

## THING & PLACE: THE COGNITIVE BASIS AND IDIOSYNCRASY OF SPATIAL EXPRESSIONS IN CHINESE

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In Chinese spatial expressions, some NPs are obligatorily followed by localizers, others cannot be followed by localizers, and the rest are optionally followed by localizers. This paper is intended to explain these variations from a perspective of cognitive semantics. We have discovered that 'objects' in a general sense are conceptualized as THING and PLACE with respect to their spatial relations in everyday cognition. The NPs that are capable of INDEPENDENTLY functioning as the Ground in the semantic structure of the motion event fall into the category of PLACE and the NPs that CONDITIONALLY function as the Ground fall into the category of THING. In Chinese, localizers rather than prepositions serve as a device to permit NPs for THING to undergo the conceptual transformation from THING to PLACE, called LOCALIZATION in this paper. This forms a fundamental explanation for the occurrence of localizers in spatial expressions. The distinction between THING and PLACE is also apparent in the observations which show selection of words for THING and PLACE in different contexts. Finally, the distinction between THING and PLACE is conceptually imposed upon a language in a manner which respects the idiosyncrasy of the semantic structure of a motion event in that language.

**1. INTRODUCTION.** The recent excitement in cognitive semantics derives in part from the remarkable achievement of studies concerning prepositional spatial expressions. These studies are characterized by exploring the meanings of individual prepositions beyond geometric and logical descriptions of space and they have mainly been undertaken in Indo-European languages such as English, French, Russian, and Polish, which share this typological feature: the preposition is employed to indicate 'Path' in the motion event (Talmy 1975, 1978, 1983, Herskovits 1986, Cienki 1989, Vandeloise 1991, Jackendoff 1991). The fundamental presumptions on which the present study is based is: there are systematic relations in language between meaning and surface expression; we can isolate elements separately within the domain of meaning and within the domain of surface expression; the relationship between elements within semantic domain and elements within syntactic domain is largely not one-to-one (Talmy 1985); semantic structure is not universal; it is language-specific to a considerable degree; semantic structure is based on conventional imagery and is characterized relative to knowledge structure (Langacker 1987).

Restricted to Mandarin Chinese, the present work will focus on the following issue: what is the cognitive basis of Figure and Ground? Throughout this paper, I am attempting to demonstrate that, at least for Chinese, the cognitive bases of Figure and Ground are thing and place, respectively. Parallel to these two categories, nouns are divided into thing names and place names which intrinsically function as Figure and Ground, respectively. In general, the categorization of thing and place is not performed geometrically but geographically in everyday cognition. The division of thing and place is meaningful only if they both refer to the concrete objects in the real world rather than abstract entities. The everyday cognition of space which is revealed in everyday language is at least partly idiosyncratic. The provision of idiosyncrasy goes beyond the superficial structure of language. The differences in spatial cognition between languages infiltrate the deep structure of language, as demonstrated in the semantic structure of a motion event. These significant differences have been ignored essentially in previous studies. As far as the methodology is concerned, specifying the semantic components of a motion event by syntactic constituents of individual languages will not be necessary to lead us to establish an universal semantic structure of a motion event.

**2. SEMANTIC STRUCTURE OF MOTION EVENT.** According to Talmy 1975, 1985, and 1991, a motion event, symbolized as  $E_M$ , is a situation containing movement (dynamic) or the maintenance of a stationary location (static). The semantic structure of the motion event can be described as:  $F + M + P + G$ . F stands for Figure of the motion event: the object moving or located with respect to another object. G stands for Ground of the motion event: the object with respect to which a first object is considered as moving or located. P stands for Path: the route of relative motion of one object with respect to another. A locational 'site' is considered to be the limiting case of a path. M stands for Motion: the moving or located state that one object is considered to be in with respect to another object. A located state is the limiting case of motion. A motion event is specified at the underlying level of all languages by a particular syntactic structure, to be termed the motion structure, symbolized as  $S_M$ . Each constituent of the motion structure specifies a particular component of the motion event and belongs to a particular grammatical category, indicated as follows: The figure-specifying constituent is a nominal; the ground-specifying constituent is a nominal; the path-specifying constituent is a prepositional (including adposition, affix and satellite); the motion-specifying constituent is a verb. The statement of the motion event could be illustrated by the following expressions:

(1)	DYNAMIC					STATIC				
	The man	is	walking	to	the church.	The man	is	in		the church.
$E_M$	F		M	P	G	F	M	P		G
$S_M$	N		V	P	N	N	V	P		N

Lexicalization is involved where a particular meaning component (F, M, P, or G in this case) is found to be in regular association with a particular morpheme (man, walk/be, in, or church in this case). But, this relationship is largely not one-to-one. A combination of semantic elements can be expressed by a single surface element, or a single semantic element by a combination of surface elements. Or again, semantic elements of different types can be expressed by the same type of surface element, as well as the same type by several different ones. Spatial expressions in Chinese offer good examples where a single semantic element is expressed by a combination of surface elements:<sup>1</sup>

- |     |    |                         |  |    |                         |
|-----|----|-------------------------|--|----|-------------------------|
| (2) | a. | <i>dao qiche -shang</i> |  | b. | <i>zai qiche -shang</i> |
|     |    | to bus on               |  |    | at bus on               |
|     |    | 'onto the bus'          |  |    | 'on the bus'            |
| (3) | a. | <i>dao shandong li</i>  |  | b. | <i>zai shandong li</i>  |
|     |    | to cave in              |  |    | at cave in              |
|     |    | 'into the cave'         |  |    | 'in the cave'           |

In the examples above, there are two surface-elements (preposition *zai* and localizers *-shang/li*) in Chinese, which correspond in meaning to one surface-element (preposition *on/in*) in English. In a recent personal communication, Talmy stated that his Path is actually a complex of two main components that he calls Directional and Configurational. Accordingly, both Directional and Configurational are lexicalized as prepositions such as *in*, *on*, and *at* in English while they are lexicalized as *zai* and *-shang/li* respectively in Chinese. Apparently, Talmy's analysis of English prepositions is quite close to that of Bennett 1975. According to him, prepositions in English contain the semantic component 'specifier' in addition to 'locative', which can be further decomposed into 'surface' and 'interior'.

