The Structure of Spatial Expressions in Saisiyat[1]

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Abstract

In this paper we investigate the structure of spatial expressions in Saisiyat based in part on corpus data. Our corpus material includes both narratives and conversations that together run for approximately 100 minutes. First, the corpus was searched for syntactic patterns of spatial expressions. The structure of dynamic motion expressions is then examined with regard to types and tokens of motion verbs, expression of ground elements, directionality in path verbs, and serial verb constructions. We conclude that Saisiyat, like most of the Austronesian languages in Taiwan, is a verb-framed language.

1 Introduction

Recent research on the structure of spatial language (Talmy 1983, 1985, 2000; Bloom et al. 1996) suggests that the linguistic spatial representation is a window on the human conceptualization of the world. Many scholars have researched the grammar of space in English (Leech 1969; Bennett 1975; O'Keefe 1996), and in Austronesian languages (Utsurikawa 1993; Senft 1997). However, the spatial representations in Saisiyat, an Austronesian language in Taiwan, have not been thoroughly studied. Utsurikawa (1993) has suggested that in Saisiyat, the orientations of the east and of the north relate to the motion of sun as well as to the direction of the chilly wind. Much of the structure of spatial concepts in Saisiyat has remained largely unexplored. Our goal in this paper is to fill in the gap in our understanding of the grammar of space in the language.

In Saisiyat, there is a locative case marker *ray* before a location in general sentences as well as a location focus *–an* in location-emphasized sentences (Yeh 2000; Tanangkingsing 2003). When we compare Saisiyat with other Austronesian languages spoken in Taiwan, we found that Saisiyat is on a par with most of the other Formosan languages since it has only one locative marker, which is what most Formosan languages have. Both locative case marker and location focus are used in languages such as Pazah (Lin 2000), Tsou (Zeitoun 2000; Huang, S. 2002) and Atayal (Huang, L. M. 2000). Many Austronesian languages spoken in Taiwan only have either one of the syntactic system mentioned above. For example, only locative case is used in Shao (Huang, L. M. 2000), Puyuma (Huang, L. M. 2000) and Kavalan (Chang 2000; Lee 2003), and location focus alone is used in Bunun (Zeitoun 2000), Seediq (Chang 2000), and Amis (Wu 2000). Only a few languages, such as Rukai (Zeitoun 2000), do not have locative case marker and location focus.

We start with an analysis of spatial terms including directionals and locatives in Section 2. Then in Section 3, we present the syntax of these spatial terms. In Section 4, we discuss Ground in motion-verbs, directionality in Path verbs, and serial verb constructions. Section 5 is the conclusion.

2 Semantics of Spatial Terms – Directionals and Locatives

Blust divides spatial system into systems of "macro-orientation" and "micro-orientation" (Blust 1997:39-40). According to his definition, the "macro-orientation" refers to the directional system, and the "micro-orientation" refers to the system of location. Examples for the "macro-orientation"

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are cardinal directions such as "north/south/west/east" and directional terms such as "left/right"; examples for the "micro-orientation" are notions of "inside/outside/above" and "below." These systems differ because "macro-orientation may be sensitive to gross environmental differences," whereas "no such expectation holds for systems of micro-orientation" (Blust 1997:40).

Our collected data of spatial terms in Saisiyat (see Table 1) partially correspond to Blust's classifications of spatial system in that the semantic changes of cardinal directional terms has much to do with the source domains of the sun (the orientations of east and west) and of the wind or the seasons (the orientations of south and north), while the directional terms such as "left/right" are derived from the body part relations.

