syllable *tu*, which should not be confused with the oblique case marker *tu*. In this special case, the *tu* is probably a lexical part of the word *patungayaw*, considering some informants pronounce it as *patengayaw* instead.

[12] Nevertheless, *tuRuz* can also be prefixed by the AF maker, but in that case it means 'feel sleepy' (*m-tuRuz*). In addition, the morpheme *Ri*, when co-occurring with locative nouns, expresses extremity on a spatial scale. Similar examples are *Ri-ngayaw* 'RI-front, the farthest front' and *Ri-babaw* 'RI-upside, the highest place'.

[13] Interestingly enough, the medial region in Saisiyat is also expressed by a reduplicated disyllabic word, namely, *wazwaz*.

[14] Another term that refers to the surrounding area of a Ground is *zana*. For example, *ta zana kyukay* is "around the church" and *ta zana taqsian* "around the school".

[15] The suffix *-an* is frequently dropped out from *kawanan*, but not from *kawili*, and this difference is probably due to the reanalysis of the *an* in *kawanan* as the locative marker.

[16] "Sin. Arch." refers to the Formosan Language Digital Archive provided by Academia Sinica, which is accessible online at http://formosan.sinica.edu.tw/formosan/en/intro.htm.

[17] The other two sources are celestial bodies and general directions such as "left" and "right". These two models happen to be adopted by Paiwan, where the east-west axis makes reference to the rising/setting of the sun and the north-south axis relies on left and right.

[18] Interestingly, we find a similar distinction in Balinese, where "directional terms are always cliticized with *d(i)-* 'at' or *k(e)-* 'towards'" (Adelaar 1997: 56). Accordingly, *d-auh* in Balinese is "at the west" and *k-auh* means "towards the west".

[19] The initial consonant *s* in manner demonstratives and interrogative is only found in the utterances of older speakers and considered a trait of high-register speech. We shall not make reference to it in later discussions.

[20] Despite the illustration in Figure 3.6, the near-speaker proximal demonstrative *yau* can also refer to distal entities.

[21] According to Haude (2006), Movima (spoken in North-Eastern Bolivia) demonstratives syntactically serve as pronouns, determiners, and predicates, and functionally indicate existence, location, motion, and (temporary) possession, much like *yau* in Kavalan. In addition, the morpheme *'u* in *wi'u* might be an emphatic marker that helps to highlight the remoteness of the distal demonstrative. The following example shows another instance of this morpheme:

bangnged niz(-u) ta seqawalu-an

typhoon all-PART LOC summer-LOC

'Typhoons *all* occur in summer.'

Although the *u* here (the glottal stop is not contrastive and absent when preceded by consonants) is optional, its presence helps to emphasize the validity of the universal quantifier.

[22] Note that *wi=iku ta libeng* means "I keep being down here" instead since the first person pronoun is incongruous with the distal reading in the spatial deictic verb *wi*. In this case, *wi* functions as an aspectual marker rather than a Motion verb. The aspectual functions of *yau* and wi(*ya*) will be discussed in Section 4.2.3.

[23] The word *stangi* means "just now" when stressed on the first syllable (i.e. stángi), but means "today" when stressed on the second syllable (i.e. stangí).

[24] About one hundred years ago, the ancestors of the Kavalan people moved from Ilan County down to Hsinshê Village in Hualien County. When settling down at Hsinshê Village, they might have considered it a place only for temporary stay. However, Hsinshê Village has now become the major settlement of the Kavalan people.

[25] Safioedin (1977) reports a similar case in Madurese (an Austronesian on Madura Island in Indonesia), where the equivalent word for PLACE is *keneng-an* 'stay-AN'.

Chapter 4 Motion in Narratives: Finding the Way and the Frog

4.0 Preliminary

Notwithstanding the examination on Motion-expressing categories in the previous chapter, it is still unclear how Kavalan speakers refer to Motion in natural discourse. For that reason, in this chapter we shall investigate the structure of Motion expressions in narratives by focusing specifically on two questions. One is concerned with route knowledge as reflected in how Kavalan people guide wayfinders to find the way. By analyzing the recorded data from five speakers, we shall look into the distributions of different types of Frames of Reference (FoR) and spatial chunking (Klippel *et al*. 2003) in Kavalan route instructions.

The other question centers on the expression of Motion events in the Frog story. Modeled after Huang and Tanangkingsing (2005), our discourse analysis of eight Kavalan Frog narratives endeavors to reveal not only the status of Kavalan in Tamly's (1991, 2000b) Motion-framing typology, but also the morphosyntatic patterns of Motion components, the preferred construction type in discourse, and the relationships between Path and Manner components in the discourse on Motion events.

4.1 Finding the way: the Conspiracy of Frames of Reference

Crosslinguistically speaking, it is common for all the three Frames of Reference (FoR) to be present in the same language. However, they typically demonstrate some "division of labor" within a single language, with some preferred for micro-orientation

and others exclusively for macro-orientation. For instance, normally Mandarin does not use Geocentric FoR to describe table-top spatial configurations, but reserve it for large-scale descriptions only, especially for route directions. A convincing piece of evidence comes from Majid *et al.* (2004), who explores the FoR in twenty languages. Only four of them (i.e. Ewe from Niger-Congo, Kgalagadi from Bantu, Kilivila from Austronesian, and Tiriyó from Cariban) make use of the three FoRs on an equal basis (in this case, showing preference for micro-orientation). Therefore, it seems that different types of FoR, each in its unique manner, conspire to construct the space as we perceive it, whether across or within languages.

Bearing this in mind, we would like to discover how the three FoRs are exploited in Kavalan and whether there is preferred FoR under certain circumstances. To this end, we have chosen route directions as our object of investigation, for they are perfect loci for all the three FoRs to be present at the same time. For example, instructions like "turn left", "head for the south", or "follow the river upward" are crucial elements for inquirers to find out the way successfully. In this section, we shall first introduce some general ideas about route directions before looking into the direction-giving data from five native speakers. Some interim summaries will ensue after we go over the data from one speaker to another, hoping to probe the variations across speakers before establishing some generalizations.

4.1.1 Route directions

Giving route directions, though as simple as it seems, is in fact nothing straightforward as it involves quite a few prerequisites. First, to be able to give good

route directions, one has to have in mind a cognitive map of the real world to be described. Second, with a view to successfully guiding the inquirer from a point of departure to the destination, one has to make a series of decisions over what information should be included and what may be omitted. Third, in order to make the instructions understood, one still has to translate the spatial knowledge into linguistic utterances, which may differ largely not only across speakers of different languages but also over speakers of the same. The simplified model in Figure 4.1 from Lovelace *et al.* (1999) explains such a complicated process:

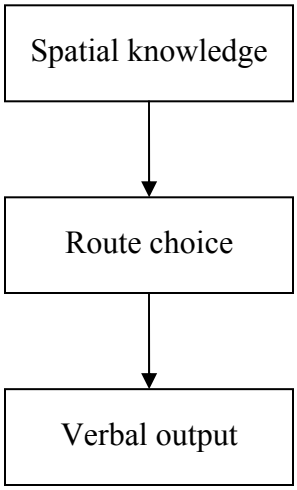


Figure 4.1 Simplified model of stages in route direction production (Lovelace *et al.* 1999)

Since it is impossible to examine spatial knowledge directly, the best we could do is to investigate the verbal output deriving from that particular knowledge.

With regard to route conceptualization, Klippel *et al.* (2003) identifies three features, namely, *decision points*, *landmarks*, and *ordering information*. A decision point is an intersection of roads, where one has to make a decision over which way to go. It is also at a decision point that a direction change (DP+) is very likely to occur. Next, a landmark

(not to be confused with Langacker's (1986) Landmark, which is equivalent to Talmy's (1983) Ground) is any prominent object en route that helps wayfinders identify a decision point, such as a gas station, a church, a store, and the like. Finally, ordering information provides wayfinders with the action to take at a particular decision point, such as turning right, heading southward, etc. As a result, route directions can be understood as instructions on which actions to take along a series of decision points identified by the landmarks in a given landscape. More concisely, a route is "a sequence of decision point/action pairs" (Richter *et al.* 2004: 4).

Although decision point/action pairs are fundamental elements in route directions, route instructors do not need to mention every pair explicitly to communicate a successful instruction. Instead, they frequently combine several decision point/action pairs into one route direction. This combination, believed to be "an important mechanism in route directions and conceptualization of routes" (Ricter and Klippel 2005: 64), is termed *spatial chunking* by Klippel *et al*. (2003) and *segmentation* by Dale et al. (2003). According to Klippel *et al*. (2003), three types of spatial chunking can be differentiated, as briefly elucidated in (1). Crucially, the type of spatial chunking is independent of the type of FoR that orients the action at a decision point. As is clear from the examples in (1), the same Viewpoint-centered FoR (i.e. "turn right") is maintained across three types of spatial chunking. Alternatively, it is possible for the same type of spatial chunking to be exploited across three different types of FoR, as is evidenced in instructions like "turn left at the church", "turn eastward at the church", and "turn to the tower at the church." For that reason, we shall examine both spatial chunking for decision points and FoR for accompanying actions.

(1) Three types of spatial chunking (summarized from Klippel *et al*. 2003: 22):

a. Numeral chunking: This type of chunking typically involves the use of numbers in the instruction, and numbers are used to count the decision points involving no direction change (DP-) between two decision points involving direction change (DP+). Instructions like "turn right at the second intersection" are of this kind.

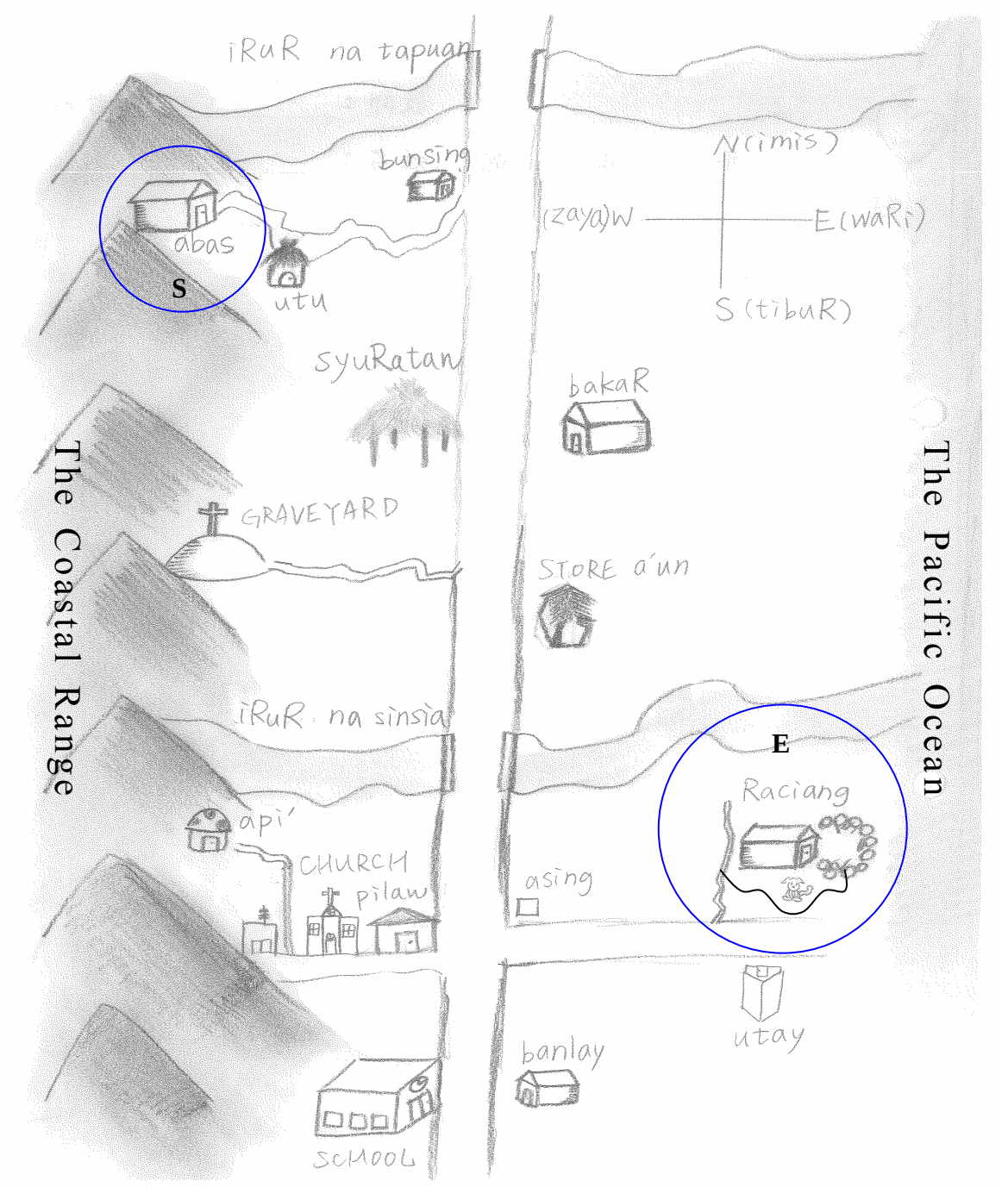
b. Landmark chunking: Instead of numbers, this second type identifies a decision point with a DP+ by means of landmarks, which are unambiguous in the local environment. It is illustrated by instructions like "turn right at the post office."

c. Structure chunking: Similar to landmarks, structural features inherent in a route (such as the fork of a road, a river, or a slope, etc.) can also function as identifiers of a decision point. Instructions that utilize these structural features are called structure chunking. Phrases like "turn right at the T-intersection" belong to this type.

Of the three types of FoR, the Geocentric system seems the most heterogeneous, and thus allows for further subgrouping. For example, when investigating space in two Tamil linguistic systems, Pederson (1993) subcategories Geocentric FoR into three kinds: (i) cardinal directions (abbreviated as NSEW), monsoonwards, and towards sunset/sunrise, etc., (ii) uphill/downhill, and (iii) inland/seaward. Considering this feature of the Geocentric system, we shall endeavor to differentiate different subtypes of Geocentric FoR when analyzing our data.

4.1.2 The way from *abas* to *Raciang*

Hsinshê Village is located at the coastal part of Fengpin Township, southeast of Hualien County, east of Taiwan. As sketched in Figure 4.2 below, the houses there are scattered along the Coastal Highway, which runs from north to south.



NOTE: *iRuR na tapuan* 'Tapuan River'; *iRuR na sinsia* 'Hsinshê River'; *syuRatan* 'the Gathering House'; the others are all names of the villagers.

Figure 4.2 A sketch of Hsinshê Village: the way from *abas* to *Raciang*[1]

To the east lies the Pacific Ocean while in the west stands the Coastal Range, which also runs from north to south. Within Hsinshê Village, north and west quadrants are generally higher than south and east. Consequently, in terms of extensional meanings the cardinal east and west in the local environment are respectively equated with seaward and inland or downward and upward.

The route from Abas' house to Raciang's (both are names of the informants), which we believe is the most complicated route available in Hsinshê Village, is about seven hundred meters long. To travel from the starting point (S) to the ending point (E), one has to move downhill following the path that leads to the highway, turn right (or southward) when reaching the highway, move straight down (or southward) until the intersection after Hsinshê Bridge, turn left (or eastward/seaward) at the intersection (with Asing's house at the corner), turn left again (or northward) to the path opposite to Utay's house, and finally turn right (or eastward/seaward) at the back of Raciang's house. In total, there are four occurrences of direction change, including two left turns and two right turns in terms of Viewpoint-centered FoR, or two eastward turns, one southward turn, and one northward turn in terms of Geocentric FoR.

Five informants were asked to narrate the route described above. All the route descriptions were tape-recorded and transcribed by the present author, and all the transcripts confirmed by one of the informants. Each transcript was divided into chunked route segments, and for each segment the following three parameters were coded:

(i) The involvement of direction change: DP+ for yes and DP- for no;

(ii) Types of FoR that orient the action to take at a particular decision point: GC for Geocentric, VC for Viewpoint-centered, and OC for Object-centered;

(iii) Types of spatial chunking that combine several decision points: NC for numeral chunking, LC for landmark chunking, and SC for structure chunking.

Unidentifiable or implicit values of a parameter were labeled N/A for non-applicable. Multiple types of FoR exploited in the same segment were equally appreciated, with each presented in the order of its occurrences in the discourse. Finally, for our present purposes, utterances irrelevant to route directions as well as disfluencies such as repetitions are omitted from the following transcripts.