(4)		'Locative'		'Specifier'
			'Surface'	'Interior'
	<i>at</i>	x		
	<i>on</i>	x	x	
	<i>in</i>	x		x

Also, the treatment above is similar to that suggested by Leech 1970, who described meanings of three prepositions with respect to dimensionality as follows:

- |     |           |                         |
|-----|-----------|-------------------------|
| (5) | <i>at</i> | no dimension relevant   |
|     | <i>on</i> | one / two dimensional   |
|     | <i>in</i> | two / three dimensional |

This means that, in addition to the semantic component the three prepositions share, *at*, *on*, and *in* differ from one other in the fact that *at* has no 'specifier' whereas *on* and *in* do. Furthermore, *on* has the component of 'surface' and *in* has that of 'interior'.

3. THE TWO TYPES OF NOUNS: PLACE NAME AND THING NAME. Structurally, one of the prominent features of prepositional expressions of space in Chinese is the selection of localizers (Chao 1968). Li & Thompson 1981 pointed out that certain nouns do not need localizers in some cases.

'The locative particle is not used when the noun phrase in the locative phrase is a place name, as in *Sanfanshi* 'city of San Francisco', *Helan* 'Holland' and *Beijing* 'Beijing', as illustrated in (10):

- |      |                                 |
|------|---------------------------------|
| (10) | <i>Ta zhu zai Zhongshan lu.</i> |
|      | 3sg live at Zhongshan Road      |
|      | 'S/he lives on Zhongshan Road.' |

When the locative phrase occurs before the verb, certain nouns need no locative particle. These nouns usually refer to familiar places, including rooms, buildings, organizations, and institutions, such as *xuexiao* 'school', *fanguan* 'restaurant', *jia* 'home', *chufang* 'kitchen', *fanting* 'dining room', *shufang* 'study', *jiaotang* 'church', *youzhengju* 'post office', *yi yuan* 'hospital', *jingchaju* 'police station', *chezhan* 'station', and *feijichang* 'airport' ... nouns of

<sup>1</sup> Tone marks are omitted in this paper for technical reasons. A hyphen before an element indicates the neutralized tone.

this type may occur in a locative phrase without a locative particle only if the locative phrase precedes the verb. If the locative phrase follows the verb, these nouns must take the locative particle.' (1981: 393-4)

Li & Thompson have ascribed the occurrence of the locative particle to the distribution of the locative phrase, in addition to the distinction between so-called place name and non-place name. The distributional constraint suggested by Li & Thompson should be a new finding if they were right. However, the distributional constraint fails to explain abandon data in which nouns in the locative phrases do not take locative particles even though locative phrases follow the verbs. The most straightforward way to argue for this is with those 'nouns [which] usually refer to familiar places' to simply replace *Zhongshan lu* in Li & Thompson's ex. 10:

- (6) *Ta zhu zai xuexiao / fanguan / chufang / fanning / shufang / jiaotang ...*  
 3sg live at school / restaurant / kitchen / dining room/ study / church...  
 'S/he lives at/in school/restaurant/kitchen/dining room/study/church ...'

All the versions above are definitely acceptable. Obviously, the selection of localizers is not dependent on the distribution of the locative phrase at all.

In this section, we will divide nouns in Chinese into two patterns, according to their selection of localizers. In the examples below, *dao* and *zai* in Chinese, which correspond in meaning to *to* and *in* in English, are analyzed as prepositions in prepositional phrases.

(7)	DYNAMIC	STATIC
Pattern 1	<i>dao</i> Zhongguo to China 'to China'	<i>zai</i> Zhongguo at China 'in China'
Pattern 2	<i>dao</i> qiche -shang to bus on 'onto the bus'	<i>zai</i> qiche -shang at bus on 'on the bus'

The two patterns above can be represented in a formula as follows:

- (8) Pattern 1      preposition + noun  
 Pattern 2      preposition + noun + localizer

Pattern 1 has no localizer right after the noun, but Pattern 2 does. There is no reason for us to ascribe the difference to syntactic constraints because for some nouns, any of the locative particles is rejected regardless of whether they occur before or after the verb while for the others, appropriate locative particles are necessary independent of their occurrence before or after the verb:

- (9) a. *zai* Zhongguo xuexi  
 at China study  
 'study in China'                      b. *zhu* *zai* Zhongguo  
 live at China  
 'live in China'
- (10) a. *zai* qiche -shang kanshu  
 at bus on read  
 'read on the bus'                      b. *zuo* *zai* qiche -shang  
 sit at bus on  
 'sit on the bus'

We suggest that the selection of localizers is derived from the semantic classification of nouns. The following examples will show that certain nouns obligatorily fall into particular patterns; otherwise they are unacceptable.

- |         | Pattern 1  | Pattern 2   |
|---------|--|---|
| (11) a. | <i>dao/zai</i> Yazhou<br>to/at Asia<br>'to/in Asia'        | * <i>dao/zai</i> Yazhou -shang/li<br>to/at Asia on/in     |
| b.      | <i>dao/zai</i> Zhongguo<br>to/at China<br>'to/in China'    | * <i>dao/zai</i> Zhongguo -shang/li<br>to/at China on/in  |
| c.      | <i>dao/zai</i> Beijing<br>to/at Beijing<br>'to/in Beijing' | * <i>dao/zai</i> Beijing -shang/li<br>to/at Beijing on/in |



## d. Places of originating transportation:

*huochezhan* 'train station', *qichezhan* 'bus stop', *feijichang* 'airport'

Unlike PLACE NAMES, these nouns do not refer to a determined geographic area. Unlike THING NAMES, these nouns do refer to places where people usually work, study, conduct business and social activities, and so on. For instance, there are many buildings called *restaurants*, *train stations*, *schools*, or *theaters* in the real world and they can be at any possible place. On the other hand, they indeed provide space for people to stay and do something. This type of noun therefore has the characteristics of both PLACE NAME and THING NAME.

