A Corpus-based Comparison of Satellites in Chinese and English

Hui Yin

In this study, two balanced corpora (BNC and Academia Sinica Balanced Corpus of Modern Chinese) were used to compare satellites in Chinese and English. The corpus data show that English and Chinese are quite different in the nature of satellites. Satellites in English are mainly verb particles while satellites in Chinese are basically second elements in verbal compounds. The corpus findings inform us that the most frequently used satellites in English are path satellites such as *in* and *out*, *up* and *down* while in Chinese the most frequent ones are motion verbs such as *lai* 'come' and *qu* 'go'. The corpus evidence also indicates that there are more satellites used in Chinese than in English. This difference is largely due to their differences in verb lexicalization. Chinese regularly uses its satellites to specify realization or fulfillment but that is not the case in English.

1. Verb-framed Languages vs. Satellite-framed Languages

Talmy proposes (1985; 2000) that language can be classified into two typological categories on the basis of where a particular language characteristically expresses the core schema of the event complex: in the main verb or in a satellite to the verb.

Talmy (2000) defines the satellite as "the grammatical category of any constituent other than a nominal or prepositional-phrase complement that is in a sister relation to the verb root" (Talmy, 2000:222). The satellite can be either a bound morpheme or a free word and it includes English verb particles, German separable and inseparable verb prefixes, Chinese verb complements and much more.

Languages that characteristically express the schematic core by the verb are verb-framed

languages while languages that characteristically express the schematic core by the satellite are satellite-framed languages. The following examples illustrate such distinctions.

(1)	maotouying		cong	shandong		li	fei	chulai.
	Cat-head hawk		from	mountain-hole		inside	fly	exit-come (out)
	'The owl flew out from the cave'							(Chinese)

(2)	el	buho	salió	volando	de	la	cueva	
	'the	owl	exited	flying	from	the	hole.'	(Spanish)

In the Chinese example, the verb *fei* (fly) indicates the fact of movement. It is the job of the satellite *chulai* (exit-come) to express direction. If we take the basic message of a movement-event communication to be that an entity has moved along a path in a specified direction (Berman & Slobin, 1994), we can say that Chinese is a satellite-framed language, because the core information 'path' is conveyed by the satellite.

However, in the Spanish (a verb-framed language) example, the verb *salió* (exited) alone indicates the core information of direction. The encoding of motion is conveyed by the satellite *volando* (flying).

English is also a good example of satellite-framed languages. In the English example: *the owl flew out from the cave*, the satellite *out* conveys the core information (path), while the main verb *flew* expresses the co-event (motion).

In English and Chinese, a verb and its satellite(s) constituent a verb complex to form a macro event (e.g. motion plus path). The satellite relates to the verb root as a dependent to its head. A set of forms that can serve as satellites in a particular language often overlaps with a set of forms on another grammatical category in that language, generally the category of prepositions, verbs or nouns.

2. English Satellites: Mainly Verb Particles

In English, a verb and its satellite(s) constituent a verb complex, which forms a conceptual macro event (Berman & Slobin, 1994). The satellite relates to the verb root as a dependent to its head. A set of forms that can serve as satellites in a particular language often overlaps with a set of forms on another grammatical category in that language, generally the category of prepositions, verbs or nouns (Talmy, 2000). In English, satellites largely overlap with prepositions while in Chinese, satellites largely overlaps with main verbs.

2.1. Differences between Satellites and Prepositions

Since English satellites overlap with prepositions, how can we distinguish satellites with prepositions in actual English language contexts? Talmy (2000) has noticed come important differences between satellites and prepositions. First, these two categories do not have exactly identical memberships, that is, there are forms serving only one function or the other. For example, in English, *apart, away, back and forth* always serve as satellites while *of, from and toward* always act as prepositions. Moreover, items that can serve both functions have different senses in each as the following example illustrates:

(3) He came to the university.
(4) He came to.

It is obvious from the above examples that *to* as a preposition in (3) is different in the sense from *to* as a satellite as in (4).

Satellites and prepositions also differ greatly in their properties. “With regard to phrase structure and co-occurrence, a satellite is in construction with the verb, while a preposition is in construction with an object nominal” (Talmy, 2000: 107). Therefore, when a nominal is omitted, the preposition that would have co-occurred with that nominal should also be omitted, however,

the satellite should remain because the satellite is closely associated with the verb as in the following example:

(5) When he saw a snake in house he run away (from the house) as fast as possible.

In addition, satellites and prepositions are different in positional properties. A preposition should precede its nominal, however, a satellite has more complex positional properties. It could either precede or follow a full NP, but it should follow a pronominal NP that lacks a preposition.

The satellites in English are mostly involved in the expressions of path. The main verb and its satellite constitute a verb complex that conveys a macro event.