4.1.2.1 Probing variations

First of all, the route instructions from Speaker A are given below:

The way from *abas* to *Raciang*---Speaker A

A1: *s<m>aRuR=ita nizi ta paw-an-ku Raw.*
<AF>descend=IIPL.NOM move.from LOC house-LOC-1SG.GEN PART
'We go down from my house.' [DP-; FoR = GC (up-down); SEG = N/A]

A2: *s<m>aRuR=ita nani, pasazi ta Raya-an=ay lazan.*
<AF>descend=IIPL.NOM DM hither LOC big-LOC=REL road
tu maszeq=ita tu Raya=ay lazan nani,
DM arrive=IIPL.NOM OBL big=REL road DM
pasa-tibuR=ti s<n>aqay-ta.
move.toward-south=PFV <PFV>walk-1IPL.GEN
'We go down toward the big road. We get to the big road, and we walk southward.' [DP+; FoR = GC (NSEW); SEG = SC]

A3: *wiya=ti t<m>uzus tu tiam nani, maszeq ta tia-tiana-an.*
leave=PFV <AF>reach OBL store DM arrive LOC RED-who-LOC
'We get to the store (there), and (we) arrive at someone's place.' [DP-; FoR = N/A; SEG = LC]

A4:	*yau*	*pasa*	*zaya*	*lepaw-na,*	*lazan-na*	*ni*	*pilaw*	*nani,*
	EXIST	toward	west	house-3SG.GEN	road-3SG.GEN	GEN	PN	DM
	naRin	*t<m>uqaz*		*pasa zaya.*	*pasa-kawili-ka*		*s<m>aRuR.*	
	NEG	<AF>ascend		LOC west	move.toward-left-IMP.AF		<AF>descend	

'Toward the west is the way to Pilaw's house, (so) do not go up toward the west. Go down to the left (instead).' [DP+; FoR = VC/GC (up-down); SEG = LC]

A5:	*saRuR-ka=ti*		*pasa*	*libeng*	*si.*	*muzus*	*tu*
	descend-IMP.AF=PFV		LOC	downside	SI	AF.reach	OBL
	siliw-an	*na lazan*	*ni*	*Raciang*	*nani,*		
	turn-NMZ	GEN road	GEN	PN	DM		
	pasa-kawili-ka=ti		*s<m>iliw*	*si.*			
	move.toward-left-IMP.AF=PFV		<AF>turn	SI			

'Go downward. When (you) get to a turn to the street on which Raciang's house is, turn left.' [DP+; FoR = VC; SEG = SC]

A6:	maszeq	tu	tuqeb	na	lepaw	ni	Raciang	nani,
	AF.arrive	OBL	back	GEN	house	GEN	PN	DM
	pasa-kawanan=ti=ita				s<m>aRuR.			
	move.toward-right=PFV=IIPL.NOM				<AF>descend			
	tu	tayan	a	lepaw	ni	Raciang.	maszeq=ti	tayan.
	DM	there	NOM	house	GEN	PN	arrive=PFV	there

'(We) get to the back of Raciang's house, and we go down to the right. And then Raciang's house will be there. Here we are.' [DP+; FoR = VC/GC (up-down); SEG = LC]

On the whole, Speaker A's instructions are clear enough since the four occurrences of DP+ were all explicitly identified. However, there is a gap between A3 and A4. In A3, the speaker mentioned the store, but suddenly switched to Pilaw's house in A4. What's more, it is difficult for wayfinders to find out the correct decision point in A4 since its identification requires prior knowledge of the location of Pilaw's house.

Of the four occurrences of DP+, only the first makes reference to cardinal directions (A2) while the others all rely on the left-right axis (A4, A5, and A6). In spite of this,

when identifying the path to Pilaw's house (A4), the speaker refers to it as "toward the west", rather than "toward the right", as would have been the case had the Viewpoint-centered FoR been adopted. More importantly, even when referring to the Viewpoint-centered left-right axis, the speaker is at the same time quite aware of the Geocentric up-down axis, as evidenced in utterances like *pasa-kawili-ka s<m>aRuR* (A4) and *pasa-kawanan=ti=ita s<m>aRuR* (A6).

Next, the instructions from Speaker B are as follows:

<u>The way from *abas* to *Raciang*</u>---Speaker B

B1: *tu wiya=ti=imi s<m>aRuR nani.*
DM leave=PFV=1EPL.NOM <AF>descend DM
'And then we go down there.' [DP-; FoR = GC (up-down); SEG = N/A]

B2: *maszeq ta Raya-an=ay lazan nani, pasa-tibuR=ti=imi.*
arrive LOC big-LOC=REL road DM move.toward-south=PFV=1EPL.NOM
'When arriving at the big road, we go southward.' [DP+; FoR = GC (NSEW); SEG = SC]

B3: *tu maszeq=ti tu damu na iza'u tawian ta sinsia nani, azas-an-ku=pama.*
DM arrive=PFV OBL village GEN FIL there LOC PN DM take-LF-1SG.GEN=still
'And then when we arrive there at Hsinshê Village, I still (have to) keep leading the way.' [DP-; FoR = N/A; SEG = LC]

B4: *pasa-waRi ya lepaw ni Raciang zin-ku sunis a zau, tu pasazi=imi pasa waRi.*
be.toward-east NOM house GEN PN say-1SG.GEN child LNK this DM hither=1EPL.NOM LOC east
'I told the child that Raciang's house is toward the east, and then we go eastward.' [DP+; FoR = GC (NSEW); SEG = N/A]

B5: *tu* *yau* *a* *lazan* *a* *yau.* *pasa-imis* *'nay.*
DM EXIST NOM road LNK that. be.toward-north that
pasazi *ya* *lepaw* *ni* *Raciang* *zin-ku* *tu* *sunis*
hither NOM house GEN PN say-1SG.GEN OBL child
a *zau* *pa-supaR* *nani.* *yau=ti* *ya* *iza'u*
LNK this CAU-know DM EXIST=PFV NOM FIL
lepaw *ni* *Raciang.*
house GEN PN

'And then there is a path, (and) that is toward the north. I told the child, "Raciang's house is this way." (Here we are) at Raciang's house.' [DP+; FoR = GC (NSEW); SEG = SC]

Similar to Speaker A's instructions, there is also a gap between B3 and B4. In B3, the speaker suggested that wayfinders move on after reaching Hsinshê Village, but she did not indicate the decision point where they should turn eastward in B4.[2] Maybe it is because the speaker imagined herself moving together with wayfinders and showed them the intersection to turn by leading ahead (hence *pasazi=imi pasa waRi* 'We go eastward.' in B4).

Furthermore, the speaker demonstrates a consistent use of FoR. Specifically, the Geocentric FoR is utilized across all of the three occurrences of DP+ (B2, B4, B5). Nevertheless, unlike in B2 and B4, the instruction in B5 is rather roundabout. Instead of simply asking wayfinders to turn northward, the speaker first indicated the existence of a path that runs northward and then told wayfinders to track that path she just mentioned.

Now, we turn to the route descriptions from Speaker C:

The way from *abas* to *Raciang*---Speaker C

C1: *s<m>aRuR=ti=ita.*

<AF>descend=PFV=IIPL.NOM

'We start to go down.' [DP-; FoR = GC (up-down); SEG = N/A]

C2: *s<m>aRuR=ita* *pasa Raqit* *nani.*

<AF>descend=IIPL.NOM LOC crowd DM

'We go down toward the crowd.' [DP+; FoR = GC(up-down)/OC; SEG = N/A]

C3: *syazi* *ta* *Raqit-an* *ta* *tiam-an,* *pasa-waRi=ita.*

reach LOC crowd-LOC LOC store-LOC move.toward-east=IIPL.NOM

yau *lazan* *qatiw* *sa* *taqsian* *nani,*

EXIST road IRR.go LOC school DM

s<m>aRuR=ita *pasazi* *ti-Raciang-an* *aizipana.*

<AF>descend=IIPL.NOM hither PNM-PN-LOC 3SG.LOC

'After reaching the crowd around the store, we move eastward. There is a road leading to the school, (but) we go down toward Raciang's house.' [DP+; FoR = GC (NSEW/up-down); SEG = LC]

Compared with the first two speakers, Speaker C contributed a rather contracted version of the route description. Of the four occurrences of DP+, only two were mentioned (C2 and C3). Interestingly, both of them were each identified by two types of FoR. In C2, *s<m>aRuR* 'descend' and *pasa Raqit* 'toward the crowd' appeal to the Geocentric and Object-centered FoR respectively. Since the Coastal Highway and the path to Abas' house form a T-intersection, wayfinders are left with only two alternatives, that is, turning either left (northward) or right (southward). Additionally, as the north is higher than the south due to the geographical layout, a downward movement (*s<m>aRuR* 'descend') suggests a southward movement. To the same effect, movement toward the village center (*pasa Raqit* 'toward the crowd'), where the church and the school are located, implies movement toward the south. On the other hand, the speaker also specified downward movement (*s<m>aRuR* 'descend') in C3, as in C2, but this time the intended direction is different. Since south and east quadrants are both lower, downward

movement may refer to either the south or the east. To avoid ambiguity, the speaker first resorted to the cardinal directions (*pasa-waRi=ita* 'we go eastward') before employing the up-down axis for reference. As a result, two subtypes of the Geocentric FoR are exploited simultaneously in the same segment.

We turn next to the transcripts from Speaker D:

The way from *abas* to *Raciang*---Speaker D

D1: *tu s<m>aRuR=imi nani, lepaw na baqi ti-utu.*
DM <AF>descend=1EPL.NOM DM house GEN grandfather PNM-PN
'We go down, (and we'll see) Grandpa Utu's house.' [DP-; FoR = GC(up-down); SEG = LC]

D2: *s<m>aqay=ti=imi tu s<m>aRuR=ti=imi,*
<AF>walk=PFV=1EPL.NOM DM <AF>descend=PFV=1EPL.NOM
m-laziw tu iRuR.
AF-cross OBL river
'We start to walk down, (and we) cross the river.' [DP-; FoR = OC; SEG = SC]

D3: *maszeq=imi m-laziw=imi tu iRuR na tapuan,*
arrive=1EPL.NOM AF-cross=1EPL.NOM OBL river GEN PN
tu pasa-tibuR=ti ngayaw-niq.
DM move.toward-south=PFV front-1EPL.GEN
'We reach and cross Tapuan River, and we head toward the south.' [DP+; FoR = GC(NSEW); SEG = SC]

D4: *ma-qayta=ti ya lepaw ni sikiyu. tu sanu-an-ku pataqsian*
MA-see=PFV NOM house GEN PN DM say-LF-1SG.GEN student
zau lepaw ni sikiyu, zau lepaw na suani-ku
this house GEN PN this house GEN younger.sibling-1SG.GEN
ni a'un, zau nani, lepaw ni ngengi paysiaq zin-ku.
GEN PN this DM house GEN PN PN say-1SG.GEN
tu wiya=ti=imi.
DM leave=PFV=1EPL.NOM

‘Sikiyu’s house can be seen. And I say to the students, “This is Sikiyu’s house, this is my sister Aun’s house, and this is Ngengi Paysiaq’s house.” And then we leave.’ [DP-; FoR = N/A; SEG = LC]

D5: *yau=ti* *iRuR* *na* *sazan,* *ma-qayta-ku=ti* *ya* *lepaw* *na*
EXIST=PFV river GEN bridge MA-see-1SG.GEN=PFV NOM house GEN
qaqa-ku *ni* *api’*
older.sibling-1SG.GEN GEN PN
‘(We come) to the bridge, from where I can see my sister Api’s house.’ [DP- ; FoR = N/A; SEG = SC]

D6: *yau=ti* *ya* *taqsian,* *yau* *a* *kyukay* *na* *tensukyu,*
EXIST=PFV NOM school EXIST NOM church GEN Catholicism
s<m>aRuR *pasa* *waRi* *ngayaw-niq.*
<AF>descend LOC east front-1EPL.GEN
‘(When seeing) the school and the Catholic church, we head down toward the east.’ [DP+; FoR = GC(up-down/NSEW); SEG = LC]

D7: *pasa-waRi* *ngayaw-niq* *nani,* *ma-tayta-ku=ti*
move.toward-east front-1EPL.GEN DM MA-see-1SG.GEN=PFV
lepaw *ni* *cin’ay.* *tu* *pasa-kawili=ti=imi.*
house GEN PN DM move.toward-left=PFV=1EPL.NOM
‘We head toward the east, (and) I see Cinay’s house. And then we turn left.’ [DP+ ; FoR = VC; SEG = LC]

A characteristic of these route directions is the frequent mention of villagers’ houses (*utu*, *sikiyu*, or *bakaR* as shown in Figure 4.2, *a’un*, *ngengi paysiaq, api’*, and *cin’ay*). Since Hsinshê Village is rather small and all villagers know each other, the villagers’ houses become convenient landmarks for the speaker to guide wayfinders through the village. To outsiders, however, local landmarks of this kind are evidently hindrance rather than assistance.

Another feature in Speaker D’s utterances is the indication of orientation by the use of body-part terms. For example, compare the following equivalent pair from Speaker B and Speaker D:

(2) a. *pasa-tibuR=ti=imi*. [B2]
b. *pasa-tibuR=ti ngayaw-niq*. [D3]
'We go southward.'

While the grammatical subject in (2a) is *=imi* 'we (exclusive)', that in (2b) is *ngayaw-niq* 'our (exclusive) front'. Utterances similar to (2b) are also found in D6 and D7 (*pasa-waRi ngayaw-niq*). The equivalent pair in (2) implies that directional phrases are capable of predicating over either an individual as a whole or part of that individual. In the latter case, the body-part term *ngayaw* 'front' helps to specify the orientation of an individual who faces or moves toward certain direction.[3]

Lastly, the most detailed route instructions come from Speaker E:

The way from *abas* to *Raciang*---Speaker E[4]

E1: *pasazi-ka* *sinunung-ika* *lazan zau pasa libeng.*
hither-IMP.AF move.along-IMP.NAF road this LOC downside
'Go down along this road.' [DP-; FoR = GC(up-down); SEG = SC]

E2: *maseq=isu* *ta* *Raya-an=ay* *lazan* *si,*
arrive=2SG.NOM LOC big-LOC=REL road SI
pasa-kawanan-ka=ti *s<m>aqay.* *sinunung-ika* *lazan*
move.toward-right-IMP.AF=PFV <AF>walk move.along-IMP.NAF road
s<m>aRuR *pasa* *imis,* *usa,* *pasa* *tibuR.*
<AF>descend LOC north no LOC south
'When you come to the big road, walk toward the right. Go down the road, (and) move toward the north, no, toward the south.' [DP+; FoR = VC/GC(NSEW); SEG = SC]

E3: *m-laziw=isu* *ta* *tabay-an* *lazan* *nani,* *ta* *kawili-an*
AF-cross=2SG.NOM LOC wide-LOC road DM LOC left-LOC
ma-tayta-su *lepaw* *ni* *ti-bakaR* *si,* *paqesen-ika*
MA-see-2SG.GEN house GEN PNM-PN SI straight-IMP.NAF
ni-saqay-su *s<m>aRuR* *uman.*
NI-walk-2SG.GEN <AF>descend again

‘After you cross the wide road, to the left you’ll see Bakar’s house. Then walk straight down again.’ [DP-; FoR = GC(up-down); SEG = LC]

E4: *m-laziw* *tu* *syuRatan* *na* *sinsia* *pateRungan* *nani,*
AF-cross OBL gathering.house GEN PN PN DM
uman-ka *uman* *s<m>aRuR.*
again-IMP.AF again <AF>descend
‘After (you) pass the Gathering House at Hsinshê , or Paterungan, go down again and again.’ [DP-; FoR = GC(up-down); SEG = LC]

E5: *maseq tu qaudaRan nani, qatuRiyas-ka uman.*
arrive OBL PN DM straight-IMP.AF again
‘When arriving at Qaudaran, go straight again.’ [DP-; FoR = N/A; SEG = LC]

E6: *m-laziw=ita tu sazan na sinsia.*
AF-cross=IIPL.NOM OBL bridge GEN PN
‘We cross Hsinshê Bridge. [DP-; FoR = OC; SEG = SC]

E7: *m-laziw* *tu* *sazan* *’nay* *nani,* *ma-qayta=ti* *lepaw-na*
AF-cross OBL bridge that DM MA-see=PFV house-3SG.GEN
ni *asing.* *yau* *lazan* *’nay* *kitut=ay* *pasa-waRi=ay*.
GEN PN EXIST road that small=REL move.toward-east=REL
pasa-lazing *si,* *pasa-kawili-ka=ti* *k<m>ulikuz* *tu*
move.toward-sea SI move.toward-left-IMP.AF=PFV <AF>follow OBL
lazan ’nay.
road that
‘After crossing that bridge, (you’ll) see Asing’s house. There is a small road leading to the east. To go to the sea, turn left and follow that road.’ [DP+; FoR = GC(NSEW/land-sea)/VC; SEG = LC]