The use of PLACE NAME differs from the use of THING NAME for the identical noun in the respect that the former refers to the space in a *geographic* sense while the latter refers to the space in a *geometric* sense. That is, the use of PLACE NAME, such as *youzhengju* 'post office', is employed to identify a particular part of an area where the post office is located. In this case, the post office is conceptualized to be a point which is coincident with a certain geographic area. The use of THING NAME, such as *youzhengju li* 'in post office', is employed to indicate a particular part of space with respect to the certain entity, the post office in this case. Therefore, a possible answer to the question about PLACE NAME like *Where is he?* is expected to be found from the same list as *restaurant*, *school*, *department store*, *train station*. A possible answer to the question about THING NAME like *Where is he?* will be found from the same list as *inside the restaurant*, *outside the restaurant*, *in front of the restaurant*, *n back of the restaurant*.

- |   |   |
|---|---|
| (16) a. About PLACE<br><i>Ta zai shenme difang?</i><br>3SG be at what place<br>'Where is he?' | b. About THING<br><i>Ta zai shenme difang?</i><br>he be at what place<br>'Where is he?' |
| c. <i>Ta zai canguan.</i><br>he be at restaurant<br>'He is at the restaurant.'                | d. <i>Ta zai canguan li</i><br>he be at restaurant in<br>'He is in the restaurant.'     |

Since specific names of schools, department stores, parks, etc. are proper nouns, they fall exclusively into Pattern 1 even though the common nouns *school*, *department store*, *park*, etc. fall into both Pattern 1 and Pattern 2. This means that specific names of schools, department stores, and parks, etc. refer to PLACE rather than THING. This is because the titles of schools, department stores, factories, etc. have lost their geometrical characteristics and therefore they are more likely to play a role in identifying the particular part of the area with respect to which a certain object is located. The examples below may serve to illustrate this restriction:

- |   |  |
|---|--|
| (17) a. <i>zai Beijing Daxue xuexi</i><br>at Beijing Univ. study<br>'study at Univ. of Beijing' | b. <i>dao Jingu mai yifu</i><br>to Golden Grain buy clothes<br>'(go) to Golden Grain to buy clothes' |
| (18) a. <i>*zai Beijing Daxue -li xuexi</i><br>at Beijing Univ. in study                        | b. <i>*dao Jingu -li mai yifu</i><br>to Golden Grain in buy clothes                                  |

5. CATEGORIZATION OF THING & PLACE: INTRINSIC GROUND & EXTRINSIC GROUND. It seems impossible that we should talk about spatial expressions from a cognitive perspective without touching on the notion of PLACE at all. Herskovits gave her definition of 'place' after citing Aristotle's statement of place. According to Herskovits (1986:33),

'A place can thus be thought of as any piece of empty space, as in

*Under the bed is a good place to hide.*  
*No two objects can occupy the same place at the same time.*

or – relationally – precisely as that part of space occupied by an object.'

Consequently in principle, the relation between Figure and Ground is thought of as the relation between two 'things' in terms of the space that is occupied by the first object. Thus, there are three things in Herskovits framework: 'first object' (Figure), 'reference object' (Ground) and 'a piece of space occupied by the first object'. Obviously, the statement that a place can be thought of as any piece of empty space goes beyond the spatial knowledge of people in everyday life. It is also difficult to be practiced in everyday life. When people say *Boulder is a nice place to live*,

Boulder cannot be thought of as a piece of space occupied by something else. Boulder is just Boulder, a geographical area.

Our approach to the conceptualization of the motion event is based on our understanding of the notion of 'place' in everyday life. It should be emphasized that *THING* and *PLACE* are thought of as two opposite categories that directly correspond to Figure and Ground. Based on the investigation into the two syntactic patterns and three types of nouns, we gain an insight into the cognitive basis of the Ground within the semantic structure of a motion event. Ground is conceptually a *PLACE*. First, *PLACE NAME* intrinsically, or naturally, functions as Ground, as Pattern 1 shows. By 'intrinsically' and 'extrinsically', we mean that what is referred to by *PLACE NAME* is perceived and conceptualized as the *GROUND* regardless its relations to others, whereas what is referred to by *THING NAME* is perceived and conceptualized as the *FIGURE* independently. These nouns function as the *GROUND* only in the case that they are involved in a particular spatial relationship with another object AND they are temporarily treated as a reference of that object. Secondly, *THING NAMES* extrinsically, or conditionally, function as Ground. As Pattern 2 shows, *THING NAMES* function as Ground with the assistance of localizers. Furthermore, so-called localizers are a type of word which indicates the spatial notions such as 'upper', 'right', 'inside' etc. In this sense, *dalou zuobian* (the left side of the building) is a *PLACE* and *zhuozi xiamian* (under the table) is a *PLACE*, also. The difference is simply that one type of *PLACE* has its own name, like *Colorado* while the other does not, like *the left side of the table*. Thus, the *PLACE* referred to by the linguistic expression *the left side of the table* has to be indicated by pointing to the relevant thing so that it can be known. We are convinced that the cognitive basis of Ground is the concept of *PLACE*. This suggestion is supported by the factors to be discussed below.

5.1. FACTOR 1. A very helpful way to understand the cognitive bases of Figure and Ground is to observe how we usually talk about Figure and Ground. For this purpose we have two terms: *dongxi* 'thing' and *difang* 'place' in Chinese. In general, *dongxi* 'thing' and *difang* 'place' are directly correspondent to Figure and Ground, respectively. For instance:

- (19) a. *Zai shenme difang?*  
 be at what place  
 'At what place?'

The term *dongxi* 'thing' cannot be used alone in this case. Therefore the version below is unacceptable:

- (19) b. \**Zai shenme dongxi?*  
 be at what thing

When the Figure is asked about, the term *dongxi* 'thing' will be employed and the term *difang* never appears in the Figure position.