In Utsurikawa (1993), the orientation of the east in Saisiyat derives from the motion of the sun, and the north derives from the direction of the chilly wind. The word *kapayhahila'an* 'east' comes from the stem *hahila*, which is the 'sun.' In our explanation, the "sun" becomes a noun by adding a locative case –*an* with a prefix *pay* and a gerundive tense prefix *ka-*. Similarly, *kap'na'amiSan* 'north' comes from the stem *amiS*, which means the chilly wind, with gerundive prefix *ka-* and the locative focus -*an*. This cardinal orientation from the sun and the wind is similar to many languages of mountainous surroundings (cf. Heine, Claudi, and Hünnemeyer 1991; Utsurikawa 1993; Svorou 1994; Blust 1997).

We display in Table 1 the spatial terms that are usually involved in spatial expression:

Table 1. Spatial Terms in Saisiyat

Saisiyat	Glossed in English
babaw	top region of object; above; over; on
hahoer	bottom region of object; under
hikor	back; behind
wazwaz	middle region; between; center
ka'anal	right hand; right
kayri	left hand; left
kapayhahila'an	east
kaheban	west
kap'naba'an	south
kap'na'amiSan	north

These spatial terms presented in Table 1 are mostly locative nouns derived from either body part relations (i.e., *hikor* 'back; behind,' *ka'anal* 'right hand; right,' and *kayri* 'left hand; left'). *hikor* means the back of the body; it also refers to the spatial relationship of 'behind.' *ka'anal* is the right hand; it is also the right side. Similarly, *kayri* is the left hand as well as the left side.

Among these location terms, *babaw* 'above,' *hahoer* 'below,' and *wazwaz* 'middle; center,' we find that Saisiyat is different from English and Chinese but similar to Proto-Malayo-Polynesian languages (Blust 1997). It uses only one word *babaw* to represent the spatial concept of an upper or a surface region, such as above, up, high, and so on. Symmetrically, it uses *hahoer* to represent the space that is in the lower region, such as concepts of below, down, and under. Besides these two words, *wazwaz* indicates the middle position in a situation where things are lined up in a row. It also means the center of a two-dimensional circle or of a three-dimensional ball. When indicating the center, *wazwaz* is not restricted to circular or round things; it can point to the center of a square room. As for objects with irregular edges, such as humans, mountains or fish, *wazwaz* means the trunk of the human body extending from the armpits to the waist, the hillside of a mountain range, or the middle part of a fish ranging from the gill split to the part before the caudal fin.

3 Syntactic Patterns

In this section we investigate how the spatial system is structured in syntax. We first note in 3.1 a strong tendency in Saisiyat to eschew the use of directional terms denoting left and right. In 3.2, we exam our corpus and obtain several syntactic patterns for spatial terms. Since we find that in the general pattern, spatial terms are usually used with words of *hao/hiza* 'there,' we then exam in 3.3 the close relationship between demonstrative pronoun *hao/hiza* 'there,' locative NP and location terms.

3.1 Avoiding the use of Directionals

Saisiyat is different from English and Chinese in that it does not allow horizontal and vertical terms to co-occur in the same sentence. In other words, it does not have expressions such as upper right, upper left, lower right, or lower left. Without these kinds of expressions, our question is how a Saisiyat speaker expresses the spatial relation between objects in describing what has been seen to another person. We asked our informant to describe the classroom scenes where he sat in for us. Their descriptions are presented in (1) and (2) below.

(1)   ray   katita'an ka hahila   hahoer   hayza   ka   saengan.
          Loc   clock   under   have   Nom   chair
          "There is a chair under the clock."   (Field notes)

(2)   ray   ka   saengan   langi   hayza   ka   inohas.
          Loc   Nom   chair   beside   have   Nom   window
          "Beside the window, there is a chair."   (Field notes)

The informant uses two sentences to describe the relationship between a chair, a window, and a clock. What is more interesting is that our informant refuses to use "left" or "right" to describe the relationship between these objects. He only uses *haehoer* 'below' and *lang'i* 'beside.'