E8: *maseq=isu* *tayan* *nani,* *ma-qayta=ti* *lepaw* *na* *qani* *utay.* *ta*
arrive=2SG.NOM there DM MA-see=PFV house GEN QANI PN LOC
kawili-an-na *yau* *u-siq* *lazan* *kitut=ay.*
left-LOC-3SG.GEN EXIST CLF.NHUM.one road small=REL
s<m>aRuR *qaya.*
<AF>descend also
‘When you arrive there, (you’ll) see Utay’s house. To the left is a small road. Go down (along it) as well.’ [DP+; FoR = VC/GC(up-down); SEG = LC]

E9: *sa-kawili-ka=ti* *s<m>aRuR* *sinunung*
move.to-left-IMP.AF=PFV <AF>descend move.along
tu *lazan* *si,* *atu* *u-lima* *betin* *siyu*
OBL road SI and CLF.NHUM-five ten SIYU
'nay *qa-daud-an.* *ta* *kawi-* *ta* *kawanan-an* *maseq=ti*
that QA-far-NMZ LOC left LOC right-LOC arrive=PFV
lepaw-na *ni* *Raciang.* *pa-tuRuz* *tu* *lazan* *lepaw* *ni*
house-3SG.GEN GEN PN CAU-back OBL road house GEN
Raciang *si.* *pasa-kawanan-ika* *si,* *s<m>aRuR* *si,*
PN SI move.toward-right-IMP.NAF SI <AF>descend SI
maseq=ti *ta* *nasan* *na* *qaniyau*
arrive=PFV LOC yard GEN 3PL.OBL
'Go down toward the left, (and) follow the road, and the distance is about fifty meters long. To the left, to the right appears Raciang's house. Her house faces the road backward. Turn right and go down, (and we'll) arrive at their (i.e. the members in Raciang's family) (front) yard.' [DP+; FoR = VC/GC(up-down); SEG = NC]

In spite of these detailed instructions, Speaker E seems to be a little hesitant about the accurate directions, for he made two repairs on them. In E2, after correctly guiding wayfinders to turn right, the speaker changed to the Geocentric FoR by directing wayfinders to turn north, which is a wrong instruction. Aware of this mistake, he immediately repaired *pasa imis* 'toward north' with *pasa tibuR* 'toward south'. Again in E9, when indicating the location of Raciang's house, the speaker repaired the truncated phrase *ta kawi-* 'to the left' with *ta kawanan-an* 'to the right'. This might not result so much from the speaker's problems with cardinal directions or the left-right axis as from his long absence from the local environment, since he moved away from Hsinshê Village at his late twenties.

Probably for the same reason as stated above, the speaker tends to elaborate on his instructions. An extreme example comes from E7, where three different systems of FoR

are exploited to specify the same direction. After speaking of a small road that leads to the east (*yau lazan 'nay kitut=ay pasa-waRi=ay*), the speaker directed wayfinders to follow that road toward the sea by turning left (*pasa-lazing si, pasa-kawili-ka=ti k<m>ulikuz tu lazan 'nay*). In fact, simply "follow that road" would have been informative enough since the intended direction had been laid out in the modification of the road (*pasa-waRi=ay* 'toward the east'). Nevertheless, the speaker elaborated on the direction by introducing two more directional phrases (*pasa-lazing* 'toward the sea' and *pasa-kawili* 'toward the left'), with each employing different types of FoR. As a result, there are in total three directional phrases used to identify the same direction, two of which belong to subtypes of the Geocentric FoR and the other to Viewpoint-centered.

4.1.2.2 Establishing generalizations

To generalize the route descriptions demonstrated above, Table 4.1 illustrates the tokens of the three coded parameters across the five speakers, namely, direction change (DP), Frames of Reference (FoR), and spatial chunking (SEG)[5].

Table 4.1 Tokens of the three parameters in route directions

	DP		Frames of Reference					Spatial Chucking		
	+	-	GC			VC	OC	SC	LC	NC
			NSEW	up-down	land-sea					
Speaker A	4	2	1	2	0	2	0	2	3	0
Speaker B	3	2	3	1	0	0	0	2	1	0
Speaker C	2	1	0.5	2	0	0	0.5	0	1	0
Speaker D	3	4	1.5	1.5	0	1	1	3	4	0
Speaker E	4	5	0.8	4	0.3	1.8	1	3	5	1
Total			**6.8**	**10.5**	0.3	4.8	2.5	10	14	1

As can be expected, of the three types of spatial chunking numeral chunking is the least favored one. There is only one token for numeral chunking, which occurs in E9 (*atu u-lima betin siyu 'nay qa-daud-an* 'The distance is about fifty meters long.'). Between the other two types, moreover, landmark chunking is more popular as a way to segment decision points. This result is understandable, considering the fact that structural features within Hsinshê Village are confined to the Coastal Highway as well as Tapuan and Hsinshê River/Bridge while recurrent landmarks include villagers' houses (*bakaR, a'un*, *api'*, *utay*, *asing*, etc.), toponyms (*qaudaRan* and *pateRungan*), the store, the church, and the school. The pervasive occurrences of villagers' houses in Kavalan route directions seem to be an inevitable result of the lack of special landmarks in the local landscape. A similar case is also found in the route directions from the Yupno in Papua New Guinea. When narrating the route from Tapen via Gua to Urop (all names for villages), the Yupno constantly enumerate the villages and resting places that have to be traversed (Wassmann 1997: 155). Villagers' houses as well as villages and other toponyms, though convenient points of reference, are rather difficult for outsiders to identify. Consequently, finding the way in Hsinshê Village involves much knowledge not only of the local geography but also of where the local people live.

In addition, though the whole route descriptions include just four occurrences of direction change, only two speakers mention all of them. More importantly, the four occurrences of direction change do not demonstrate a consistent deployment of any particular type of FoR, both within and across speakers, as illustrated in Table 4.2.

Table 4.2 Reference objects or directions for the four occurrences of DP+

	1st DP+	2nd DP+	3rd DP+	4th DP+
Speaker A	'south'	'left; down'	'left'	'right; down'
Speaker B	'south'	'east'	'north'	N/A
Speaker C	'the crowd'	'east; down'	N/A	N/A
Speaker D	'south'	'down; east'	'left'	N/A
Speaker E	'right; south'	'east; sea; left'	'left; down'	'right; down'

While the Geocentric FoR is exploited by all the speakers, the Viewpoint-centered FoR is adopted by three and the Object-centered FoR is only restricted to Speaker C. What's more, no speakers employ the same type of FoR across all occurrences of DP+, except for Speaker B, who consistently refers to the cardinal directions. These results may imply the Geocentric FoR is the commonest reference system in Kavalan route directions, and that the NSEW subtype is well-established across different direction changes.

The prominent status of the Geocentric FoR in Kavalan is further evidenced in Table 4.1, where the tokens for the Geocentric FoR outnumber those for the Viewpoint-centered and Object-centered (respectively 17.8, 4.8, and 2.5). Of the three subtypes of the Geocentric FoR, reference to cardinal directions and the up-down axis is noticeably more frequent whereas reference to the land-sea axis is extremely rare (6.8 for NSEW, 10.5 for up-down, and 0.3 for land-sea). The two extremes with the up-down axis on the one hand and the land-sea axis on the other are worth some explanations. For one thing, the high frequency of reference to the up-down axis results from the speakers' constant awareness of the altitude change even when the direction has been indicated by cardinal points or the left-right axis. Take the second DP+ in Table 4.2 for example. Other than cardinal points or the left-right axis, three of the speakers referred to the up-down axis as

well. As for the low frequency of reference to the land-sea axis, it might have something to do with the conceptual sources of the cardinal directions in Kavalan. As has been argued earlier (Section 3.2.4), cardinal east (*waRi*) and west (*zaya*) in Kavalan are conceptually intertwined with "seaward" and "uphill" respectively. Given this conceptual association, reference to cardinal east and west prevails over reference to the sea (*lazing*) and the mountain (*naung*), thus yielding the low tokens of reference to the land-sea axis (the only example being *pasa-lazing* 'toward the sea' in E7).

Finally, in terms of the syntactic structures that express both direction and action, two constructions are recurrent, as illustrated in (3).

(3) Two constructions that express both action and direction:

a. Direction after Action: *t<m>uqaz pasa zaya* [A4], *saRuR-ka=ti pasa libeng* [A5], *s<m>aRuR=ita pasa Raqit* [C2], *s<m>aRuR=ita pasazi ti-Raciang-an aizipana* [C3], *s<m>aRuR pasa waRi ngayaw-niq* [D6], *s<m>aRuR pasa imis, usa pasa tibuR* [E2]

b. Direction before Action: *pasa-kawili-ka s<m>aRuR* [A4], *pasa-kawili-ka=ti s<m>iliw* [A5], *pasa-kawanan=ti=ita s<m>aRuR* [A6], *pasa-kawanan-ka=ti s<m>aqay* [E2], *pasa-kawili-ka=ti k<m>ulikuz tu lazan 'nay* [E7], *sa-kawili-ka=ti s<m>aRuR sinunung tu lazan* [E9]

Interestingly enough, when direction follows action (3a), the FoR exploited is either Geocentric or Object-centered. When direction precedes action (3b), however, the FoR is exclusively Viewpoint-centered. Although the other way around is not prohibited, this distribution should mean nothing less than a coincidence. It seems that the Kavalan people are conscious of the uniqueness of the Viewpoint-centered FoR and organize it differently by changing the linear ordering between action and direction. A possible explanation is that the ternary relationship in the Viewpoint-centered FoR (among the Figure, the Ground, and the viewer), as opposed to the binary relationship in the

Geocentric and Object-centered FoR (between the Figure and the Ground), generates a different degree of cognitive complexity, which contributes to the eventual difference in syntax as shown in (3).

4.1.3 Interim summary

For the first part of this chapter, we have analyzed the route directions from five speakers narrating the way from Abas' house to Racinag's in Hsinshê Village. Although different rout directions that guide wayfinders through the same route may be considered equal from a pragmatic point of view, they are very likely to vary on the conceptual level (Richter and Klippel 2005: 60). The conceptual variations are mostly reflected in different types of FoR exploited for the direction change at the same decision point as well as different types of spatial chunking that segment a sequence of decision points into a unit. For example, at the decision point where the path to Abas' house and the Coastal Highway meet, attested descriptions include "toward the south", "toward the right", and "toward the crowd", with each creating a different conceptualizations of the real world.

Due to the geographical layout in Hsinshê Village, the west-east axis corresponds to the land-sea and up-down axes while the north-south axis to the up-down axis. As a result, these overlapping axes in the local environment enhance the prominent status of the Geocentric FoR in Kavalan route directions. On the other hand, the Geocentric FoR is conceptually more akin to the Object-centered FoR instead of the Viewpoint-centered FoR, for they both depend on a binary relationship between the Figure and the Ground. This discrepancy between the Geocentric and Object-centered FoR on one hand and the Viewpoint-centered FoR on the other is in all probability what accentuates the

markedness of the Viewpoint-centered FoR, wherein direction exclusively precede action, as opposed to the Geocentric and Object-centered FoR, wherein direction always follows action.

4.2 Finding the Frog: the Expression of Motion Events

After examining instructions on finding the way, we proceed to investigate the way to search for a frog in Kavalan, that is, the expression of Motion events in the Frog story. Of studies on Motion events in Austronesian languages, Huang and Tanangkingsing (2005) seems to be the most extensive one. Based on the Frog story data from six Western Austronesian (WAn) languages (Tagalog, Cebuano, Malay, Squliq Atayal, Saisiyat, and Tsou), they propose a semantic typology of Motion events, suggesting Path and Manner be viewed as two perpendicular continua of saliency whereby a given language occupies a particular point in the coordinates. As this macroscopic view of event integration seems to be promising, this section intends to follow their line of research by adding one more piece, namely Kavalan, to the puzzle of spatial reference in WAn languages. Though our focus here is on Kavalan, available data from other languages (especially WAn) will also be presented alongside. More importantly, we find it unsatisfying to simply find out whether a particular language is verb-framed or Satellite-framed. Therefore, we shall pay much attention to the preferred construction type in discourse, the relationships between Manner and Path components in the descriptions of Motion event, and above all the distribution of Motion-event components across different form classes of the language system.

4.2.1 Data and methodology

The data examined in this present study consist of the Frog stories from eight Kavalan native speakers. All the narratives were tape-recorded and then transcribed into intonation units (IUs) based on Du Bois (l993). In addition to four of the narratives collected and transcribed by the present author, the others were the result of a collaborative work from the Austronesian Research Group at National Taiwan University. Lengths of time and IU numbers from each speaker are given in Table 4.3 below.

Table 4.3 Lengths of time and IU numbers from each speaker

Speakers	Spans of time	IU numbers
Speaker 1	11’04’’	105
Speaker 2	10’25’’	137
Speaker 3	3’ 55’’	105
Speaker 4	9’01’’	168
Speaker 5	7’28’’	81
Speaker 6	6’14’’	56
Speaker 7	5’05’’	42
Speaker 8	3’48’’	78
Total	57’00’’	772

Since it is never easy to identify clausal boundaries in an uncontroversial manner, we come up with the following four operational criteria, which are of course arguable, to segment the Frog narratives into clauses.

(i) When the multifunctional morpheme *tu* functions as a discourse marker, it indicates a clausal boundary;

(ii) The perfective aspect maker *ti* structures a unit of temporal contouring, and thus signals a separate clause;

(iii) Whenever repair occurs, only one single clause is counted;

(iv) Utterances expressing a complete Motion event and expressed in the same IU count as a clause.

Here are some examples for illustration. First, the two occurrences of the discourse marker *tu* in (4) suggest there are a total of three clauses.

(4)

yau	muRtut		qaya	sunis	a	yau	tu	siaRmuq
EXIST	scared		also	child	LNK	that	OBL	deer
a	yau	tu	m-RaRiw	a	siaRmuq	a	yau	
LNK	that	DM	AF-run	NOM	deer	LNK	that	
tu	muRtut	na	su<zi>zitang=ti					
DM	scared	PART	<RED>fall.backwards=PFV					

'The child is also scared by the deer. (When) the deer is running, he is so scared as to fall backwards.' (frog_api', IU 95)

Second, the two verbs in (5a) (*t<m>ibuq* 'fall' and *wiya* 'leave'), though juxtaposed together, belong to different clauses since both of them are suffixed by the aspect marker *ti*. More importantly, *wiya* is a Path verb that normally precedes another verb, so it would be inappropriate to group (5a) into a single clause. Likewise, the verb *m-quling* 'fall' in (5b) starts a new clause due to the affixation of the aspect marker *ti*.

(5)

a. …(0.8)		t<m>ibuq=**ti**			wiya=**ti**		pasazi	ta==	\
		<AF>fall=PFV			leave=PFV		hither	LOC	
b. …	ta	libeng	wasu	a	yau		qaya	m-quling=**ti**	/
	LOC	ground	dog	LNK	that		also	AF-fall=PFV	

c. .. pasazi ta libeng-an \
hither LOC ground-LOC
d. … (1.0) wasu a yau \
dog LNK that
'(The child) fell down, and the dog also went down there. The dog fell down to the ground.' (frog_imui, IU 130-133)

Third, whenever repair occurs, only one single clause is counted, as in (6). Here the speaker is talking about a dog whose head is lodged in a bottle. Since to get the head out of the bottle requires extra force, *'etus* 'pull' would be more suitable than *ala* 'take', and this is why the speaker repaired the latter with the former.

(6) tu Ringu=ti.. ala-an Ringu=ti 'etus-an ya uRu
DM cannot=PFV take-LF cannot=PFV pull-LF NOM head
na wasu a zau
GEN dog LNK this
'And this dog can't take, can't pull out its head.' (frog_abas, IU 16)

Finally, although the two verbs in (7) are interrupted by the subject (i.e. that child), a one-clause interpretation is adopted here since they are uttered in the same IU and together form a complete Motion event.

(7) …(1.9) wiya=ti sunis a yau m-zaqis ta babaw-an na paRin. \
leave=PFV child LNK that AF-ascend LOC upside-LOC GEN tree
'That child went climbing up the tree.' (frog_imui, IU 66)

According to the criteria outlined above, there are a total of 819 clauses in the Frog narratives, 265 of which contain Motion events. Our calculation of Motion-event clauses takes only translational Motion into consideration, that is, Motion with change of

location. Consequently, self-contained Motion (e.g. posture verbs, such as “hang”, “lie”, “sit”, and “stand”, etc.) are not investigated in this present study.