- (20) a. *Shenme dongxi zai zhuozi -shang?*  
 what thing be at table on  
 'What is on the table?'  
 b. \**Shenme difang zai zhuozi -shang?*  
 what place be at table on

The following expression will be produced where both *dongxi* 'thing' and *difang* 'place' are questioned and the reversed version is unacceptable (C = Classifier):

- (21) a. *Shenme dongxi zai na-ge difang?*  
 what thing be at that-C place  
 'What is there?'  
 b. \**Shenme difang zai na-ge dongxi?*  
 what place be at that-C thing

The term *dongxi* 'thing' can be at the position of the Ground if a localizer co-occurs. For instance,

- (22) *Zai shenme dongxi -shang?*  
 be at what thing on  
 'On what?'

*Dongxi* 'thing' cannot be at the position of the Ground because it is about THING, and *dongxi -shang* can be the Ground because it is about PLACE: the surface space of an object. Consequently, the equivalence might be established:

- (23) Figure = THING  
Ground = PLACE

5.2. FACTOR 2. Possible answers to the questions about Ground like *Zai shenme difang?* 'At what place?' is necessarily with a PLACE NAME or a THING NAME plus a localizer:

- |      |                      |                          |
|------|----------------------|--------------------------|
| (24) | Place Name           | Thing Name               |
|      | <i>Zai Zhongguo.</i> | <i>Zai zhuozi -shang</i> |
|      | be at China          | be at table on           |
|      | 'In China'           | 'On the table'           |

A possible answer to the question about the Figure like *Shenme dongxi zai zhuozi -shang?* 'what thing be at table on' must be about THING and THING NAME will be used:

- (25) *Shubao zai zhuozi -shang*  
school bag be at table on  
'The school bag is on the table.'

The substitution of *Zhongguo* and *zhuozi -shang* for *difang* and the substitution of *shubao* for *dongxi* show that *Zhongguo* and *zhuozi -shang* belong to the category of PLACE and *shubao* belongs to the category of THING. The relation will extend further to Figure and Ground in motion event.

- (26) Figure = THING = THING NAME: *shubao* ...  
Ground = PLACE = PLACE NAME/THING NAME+localizer:  
*Zhongguo / zhuozi -shang*

5.3. FACTOR 3. The similarity appears in the so-called existential sentence. Chinese uses the verb *you* for both 'to possess' and 'to exist'.

- (27) 'Possess'  
*Ta you yi-liang qiche*  
3SG have one-C car  
'S/he has a car.'
- (28) 'Exist'  
*Qiche -shang you wu-ge ren*  
car on have five-C people  
'There are five people in the car.'

For the 'exist' usage of *you*, only NPs for PLACE can be simply used as the existential subjects, including PLACE NAME and THING NAME plus localizer:

- (29) *Meiguo you wushi-ge zhou*  
USA have fifty-C state  
'There are fifty states in the USA.'
- (30) *Beijing you jin bai-suo daxue*  
Beijing have near hundred-C college  
'There are near a hundred colleges in Beijing.'
- (31) *Bode you bushao Zhongguo canguan.*  
Boulder have fairly many Chinese restaurant  
'There are fairly many Chinese restaurants in Boulder.'
- (32) *Zhuozi -shang you liangben shu.*  
table on have two-C book  
'There are two books on the table.'

- (33) *Pingzi li mei you shui.*  
 bottle in not have water  
 'There was no water in the bottle.'

But the following are unacceptable:

- (34) \**qiche you wu-ge ren*  
 bus have five-C people  
 (35) \**zhuozi you liangben shu*  
 table have two-C book  
 (36) \**pingzi mei you shui.*  
 bottle not have water

The reason is exactly the same as proposed above: the Ground, which is the grammatical subject in the existential sentence, is conceptualized as PLACE rather than THING. Moreover, the questions with the verb *you* obligatorily have *ren* 'people' as the subject if they indicate 'to possess' or *difang* 'place' as the subject if they indicate 'to exist' as the following show. Contrast 39 with 37 and 38:

- (37) 'Possess'  
*Shenme ren you qian?*  
 what person have money  
 'What kind of people are rich?'  
 (38) 'Exist'  
*Shenme difang you qian?*  
 what place have money  
 'Where is the money?'  
 (39) \**Shenme dongxi you qian?*  
 what thing have money

This is because people can possess THING ('money' here) and THING ('money' here) can exist somewhere. But, THING can neither possess something else nor locate something else.

5.4. FACTOR 4. Furthermore, there is an appositional construction in Chinese in which the modified noun is a hyponym and modifying noun is a superordinate. In the following examples, *xiangyan* 'cigarettes' is specified by *dongxi* 'thing', and *Bode* 'Boulder' is specified by *difang* 'place':

- (40) *Xiangyan zhege dongxi bu liyu jiankang.*  
 cigarettes this-C thing not good for health  
 'Cigarettes are not good for the health.'  
 (41) *Bode zhe-ge difang hen mei.*  
 Boulder this-C place very beautiful  
 'Boulder is a very beautiful place.'

This is another way to reveal the categorization of THING and PLACE.

In sum, THING is the cognitive basis of the Figure, therefore it is an intrinsic Figure and it conditionally functions as the Ground in association with a localizer. The category PLACE is the cognitive basis of the Ground, therefore it intrinsically functions as the Ground.

6. LOCALIZATION OF THING: LOCATION AND RELATIVE POSITION. As we have seen, PLACE NAME naturally functions as the Ground, and THING NAME does not. On the other hand, we do need to take THING as the Ground in many situations where only two THINGS are involved in a certain spatial relation, like *a book on the table*. Attaching a localizer to a THING NAME therefore is a special device to make THING become PLACE in conception. The process through which THING is conceptualized as PLACE in association with a localizer is called *localization* in this paper. Localization makes it possible for THING to function as the Ground when necessary.

In this section we would like to show the difference between LOCATION and RELATIVE POSITION by comparing *-shang* 'on' to *shang* 'above/upper' from which *-shang* has been derived. In a prosodic analysis, *-shang* 'on' differs from *shang* 'above/upper' in that the former has a neutralized tone and the latter has its normal tone. They are connected phonetically in terms of the same segments and semantically in terms of the relevant meanings.