The avoidance of the terms left or right also occurred when we asked the informant to describe a map for us. In order to understand how Saisiyat directionals and location terms are used, we draw a map. The map conveys spatial information, such as the relationship between stores at crossroads, branch roads, pond, and so on. We made up a story about someone going from *Oka*'s house to *Bowa*'s house, and then we asked the informant to look up the map and tell the protagonist how to get to *Bowa*'s house with the aid of the map. The map is designed as follows: The person has to start from *Oka*'s house, make a left turn, and then go straight until he sees a tree. Then he turns right and goes straight to reach an intersection. There he has to enter a shoe store on the right side to buy a pair of shoes for *Bowa*. After buying shoes, he has to walk around a pond until he comes to a place where two roads start. The person has to choose the road on the right that leads to a hospital. Then he goes on to the road at the back of the hospital. The second house on the right is *Bowa*'s house.

When narrating the map, our informants did not use more than one directional term within one utterance. When they were asked to describe the layout at an intersection where they had to remind the protagonist of the story to go to the store on the right side to buy shoes, most of them simply skipped the description of the crossroads and only told the protagonist in the story to buy shoes at that crossroad. Only one subject attempted to describe the location of the shoe store, which is the number 3 shoes store in Figure 1. The description is presented in (3) below.

(3)   rima   ray   ka'anal   ray   kaliokan   'aehae'   ka   ka-paiw-an
          go   Loc   right   Loc   edge   one   Acc   ka-sell-LF
          "Go to the store on the right side on the side."   (kao map)

However, description (3) is still not clear. Therefore, we asked all the informants to describe the intersection for us again after they finished the narration. One informant split the instructions into two parts. He first instructed the protagonist to look at the left, and then in the second step, he told the protagonist to look at the front where he saw a shoe store. The other informant refused to use any spatial instructions. He only told the protagonist to buy shoes at the crossroads because, in his words, one will know where to buy shoes by looking for the shoe store. Since we needed to test how spatial expressions are used in Saisiyat, we then modified the four corners of the intersection to four shoe stores. Examples (4) to (5) are data collected from different subjects. The number in front of the sentence indicates the number of shoe store that the informant describes.
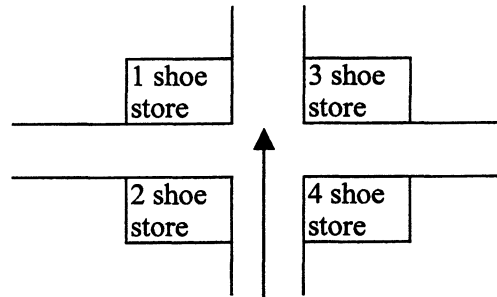
Figure 1. Map of crossroads with shoe stores.

(4)   (Fong map)
1.   ray   ka-pai:w-an   ka   haehoeway   ray   kayri   kabih
      Loc   ka-buy-LF   Acc   shoe   Loc   left   side
      "At the shoe store to the left side."

2.   ray   ka-pai:w-an   ka   haehoeway   ray   kayri
      Loc   ka-buy-LF   Acc   shoe   Loc   left
      "At the shoe store to the left."

3.   ray   ka-pai:w-an   ka   haehoeway   ray   ka'anal   kabih
      Loc   ka-buy-LF   Acc   shoe   Loc   right   side
      "At the shoe store to the right side."

4.   ray   ka-pai:w-an   ka   haehoeway   ray   ka'anal
      Loc   ka-buy-LF   Acc   shoe   Loc   right
      "At the shoe store to the right."

The informant of (4) varies the end of each sentence. Instead of saying "right-front" as Chinese speakers do, the informant says "right" plus "side" when describing the store in the front. This again is evident of that directional terms are not allowed to co-occur in Saisiyat. Another interesting finding is that when we take off number 2 shoe store, which is on the left side of the road, the informant labeled number 1 shoe store as *ray kayri* 'left' instead of *ray kayri kabih* 'left side.' The reason is, according to the informant, that saying so will not cause any confusion since there is only one shoe store on the left. As a result, the word *kabih* needs not to be specified. It seems that the expression of *ray kayri kabih* 'left side' is not natural; therefore, the informant only uses such expression when it is necessary.