4.2.2 Results

Before we look at the results in more detail, it is valuable to inspect the lexical variety of Motion verbs and narrative dynamism of Motion events in the Frog stories. Following Wu (2004: 37), we define lexical variety as types of Motion verbs per Motion-event clauses and narrative dynamism as the ratio of Motion-event clauses to the total number of clauses. As shown in Table 4.4, the average lexical variety is 0.5 while the average narrative dynamism is 0.34. This means that on average the speakers introduce a new type of Motion verb into the discourse in every two Motion-event clauses and depict a Motion event in every three clauses.

Table 4.4 Lexical variety and narrative dynamism in the Frog stories

	Types of Motion verbs (T)	**Motion-event clauses (M)**	**Total clauses (C)**	**Lexical variety (T/M)**	**Narrative dynamism (M/C)**
Speaker 1	13	40	146	0.33	0.27
Speaker 2	13	36	169	0.36	0.21
Speaker 3	17	30	79	0.57	0.38
Speaker 4	21	53	106	0.40	0.50
Speaker 5	17	38	100	0.45	0.38
Speaker 6	16	21	69	0.76	0.30
Speaker 7	15	31	102	0.48	0.30
Speaker 8	10	16	48	0.63	0.33
Average	15.25	33.13	102.38	**0.50**	**0.34**

The results in this section will focus on the following five aspects: (i) the lexicalization patterns of Motion verbs, (ii) the morphosyntatic patterns of Motion

components, (iii) percentages of Ground specifications, (iv) the way the owl's emergence is described (i.e. the Owl's Exit), and finally (v) the event granularity in the "cliff scene".

4.2.2.1 The lexicalization patterns of Motion verbs

Of the 265 Motion-event clauses, we identify five lexicalization patterns of Motion verbs, including Path verbs, Path-plus-Ground verbs, Deictic-Path verbs, Manner verbs, and Causative verbs. The types and tokens for each lexicalization pattern are illustrated in Table 4.5.

Table 4.5 Types and tokens of Motion verbs in the Frog stories

1. V[Motion + Path] = 19 types and 151 tokens

Kavalan	English	Tokens
t<m>ibuq	'fall (down from a height)'	**36**
m-zaqis	'ascend, climb'	**32**
m-zukat	'exit'	**30**
nizi/nayzi	'move from'	10
suzitang	'fall backward'	8
s<m>usuR/qaysuR	'enter'	8
maszeq	'arrive'	5
t<m>uqaz	'ascend, enter'	4
t<m>alawma	'traverse, cross'	3
m-quling/si-quling	'fall, topple over, lie down'	3
m-laziw	'pass through/by'	2
m-dusit/m-udsit	'go out'	2
m-suRaw	'fall down'	2
sinunung	'move along'	1
k<m>ulikuz	'follow'	1
s<m>aRuR	'descend, go down'	1

m-zuzungus	‘approach’	1
m-tabuq	‘(of containers) fall over’	1
Raqat	‘step across’	1
Total		**151**

2. V[Motion + Path + Ground] = 4 types and 8 tokens

Kavalan	English	Tokens
t<m>anan	‘return home’	5
sa-dengat	‘go to the window’	1
sya-qazqaz	‘reach the seashore’	1
tiRqaz	‘reach the seashore’	1
Total		**8**

3. V[Motion + Deixis] = 7 types and 46 tokens

Kavalan	English	Tokens
wiya	‘leave, move away’	**25**
pasazi	‘move hither’	8
matiw	‘go’	7
mautu	‘come’	2
pasazui	‘move thither’	2
maqzi	‘move hence’	1
syazi	‘reach (here)’	1
Total		**46**

4. V [Motion + Manner] = 5 types and 50 tokens

Kavalan	English	Tokens
m-RaRiw	‘run, escape’	**26**
t<m>anuz	‘chase’	17
s<m>aqay	‘walk’	3
m-nanguy	‘swim’	3
t<m>anbaseR	‘fly’	1
Total		**50**

5. V [Motion + Cause] = 12 types and 42 tokens

Kavalan	English	Tokens
ala	‘take, carry’	**13**
uzung	‘shoulder’	6
bawa	‘hold in the arms’	5
baba	‘carry on back’	4
betu/batu	‘throw’	3
baksiw	‘throw’	3
pizi	‘put’	2
’tus	‘pull’	2
isis	‘lift, hold’	1
pamuqu	‘shoulder’	1
azas	‘carry’	1
tewalina	‘throw’	1
Total		**42**

Within each lexicalization pattern, the distribution is highly skewed, with the majority of tokens converging on a few types of verbs. This may be in part due to the repeated actions in the Frog story. Falling events, for example, include at least the dog falling away from the window, the beehive from the tree, the boy from the tree, and the boy together with his dog from the cliff. These repeated falling events contribute to the extremely high frequency of the verb *t<m>ibuq* ‘fall’.

Across lexicalization patterns, on the other hand, an unequivocal trend is that “Motion + Path” outnumbers any of the other lexicalization patterns, not only in types but also in tokens. However, if we consider the token-type ratio, it is Manner verbs, rather than Path verbs, that exceed the others, as shown in Table 4.6 below. The result that Path verbs do not exceed Manner verbs in terms of token-type ratio would appear less surprising if we highlight the role played by the large number of low-token Path verbs

(13 types of Path verbs have less than five tokens). Moreover, the types of Path verbs are nearly four times the number of those of Manner verbs (19 vs. 5). These factors together explain why the token-type ratio of Path verbs fails to be the highest.

Table 4.6 Token-type ratio of Motion verbs in the Frog stories

Verb types	Types	Tokens	Token/Type
Path verbs	**19**	**151**	7.9
Path-plus-Ground verbs	4	8	2
Deictic-Path verbs	7	46	6.6
Manner verbs	5	50	**10**
Causative verbs	12	42	3.5
Total	46	296	6.4

Another perspective to interpret the result is to adopt a broader definition of Path and Manner verbs. Since Path, Path-plus-Ground, and Deictic-Path verbs all include the Path information, they may well be combined into macro-Path verbs, or verbs with the core schema of a Motion event. On the other hand, since Manner and Cause of Motion are both components in the Co-event, the other two types of verbs may constitute macro-Manner verbs. Once the macro-definition is adopted, Path verbs forereach Manner verbs in terms of token-type ratio, as shown in Table 4.7.

Table 4.7 Token-type ratio of macro-Path and macro-Manner verbs*

Verb type	Types	Tokens	Token/type
macro-Path verbs	30	205	**6.8**
macro-Manner verbs	17	92	5.4

* While macro-Path refers to Path, Path-plus-Ground, and Deictic-Path, macro-Manner includes Manner and Cause of Motion.

Overall, Kavalan characteristically conflates Path with Motion, which qualifies it as a path language according to Talmy's (2005) Motion-actuating typology. In addition, Path verbs overwhelm the other types of Motion verbs in terms of lexical variety. For example, the results in Table 4.5 display four different verbs that depict a falling-over event, including *suzitang* 'fall backward', *m-quling* 'fall over/down', *m-suRaw* 'fall down', and *m-tabuq* 'fall over'. Most importantly, the Path information even encroaches on Manner verbs under some circumstances. Take *m-RaRiw* 'run' for example, the most frequent Manner verb. The *m-RaRiw* in (8) does not express so much the activity of running itself as the initiating action of running away, so it would be better rendered as "run away" than simply "run".

(8) qu sunis 'nay m-RaRiw maytis qa=qaRat-an na tuliq 'nay
and.then child that AF-run AF.afraid EMP=sting-LF GEN wasp that
'And then the child ran away, for fear of being stung by the wasps.'
(frog_ngengi, IU 35)

In other words, the Path information is embedded right in this Manner verb rather than prompted by contextual inference. As Huang and Tanangkingsing (2005: 327) expounds, this phenomenon is very likely to have resulted from the mutual implication between Manner and Path, which enhances the Path interpretation in Manner verbs. Following their convention, we shall dub verbs of this kind "M=P" verbs, for they allow for both Manner and Path interpretations. Given this asymmetry between Path and Manner, it would be interesting to know how they are going to interact with each other in terms of morphosyntatic distributions, and that will be the concern of the next section.

4.2.2.2 Morphosyntactic patterns of Motion components

Aside from contextual inference, the realization of Motion components in Kavalan depends on Motion verbs or directional verbals and, to a lesser extent, spatial locatives. In this section, we shall first look into the morphosyntatic patterns of Motion verbs and directional verbals and then into those of spatial locatives.

4.2.2.2.1 Motion verbs and directional verbals

Languages may differ in the morphosyntatic strategies adopted for encoding Motion events. While some may prefer subordination, others are predisposed to take advantage of coordination or simply serialization. According to our present data, Kavalan seems to favor the serial strategy, though not on a frequent basis. The percentages of the morphosyntatic patterns of the Motion components in Kavalan, as well as those from other six WAn languages plus Mandarin, are tabularized in Table 4.8 below, where the number sign (#) indicates a serial verb strategy. Here, a macro interpretation of Manner and Path is adopted in order to adapt the calculation to the categories in Huang and Tanangkingsing (2005).

According to Table 4.8, Kavalan Frog narratives illustrate three serialization patterns, namely, P#M, M#P, and P#P. Importantly, all these patterns are instantiations of two recurrent constructions. One is the "*wiya*#V" construction, where *wiya* is a Path verb meaning "leave, move away" and tends to precede another verb. Of the 25 tokens of *wiya* that express Path of Motion, nearly all cases precede a Manner verb, as illustrated in (9).

Table 4.8 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	27.8	5.2	0	0	0	0	0
Saisiyat	63.6	26	6.3	8.4	0.4	1.6	0	0
Cebuano	60.7	39.3	11.9	0	0	0	0	0
Squliq	57.1	42.1	10.0	0	0.4	0.4	0	0
Kavalan	**55.8**	**23.8**	**8.3**	**0**	**3.4**	**0.8**	**7.9**	**0**
Malay	49.2	36.7	10.8	14.2	0	0	0	0
Tsou	42.3	22.3	0	35.4	0	0	0	0
Mandarin	6.5	40.5	0	0	0	5.6	0	48.4

* MP refers to the compounding of Manner and Path, which is typical of Tsou and, to a much lesser extent, Malay. Manner in serialization (i.e. either P#M or M#P) adopts a narrow interpretation, which excludes Causative verbs. M#P#D in Mandarin includes three types of combinations of motion components: M#P#D, M#D, and P#D.

(Adapted from Huang and Tanangkingsing 2005)

(9) a. **wiya=ti** **m-RaRiw** sunis a zau nani
leave=PFV AF-run child LNK this DM
'This child ran away.' (frog_bas, IU 60)

b. **wiya=ti** **t<m>anbaseR…** ya ku a yau
leave=PFV <AF>fly NOM owl LNK that
'The owl flew away.' (frog_api, IU 70)

c. tu **wiya=ti** **s<m>aqay…** siaRmuq a yau
DM leave=PFV <AF>walk deer LNK that
'And then the deer walked away.' (frog_pilaw, IU 35)

Even when *wiya* does not express Path of Motion, the serial verb strategy is still pervasive. For example, the verb *wiya* in (10) is associated with an aspectual meaning, indicating the inceptive process of the frogs getting more and more.[6]

(10) wiya=ti iza t<m>uRang t<m>uRang a biyat a yau m-lisimpu
leave=PFV FIL <AF>increase <AF>increase NOM frog LNK that AF-gather
'There are, uh, more and more frogs getting together.' (frog_pilaw, IU 51)

Considering the construction-specific nature of "P#M" serialization and the non-spatial use of the "*wiya*#V" construction, we speculate the verb *wiya* (or its variant *wi*) may have undergone some degree of grammaticalization, which will be discussed in Section 4.2.3.

The other recurrent construction is the serialization of Manner or Path verbs together with directional verbals (DV), a closed-class set of Path verbs that usually take the locative phrase *ta* …-*an* as their complements, as schematized below:

(11) M#P and P#P serialization patterns:
Manner/Path verb # DV [*syazi*/*pasazi*/*pasazui*/*nayzi*/*nizi*/*maqzi*] + *ta* Ground-*an*

The M#P and P#P serialization patterns that instantiate this construction are respectively given in (12) and (13) below. Since the M#P serialization amounts to only 0.8% of all Motion event clauses (two tokens), we might ignore it for a while and simplify the matter by stating that while the "*wiya*#V" construction exemplifies P#M serialization, the "V#DV" construction illustrates P#P serialization.

(12) …(0.9) **s<m>aqay maqzi** tazian qaniyau sayza tangi, /
<AF>walk hence here 3PL.NOM maybe now
'Now they are probably walking (away) from here.' (frog_imui, IU 115)

(13) **t<m>ibuq=ti pasazi** ta== zan-zanum-an
<AF>fall=PFV hither LOC RED-water-LOC
'(The child) fell into the water.' (frog_abas, IU 75)

In addition to forming a complement of Motion verbs as in (11), directional verbals can also function as the main predicate, as illustrated below:

(14) …(1.7) **pasazi=pa** ta na-naung-an sayza ya. \
hither=FUT LOC RED-mountain-LOC perhaps PART
'(They) probably went toward the mountains.' (frog_imui IU 114)

(15) a. … nani t<m>ibuq ala-an-na=ti na==, \
DM AF-fall take-PF-3SG.GEN-PFV GEN
b. … sunis a zau ya wasu a yau
child LNK this NOM dog LNK that
nayzi ta zan-zanum-an qaniyau \
move.from LOC RED-water-LOC 3PL.NOM
'(They) fell (into the water), and the child took up the dog, and they went out of the water.' (frog_imui, IU 140-141)

Note that not all tokens of directional verbals in the data portray a Motion event in real world. Specifically, two directional verbals, namely, *syazi* 'reach' and *pasazi* 'hither', display a discourse function by marking boundaries in the narratives. In total, 34 tokens of *syazi* and 8 tokens of *pasazi* all look like those in (16) and (17) respectively, where *syazi=ti tazian* and *pasazi=ti tazian* are like discourse markers that always occur at the beginning of a new narrative episode.

(16) **syazi=ti** **tazian** mai=ti peRasku a yau
reach=PFV here NEG=PFV bottle LNK that
'Now (lit. when (it) comes here), the bottle is gone (off the dog's head).'
(frog_abas, IU 26)

(17) **pasazi=ti** **tazian** nani... wasu a zau nani Ringu-an-na
hither=PFV here DM dog LNK this DM not.know-LF-3SG.GEN
Ringu-an-na tu q<m>aRat a tuliq a yau
not.know-LF-3SG.GEN COMP <AF>bite NOM wasp LNK that
'Now (lit. when (it) comes here), the dog doesn't know, doesn't know that those wasps would sting.' (frog_api, IU 48)

The discourse function of *syazi* and *pasazi* illustrates that what they characterize is not Motion events in the world, but movement in the storyline instead. For that reason, directional verbals that serve as discourse markers are not counted as Motion verbs and are thus excluded from the calculations in Table 4.8 above. The use of these discourse markers must be a speaker-specific practice, since just two narrators accounted for nearly all of the tokens (40 out of 42).

Table 4.9 illustrates a functional distribution of directional verbals in our data.

Table 4.9 Functional distribution of directional verbals in the Frog stories

	syazi 'reach'	*pasazi* 'hither'	*pasazui* 'thither'	*nizi/nayzi* 'move from'	*maqzi* 'hence'
Complement (12-13)	1	7	2	7	1
Predicate (14-15)	0	1	0	3	0
Discourse Marker (16-17)	34	8	0	0	0
Total	35	16	2	10	1

As is clear from this table, directional verbals are much more likely to follow Motion verbs than function independently as the main predicate (18 and 4 tokens respectively), thus giving rise to the "V#DV" construction, which is mainly responsible for P#P

serialization, a pattern not found in the languages investigated in Huang and Tanangkingsing (2005) (see Table 4.8).

Another observation from Table 4.11 is that the *–zi* 'here' in directional verbals is much more frequent than its counterpart *–zui* 'there'. To be exact, while there are 16 tokens of *pasazi* 'hither', there are only two for *pazazui* 'thither'. Likewise, while there is one token of *maqzi* 'hence', there is none for *maqzui* 'thence'. This result does not mean Kavalan speakers pay more attention to proximal deixis than to distal deixis. Instead, it is because the proximal deictic meaning in directional verbals has been neutralized when they are followed by a locative phrase that specifies the Ground. Compare, for example, the same scene narrated by two speakers in (18), which depicts the child's falling down into the water below a cliff.