In principle, that *x* is conceptualized to be located at *y* is a geographical perspective. We identify this situation as LOCATION. LOCATION refers to *x zai y -shang*. On the other hand, that *x* is conceptualized to be at a position with respect to *y* is a geometrical perspective. We identify this situation as RELATIVE POSITION.

Generally speaking, the localizers with a neutralized tone denote LOCATION and the localizers with a normal tone indicate RELATIVE POSITION.

**6.1. THE STRUCTURAL BIAS OF LOCALIZERS FOR LOCATION.** Localizers for relative position show consistent symmetry in their association fields. For instance, *qian* 'front' opposes *hou* 'back', *shang* 'above' opposes *xia* 'under', and *li* 'inside' opposes *wai* 'outside'. But, *-shang* 'on' doesn't have an opponent. There is only one exception for *-shang* 'on' which will be discussed later.

- (42) *shang* 'above'      *xia* 'under'  
*-shang* 'on'              ?

Thus, we have expressions of type a, but not of type b:

- |      |    |   |    |                            |
|------|----|---|----|----------------------------|
| (43) | a. | <i>qiang</i> - <i>shang</i><br>wall on<br>'on the wall' | b. | * <i>qiang</i> ?<br>wall ? |
| (44) | a. | <i>bei</i> - <i>shang</i><br>back on<br>'on the back'   | b. | * <i>bei</i> ?<br>back ?   |
| (45) | a. | <i>shou</i> - <i>shang</i><br>hand on<br>'at the hand'  | b. | * <i>shou</i> ?<br>hand    |
| (46) | a. | <i>jiao</i> - <i>shang</i><br>foot on<br>'on the foot'  | b. | * <i>jiao</i> ?<br>foot ?  |
| (47) | a. | <i>shen</i> - <i>shang</i><br>body on<br>'on the body'  | b. | * <i>shen</i> ?<br>body ?  |
| (48) | a. | <i>zhi</i> - <i>shang</i><br>paper on<br>'on the paper' | b. | * <i>zhi</i> ?<br>paper ?  |
| (49) | a. | <i>lu</i> - <i>shang</i><br>road on<br>'on the road'    | b. | * <i>lu</i> ?<br>road ?    |

Therefore there will be a gap in the following parallel relation:

- |      |    |   |    |   |
|------|----|---|----|---|
| (50) | a. | <i>qiao</i> - <i>shang</i> 'on the bridge'<br>bridge on     | b. | <i>qiao</i> ?<br>bridge ?                                 |
| (51) | a. | <i>qiao</i> <i>shang</i> 'above the bridge'<br>bridge above | b. | <i>qiao</i> <i>xia</i> 'under the bridge'<br>bridge under |

The fact that *-shang* 'on' doesn't have a counterpart shows that the spatial relation of the two objects cannot be reversed in this case. For LOCATION, the Ground is geographically conceptualized as PLACE; for RELATIVE POSITION, the Ground is geometrically conceptualized as PLACE and is temporarily considered as a reference object.

**6.2. NEUTRALIZATION OF MEANING 1.** An exception is that the morpheme *di* (ground/floor) can be in association either with *-shang* or with *-xia*. In this case, *di -xia* doesn't mean 'under the ground'. Rather, it means what *di -shang* really means. For instance:

- (52) a. *Di* -*shang* *you* *yi-zhang* *zhi*.  
ground/floor on have one-C paper  
'There is a piece of paper on the ground/floor.'

- b. *Di*            *-xia*    *you*    *yi-zhang*    *zhi*.  
 ground/floor down have one-C paper  
 'There is a piece of paper on the ground/floor.'

Notice that the two Chinese expressions have exactly the same English translation. However, *-xia* is only attached to *di*. The selectional feature of *di -shang* and *di -xia* will be shown in terms of a pair of sentences as follows:

- (53) *Di*            *-shang*    *you*    *yi-ben*    *shu*.  
 ground/floor on have one-C book  
 'There is a book on the ground/floor.'
- (54) *Ni-de*    *shu*    *diao*    *zai*    *di*            *-xia*    *le*.  
 Your book drop at ground/floor down ASP  
 'Your book dropped on the ground.'

*di -xia* is preferred either when an object is seen to have changed its position from somewhere higher than the ground / floor. This is the reason we translate *-xia* as *down* in English instead of *under below* and so forth. *Di -shang* is preferred when an object is seen to just appear/exist there.

Furthermore, the employment of *di -xia* is obviously relevant to the employment of *tian -shang*. Compare the two expressions below:

- (55) *Di*            *-xia*    *pao*    *qiche*;    *tian*    *-shang*    *kai*    *feiji*.  
 ground/floor on run car sky upper fly airplane  
 'Cars run on the road; airplanes fly in the sky.'

It is worth noticing that the meanings *-xia* in *di -xia*, and *-shang* in *tian -shang* simply reverse their original meanings. *Shang* and *xia* in the ancient Chinese writing system were written as in Fig. 1. The longer stroke denotes the horizon level and the very short stroke above or under it indicates the position occupied by an object. Accordingly, we should expect to say *di -shang* and *tian -xia* instead of *di -xia* and *tian -shang*. It is, however, not the case. One possible explanation is that *di -xia* and *tian -shang* is a speaker-based perspective in opposition to a referent-based perspective. With respect to the speaker, *di* is under his/her body and *tian* is above his/her body.



FIGURE 1.

**6.3. NEUTRALIZATION OF MEANING 2.** Another interesting thing about *-shang* is that it is neutralized in direction as well as being neutralized in tone. So it does not necessarily indicate either vertical or upward even though these were the original meaning of *shang*:

- (56) vertical and upward  
*Zhuo -shang*    *you*    *yi-ben*    *shu*.  
 table on have one-C book  
 'There is a book on the table.'
- (57) horizontal  
*Qiang -shang*    *you*    *yi-fu*    *hua*.  
 wall on have one-C painting  
 'There is a painting on the wall.'
- (58) vertical and downward  
*Tianhuaban -shang*    *you*    *yi-ge*    *zhizhu*.  
 ceiling on have one-C spider  
 'There is a spider on the ceiling.'