(5)   (Chu map)
       rosa'   taw'an   katil-haehoeway'-an
       two   house   sell-shoe-LF
       "There are two shoe stores."

       hinibih   ray   kayri
       turn   Loc   left
       "Turn left."

2.   'aehae'   ray   kayri
       one   Loc   left
       "The one on the left."

1.   'aehae'   ray   ka'anal
       one   Loc   right
       "The one on the right."

hinibih   ray   ka'anal
turn   Loc   right
"Turn right."

3. 'aehae'   ray   kayri
    one   Loc   left
    "The one on the left."

4. 'aehae'   ray   ka'anal
    one   Loc   right
    "The one on the right."

The informant of (5) also shows difficulties in describing the four shoe stores at the intersection. However, the informant still does not juxtapose two directional terms such as "front" with "left/right" in the same utterance. The only one informant who uses both the directionals of "front" and "left/right" within the same utterance, as presented in (6) below.

(6)   (kao map)
1. kabih   ray   ka   kahoeway
    side   Loc   Nom   shoe
    "The shoe store on that side."

2. kati'ala   ray   ka   kahoeway
    front   Loc   Nom   shoe
    "The shoe store in the front."

3. kabih   ray   ka'anal
    side   Loc   right
    "On that side to the right."

4. ray   kati'aela   ka'anal
    Loc   front   right
    "To the right in the front."

Since the other three informants did not juxtapose two directional terms in one utterance and they all seem to encounter difficulties in describing the crossroads, we assume that the expression in (6) above is not natural.

Among the narrations of the map story, we found a spatial expression frequently used by the informant, which is presented in the following:

(7)   lososoi   ka-bai:w-an   ka   hahoeway   ray   ka'anal / kayri'.
       go_straight   ka-buy-LF   Acc   shoe   Loc   right   / left
       "Go straight to the shoe store on the right/left."   (Field notes)

(8)   lososoi   yo   ray   ka'anal
       go_straight   DM   Loc   right
       "Go straight and turn right."   (Field notes)

Sentences (7) and (8) show a pattern in the retelling of the map story, wherein the VP is followed by a locative predicate composed of [*ray* + left/right]. Concluding from the examples above, we suggest that directional phrase of left/right is used in the sentence-final position.

3.2 Syntactic Patterns of Spatial Expressions

In this subsection, we examine five Pear Story narrations (Pear 1-5), six Frog Story narrations (Frog 1-5, Frog 7), one flood story narration, and two Conversation texts (Life, Election). From these data,

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we obtain a total of 109 sentences that have location terms (LT), such as *babaw* 'above/over/on,' *'izo'* 'inside,' *hahoer* 'under,' *hikor* 'back,' and so on. Then from these sentences, we obtain some syntactic patterns of static expressions, which are shown in the following together with examples:

General Pattern:

(NP) VP $\left\{\begin{array}{l}(hao)\\(hiza)\\(hini)\\(hani)\end{array}\right\}$ (Loc) (NP) LT (VP)

NP (Loc) (NP) LT VP

This general pattern is the most pervasive, which can generate many other examples, such as (9) and (10). *Hao, hiza, hini,* and *hani* are different degrees of 'there.' The pattern in (9) is: S VP *hao* LT VP; in (10): S *hao* Loc NP LT VP.

(9) isahiza ka   tatini' rima ta-'itol   ila ha:o babaw o:
     that   Nom old_man go-AF move_up-AF Pfv there above DM

     r-om-okrok   ka   boway
     pick-AF   Acc   fruit
     "The old man went up the tree to pick fruits there." (Pear 1:28-31)

(10) tatini' ha:o   ray kahoey babaw 'okay sa-sahoeroei
     old_man there   Loc tree   above Neg Red-see-AF
     "(Because) the old man was up in the tree (and) didn't see." (Pear 1:54-55)

Another pattern is an existential pattern. Examples are presented as in (11) and (12).