(18) a. .. t<m>ibuq=ti ta pediyas-an t<m>ibuq=ti **pasazui ta zanum** tu,\
<AF>fall=PFV LOC cliff-LOC <AF>fall=PFV thither LOC water DM
'(They) fell off the cliff, and fell thither into the water.' (frog_Raciang, IU 104)

b. t<m>ibuq=ti **pasazi ta== zan-zanum-an**
<AF>fall=PFV hither LOC RED-water-LOC
'(The child) fell into the water.' (frog_abas, IU 75)

While the deictic meaning in (18a) is still preserved, that in (18b) has certainly been lost, for the speaker would be otherwise down in the water, watching the child falling toward her, which is not the case in the Frog story. In other words, the deictic meaning of *pasazi* in (18b) has all but gone.[7] The example that illustrates this point most comes from (19) (identical to (12)), where *maqzi* 'hence, from here', a directional verbal that contains proximal deixis, precedes another proximal deictic term *tazian* 'here'.

(19) …(0.9) s<m>aqay **maqzi tazian** qaniyau sayza tangi, /
<AF>walk hence here 3PL.NOM maybe now
'Now they are probably walking from here.' (frog_imui, IU 115)

The only explanation is that both directionality and deixis inherent in *maqzi* (i.e. *maq-zi* 'from-here') have now diminished to directionality only, and that is why the proximal deictic term *tazian* is required to compensate for the loss of deictic meanings. This semantic shift of the historically proximal deixis *–zi* 'here' also explains some lexical gaps in directional verbals. For instance, while *nizi*/*nayzi* and *syazi* are used on a daily basis, neither **nizui*/*nayzui* nor **syazui* is in existence.

Finally, Table 4.10 illustrates the ratio of serialization density in Kavalan as well as in other six WAn languages plus Mandarin.[8]

Table 4.10 Ratio of serial verbs per main Motion-event clause

Languages	Ratio of density
Tagalog	0%
Cebuano	0%
Tsou	0%
Malay	3.30%
Saisiyat	8.30%
Kavalan	**12.10%**
Squliq	15.10%
Mandarin	54.00%

(Adapted from Huang and Tanangkingsing 2005)

4.2.2.2.2 Spatial locatives

In the Kavalan Frog narratives, spatial locatives function as either locative verbs or locative case markers, as respectively illustrated in (20) and (21).

(20) a. …(1.4) pasa- **sa-dengat** qaniyau q<m>qRas, /
move.toward move.to-window 3PL.NOM RED<AF>yell
'They went to the window and yelled (for the frog).' (frog_buya, IU 19)

b. … mai=pama **sya-qazqaz**, _
NEG=yet move.to-shore
'They haven't reached the shore.' (frog_imui IU 164)

(21) a. u sunis 'nay ti-bawki nani **matiw=ti sa naung**
and.then child that PNM-PN DM AF.go=PFV LOC mountain
'And then the child Bawki went to the mountains. (frog_ngengi, IU 24)

b. **m-zukat=ti** biyat 'nay **pasa tati** nani
AF-exit=PFV frog that LOC outside DM
'So out came the frog. (frog_ngengi, IU 11)

In spite of these two potential functions, cases of spatial locatives functioning as locative verbs are in fact extremely rare in our data. Of the 15 tokens of spatial locatives in Table 4.11, only two are locative verbs, namely, those in (20).[9]

Table 4.11 Functional distribution of spatial locatives in the Frog stories

	maq 'from'	(*pa*)*qa* 'through'	*s*(*y*)*a* 'to'	*pasa* 'toward'
Locative verb (20)	0	0	2	0
Locative case marker (21)	0	0	10	3
Total	0	0	12	3

That is to say, spatial locatives tend to function as locative case markers rather than locative verbs, though the latter alternative is also acceptable. This generalization is true at least in terms of *sa* and *pasa*; as for the distributions of *maq* and (*pa*)*qa*, which have no tokens in the Frog stories, more data are required in order to find them out.

4.2.2.3 Ground specifications

Given the fact that spatial locatives introduce nominals that specify certain type of Ground, how often do Kavalan speakers explicitly articulate the Ground with which the Figure interact? This question brings us to the issue of Ground specifications. In general, S-languages are known to specify Ground information in greater detail than V-languages do, for the former may avail themselves of the flexibility of Satellite constructions in stringing several Ground phrases together.

With respect to this particular criterion, Kavalan aligns with V-languages. Firstly, Table 4.12 demonstrates the percentages of Ground specifications in all Kavalan Motion-event clauses across the eight narrators, which range from 26% to 56% and averages 42%. Next, the percentages of minus-Ground and plus-Ground clauses in Kavalan are compared with those in other languages, as in Table 4.13. The percentage of minus-Ground clauses in Kavalan is much greater than that in Spanish, a typical V-language (respectively, 58% and 37%), but is basically closer to that in Cebuano and Tagalog, both Philippine-type languages.

Table 4.12 Percentages of Ground specifications in all Motion-event clauses

	Source (A)	**Goal (B)**	**Milestone (C)**	**Plus-Ground clauses (D = A+B+C)**	**Motion-event clauses (E)**	**Ground percentage (F= D/E)**
Speaker 1	4	13	0	17	40	43%
Speaker 2	0	10	0	10	36	28%
Speaker 3	1	14	0	15	30	50%
Speaker 4	6	21	3	30	53	55%
Speaker 5	1	9	0	10	38	26%
Speaker 6	1	8	2	11	21	52%
Speaker 7	0	9	0	9	31	29%
Speaker 8	3	6	0	9	16	56%
Total	16	90	5	111	265	**42%**

Table 4.13 Percentages of minus-Ground and plus-Ground clauses

	Minus-Ground	Plus-Ground
Verb-Framed Languages		
Squliq	64%	36%
Saisiyat	61%	39%
Cebuano	59%	41%
Kavalan	**58%**	**42%**
Tagalog	55%	45%
Malay	42%	58%
Spanish*	37%	63%
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 taken from Slobin (l996).

(Adapted from Huang and Tanangkingsing 2005)

Furthermore, in plus-Ground clauses the distribution of Ground is noticeably unbalanced, not only in terms of types of Ground, but also with respect to Ground-encoding devices. Table 4.14 illustrates the correspondence between types of Ground (i.e. Source, Milestone, and Goal) and Ground-encoding devices, which include three spatial locatives *ta*, *s(y)a*, and *pasa*, the oblique case marker *tu*, and finally nominals marked in nominative case (NOM in LF construction).

Table 4.14 Types of Ground versus Ground-encoding devices

	Source	Milestone	Goal	Total	Percentage
ta + G(-*an*)	17	1	45	63	**58.3%**
s(y)a + G	0	0	12	12	11.1%
pasa + G	0	0	3	3	2.78%
tu + G	0	2	13	15	13.9%
NOM = G	0	1	14	15	13.9%
Total	17	4	87	108	
Percentage	15.7%	3.7%	**80.6%**		

In terms of types of Ground, Goal is a great deal more frequent (80.6%) than Source or Milestone. This result is expected since Goal is the most informative type of Ground in the Frog story, whose main plot is concerned with a search (Aksu-Koç 1994: 354).

With respect to Ground-encoding devices, on the other hand, the *ta* G-(*an*) construction is the most frequent (58.3%), which may require some explanations. Explicitly, though having specific spatial locatives for each type of Ground (*maq* for Source, (*pa*)*qa* for Milestone, and (*pa*)*sa* for Goal, see Section 3.1.2 for detail), Kavalan tends to utilize the all-purpose *ta* G-(*an*) construction, thus leaving directionality to Motion verbs and/or directional verbals. For instance, the locative phrases in (22) both

specify a Source whether preceded by directional verbals *nizi*/*maqzi* ‘move from’ or not, for the Path verb *m-zukat* ‘exit’ has determined the intended directionality. However, when the Path verb involved has variable interpretations of directionality, presence of directional verbals is preferred, as the repair in (23) illustrates.

(22) a. …(1.9) paqanas=ti **m-zukat ta peRasku-an,_**
slow=PFV AF-exit LOC bottle-LOC
‘(The frog) slowly came out of the bottle.’ (frog_buya, IU 10)

b. syazi== tazian nani.. **m-zukat=ti nizi ta zan-zanum-an**
reach here DM AF-exit=PFV move.from LOC RED-water-LOC
sunis a zau Ri wasu-na
child LNK this and dog-3SG.GEN
‘When it comes here, the child as well as his dog has come out of the water.’ (frog_abas, IU 79)

(23) ..(2.55) m-Retut sunis ’nay **t<m>ibuq=ti ta paRin-an**
AF-scared child that <AF>fall=PFV LOC tee-LOC
nizi ta paRin-an sunis ’nay
move.from LOC tree-LOC child that
‘Being frightened, the child fell off from the tree.’ (frog_syulan, IU 48)

In the same vein, both the locative phrases in (24) specify a Goal, whether they are preceded by directional verbals *pasazi*/*syazi* ‘hither’. In the Frog stories, only 24% of the locative phrases that specify Goal (11 out of 45) are preceded by directional verbals. This suggests that most of the time directionality is prompted by the semantics of Motion verbs as well as possible interactions between the Figure and the Ground.

(24) a. …(3.4) yau ngid **zaqis** ’nay wasu ’nay **ta paRin-an ’nay.** \
EXIST want ascend that dog that LOC tree-LOC that
‘The dog wanted to climb up the tree.’ (frog_imui, IU 63)
b. …(7.8) ((FLIPPING PAGE)) **t<m>ibuq pasazi ta melanay-an,** /
<AF>fall hither LOC ground-LOC
…(0.8) ’nay sunis a yau atu wasu a yau nani. \
that child LNK that and dog LNK that DM
‘The child and the dog fell down to the ground.’ (frog_imui, IU 134-135)

In addition to spatial locatives, the oblique case marker *tu* in AF construction and nominative nouns in LF construction are also capable of encoding Ground, as respectively illustrated in (25) and (26).

(25) a. maytis=ti ya== wasu a yau.. ngid=ti **zaqis tu paRin**
AF.afraid=PFV NOM dog LNK that want=PFV ascend OBL tree
‘The dog was afraid, so it wanted to climb up the tree.’ (frog_abas, IU 44)
b. mai=pama **maseq tu zanum**
NEG=yet reach OBL water
‘They haven’t reached the water (below).’ (frog_ngengi, IU 61)
(26) a. *susuR*-an-na=ti na uRu-na **ya.. peRasku a yau**
enter-LF-3SG.GEN=PFV GEN head-3SG.GEN NOM bottle LNK that
q<n>izuan-an na biyat
<PFV>stay-NMZ GEN frog
‘Its head went into the bottle where the frog once lived.’ (frog_abas, IU 15)
b. .. *tuqaz*-an-na=ti ’nay z- ’nay .. **’nay suRna** nani.\
ascend-LF-3SG.GEN=PFV that FS that that ice DM
‘And he climbed up to the iceberg.’ (frog_buya, IU 61)

As has been mentioned previously (in Section 3.2.1.1), the oblique case marker *tu* is interchangeable with the locative case marker *ta* under certain circumstances (*cf*. (24a)

and (25a)) due to the conceptual correlation between OBJECT and LOCATION, which they respectively encode. On the other hand, nominative nouns that express Ground sprout from LF construction, which marks the grammatical subject as OBJECT or LOCATION, another case of the interpermeability between these two concepts. Interestingly, the percentage of *tu* plus Ground is as low as that of NOM as Ground (both 13.9%), and this may imply that these two alternative Ground-encoding devices are rather marginal in Kavalan Motion events.

After the inquiry of Ground specifications in general, we narrow the scope to downward Motion in particular. Table 4.15 demonstrates whether the Kavalan speakers use bare verbs or include Ground in four falling events in the Frog story.

Table 4.15 Bare verbs or Ground in four falling events

	Bare verbs	Ground	Non-applicable
1. Dog falls	3	1	4
2. Beehive falls	4	1	3
3. Boy falls from tree	4	4	0
4. Boy and dog fall	3	4	1
Total	14	10	8

As a result, the percentage of downward Motion descriptions with the bare verb 'fall' averages 58.3% (14 out of 24) in Kavalan, which is approximate to those in Tagalog and Cebuano (respectively, 62.5% and 62.9%), as compared in Table 4.16 below.

Table 4.16 Percentages of downward motion descriptions with the bare verb 'fall'

	Percentages of bare verbs
Verb-Framed Languages	
Cebuano	62.9%
Tagalog	62.5%
Kavalan	**58.3%**
Squliq	52.2%
Spanish*	36%
Saisiyat	27.3%
Malay	26.9%
Satellite-Framed Language	
English*	15%
Macro-Event Language	
Tsou	55.6%
Serial verb language	
Mandarin	41.9%

*Percentage figures for Spanish and English are taken from Slobin (l996).
(Adapted from Huang and Tanangkingsing 2005)

Therefore, Kavalan behaves on a par with two typical V-languages (i.e. Tagalog and Cebuano) in terms of Ground specifications, both of Motion in general and of downward Motion in particular.

4.2.2.4 The Owl's Exit

While searching for his missing frog in the woods, the boy in the Frog story climbs up a tree and peeks into a hole in the trunk. He ends up falling off from the tree as an owl emerges out of the hole into which he is peeking. While Satellite-framed languages (S-language) attend to the manner of the owl's coming out of the hole (e.g. "flying"), verb-

framed languages (V-language) are very likely to highlight the transition of motion (e.g. "exiting"). The Owl's Exit is therefore a repeatedly investigated scene used to find out what Motion-event component (i.e. Manner or Path in this case) a particular language is inclined to emphasize.

Of the eight Kavalan narrators, four depicted the emergence of the owl by means of the Path verb *m-zukat* 'exit' without supplementing the Manner, as in (27).

(27) pameng=ti m-zukat a ku a zau
suddenly=PFV AF-exit NOM owl LNK this
'Suddenly (out of the hole) comes an owl.' (frog_abas, IU 54)

Meanwhile, three narrators identified the existence of the owl by means of the existential predicate *yau* 'exist', as in (28), where the description of the child's falling follows the identification of the owl's existence.

(28) a. …(1.1) yau ku a yau ta babaw na paRin nani. \
EXIST owl LNK that LOC upside GEN tree DM
'There is an owl on the tree.'
b. … m-Retut=ti sunis a yau suzitang, _
AF-scared=PFV child LNK that fall.backward
'The child was so frightened as to fall backwards.' (frog_imui, IU 72-73)

The last narrator also attended to the owl's existence on the tree by saying, "the child sees an owl", as in (29).

(29) sunis a zau nani.. tayta-an-na=ti ya ku nani..
child LNK this DM see-LF-3SG.GEN=PFV NOM owl DM
akaw pa-mangay=ita
INT CAU-be.in.danger=IIPL.NOM
'As for the child, he sees an owl. "Gosh! We are caught up in danger," (says he).'
(frog_api, IU 65)

Taken as a whole, either attention to the dynamic emergence of the owl or emphasis on its presence qualifies Kavalan as a V-language.

Therefore, Kavalan employs 100% of Path verbs in this particular scene, just like other six WAn languages except for Tsou, as shown in Table 4.17.

Table 4.17 Percentages of Manner and Path verbs for the Owl's Exit*

	Manner verb	Path verb
Verb-Framed Languages		
Hebrew	3%	97%
Spanish		100%
Saisiyat		100%
Squliq Atayal		100%
Tagalog		100%
Cebuano		100%
Malay		100%
Kavalan		**100%**
Satellite-Framed Languages		
Russian	100%	
English	32%	68%
German	18%	82%
Dutch	17%	83%

	Manner verb	Path verb
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). Manner in this table refers to MP verbs for Tsou and Malay and to M#P or M#P#D for Mandarin.

(Adapted from Huang and Tanangkingsing 2005)

4.2.2.5 The "cliff scene"

The "cliff scene" refers to a series of Motion events that take place on the cliff and constitute a single trajectory of Motion. Slobin (1997: 448) analyses this particular scene into "four potential event components", as listed below:

(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.

Accordingly, he refers to the number of event segments mentioned by a speaker as "event granularity", thus comparing components in an event to granules in a cell.

The event segments mentioned by the eight narrators are illustrated in Table 4.18, where change of location (both (i) and (iv)) is more recurrent than negative changes of location and cause of change of location. Of the eight narrators, only Speaker 3 and Speaker 7 (those in gray) mentioned more than three segments. Excerpts from these two speakers are given in (30) (where the English translations are intended to maintain the syntactic structure in Kavalan), with the mentioned segment indicated in parenthesis.