Since a room usually consists of four walls and since *There is a painting on the wall* could be used to indicate any of the four walls, differences between *front*, *back*, *left*, *right* are ignored. The ignorance of direction shows that *-shang* only indicates location rather than position: *x* is located on the surface of *y*.

### 7. DISTINCTION OF CONCEPTUALIZATION OF PLACE BETWEEN GEOMETRY AND EVERYDAY LANGUAGE.

The significance of studies on spatial cognition and spatial language lies in the comparison of the objective analysis of space (or logically-structured space) and the subjective perception of space (or linguistically-structured space). Presumably, human beings, no matter what culture they live in, share the awareness of space. This is why we have geometry, as a branch of science, which is applicable to all cultures. This knowledge, which is shared by all human beings is the basis for the objective analysis of space. However, our perception and conceptualization of space in everyday life as represented by natural languages might vary from culture to culture. No wonder people say *at school*, *on campus*, and *in the classroom* in English but *in school*, *in campus*, and *in classroom / on classroom* in Chinese.<sup>2</sup> This duality arises because human beings have both logically-structured space and linguistically-structured space; thus linguists are able to gain an insight into the characteristics of the cognition of space in terms of the comparison of logically-structured space to linguistically-structured space.

As we discussed above, Pattern 1 structures typically reflect the cognitive bases of Figure and Ground in which Figure intrinsically derives from THING and Ground intrinsically derives from PLACE. It should be emphasized that the opposition of THING and PLACE stated above is the result of the conceptualization of objects in everyday language. From the perspective of geometry, as a branch of science, another picture emerges. Conventionally, two-dimensional space is specified by the coordinates which are conceptualized as PLACE. Any entity that occurs within the coordinates in question is conceptualized as THING. Therefore, the relation between an entity and the coordinates is the relation between THING and PLACE whereas the relation between entities in the coordinates is the relation between PLACE and PLACE.

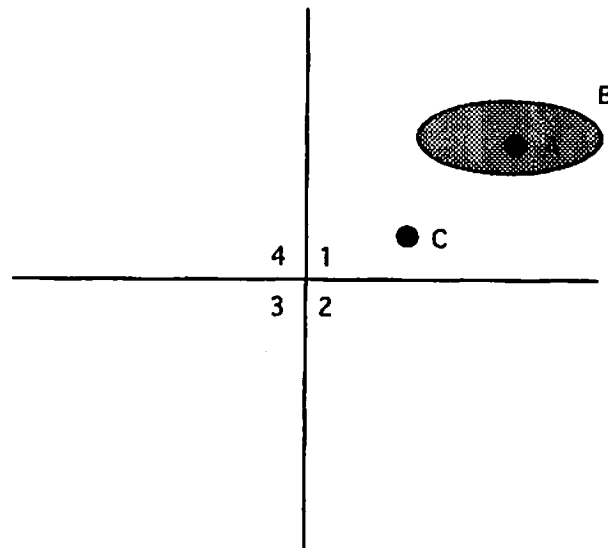


FIGURE 2.

In Figure 2, quadrants 1, 2, 3, and 4 make up a two dimensional space with unlimited extension. Point A coincides with the area B, and Point C is under both A and B. In the Chinese literature of geometry, the several relations among them are expressed as follows:

(59) Pattern 1

- a. *A zai diyi xiangxian.*  
A be at first quadrant  
'A is at the first quadrant.'
- c. *C zai diyi xiangxian.*  
C be at first quadrant  
'C is at the first quadrant.'

- b. *B zai diyi xiangxian.*  
B be at first quadrant  
'B is at the first quadrant.'

<sup>2</sup> The selectivity of adpositions reflects the conceptualization of space in different cultures. For example, in my personal experience, there is no school in China without a wall around it. This is probably the reason why people say *in school* and *in campus*, instead of *at school* and *on campus*, in Chinese. Of course, it does not mean Chinese has prepositions which exactly correspond to English *in*, *on*, and *at*. Chinese shows a different pattern of lexicalization of a motion event from some Indo-European languages.

## (60) Pattern 2

a. A *zai* B *nei*.  
A be at B in

'A is the inside of B.'

b. C *zai* B *xai*.  
C be at B under

'C is under B.'

First, an example of Pattern 1 is only used to indicate the relations between any entity and the coordinates where it appears. Pattern 2 is only used to indicate the relations among entities which appear in the same coordinates. This tells us that only abstract space specified by the coordinates is conceptualized as PLACE. Conversely, no entity can be conceptualized as PLACE but must be viewed as a THING no matter what size it is. In contrast, if the geometrical figure above represents the spatial relation between the person called John and the town called Boulder rather than abstract geometrical figures themselves, that is, A and B are no longer abstract entities in the coordinates but concrete objects in the real world, A for John and B for Boulder, the legitimate expression should be 61 instead of 62 below:

(61) Yuehan *zai* Bode.  
John be at Boulder

'John is at/in Boulder.'

(62) \*Yuehan *zai* Bode *nei*  
John be at Boulder inside

On the other hand, if the geometrical figures above represent the spatial relation between a ball and a round table rather than the person called John and the town called Boulder, that is, A for the ball and B for the table, we have to say 63 instead of 64:

(63) Piqui *zai* yuanzhuo *-zhang*.  
ball be at round table on

'The ball is on the round table.'

(64) \*Piqui *zai* yuanzhuo  
ball be at round-table

Actually, in the three cases above, we are referring to the same spatial relation *A coincides with B* in a geometrical sense. The differences among them we have seen are their non-geometrical characteristics. Symbol A stands for an abstract geometrical figure in the first situation, a person in the second situation and a ball in the third situation. Symbol B stands for an abstract geometrical figure in the first situation, a town in the second situation, and a round table in the third. The selection of Pattern 1 and Pattern 2 for the relation between A and B must be determined by cognition through which the entities in a geometrical sense might have obtained the extra meaning, namely, some of them belong to THING and the others belong to PLACE. The point is, in everyday language, spatial relations among objects in the real world are not abstract geometrical relations but concrete ones because objects must fall into either the category of THING or the category of PLACE. In geometry, all objects are understood as entities THING and only the space represented by the coordinates is understood as the absolute PLACE.