Existential Pattern 1:

Loc NP $\left\{\begin{array}{l}hao\\hiza\\hini\\hani\end{array}\right\}$ LT Exist NP

(11) ray 'aehae' kahoey ima hao 'izo'   kita'-en hayza takem
     Loc one   tree   there inside see-PF Exist frog
     "Inside one tree, there is a frog." (Frog 3:147-150)

Existential Pattern 2:

NP Exist $\left\{\begin{array}{l}hani\\hiza\\hini\\hani\end{array}\right\}$ LT

(12) takem witi'   ma= hayza   ila hani 'izo'
     frog   [Hak]   Exist   there inside
     "There is a frog inside there." (Frog 4:47)

There are four sentences that have *kisray* or *in'aray* 'from.' The word order is in the following pattern as shown in (13).

"From" Pattern:

$\left\{\begin{array}{l}kisray\\in'aray\end{array}\right\}$ NP LT (VP)

(13) 'in'aray   binbinisitan   'izo'   kasna'itol   ila
     from   container   inside   move_up   Pfv
     "The frog inside the container (jumped) out."   (Frog 1:9-10)

3.3 Word Order of Demonstrative Pronouns, Loc NP and Location Term

The previous subsection shows that in many sentences in our corpus, location terms (LTs) co-occur with demonstrative pronouns (DPs) *hao/hiza* 'far-away-there/there.' In this subsection, we will examine the collocation of demonstrative pronouns and LTs. The data in Table 2 is obtained from our corpus showing the pattern of the positions of DM, Loc NP and LT. As shown in the table, there are three possible patterns, and examples of each pattern are presented in (14), (15) and (16) after Table 2. Among the three patterns, Pattern 2 is only used in existential sentences with its Loc NP and LT separated by a DP.

Table 2. Word Order of Demonstrative Pronouns, Loc NP and Location Terms.

Word Order	Position 1	Position 2	Position 3
Pattern 1	DP	Loc NP	LT
Pattern 2	Loc NP	DP	LT
Pattern 3	Loc NP	LT	DP

(14) **Pattern 1:**
     tatini'   **ha:o**   **ray**   **kahoey**   **babaw**   'okay   sa-sahoeroei.\
     old_man   **there**   **Loc**   **tree**   **above**   Neg   Red-see-AF
     "(Because) the old man was up in the tree (and) didn't see." (Pear 1: 54-55)

(15) **Pattern 2:**
     ray   **'aehae'**   **kahoey**   ima   **hao**   **'izo'**   kita'-en   hayza   takem
     Loc   **one**   **tree**   **there**   **inside**   see-PF   Exist   frog
     "Inside one tree, there is a frog."   (Frog 3:147-150)

(16) **Pattern 3:**
     hini   korkoring   kasna'itol   **ray**   **kahoey**   **babaw**   **hiza**
     this   child   move_up   **Loc**   **tree**   **above**   **there**
     "This child climbs up the tree."   (Frog 3: 87)

Our informants provided us with the following word order based on their intuition: [DP Loc NP LT]. This word order matches Pattern 1 stated in Table 2. Furthermore, our informants always give us sentences corresponding to Pattern 1 when they provide us elicited data. Although Pattern 2 and 3 are acceptable, our informants prefer Pattern 1 when we double-checked the corpus sentences with them. Therefore, we hypothesize that there seem to be a syntactic pattern in the mind of our informants. They construct sentences out of this pattern when they have enough time. However, in a narration when they have to keep planning for speech and to keep on talking at the same time, they possibly generate different patterns of spatial expressions under time pressure. We therefore obtain the three patterns listed in Table 2 in our corpus, though Pattern 1 is regarded as the best as well as the only pattern that our informants use in our field notes. From our informant's intuition, we hypothesize that Pattern 1 is the syntactic pattern in the mind of Saisiyat people, while Pattern 2 is especially used in existential sentences, and Pattern 3 is not a good pattern for our informants.