Table 4.18 Event segments of the "cliff scene" mentioned across the eight speakers

	(i) Deer moves	(ii) Deer stops	(iii) Deer throws boy	(iv) Boy/dog falls
Speaker 1	✓			✓
Speaker 2				✓
Speaker 3	✓	✓		✓
Speaker 4				✓
Speaker 5	✓			✓
Speaker 6	✓			✓
Speaker 7	✓		✓	✓
Speaker 8			✓	
Total	5	1	2	7

(30) Excerpts from speakers mentioning more than three segments in the "cliff scene"

Speaker 3: The deer ran away, arrived at a cliff (i), and stopped (ii). The child and his dog fell down (iv).

Speaker 7: The deer ran away, carrying the child (i). Finally, when it comes to a cliff, the child fell down (iv), thrown by the deer (iii). The deer probably said, "Why did you come to my tribe?" Then, it cast (the child and his dog) away into the river (iii), so they fell down (iv). They fell off the cliff (iv). They fell thither into the water (iv).

Table 4.19 illustrates the average number of event segments and percentage of narrators mentioning more than three segments in Kavalan as well as in other languages. Once again, the results in Kavalan fall in between those in Cebuano and Tagalog, both typical V-languages.

Table 4.19 Average number of event segments and percentage of narrators mentioning more than three segments in the "cliff scene" *

Verb-Framed Languages			**Satellite-Framed Languages**		
Squliq	3.6	100%	Germanic	3.0	86%
Saisiyat	3.0	50%	Slavic	2.8	76%
Malay	2.5	50%	**Macro-Event Language**		
Cebuano	2.2	33%	Tsou	3.1	83%
Kavalan	**1.9**	**25%**	**Serial Verb Language**		
Tagalog	1.8	17%	Mandarin	3.0	100%

*The percentages for Germanic and Slavic languages are taken from Slobin (1997).
(Adapted from Huang and Tanangkingsing 2005)

4.2.3 Discussion

To begin with, according to the Frog narratives there are two preferred serial constructions characteristic of Kavalan, namely, the "*wiya*#V" construction and the "V#DV" construction, where V is a Motion verb and DV a directional verbal. On the one hand, it is worth asking what makes the verb *wiya* 'leave' (or its variant *wi*) so distinctive in characterizing a Motion event. Under closer inspection, this particular form turns out to encompass quite a few functions. First, *wi*(*ya*) simply means "leave, move away" when used independently, as in (31).

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

b. q<n>a-**wiya**-an-ku, mai=ti ma-sinap lepaw 'nay
<PFV>QA-leave-NMZ-1SG.GEN NEG=PFV MA-clean house that
'The house has not been cleaned ever since I left.'

Second, it has a function roughly equivalent to the English particle "away" when co-occurring with a Motion verb, as illustrated in (32), which is the very construction found in our Frog stories.[10]

(32) a. wiya=ti t<m>anbaseR ya adam 'nay
leave=PFV <AF>fly NOM bird that
'The bird flew away.' (lit. 'The bird left flying.')
b. 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.')

Third, most interestingly of all, *wi*(*ya*) has come to acquire some aspectual meanings. While *wiya=ti* (with the perfective marker) is very often associated with inchoative aspect, *wi:* (with vowel lengthening) tends to suggest continuative aspect, as respectively illustrated in (33) and (34).

(33) a. wiya=ti Raya uzan
leave-PFV great rain
'The rain is getting heavier and heavier.' [Inchoative]
b. wiya=ti q<um>nut ya tama-ku
leave-PFV <AF>angry NOM father-1SG.GEN
'My father is getting angry.' [Inchoative]

(34) a. wi: muRing sunis 'nay, mai m-limek
leave AF.cry child that NEG AF-stop
'The child cries on and on, without making a stop.' [Continuative]
b. wi: satzay aimi, mai m-Ribang
leave sing 1EPL.NOM NEG AF-rest
'We sing on and on, without taking a rest.' [Continuative]

What is responsible for such a distinction seems to be the perfective marker *=ti* for *wiya* and the vowel lengthening for *wi*. As is well-known, the marker *=ti*, which indicates a recent completion of action or a punctual change of state, expresses both perfective and inchoative aspect in Kavalan. The combination of the Path verb *wiya* and the marker *=ti* thus triggers an inchoative meaning with the help of the CHANGE OF STATE IS CHANGE OF LOCATION metaphor. As a result, *wiya=ti q<um>nut* in (33b) is somewhat like the metaphorical usage of "go into anger" in English. On the other hand, the relationship between the vowel lengthening for *wi* and the continuative aspect may be considered an instance of sound symbolism, whereby the vowel lengthening corresponds to the continuation of action. The Path verb *wi*, when co-occurring with activity verbs, develops into a continuative meaning by way of the PROGRESS IS FORWARD MOVEMENT metaphor. Consequently, *wi: satzay* in (34b) resembles such expressions as "go on singing" in English.[11]

As has been mentioned earlier (in Section 3.2.5), the Motion predicate *wi*(*ya*) may be related to the distal demonstrative *wi'u*, just as the Motion predicate *yau* is to the proximal near-speaker demonstrative *yau*. Moreover, since both *yau* and *wi*(*ya*) have acquired aspectual meanings, they might have undertaken a similar path of grammaticalization from a Motion predicate to an aspect marker. We thus suggest a parallelism between *yau* and *wi*(*ya*), which in turn implies a conceptual connection among place deixis, Motion verbs, and aspect markers, as summarized in Table 4.20 below.[12]

Table 4.20 Parallelism between *yau* and *wi*(*ya*)

Category	Function	*yau*	*wi*(*ya*)
Place deixis	Spatial reference	*yau* (proximal near-hearer demonstrative pronoun)	*wi'u* (distal demonstrative pronoun)
	Spatial modifier	N *a yau* 'that N (near-hearer)'	N *a wi'u* 'that N (away from both speaker and hearer)'
Motion predicate	Static predication	*yau* + *ta* X(-*an*) 'to be located at X (here)'	*wi* + *ta* X(-*an*) 'to be located at X there'
	Dynamic predication	*yau=ti* 'to move towards speaker' 'to come into view'	*wiya=ti* 'to move away from speaker' 'to go out of view'
Aspect marker	Temporal contouring	*yau* + V (Progressive)	*wi:* + V (Continuative) *wiya=ti* + V (Inchoative)

It is speculated that the grammaticalization of *wi*(*ya*) facilitates its serialization with other verbs. As a result, the "wiya#V" serialization becomes a handy construction not only for describing a Figure moving progressively away from the conceptualizer but also for depicting an emerging state of affairs (as in (33)) or a continuous activity (as in (34)).

On the other hand, it seems that the use of directional verbals in the "V#DV" construction has something to do with the "boundary-crossing constraint", which states that Path-conflating verbs are allowed to describe situations where a boundary is crossed whilst Manner-conflating verbs are not unless Path-conflating verbs are provided at the same time (Aske 1989, Slobin and Hoiting 1994). In general, V-languages observe the boundary-crossing constraint, but S-languages do not. For example, such expressions as "flying into the nest" are possible in S-languages, but not in pure V-languages. In Kavalan, Path verbs permit a boundary-crossing event while Manner verbs do not, even though they are followed by the same locative phrase, as contrasted in (35) below.

(35) a. **s<m>usuR=ti ta Rupu-an-na** ya adam 'nay
<AF>enter=PFV LOC shelter-LOC-3SG.GEN NOM bird that
'The bird went into its house.' [**Vector**: Goal]

b. **t<m>anbaseR=ti ta Rupu-an-na** ya adam 'nay
<AF>fly=PFV LOC shelter-LOC-3SG.GEN NOM bird that
'The bird started flying in its nest.' [**Vector**: Location]

To express a boundary-crossing event using the Manner verb in (35a), some kind of Path-conflating verbs must be provided, as illustrated in (36), where directional verbals such as *psasazi* and *nizi* follow the Manner verb, thus constructing an M#P serialization.

(36) a. **t<m>anbaseR=ti pasazi** ta Rupu-an-na ya adam 'nay
<AF>fly=PFV hither LOC shelter-LOC-3SG.GEN NOM bird that
'The bird flew into its nest.' [**Vector**: Goal]

b. **t<m>anbaseR=ti nizi** ta Rupu-an-na ya adam 'nay
<AF>fly=PFV move.from LOC shelter-LOC-3SG.GEN NOM bird that
'The bird flew out of its nest.' [**Vector**: Source]

Therefore, Kavalan behaves more like V-languages than S-languages since it observes the boundary-crossing constraint, and directional verbals in the "V#DV" construction help to remove the boundary-crossing constraint in Kavalan by acting as Path-conflating verbs.

Next, since Kavalan speakers barely express both Path and Manner at the same time (except in the two constructions discussed above), it would be interesting to find out how they eventually verbalize these two Motion components when forced to. As an attempt, we compare the Spanish examples from Talmy (2000b: 49-50) with their counterparts in Kavalan, which are given in (37), where Spanish examples precede Kavalan ones.

(37) a. La botella entró a la cueva (flotando)
the bottle move.in to the cave (floating)

a′ s<m>usuR (pasazi) ta tangan-an ya peRasku a yau (masalin)
<AF>enter (hither) LOC cave-LOC NOM bottle LNK that (AF.drift)
'The bottle floated into the cave.'

b. La botella salió de la cueva (flotando)
the bottle move.out from the bottle (floating)

b′ m-zukat (nizi) ta tangan-an ya peRasku a yau (masalin)
AF-exit (move.from) LOC cave-LOC NOM bottle LNK that (AF.drift)
'The bottle floated out of the cave.

c. Las dos botellas se juntaron (flotando)
the two bottles move.together (floating)

c′ matapun=ti (m-linamaw) ya u-zusa peRasku
AF.move.together=PFV (AF-float) NOM CLF.NHUM.two bottle
'The two bottles floated together.'

d. Las dos botellas se separaron (flotando)
the two bottles move.apart (floating)

d′ matanaq=ti (m-linamaw) ya u-zusa peRasku
AF.move.apart=PFV (AF-float) NOM CLF.NHUM.two bottle
'The two bottles floated apart.'

Much like Spanish, Kavalan assumes the pattern underlying Path-event conflation, thus leaving the Manner component dispensable. However, Kavalan differs from Spanish in two aspects. First, Kavalan realizes the Manner component as verbs inflected for Focus rather than an adverbial gerund (such as *flotando* 'floating' in Spanish). This is somehow expected since most adverbial modifiers in Kavalan turn out to be inflected verbs (see Section 3.2.5 and Chang 2004). Second, in spite of the functional equivalence between Spanish prepositions (*a* 'to' and *de* 'from') and Kavalan directional verbals (*pasazi*

'hither' and *nizi* 'move from'), the former are obligatory while the latter are dispensable so long as the Path verb has provided a clue to directionality.

Overall, considering all the results from the previous sections and the discussions so far, Table 4.21 illustrates a comparison of the structural and discourse characteristics of V-languages, S-languages, and Kavalan.

Table 4.21 Comparison of structural and discourse characteristics of V-languages, S-languages, and Kavalan

Parameters	V-Languages	S-Languages	Kavalan
1. Core schema (Path) expression	Verb	Satellite	Verb
2. Co-event (e.g. Manner) expression	Adverbial	Verb	Verb
3. Boundary-crossing constraint	Yes	No	Yes
4. Manner-verb use	Low	High	Low
5. Ground specification	Lower (63% for Spanish)	Higher (82% for English)	Lower (42%)
6. Several Path segments per clause	No	Yes	No
7. Scene setting	Yes	No	Yes
8. Event granularity	Lower<3	Higher>3	Lower<3

(Adapted from Zlatev and Yangklang 2003)

Based on this table, Kavalan must be recognized as a fairly typical V-language since only one of the parameters (i.e. Co-event expression) is different from what is taken as characteristic of a V-language by Zlatev and Yangklang (2003).

Finally, to fit Kavalan into the spatial puzzle of Motion events in the six WAn languages investigated in Huang and Tanangkingsing (2005), Table 4.22 specifies the Path and Manner salience for the coordinates in the semantic typology on the respective Y-axis and X-axis.

Table 4.22 Percentages for Path and Manner salience in Kavalan Frog stories

	Path	Manner	M=P	MP	P#M	M#P	P#P	M#P#D	Total
Path (Y-axis)	55.8	---	8.3	0	3.4	0.8	7.9	0	**76.2**
Manner (X-axis)	---	23.8	8.3	0	3.4	0.8	---	0	**36.3**

Based on the total Path and Manner salience percentages therein, Kavalan is mapped onto a grid space, as illustrated in Figure 4.3. Since Kavalan is a language with high Path salience and low Manner salience, it falls on the upper left quadrant of the grid space, along with Saisiyat, Tagalog, Cebuano, and Squliq.

According to the semantic typology in Figure 4.3, Kavalan bears the strongest resemblance to Tagalog and Cebuano. In addition, discourse features other than Manner and Path salience also manifest the close relationship between Kavalan on the one hand and Tagalog/Cebuano on the other. As mentioned above, Kavalan behaves on a par with Tagalog and Cebuano in terms of the percentages of Ground specification, both of Motion in general and of downward Motion in particular. With respect to event granularity, moreover, Kavalan also lies near between Tagalog and Cebuano. All these results help to illustrate that Kavalan is a language as typically verb-framed as Tagalog and Cebuano, both Philippine-type languages.

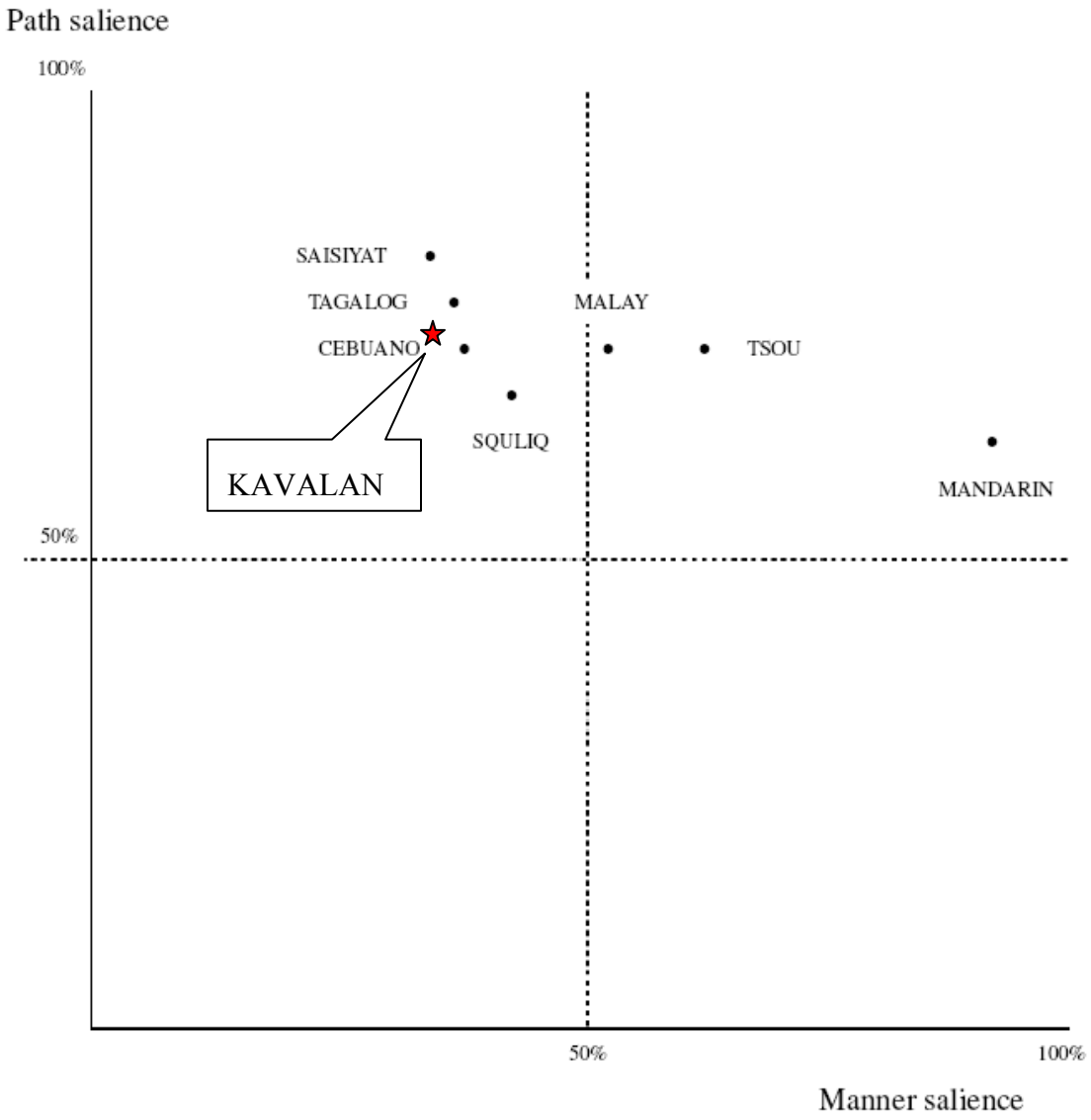


Figure 4.3 Semantic typology of Motion events in seven WAn languages (plus Mandarin)

(Adapted from Huang and Tanangkingsing 2005)

4.3 Finale

In this chapter, by scrutinizing the narrative data from Kavalan native speakers we have explored two specific dimensions of Motion in discourse, that is, route knowledge of Hsinshê Village and Motion events in the Frog story. On the one hand, due to the nature of the geographical layout of Hsinshê Village, the west-east axis corresponds to the land-sea and up-down axes while the north-south axis to the up-down axis. Consequently, these overlapping axes in the local environment enhance the prominent status of the Geocentric FoR (both cardinal directions and the up-down axis) in Kavalan route directions. Moreover, finding the way in Hsinshê Village involves much knowledge not only of the local geography but also of where the local people live as attested by the frequent mentions of villagers' houses that serve as identifiers of a decision point en route.