**8. PREPOSITIONS: LEXICALIZATION OF PATH IN MOTION EVENT.** In §2, we tentatively treated the prepositions *dao/zai* as the lexicalization of the Directional and the localizers *-shang/li* as the lexicalization of the Configurational in Chinese. In fact, that analysis is on the basis of the semantic structure of a motion event that is basically specified at the underlying level of English. Namely, the structure establishes a correspondence of the semantic components of the motion event specified at the underlying level of English to the syntactic constituents of the spatial expression in Chinese. But we should notice that the treatment above is not a result of specifying the semantic structure by the syntactic structure in Chinese but a result of specifying the semantic structure in Chinese in terms of that in English. It will be demonstrated in the next two sections that, specified at the underlying level of Chinese, *zai* and *-shang/li* belong to separate components Path and Ground within the semantic structure of a motion event.

In fact, the translation of *on* in English into *zai...-shang* in Chinese is misleading to investigation of Chinese spatial expressions. Specified at the underlying level of Chinese by a particular syntactic structure, the Path is simply the preposition *zai* and has nothing to do with localizers.

First, if localizers are a part of the Path and compose the Path in association with prepositions, they should necessarily co-occur everywhere in the surface expressions. But, this is not the case. In Pattern 1, *-shang* disappears and its elision is obligatory:

- (65) *Wo dao Zhongguo fangwen.*  
I to China visit  
'I go to China for a visit.'
- (66) \**Wo dao Zhongguo -shang/li fangwen.*  
I to China on/in visit
- (67) *Wo zai Zhongguo fangwen*  
I at China visit  
'I am in China for a visit.'
- (68) \**Wo zai Zhongguo -shang/li fangwen*  
I at China on/in visit

As far as Pattern 2 is concerned, localizers such as *qianmian* 'front-face', *zuobian* 'left-side' and others are a part of Ground in a motion event. The most straightforward evidence is that those localizers can function as a prepositional object. In the following examples, the NPs in brackets are optional in structure, a disyllabic localizer can function as the subject and object without the assistance of another noun.

- (69) *Ta zai (dalou) qianmian kanshu.*  
3SG at (building) front read  
'S/he is reading in front (of the building).'
- (70) *Women dao (youzhengju) limian qu kan-kan.*  
we to (post office) inside go look-look  
'Let's go inside (of the post office) to take a look.'

Both Pattern 1 and Pattern 2 show that 'Path' is simply lexicalized as the prepositions *dao/zai*.

9. STATUS OF LOCALIZERS WITHIN THE SEMANTIC STRUCTURE OF A MOTION EVENT. Syntactically, the localizer is part of a nominal phrase that specifies the Ground. We will demonstrate it from the following perspectives. First, the immediate constituents of the phrase *zai qiche -shang* (literally, 'at bus on') are *zai* 'at' and *qiche -shang* 'bus on' rather than *zai qiche* 'at bus' and *-shang* 'on', as we mentioned earlier, *zai qiche* is unacceptable. There is a parallel relation between the two patterns.

- |      |           |                              |                              |
|------|-----------|------------------------------|------------------------------|
| (71) | Pattern 1 | <i>dao // Zhongguo</i>       | <i>zai // Zhongguo</i>       |
|      |           | to China                     | at China                     |
|      | Pattern 2 | <i>dao // qiche - shang</i>  | <i>zai // qiche -shang</i>   |
|      |           | to bus on                    | at bus on                    |
|      |           | * <i>dao qiche // -shang</i> | * <i>zai qiche // -shang</i> |
|      |           | to bus on                    | at bus on                    |

Second, the grammatical functions of *Zhongguo* 'China' in Pattern 1, *qiche -shang* 'bus on', and *chezhan houmian* 'station back' in Pattern 2 are the same.

Ex. 72-74 demonstrate the structure of 'Initial noun of an existential sentence':<sup>3</sup>

- (72) *Meiguo you wushi-ge zhou.*  
USA have fifty-C state  
'There are fifty states in the USA.'
- (73) *Qiche -shang you wu-ge ren.*  
car on have five-C people  
'There are five people in the car.'
- (74) *Chezhan houmian you yi-tiao he.*  
station back have one-C river  
'There is a river behind the station.'

As we discussed above, only PLACE NAME or THING NAME in association with a localizer is allowed to be at the initial position of existential sentences. Further, N + Loc functions same as N in the attribute position:

<sup>3</sup> We call this 'initial noun of an existential sentence', to avoid the controversy about its syntactic status. Some linguists think that it is adverbial while others believe that it is the subject. Whatever it is, it does not affect our discussion and conclusion in this paper.

- (75) a. *Meiguo de wushi-ge zhou*  
USA GEN fifty-C state  
'the fifty states of the USA'
- (75) b. *chezhan houmian de he*  
station back GEN river  
'the river behind the station'
- (76) a. *Qiche -shang de ren*  
bus on GEN people  
'people on the bus'
- (76) b. *Pingzi -li de shui*  
bottle in GEN water  
'water in the bottle'

We conclude this section with the diagram below:

(77)	Path		Ground	
	Dynamic	Static	PLACE	_____
	<i>dao</i>	<i>zai</i>	NP	_____
			THING	'Configurational'
			NP	<i>-shang / li</i>

#### 10. LEXICALIZATION OF SEMANTIC STRUCTURE VS. SPECIFICATION OF SYNTACTIC STRUCTURE.

Theoretically, the specification of the semantic structure by the syntactic structure is directionally the opposite of the so-called lexicalization. We usually take one approach in our research. For instance, we either say that *in* in English is the lexicalization of Path (Directional + Configurational) of the semantic structure of the motion event or say that Path (Directional + Configurational) of the semantic structure of the motion event is specified by *in* in English. Actually, the specification is a method employed by linguists to study linguistic meanings, especially to isolate semantic units while the lexicalization is a process assumed by linguists to study the relation between the syntactic structure and semantic structure. Methodologically, the establishment of the semantic structure of a motion event has to be based on the specification of the syntactic structure of a spatial expression since we don't have any tools other than the linguistic structure to study linguistic semantics.