4 Dynamic Motion Events

Motion events are correlated with directionality of the motion, path of the motion, etc., and these elements are related to the classification of the language (i.e. satellite-framed language, verb-framed language, equipollently-framed language). Previous studies on Austronesian languages in Taiwan suggest that Tsou is a macro-event language (Huang S. 2002), while Saisiyat (Tanangkingsing 2003) and Kavalan (Lee 2003) are verb-framed languages. In this section, we examine the dynamic motion events in order to have a more complete understanding of the spatial expressions in Saisiyat.

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4.1 Motion Verbs

Talmy (1985, 2000) has proposed to categorize languages in the world into Satellite-frame languages (S-languages) and Verb-framed languages (V-languages). Satellite-framed languages, such as English, German, and Polish, express Path by satellite elements other than inflections, auxiliaries, or nominal arguments, while Manner is incorporated in motion verbs. On the other hand, Verb-framed languages, such as Spanish, French, and Turkish, conflate Path and motion verbs, while Manner is expressed by a separate clause.

Slobin (2003) modifies Talmy's proposal and adds a third type of language, Equipollently-framed language (E-language), which incorporates both Path and Manner as equivalent components in a motion verb. We apply the classifications of motion events proposed by Talmy and Slobin to examine motion verbs in eight frog stories in our corpus, as illustrated in Table 3. Moreover, we only look at Motion verbs. Other verbs such as Activity verbs or Perception verbs are not the temporary focus of the study.

Table 3. Types and Tokens of Motion Verbs in the Corpus

[+ Path] Verb		Num.	[+ Manner] Verb		Num.	[Path+Manner] Verb		Num.
sahae'	'fall'	43	aseng	'chase'	13	hahlihin	'shake'	7
kas'oehaz	'move out'	36	ae'ae'aw	'run'	9	muiti'	'squeeze in'	3
rima'	'go'	35	hoemayap	'fly'	8	tomotoko'/pahongal	'shoulder'	3
mwa:i'	'come'	28	lalangoy	'swim'	7	pataboe'	'press into'	2
'itol	'move up'	30	bilis	'tightly hold'	5	panpanibih	'rummage'	1
ra:iw	'leave'	17	aewpo'on	'hug'	4	malobaz	'heavily fall'	1
maray/may	'by/thorough'	9	hangal/pakai	'hang'	3			
lobih	'return'	5	m:anra:an	'walk'	2			
makakosa/alibih	'move back'	4	konkonai	'roll'	1			
tanisowaw	'follow'	2	tomkaw	'jump'	2			
mohae'oe	'move down'	2	omakama'	'crawl'	1			
mintani'/kikozah	'approach'	2						
potngor	'arrive'	2						
paonhae'ae	'separate'	1						
sipan'i	'turn upside down'	1						
Total Types	**15**		**11**			**7**		
Percentage	**46%**		**33%**			**21%**		
Total Tokens		**217**			**55**			**17**
Percentage		**75%**			**19%**			**6%**

If Saisiyat is a S-language, the tokens of Manner verbs should be higher than the tokens of Path verbs. On the other hand, if Saisiyat is a V-language, the tokens of Path verbs should be higher than that of Manner verbs. As presented in Table 3, the tokens of Path verbs are higher than the tokens of Manner verbs and [Path + Manner] verbs. In addition, in our corpus, types of Path verbs are more than types of Manner verbs. This finding also corresponds to Slobin (2003), which suggests that verb-framed languages have more types of Manner verbs than types of Path verbs because the manner of the motion is linguistically salient in V-languages. To conclude from Table 3, we obtain that Saisiyat may be a verb-framed language.

4.2 Ground in Motion Verbs

According to Slobin (1996), S-languages and V-languages can be distinguished by the Ground element, which is the Source or Goal in motion events because Ground is less frequently expressed in V-languages than in S-languages.