2.2. Simple Type: motion+path

In English, motion+path type is basic on the evidence that it is first aquired by children (Berman & Slobin, 1994). It is possible that the verb simply indicate the fact of movement without specification of manner while its satellite specifies direction or path. Satellite-framed languages like English allow for detailed description of paths within a verb complex, "because the syntax makes it possible to accumulate path satellites to a single verb, along with preposition phrases that add further specification" (Berman & Slobin, 1994: 118) as example (6) shows:

(6) The man *went out* of the house into a cave.

The simple type (also basic type) of such verb complex expresses motion and path. Verbs in such constructions are general-purpose verbs such as come, go, get, put, move which simply indicate movement with no co-event involved and which acquired earlier by children (Berman & Slobin, 1994).

The following are the commonly used path satellites: in, out, up, down, away, through, past, on, under, over, below, across, off, back, forth, etc. a particular verb can be followed by a bunch of satellites to indicate different directional specifications (paths). For example, we can put different

satellites to the general-purpose verb go to form different verb complexes:

(7)	He	went	in.	He	went	out.
	He	went	up.	He	went	down.
	He	went	across.	He	went	by.
	He	went	off.	He	went	along.
	He	went	through.	He	went	past.
	He	went	above.	He	went	below.
	He	went	back.	He	went	over.

2. 3. Co-event Type: motion and manner (or cause)+ path

In a satellite-framed language like English, since the Path components are tucked away in satellites what kind of other semantic element can be encoded in the main verb? In fact, the main verb often encodes co-events. In English, in which path is expressed by satellites, a whole series of verbs in common use could express motion occurring in various manners or by various causes (Talmy, 2000). The verb in such constructions is more specific and more complex than general-purpose verbs such as *come* and *go*.

As Berman and Slobin (1994) suggested that satellite-framed languages like English have a tendency towards greater specification of manner than verb-framed languages, probably because the lexicon provides a large collection of verbs that conflate manner with change of location. Instead of using the general-purpose verbs *go* o*r move* the following examples give us illustrations of event conflation of motion with manner in the verb root:

(8) a. The rock slid/rolled/bounced down the mountain.

b. I ran/limped/stumbled/hopped/rushed my way down the hill.

Besides conflating manner with motion, the main verb in a verb complex consisting of a verb root and its satellite can encode co-events of both motion and cause. Consider the following examples:

(9) I knocked the nail into the wall.

In (9), *knocked* basically refers to what I did to the nail, so it expresses the cause of the event.

3. Chinese Satellites: Basically Verb Complements (Compounds)

3. 1. Directional Complement: motion + path

In Chinese, certain verbs, typically verbs of displacement, can serve as the main verbs (V_1) in directional verbal compounds. As Li and Thompson (1981) have observed, the most obvious type of displacement verb is a verb of motion such as *hui* 'return', *zou* 'walk', *guo*'cross'. Another common type of displacement verb is a dislocation verb "that inherently implies that the direct object undergoes a change of location" (Li & Thompson, 1981:58) such as *ban* 'remove', *reng* 'throw', *song* 'send', *ji* 'mail', *ju* 'lift', *fang* 'put', *duan* 'carry'. These verbs conflate movement with some other activity. As for satellites, that is, V_2 denoting path or direction, they are highly limited lexically. The prototypical satellite verbs functioning as directional complements in VV compounds are *lai* 'come' and *qu* 'go', although there is a small set of additional verbs which serve as complements of direction. I'll discuss these in turn.

3. 1. 1. Satellite Verbs lai 'come' and qu 'go' as Complements

The Satellite verbs *lai* 'come' and *qu* 'go' are used extensively in Chinese as complements of direction (path). They occur after verbs of movement or action to indicate a path or direction 'towards' or 'away from' the speaker (Yip & Don, 1998a). Typically, these involve events of TRANSPORTATION as in (10) or TRANSACTION (TRANSLOCATION) as in (11):

(10) a. *Zhangsan* ***zuo*** ***lai****-le.*
Zhangsan **walk** **come**-ASP
'Zhangsan came over here on feet.'

b. *Lisi* ***zuo*** ***qu****-le.*
Lisi **walk** **go**- ASP
'Lisi went over there on foot.'

(11) a. *Zhangsan* ***na*** ***lai****-le* *yiben* *shu.*
Zhangsan **carry** **come**-ASP one-CL book
'Zhangsan brought a book.'

b. *Lisi* ***na*** ***qu****-le* *yiben* *shu.*
Lisi **carry** **go-** ASP one-CL book
'Lisi took a book with him.'

The verbs in these sentences are bound together and the verb of movement or moved action is naturally accompanied by path or direction. These verb complexes actually form directional compounds in which the main verb V_1 expresses motion or co-event while the satellite V_2 conveys the core information: path.

3. 1. 2. Double Complements (or VVV Compounds) and their Figurative Uses

There is a small group of motion verbs in Mandarin other than *lai* and *qu* which also participate in VV compounds. These verbs have directional meanings denoting path when they occur in directional complements in addition to verbal meanings when they are used as independent verbs (Li & Thompson, 1981). Two examples are given below:

(12) *Ta* ***zuo*** ***jin*** *le* *jiaoshi.*
S/he **walk** **enter** ASP classroom.
'S/he walked into the classroom.'