There might be two approaches to the universality of the semantic structure of a motion event. One is to specify the semantic structure of a motion event at the underlying level of some language(s) by a particular syntactic structure of the spatial expression, and then to apply the semantic structure observed in the language(s) other languages in terms of establishment of the correspondence of the components of the semantic structure observed in the language(s) to the syntactic constituents in other languages.

The second approach to the universality of the semantic structure of a motion event is to specify the semantic structure of a motion event at the underlying level of different languages by particular syntactic structures of spatial expressions and then compare semantic structures observed to see if there exists an universal pattern among them. This is what we are doing in this paper.

The two approaches will lead to critically different results. In the first approach, the Directional and Configurational would be interpreted as being lexicalized as a single syntactic constituent, prepositions in English while they are lexicalized as two syntactic constituents, prepositions and localizers in Chinese. But, in the second approach, it is not a matter of how semantic elements are lexicalized as syntactic constituents in different ways in English and Chinese but a matter of how the semantic structure of a motion event in English differs from that in Chinese. It has been demonstrated that, specified at the underlying level of Chinese by the syntactic structure, *zai* and *-shang* belong to Path and Ground respectively within the semantic structure of a motion event; and, *on* and *in* in English, which are equivalent in meaning to *zai...-shang* in Chinese, are designated to be in Path. The semantic structure of the motion event specified at the underlying level of Chinese by the spatial expression should be:

Figure (Thing) + Motion + Directional + Ground (Place / Thing + Configurational)

Compare it to what Talmy 1975 suggested:

Figure + Motion + Path (Directional + Configurational) + Ground

The critical difference here is that, for Chinese, the 'Place' is the cognitive basis of the Ground and the Configurational is not a necessary component of the semantic structure of a motion event to Chinese but a semantic component of the Place when the Ground consists of Thing and Localizer. However, for English, Configurational is an obligatory component under Path.

At this point, it is worth referring to Vandeloise's study of French prepositions *à, sur/sous, and dans/hors de*. According to Vandeloise, *à, sur/sous, and dans/hors de*, which are thought to correspond to *at, on/under, and*

*in/outside* in English, cannot be decomposed into Directional and Configurational. Instead, three prepositions respectively indicate the three un-dividable units of meaning as follows:

- (78) *à* — 'localization': (1) The spatial co-occurrence of x and y; (2) The unidimensionality of y.  
*sur/sous* — 'bear/burden': (1) Order on the vertical axis; (2) Contact; (3) Access to perception; (4) Target is smaller than the landmark; (5) Opposition to gravity.  
*dans/hors de* — 'container/contained': topological solution – if the boundaries of the landmark y include the boundaries of its target x. (1991:157-234)

From this point of view, the meanings of *à*, *sur/sous*, and *dans/hors de* are indivisible. The three prepositions differ in meaning from one other as a whole rather than partially differ in meaning from one other. Following Vandeloise, that is to say that:

- |        |                |                            |                                  |
|--------|----------------|----------------------------|----------------------------------|
| (79)   |                | Path                       |                                  |
|        | 'localization' | 'bear/burden'              | 'container/contained'            |
| French | <i>à</i> 'at'  | <i>sur/sous</i> 'on/under' | <i>dans/hors de</i> 'in/outside' |

Inferred from this analysis, the semantic correspondence of *zai...-shang* Chinese, *on* and *in* in English, and *sur/sous*, *dans/hors de* in French is not based on the fact that they share semantic components such as the Directional and Configurational. Instead, they happen to correspond in meaning to each other by means of the whole spatial expression. This means that, though the Figure, Ground, and Path, as the main components of the universal semantic structure of a motion event are shared by English, French, and Chinese, the contents of them will vary from language to language. This results, necessarily not accidentally, from the fact that *zai ... -shang*, in Chinese have different cognitive basis from *on* and *in* in English as well as *sur/sous*, and *dans/hors de* in French. Here, we are back to one of the crucial questions raised by Whorf: 'are our own concepts of "time", "space", and "matter" given in substantially the same form by experience to all men, or are they in part conditioned by the structure of particular languages?' (1956:138) The linguistic structure is constrained by the everyday cognition which is culturally dependent. The logical description of the motion event failed to embrace the challenges of the idiosyncrasy of individual languages in cognition, as the investigations of Vandeloise 1991, Herskovits 1986, and the present study have shown.

**11. CONCLUSION.** Our argumentation in this paper might be briefly summarized as follows: First, 'objects' in a general sense are conceptually categorized as THING and PLACE with respect to their spatial relations in everyday cognition. Objects falling into the category of PLACE are free to function as Ground, such as *China*, *Colorado*, and *Boulder* which are termed PLACE NAMES. By the term 'free', we mean that they function as Ground without any assistance. Objects falling into the category of THING conditionally function as the Ground, such as *table*, *book*, and *bike* which are termed THING NAMES. That is, the words for THING would function as the Ground by adding an appropriate localizer, which refers to particular spatial notions like 'upper' 'right' 'inside' and so forth, to the noun that refers to THING. This conceptual process is called LOCALIZATION. The distinctions between *China*, *Colorado*, and *Boulder*, on the one hand, *table*, *book*, and *bike*, on the other, is characterized by the intrinsic Ground vs. the extrinsic Ground. In everyday cognition, the categorization of THING and PLACE is not performed geometrically but geographically. The division of THING and PLACE is meaningful only if they both refer to concrete objects in the real world rather than abstract entities. Finally, we have raised the issue of the idiosyncrasy of the semantic structure of a motion event in Chinese. Unlike many Indo-European languages, the semantic component the Configurational is covered by the Ground rather than the Path. This is constrained by the conceptualization of THING and PLACE in everyday language.

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