Table 4. Comparison of Ground across Languages (Compared with Slobin 1996)

		Minus Ground	Plus Ground
Satellite-framed	English	18%	82%
Verb-framed	Spanish	37%	63%
	Saisiyat	*206 (74%)*	*71 (26%)*

We compare the findings in Slobin (1996) with our own. In Slobin (1996), the percentage of Minus Ground expressions in S-language, such as English, is lower than the percentage in V-language, such as Spanish. In other words, the percentage of Minus Ground expressions in V-languages should be higher than the percentage in S-languages. We find that Saisiyat is closer to verb-framed languages, because the percentage of Minus Ground motion expressions is higher than the percentage of Plus Ground motion expressions (74% to 26%). This is another piece of evidence indicating that Saisiyat may be a verb-framed language.

4.3 Directionality in Path Verbs

We classify the Path verbs found in our corpus into two groups: (a) verbs carrying directionality and (b) verbs not carrying directionality. In the first group, the direction of the motion, such as going upward or downward, moving toward or away from the speaker, is expressed in the Path verb. In the second group, the direction of the path is not expressed. The classification is shown in Table 5 below:

Table 5. Directionality in Path Verbs

Path Verbs Carrying Directionality		Num	Path Verbs Not Carrying Directionality		Num
sahae'	'fall'	43	kas'oehaz	'move out'	36
rima'	'go'	35	mray/may	'by/thorough'	9
mwa:i'	'come'	28	tanisowaw	'follow'	2
'itol	'move up'	18	potngor	'arrive'	1
ra:iw	'leave'	17	mintani'	'approach'	1
lobih	'return'	5			
alibih/makakosa	'move back'	4			
mohae'oe	'move down'	2			
pataboe'	'press into'	2			
paonhae'ae	'separate'	1			
sipan'i	'turn upside down'	1			
Total		**156**	**Total**		**49**

As presented in Table 5, Saisiyat prefers verbs carrying directionality than verbs without directionality. This result is similar to V-language such as Spanish (Slobin 1996), in which types and tokens of Path verbs carrying directionality are used more frequently than verbs not carrying directionality.

4.4 Serial Verb Constructions (SVC)

Tanangkingsing (2003) proposed that in Saisiyat, when a speaker needs to express both Manner and Path of a motion, Manner and Path are both expressed as verbs in a serial verb construction rather than in a subordinate clause. We continue on the topic and divide the serial verb constructions into two types: (1) Path verb$_1$ + Verb$_2$ and (2) Manner verb$_1$ + Verb$_2$.

(1) Path verb$_1$ + Verb$_2$

In the frog story narratives, the first Path verb is always a deictic verb (*mwa:i'* 'come' or *rima'* 'go'), and the second verb is usually an activity verb, such as 'look for' as presented in (17) below, forming a [Path$_{deictic}$ Verb + Perception/Activity Verb] construction.

(17) ...(2.4) takem **m-wa:i'** **k-om-i:m** ka= taew'an nisia
frog **AF-come** **look_for-AF** Acc house 3rdGen
"The frog comes to look for his house." (Frog 4:117)

Perception verbs, such as 'see,' are also often used as the second verb after a Path verb in the SV construction. For example, the second verb of the SVC in instance (18) is *komita'* 'see.' This construction (i.e. a deictic berb before the main verb) is also a common serial verb construction in Malay (Cumming 1991:79).

(18) ...　korkoring　**rima'**　**k-om-ita'**　ka=
　　　　　child　　　　**go**　　　**see**　　　Acc

　...　inoka-　aewhaes　ka　hoeroe'
　　　　Gen　　rat　　　　Acc　hole
　　　"The child went to see a rat hole." (Frog 2:39-40)

Another type is a [Path Verb + Path Verb] construction, such as example (19) below. In this kind of SVC, the motion event is expressed by a deictic verb with another Path verb, and the deictic verb can either be the first verb or the second verb. The two Path verbs provide complete spatial information of an on-going motion.