On the other hand, we have analyzed eight Kavalan Frog narratives in terms of the lexicalization patterns of Motion verbs, the morphosyntatic patterns of Motion components, percentages of Ground specifications, the description of the owl's emergence, and finally the event granularity in the "cliff scene". It is found that Kavalan is a fairly typical verb-framed language on a par with Tagalog and Cebuano, to which Kavalan bears the strongest resemblance in the semantic typology of Motion events in the six WAn languages investigated in Huang and Tanangkingsing (2005).

However, unlike Tagalog and Cebuano, where a subordinate strategy is employed to deal with the linear ordering between Path and Manner (see Tanangkingsing 2003), Kavalan adopts a serial strategy to achieve the same end. Three serialization patterns are found in our data, namely "P#M", "M#P", and "P#P", and they are instantiations of two recurrent constructions, that is, the "*wiya*#V" construction and the "V#DV" construction.

Since instances of the M#P serialization are extremely rare (only two tokens), suffices it to say that while the "*wiya*#V" construction exemplifies P#M serialization, the "V#DV" construction illustrates P#P serialization.

Finally, of greater significance is the "*wiya*#V" construction, which not only describes a Figure moving progressively away from the conceptualizer, but can also depict an emerging state of affairs (i.e. inchoative aspect) or a continuous activity (i.e. continuative aspect). Interestingly, the Motion verb *wi*(*ya*) 'leave, move away' shares a parallel development of grammaticalization with the Motion verb *yau* 'be located, exist', both of which intersects across place deixis, Motion verbs, and aspect markers. In other words, these two particular linguistic forms *wi*(*ya*) and *yau* connect an event of Motion and an event of temporal contouring by expressing the core-schema in the respective event, that is, Path in the former and aspect in the latter. Ultimately, this coherent maneuver of core-schema in macro-events may be attributed to the conceptual analogy between space and time.

Notes

[1] We would like to express our gratitude for an anonymous reviewer, who helps us through this sketch of Hsinshê Village.

[2] In terms of administrative division, this Kavalan tribe belongs to Hsinshê Village. However, local people typically refer to this region by means of three toponyms, namely *tapuan*, *qaudaRan*, and *pateRungan*, with the last also called Hsinshê in Mandarin (see Figure 3.8 for their distribution on the map). Therefore, the speaker was talking about the location *pateRungan* (or Hsinshê), instead of Hsinshê Village as a whole.

[3] In contrast, the body part term *tuRuz* 'back' is not used to indicate someone's orientation. Thus, sentences like *pasa tibuR=ti tuRuz-niq* are unacceptable.

[4] *maseq* 'arrive' in Speaker E's utterances is a free variation of *maszeq* elsewhere.

[5] When more than one type of FoR is used for the action in one chunked segment, the token value for each type of FoR is the quotient of one divided by the total number of all the types of FoR used. For example, if there are two types of FoR specifying the same direction in a segment, the token value for either is 0.5. All the calculations are accurate only to the first decimal place.

[6] The two instances of *t<m>uRang* 'increase' here are the result of a repair, rather than a construction-specific phenomenon.

[7] However, the contrast between the proximal and distal deixis can still be highlighted when there are no locative phrases following directional verbals, as in the following pair.

a. pasazi-ka s<m>aqay
   hither-IMP.AF <AF>walk
   'Walk hither.'

b. pasazui-ka s<m>aqay
   thither-IMP.AF <AF>walk
   'Walk thither.'

[8] For syntactic discussions on serialization in Kavalan and other Formosan languages, see Huang (1997) and Chang (2006).

[9] Table 4.11 does not take the generic spatial locative *ta* into consideration since it does not determine a local role, except in static locative events, which are excluded from our present discussion.

[10] However, the verb following *wiya* is not restricted to Motion verbs, as the following example shows:

wiya=ti muRing ya sunis a yau

leave=PFV AF.cry NOM child LNK that

'The child left crying.'

In addition, a similar example of (36a) is also found in Squliq, as in the following example from Huang and Tanangkingsing (2005: 319):

m-ge: m-laka' qu nguyaq qasa la

AF-leave AF-fly NOM owl that PART

'The owl flies away.' (Frog 4: 197-98)

[11] When the vowel is not lengthened, a different meaning would arise. For example, *wi satzay* means "go singing", rather than "go on singing."

[12] Much as *wi*(*ya*) indicates both motion away from the speaker and continuative aspect, *van* in Mwotlap functions as an away-from-speaker directional "thither" as well as a continuative aspect maker "on and on" (François 2003). This extra example in a way highlights the crosslinguistic correspondence between away-from-speaker motion and continuative aspect. Moreover, in addition to Kavalan, locative verbs in Rukai, Paiwan, Amis, Atayal, Puyuma, and Seediq all derive from proximal demonstratives, and this fact supports Diessel's (2003: 19) claim that "demonstratives are generally so old that their roots are not etymologically analyzable."

Chapter 5 Conclusion

5.0 Recapitulation

In the present study, we have attempted to address three research questions. For the purpose of recapitulation, the three questions and our answers to each of them are summarized below.

(1) How do morphosyntatic categories (different form classes, such as verbs, adverbials, particles, case markers, adpositions, or affixes, etc.) interact with spatial semantic categories (such as Path, Ground, Frames of Reference, etc.) in the Kavalan language?

In Kavalan, the morphosyntatic categories that express spatial meanings include spatial locatives, directional verbals, locative nouns, cardinal direction terms, demonstratives, place nouns, and finally Motion verbs. Each of them has its own interaction patterns with spatial semantic categories and vice versa. For instance, Path verbs encode Motion, Vector, Direction, and Frames of Reference (FoR). Conversely, Direction is distributed over cardinal directions, demonstratives, and Path verbs. More specifically, though it has specific spatial locatives for the encoding of different types of Ground, Kavalan prefers to use the general locative marker *ta*, in both self-contained and translational Motion. By so doing, Kavalan leaves the interpretation of local roles to Path verbs or directional verbals. However, even directional verbals are frequently unexpressed, and this makes Kavalan depend heavily on Path verbs for the specification of local roles. When Path verbs fail to provide definite clues to local roles, inferencing about the “natural” interaction between a given pair of Figure and Ground becomes the

last resort (e.g. falling *off from* the window and *into* the river, but never the other way around). In addition, whenever the spatial configuration between a Figure and a Ground is canonical (e.g. a cup *on* the table, a man *in* a room, etc.), the interpretation of localization very often dispenses with locative nouns that encode a Region. Therefore, what Kavalan speakers need to interpret the local role and localization in a Motion event is normally their spatial knowledge about the canonical interaction between a given pair of Figure and Ground, which helps to "simplify" the coding of linguistic forms.

(2) How do Kavalan speakers guide wayfinders from one location to another in their local environment? In addition, what coordinate systems do they appeal to in the conduct of their daily routines?

Kavalan speakers guide wayfinders en route (within Hsinshê Village) by appealing largely to the Geocentric FoR (both cardinal directions and the up-down axis), though Viewpoint-centered and Object-centered FoR are also in use. This strategy is due to the nature of the geographical layout of Hsinshê Village, where the west-east axis corresponds to the land-sea and up-down axes while the north-south axis to the up-down axis. Consequently, these overlapping axes in the local environment enhance the prominent status of the Geocentric FoR. Moreover, finding the way in Hsinshê Village involves knowledge not only of the local geography but also of where the local people live as attested by the frequent mentions of villagers' houses that serve as localizers in the landscape. The naming of villagers' houses in route instructions is in fact no more helpful to outsiders than the enumeration of villages and resting places in the route directions by the Yupno in Papua New Guinea (see Wassmann 1997: 155).

(3) What type of spatial language does Kavalan belong to with respect to Talmy's (2000b) Motion-framing typology? More specifically, what morphosyntatic mechanisms or what preferred construction type does Kavalan employ in the competition between core-schema (Path) and Co-event components (e.g. Manner)?

Kavalan has be shown to be a fairly typical verb-framed language on a par with Tagalog and Cebuano, to which Kavalan bears the strongest resemblance in the semantic typology of Motion events in the six WAn languages investigated in Huang and Tanangkingsing (2005). However, unlike Tagalog and Cebuano, where a subordinate strategy is employed to deal with the linear ordering between Path and Manner, Kavalan adopts a serial strategy to achieve the same end. In addition, the serialization pattern with great significance in Kavalan is the "*wiya*#V" construction, which not only describes a Figure moving progressively away from the conceptualizer, but can also depict an emerging state of affairs (i.e. inchoative aspect) or a continuous activity (i.e. continuative aspect). Interestingly, the Motion verb *wi*(*ya*) 'leave' shares a parallel development of grammaticalization with the Motion verb *yau* 'exist' by uniting place deixis, Motion, and aspect functions. In other words, these two particular linguistic forms *wi*(*ya*) and *yau* connect an event of Motion and an event of temporal contouring by expressing the core-schema in the respective event, that is, Path in the former and aspect in the latter. Ultimately, this coherent maneuver of core-schema in macro-events (Talmy 2000b) can be attributed to the conceptual analogy between space and time.

5.1 Implications

The investigation of Kavalan locative nouns reveals a language-specific manner of partitioning space. Explicitly, as far as asymmetrical spatial relations (i.e. superior vs. inferior, exterior vs. interior, and anterior vs. posterior) are concerned, the number of linguistic terms expressing members of an asymmetrical pair is likewise asymmetric. For instance, while there are three terms for the inferior and posterior Region (respectively, *pusen*/*liab*/*libeng* and *tuqeb*/*tuRuz*/*likuz*), there is only one single term for the superior and anterior Region (respectively, *babaw* and *ngayaw*). This implies that even the so-called "intrinsic" relations are in fact not intrinsic at all since they are strongly determined by the semantic structuring of space in a specific language.

Though the land-sea axis is an important orienting feature that can be traced back to Proto-Malayo-Polynesian (PMP) languages, it usually plays less important a role in most present-day Formosan languages. For example, although Paiwan has *zaya* 'upland' and *lauz* 'seaward' (reflexes of the PMP etymons *daya and *lahud respectively), it does not use them to refer to cardinal directions, which are instead expressed by terms like *ka-cedas* 'KA-sun.peep; the east' and *ka-letjep* 'KA-dive; the west' (see Li 2004). However, our research shows that unlike other Formosan languages Kavalan depends heavily on the land-sea axis. For one thing, the Kavalan terms for cardinal east (*waRi*) and west (*zaya*) respectively originate from the terms for seaward and landward direction. For another, given this conceptual association between cardinal directions and the land-sea axis, reference to cardinal east and west in route descriptions prevails over reference to the sea (*lazing*) and the mountain (*na'ung*), both of which would have been good orienting features for spatial reference given the geographical layout in the local landscape. In

other words, Kavalan refers to space by means of the contrast between landward and seaward direction, which is similar to most Malayo-Polynesian languages but different from other Formosan languages.[1] Since awareness of the land-sea axis is characteristic of seafaring peoples, this might suggest that the Kavalan people was once a seafaring people, just as the Tau people in Botel Tobaco (or Orchid Island) has long been.

5.2 Suggestions for Future Research

Given the prominent status of the Geocentric FoR in Kavalan route instructions, it is worth investigating whether the same type of FoR is still preferred for different scales of orientation. For example, the "Man and Tree" methodology devised by the Nijmegen research group at Max Planck Institute would be an appropriate elicitation tool for expressions of the static configuration between two entities. In fact, we have gathered some conversational data for the "Man and Tree" settings. A preliminary analysis shows that two Kavalan speakers regularly make use of the scene-internal strategy (e.g. the man is facing the tree) and the Viewpoint-centered FoR, without ever deploying the Geocentric FoR in their negotiations. However, another speaker, when asked to describe each picture alone, ubiquitously substitutes the Geocentric FoR for the Viewpoint-centered FoR. It is hoped that the deployment of Frames of Reference in Kavalan will become lucid as more data accumulate in the future.

Moreover, of the spatial locatives in Kavalan *sa* '(move) to' seems to be the most polysemous morpheme. In addition to the functions outlined in Chapter 3, *sa* also bears numerous functions with respect to nominalized verbs (i.e. marked by the suffix *–an*), including Goal, Instrument, Beneficiary, etc. For example, while *qautu* means "come",

sa-qautu-an is something used to make somebody come (e.g. an invitation card). Similarly, while *zaqis* means “ascend, climb”, *sa-zaqis-an* is any tool that helps one to go up somewhere (e.g. a ladder). Interestingly, shared cognates of this particular form (abbreviated as SA) are attested in many other Formosan (or even Malayo-Polynesian) languages, including Amis, Paiwan, Rukai, Saisiyat, etc. In terms of non-spatial functions, SA serves as a Referential Focus marker in some languages, but behaves more like a modal marker in others. This state of affairs provides researchers with an excellent realm of comparative studies, where one can not only construct a taxonomy of the semantic evolutions of SA across languages, but also verify the correlation between space and modality across Formosan languages. Comparative studies on basic spatial functors such as SA in particular and spatial language as a whole in general may help to shed some light on the intricacy among language, cognition, and culture in the long run.

Note

[1] Although Amis refers to cardinal east by seaward direction just like Kavalan (cf. *sa-qa-wali* ‘eaat’ in Amis and *waRi* ‘east’ in Kavalan), the relationship between the term for cardinal west (i.e. *satip* ‘west’) and that for landward direction in Amis is rather obscure. Some future studies are needed in order to find out whether Amis makes much of the land-sea contrast as Kavalan does.

References

Adelaar, K. Alexander. 1997. An exploration of directional systems in West Indonesia and Madagascar. *Referring to space: studies in Austronesian and Papuan languages,* ed. by Gunter Senft. Oxford; New York: Clarendon Press.

Aksu-Koç, Ayhan A. 1994. Development of linguistic forms: Turkish. *Relating Events in Narrative: A Crosslinguistic Developmental Study*, eds. by Ruth A. Berman and Dan Isaac Slobin, 329-384. Hillsdale, New Jersey: Lawrence Erlbaum.

Ameka. F. K. 1995. The linguistic construction of space in Ewe. *Cognitive Linguistics 6*(2/3): 139-181.

Bennardo, Giovanni, ed. 2002. *Representing space in Oceania: Culture in language and mind.* No. 523. Canberra: Pacific Linguistics.

Black, Barry J. 2001. *Case*. Cambridge; New York: Cambridge University Press.

Blust, Robert. 1997. Semantic change and the conceptualization of spatial relationships in Austronesian languages. *Referring to space: studies in Austronesian and Papuan languages*, ed. by Gunter Senft. Oxford; New York: Clarendon Press.

Bowden, John. 1991. *Behind the preposition: Grammaticalization of locatives in Oceanic languages*. MA thesis, University of Auckland.

Bowerman, Melissa, Penny Brown, Sonja Eisenbeiss, Bhuvana Narasimhan, and Dan I. Slobin. 2002. Putting things in places: Developmental consequences of linguistic typology. Symposium, Child Language Research Forum, Stanford University.

Bowerman, Melissa. 1996. Learning how to structure space for language: A crosslinguistic perspective. *Language and space*, eds. by Paul Bloom, Mary A. Peterson, Lyn Nadel, and Merrill F. Garret, 385-436. Cambridge, MA: MIT Press/Bradford Books.