(19) ...　**mohae'oe**　**mwa:i'**　nakhara=
　　　　　move_down　**come**　　like

　...(0.9)　maybih　ila　komosa
　　　　　　regret　Pfv　DM
　　　　　"It came down and regretted it." (Frog 5:232)

(2) Manner verb₁ + Verb₂

In our corpus, instances of SVC started with a Manner verb are composed of [Manner verb + Path verb]. Such expression is related to the manner of motion events as we will discuss below.

(3) Manner of Motion in Serial Verb Construction

We count the tokens of different types of serial verb constructions using Path verbs or Manner verbs in Table 6.

Table 6. Tokens of Different Types of Serial Verb Construction

Serial Verb Construction	Num.
Path$_{deictic}$ Verb + Perception/Activity Verb	11
Path Verb + Path Verb	5
Manner Verb + Path Verb	2
Path $_{deictic}$ Verb + Manner Verb	1

Path Verb + Manner Verb Construction:

(20) ...(1.5)　boya'
　　　　　　　bees

　...(2.4)　**mwai**　**hoemayap**
　　　　　　come　**fly**

　..　ray　korkoring　ki　ahoe'
　　　Loc　child　　　and　dog
　　　"The bees fly to the child and the dog." (Frog 8:28-30)

Manner Verb + Path Verb Construction:

The two instances found in the corpus are *konkonai sahae'* 'roll fall' and *paklangoyen maray* 'swim by.'

It is shown in Table 6 that Saisiyat speakers use nearly the same amount of [Path Verb + Manner Verb]

and [Manner Verb + Path Verb] constructions to describe manner of motion. The Path verb in either construction can be a verb carrying or not carrying directionality. In the first type, the path verb before the manner verb can be a deictic verb such as *mwai:* 'come' or *rima'* 'go.' Path verbs in the latter type can be verbs carrying direction (*sahae'* 'fall') or verb without direction (*maray* 'move by'). Therefore, it seems that for Saisiyat speakers, whether it is a [Manner + Path] or a [Path + Manner] construction is not a major concern. The result is different from the Malay language in that in such type of SV construction, the second verb carries direction and therefore it functions like a directional prepositional phrase (Cumming 1991:80). However, the data of serial verb construction using manner verbs is small in our corpus. Therefore, how motion is expressed in serial verb construction will need further investigation.

5 Conclusion

In this paper, we have examined the structure of spatial expressions in Saisiyat. We found that the directional system in Saisiyat only corresponds partially to the "macro-orientation" proposed by Blust (1997:39), because even though the cardinal directionals fit in Blust's system of "macro-orientation," the left/right directional terms are derived from body part relations instead of from a larger spatial orientation. Furthermore, we found that unless confusion arises, Saisiyat usually does not specify directional terms such as left and right. The phenomena could be resulted from syntactic limitation, which is supported by the fact that there is no such juxtaposition of two directional terms together.

In addition to differentiating the semantic meanings, we also compare the word order within locative predicates obtained from our corpus with our field notes. We found that our informants have an intuitive word order, whereas the corpus shows a larger variety of word order. Moreover, we conclude that Saisiyat is a verb-framed language from analysis supported by corpus examination on motion events, Ground element, directionality of path verbs, and analysis of serial verb constructions. Our goal in this paper is to contribute to the understanding of how space is structured in Saisiyat. By doing so, we hope to further understand how space is conceptualized in language.

Abbreviations

AF	Agent Focus	LF	Location Focus	PF	Patient Focus
Acc	Accusative Case Marker	Nom	Nominal Case Marker	Neg	Negation Word
Loc	Locative Case Marker	Pfv	Perfactive Word	Red	Reduplication
DM	Discourse Marker		(File name: number of Intonation Units)		

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