Broschart, Jürgen. 1997. Locative classifiers in Tongan. *Referring to space: studies in Austronesian and Papuan languages*, ed. by Gunter Senft. Oxford; New York: Clarendon Press.

Brown, Cecil H. 1983. Where do cardinal direction terms come from? *Anthropological Linguistics* 25: 121-61.

Chafe, Wallace L. 1980. *The pear stories: Cognitive, cultural, and linguistic aspects of narrative production.* Norwood, NJ: Ablex.

Chang, Henry Yung-li. 1997. *Voice, Case, and Agreement in Seediq and Kavalan*. Ph.D. dissertation, Graduate Institute of Linguistics, National Tsing Hua University.

_____. 2000.《噶瑪蘭語參考語法》(*A Reference Grammar of Kavalan*). Series on Formosan Languages, 12. 台北：遠流出版社。(Taipei: Yuanliou Publishing Co.)

_____. 2004. The syntax of adverbial modification in Kavalan and Tsou. In *Proceedings of IsCLL-9*.

_____. 2006. Verb sequences in Formosan languages: SVCs or secondary predicates? Presented at IACL-14 and IsCLL-10.

Dale, R., S. Geldof, and J. Prost. 2003. CORAL: Using natural language generation for navigational assistance. *Proceedings of the 26th Australasian Computer Science Conference (ACSC 003)*, ed. by M. Oudshoorn. Adelaide, South Australia.

DeLancey, Scott. 1997. Grammaticalization and the gradience of categories: Relator nouns and postpositions in Tibetan and Burmese. *Essays on Language Function and Language Type*, eds. by J. Bybee, J. Haiman, and S. A. Thompson, 51-69. Amsterdam, Philadelphia: John Benjamins.

Diessel, H. 1999. *Demonstratives: Form, Function, and Grammaticalization.* Typological Studies in Language, 42. Amsterdam: John Benjamins.

_____. 2003. Demonstratives in language use and grammar. San Marino Summer School.

Du Bois, John, Stephan Schuetze-Coburn, Susanna Cumming, and Danae Paolino. 1993. Outline of discourse transcription. *Talking data: Transcription and coding for language research*, eds. by Jane Anne Edwards and Martin D. Lampert, 45-89. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Ebert, Karen H. 1985. Wo ist “da” in Papua? *Zeitschrift für Sprachwissenschaft* 4: 259-78.

Ehrich, Veronika. 1991. Hier und Jetzt: Studien zur positionalen und temporalen Deixis im Deutschen. Nijmegen, Cologne: Mimeo.

Ferrell, Raleigh. 1982. *Paiwan Dictionary*. Pacific Linguistics C, No. 73. Canberra: Department of Linguistics, Research School of Pacific Studies, Australian National University.

Fillmore, Charles J. 1971/1975. *Santa Cruz lectures on Deixis*. Reproduced by the Indiana University Linguistics Club 1975. Bloomington, Indiana.

François, Alexandre. 2003. Of men, hills, and winds: space directionals in Mwotlap. *Oceanic Linguistics*, 42(2): 407-437.

Haude, Katharina. 2006. A grammar of Movima. PhD dissertation, Radboud

Hill, Deborah. 1997. Finding your way in Longgu: Geographical reference in a Solomon Islands language. *Referring to space: studies in Austronesian and Papuan languages*, ed. by Gunter Senft. Oxford; New York: Clarendon Press.

Huang, Lillian. 1997. Serial verb constructions in some Formosan languages.

Presented at 9-ICAL, AS, Taipei.

Huang, Shuanfan and Chung-chih Chang. (黃宣範、張宗智). 1995.「噶瑪蘭語：語言社會學的研究」,《臺灣南島民族母語研究論文集》。李壬癸、林英津編輯，頁 241-256。(Kavalan: a sociolinguistic study, *Proceedings of research on Forman languages*, eds. by Paul Jen-kuei Li and Ying-chin Lin, 241-256.)

Huang, Shuanfan and Michael Tanangkingsing. 2005. Reference to motion events in six western Austronesian languages: A semantic typology. *Oceanic Linguistics* 44(2): 307-340.

Huang, Shuanfan, Lily I-wen Su, Li-May Sung. 2004. *Language, space, and emotion.* NSC Project. National Taiwan University.

Huang, Shuanfan, Li-May Sung, and Wen-yu Chiang. 2006. *Discourse and Cognition in Kavalan.* NSC Project. National Taiwan University.

Huang, Shuanfan. 2001. Two different ways to travel. Paper presented at the Association of Linguistic Typology IV Conference, July 18-21, Santa Barbara, California.

_____. 2002a. Tsou is different: a cognitive perspective on language, emotion, and body. *Cognitive Linguistics* 13(2): 167-186.

_____. 2005. Split O in Formosan languages: A Localist interpretation. *Language and Linguistics* 6(4): 783-806.

Huang, Shuping and Li-May Sung. 2006, The Undergoer Focus *ma-* in Kavalan. Presented at the 10-ICAL, Palawan, Philippines .

Hyslop, Catriona. 2002. Hiding behind trees on Ambae: Spatial reference in an Oceanic language of Vanuatu. *Representing space in Oceania: Culture in language and mind*, No. 523, ed. by Giovanni Bennardo. Canberra: Pacific Linguistics.

Jackendoff, Ray S. 1990. *Semantic Structures*. Cambridge, MA: The MIT Press.

Keating, Elizabeth. 2002. Space and its role in social stratification in Pohnpei, Micronesia. *Representing space in Oceania: Culture in language and mind*, No. 523, ed. by Giovanni Bennardo. Canberra: Pacific Linguistics.

Klippel, Alexander, Heike Tappe, and Christopher Habel. 2003. Pictorial representations of routes: Chunking route segments during comprehension. *Spatial Cognition III --- Routes and Navigation, Human Memory and Learning, Spatial Representation and Spatial Learning*, eds. by Christian Freksa, Wilfried Brauer, Christopher Habel and Karl F. Wender, 11–33. Lecture Notes in Artificial Intelligence. Berlin: Springer.

Koffka, K. 1935. *Principles of Gestalt Psychology*. New York: Harcourt Brace.

Köhler, W. 1929. *Gestalt Psychology*. New York: Liverright.

Lakoff. G. 1987. *Women, fire and dangerous things: What categories reveal about the mind*. Chicago: University of Chicago Press.

Langacker, Ronald W.1986. An introduction to cognitive grammar. *Cognitive Science* 10: 1-40.

Langacker, Ronald. 1987. Foundations of cognitive grammar, Vol. 1: Theoretical prerequisites. California: Stanford University Press.

Language, Mind, and Culture, eds. by Suzanne Kemmer and Michel Achard, 199-211. CSLI.

Lee, Amy Pei-jung. 1997. *The Case-marking and Focus Systems in Kavalan*. MA thesis, National Tsing Hua University.

Levinson, Stephen. 1996. Frames of reference and Molyneux's question: cross-linguistic evidence. *Language and space*, eds. by Paul Bloom, Mary A. Peterson, Lynn Nadel, and Merrill F. Garrett, 109-169. Cambridge: MIT Press.

_____. 2003. *Space in language and cognition: Explorations in cognitive diversity*. Cambridge: Cambridge University Press (CUP).

Li, Chao-Lin. 2004. *The spatial representations in Paiwan*. MA thesis, National Chung Cheng University.

Li, Paul Jen-kuei. (李壬癸). 1996.《宜蘭縣南島民族與語言》，宜蘭市：宜蘭縣政府 (*Austronesian peoples and languages in Yilan County*. Yilan City: Yilan County Government)。

_____. 2006. The internal relationships of Formosan languages. Handout for the lecture at National Taiwan University, Mar. 6, 2006.

Lovelace, K., M. Hegarty, and D. R. Montello. 1999. Elements of good route directions in familiar and unfamiliar environments. *Spatial information theory. Cognitive and computational foundations of geographic information science*, eds. by C. Freksa and D. M. Mark, 65-82. Berlin: Springer.

Majid, Asifa, Melissa Bowerman, Sotaro Kita, Daniel B.M. Haun, and Stephen C. Levinson. 2004. Can language restructure cognition? The case for space. *Trends in Cognitive Science* 8: 108-114.

Matsumoto, Yo. 2003. Typologies of lexicalization patterns and event integration: Clarifications and reformulations. *Empirical and Theoretical Investigations into Language: A Festschrift for Masaru Kajita*, eds. by Shuji Chiba *et al.*, 403-418. Tokyo: Kaitakusha.

Mayer, M. 1969. *Frog, where are you?* New York: Dial Books.

Palmer, Bill. 2002. Absolute spatial reference and the grammaticalization of perceptually salient phenomena. *Representing space in Oceania: Culture in language and mind*, No. 523, ed. by Giovanni Bennardo. Canberra: Pacific Linguistics.

Pawlak, Nina. 2003. Locative prepositions in Chadic: Lexical or grammatical morphemes. *Motion, Direction and Location in Languages*, eds. by Erin Shay and Uwe Seibert, 235–254. Amsterdam; Philadelphia: John Benjamins.

Pederson, E. 1993. Geographic and manipulable space in two Tamil linguistic system. *Spatial Information Theory: A Theoretical Basis for GIS*, eds. by A. Frank and I. Campari. Lecture Notes in Computer Sciences No. 716, 294-311. Berlin: Springer-Verlag. Presented at the CSDL-6, Rice University, Houston, Texas, October 10-12.

Richter, Kai-Florian and Alexander Klippel. 2005. A model for context-specific route directions. *Spatial Cognition IV. Reasoning, Action, Interaction: International Conference Spatial Cognition 2004*, eds. by Christian Freksa, Markus Knauff, Bernd Krieg-Brückner, Bernhard Nebel, and Thomas Barkowsky, 58–78. Berlin: Springer.

Richter, Kai-Florian, Alexander Klippel, and Christian Freksa. 2004. Shortest, fasters, --but what next? A different approach to route directions. *Geoinformation und Mobilität - von der Forschung zur praktischen Anwendung*, eds. by Martin Raubal, Adam Sliwinski, and Werner Kuhn, 205–217. Beiträge zu den Münsteraner GI-Tagen 2004. IfGIprints. Münster: Institut für Geoinformatik.

Senft, Gunter. ed. 1997. *Referring to space: studies in Austronesian and Papuan languages*. Oxford; New York: Clarendon Press.

Sinha, C. and L. Thorseng. 1995. A coding system for spatial relational reference. *Cognitive Linguistics* 6: 261-309.

Sinha, C. and T. Kuteva. 1995. Distributed spatial semantics. *Nordic Journal of Linguistics* 18: 167-199.

Slobin, D. I. 1996. Two ways to travel: Verbs of motion in English and Spanish. Grammatical constructions: Their form and meaning, eds. by M. S. Shibatani and S. A. Thopson, 195-220. Oxford: Clarendon Press.

_____. 1997. Mind, code, and text. *Essays on language function and language type: Dedicated to T. Givón*, eds. by J. Bybee, J. Haiman, and S. A. Thompson, 437-467.

_____. 2000. Verbalized events: A dynamic approach to linguistic relatiavity and determinism. *Evidence for linguistic relatigvity*, eds. by S. Niemeier and R. Dirven. 107-138. Amsterdam, Philadelphia: John Benjamins.

_____. 2004. The many ways to search for a frog: Linguistic typology and the expression of motion events. *Relating events in narrative,* Vol. 2*: Typological* and contextual perspectives, eds. by S. Strömqvist and L. Verhoeven, 219-257.

Sugiyama, Yukiko. In press. Not all verb-framed languages are created equal: The case of Japanese. *Proceedings of the Thirty-first Annual Meeting of the Berkeley Linguistics Society* (2005).

Svorou, Soteria. 1994. *The grammar of space*. Amsterdam; Philadelphia: J. Benjamins.

Talmy, Leonard. 1972. *Semantic structures in English and Atsugewi*. Doctoral Dissertation, University of California at Berkeley.

_____. 1983. How language structures space. In *Spatial Orientation: Theory, Research, and Application.*

_____. 1985. Lexicalization patterns: semantic structure in lexical forms. *Language typology and syntactic description,* Vol. 3: *Grammatical categories and the lexicon,* ed. by Timothy Shopen, 57-149. Cambridge: Cambridge University Press.

_____. 1991. Path to realization: a typology of event conflation. *Berkeley Linguistic Society* 17: 480-519.

_____. 1996. Fictive motion in language and "ception". *Language and space*, eds. by Paul Bloom, Mary A. Peterson, Lynn Nadel & Merrill F. Garrett, 211-276. Cambridge: MIT Press.

_____. 2000a. *Toward a Cognitive Semantics*, Vol. I: *Concept Structuring Systems*. Cambridge: MIT Press.

_____. 2000b. *Toward a Cognitive Semantics*, Vol. II: *Typology and Process in Concept Structuring*. Cambridge: MIT Press.

_____. 2005. Written interview on my work conducted by Iraide Ibarretxe: Part 1. *Annual Review of Cognitive Linguistics*, Vol. 3: 325-347. John Benjamins.

Tanangkingsing, Michael. 2002. A Study of Motion Events in Saisiyat and Cebuano. Presented at the CSDL-6, Rice University, Houston, Texas, October 10-12.

_____. 2003. "Do we move in different ways" or "do we differ in our ways to move": A study of Motion verbs in four Austronesian languages. Presented at the Second Workshop on the "Verb" in Formosan Languages, Academia Sinica, Taipei, November 1-2.

_____. 2004. A Study of Motion events in Saisiyat and Cebuano. *Language, Mind, and Culture*, ed. by Suzanne Kemmer and Michel Achard, 199-211. CSLI.

Teljeur, Dick. 1987. Spatial orientation among the Giman of South Halmahera. *Halmahera Dan Raja Ampat Sebagai Kesatuan Majemuk.* Studi-Studi Terhadap Suatu Daerah Transisi. *Buletin Leknas* 2(2) (1983). Terbitan Hausus, ed. by E. K. M. Masinambow, 347-366. Jakarta: Lembaga Ekonomi dan Kemasyarakatan Nasional.

Tryon, Darrell T. ed. 1995. *Comparative Austronesian dictionary : an introduction to*

Austronesian studies. Berlin, New York: Mouton de Gruyter.
University, Nijmegen.

Wälchli, B. and Zuñiga, F. 2003. *The feature of systematic Source-Goal and a typology of motion events in the clause.* 5th Biennial Meeting of the Association for Typology, Cagliari, 2003 (improved version, which is available at http://www.uni-leipzig.de/~zuniga/files/displ-paper.pdf).

Wälchli, Bernhard. 2001. A typology of displacement (with special reference to Latvian). *Sprachtypologie und Universalienforschung* 54(3): 298-323.

Wassmann, Jürg. 1997. Finding the right path: The route knowledge of the Yupno of Papua New Guinea. *Referring to space: studies in Austronesian and Papuan languages*, ed. by Gunter Senft. Oxford; New York: Clarendon Press.

Wu, Chun-ming and Henry Yungli Chang. 2005. Noun incorporation in Paiwan. Presented at the Taiwan-Japan Joint Workshop on Austronesian Languages, Taipei, June 23-24.

Wu, Hsiao-Ching. 2004. *Spatial conceptualizations in Tsou and Saisiyat*. MA thesis, National Taiwan University.

Yang, Gloria Fan-pei. 2001. *Evidentiality in Tsou*. MA Thesis, National Taiwan

Zeitoun, Elizabeth and Lillian M. Huang. 2000. Discussion on *ka-*, an overlooked marker of verbal derivation in the Formosan languages. *Oceanic Linguistics*, 39(2): 391-414.

Zeitoun, Elizabeth. 1993. A semantic study of Tsou case markers. *Bulletin of the Institute of History and Philology* 64(4): 969-989.

_____. 2000.《布農語參考語法》 (*A Reference Grammar of Bunun*). Series on Formosan Languages, 5. 台北：遠流出版社。(Taipei: Yuanliou Publishing Co.)

Zlatev, J. 1997. Situated embodiment: Studies in the emergence of spatial meaning. Stockholm: Gotab.

_____. 2003. Holistic spatial semantics of Thai. *Cognitive Linguistics and Non-Indo European Languages*, eds. by E. Casad and G. Palmer. Berlin: Mouton de Gruyter.

_____. To appear. The Semantics of spatial expressions. *Encyclopedia of Language. and Linguistics*, 2nd Edition. Oxford: Elsevier.

Zlatev, J. and P. Yangklang. 2003. A third way to travel: The place of Thai (and other Serial Verb Languages) in motion event typology. *Relating Events in Narrative: Cross-linguistic and Cross-contextual perspectives*, eds. by S. Strömqvist and L. Verhoeven. Mahwath, N.J.: Earlbaum.