(13) *Ta* ***fang*** ***xia*** *le* *shubao.*
S/he **put** **descend** ASP schoolbag
'S/he laid down her/his schoolbag.'

There are about eight verbs in this group (ibid.): *shang* 'ascend', *xia* 'descend', *jin* 'enter', *chu* 'exit', *qi* 'rise', *hui* 'return', *guo* 'cross', *kai* 'open'. *Lai* 'come' and *qu* 'go' may be linked to the group of 8 motion verbs (Yip & Don, 1998b) in Chinese to form a set of double directional complements elaborating path. Therefore, there are 16 members in this category of double complements when the 8 verbs combine with *lai* and *qu*.

A. following verbs of movement (absolute motion)

(14) *Huar* ***diao*** ***xia-lai****-le.*
Picture **drop** **descend-come-**ASP
'The picture fell down.'

(15) *Che* ***kai*** ***guo-qu****-le.*
Car **drive** **cross-go**-ASP
'The car went past.'

B. following verbs of action (translocation)

(16) *Shu* ***fang*** ***hui-qu****-le.*
Book **put** **return-go**-ASP
'The book was put back.'

(17) *Cai* ***duan*** ***jin-lai****-le.*
Dish **bring** **enter-come**- ASP
'The dishes were brought in.'

Sometimes these double complements can have metaphorical interpretations in appropriate contexts besides being used literally as in (18) and (19). In that case, the VV complements (satellites) in VVV compounds could be regarded as having been lexicalized.

(18) *Ni yinggai ti ta* ***shang-lai****.*
You should pick him **ascend-come**
'You should lift him up.'/'You should promote him.'

Here *shanglai* 'ascend-come' can be used figuratively: come up high in social (or administrative) position and the metaphorical meaning is derived from the basic meaning *shanglai* 'come up'.

(19) *Ta xiang huo* ***xia-qu****.*
S/he want live **descend-go**
'He wants to live on.'

In (19), *xia-qu* is also used figuratively. The directional aspect of *xia-qu* is metaphorically extended to the aspect of time (Li & Thompson, 1981). Therefore, *huo xia-qu* 'live descend-go' is interpreted as 'live on'. The double satellite *xia qu* has been lexicalized to indicate path.

In Chinese, path satellites are very lexically restricted. If given a particular verb of motion or action, we can combine it with different path satellites to make different VV compounds. Thus, VV compounds of motion+path type are very productive and frequent.

3. 2. Fulfillment Complement

Fulfillment verb compounds are important in Chinese and they are widely used both in speech and writing (Li & Thompson, 1981). In Mandarin Chinese, complements of fulfillment in VV compounds are cases in which the second verb indicates fulfillment or result of the action of the first verb. Given an appropriate verb, we can freely create new fulfillment verb compounds. Verbs used as complements of fulfillment are very restricted lexically The commonly used ones are the following phase verbs or achievement verbs: *po* 'break', *dao* 'fall', *diao* 'drop', *kai* 'open, separate', *wan* 'finish', *dao* 'attain, achieve'. These verbs serving as complements express the phases or achievements of the first verbs.

(20) *Ta* ***tui*** ***dao*** *le* *wo.*
S/he **push** **fall** ASP I
'S/he pushed me down.'

(21) *Zhangsan* ***muo*** ***diao*** *le* *zang* *dongxi.*
Zhangsan **wipe** **drop** ASP dirty thing
'Zhangsan wiped out the dirty things.'

In (20), the result of pushing is that the things being pushed *fall*; in (21) the result of wiping the dirty things is that the dirty things are *gone*.

However, in English, the fulfillment or resulting state is usually indicated by an adverb or a particle---in short, by an atemporal relational predicate (Langacker, 1987) while in Chinese, the resulting state is often indicated by a complement verb or adjective which usually follows the first verb immediately. It is obvious in (20) that the fulfillment is indicated by the satellite verb *dao* 'fall' while in English translation, it is expressed by a particle (satellite) *down*. Usually, the action verb and the complement verb in Chinese form a VV compound. That is one of the main reasons to explain why there are much more compounds in Chinese than in English (Nicoladis & Yin, 2001).

Fulfillment verb compounds are always compounds of two parts, although each part may

be a compound itself. In such a compound, the second part signals fulfillment or some result of the action or process conveyed by the first part. Fulfillment verb compounds can express the following different kinds of fulfillment or result (Li & Thompson, 1981):

1. Cause

(22) wo ***da*** ***po*** le huaping.
I hit broken ASP vase
'I broke the vase. '

(23) Ta ***la*** ***kai*** le men.
S/he pull open ASP door
'S/he pulled the door open.'

In this kind of VV compound, the first verb indicates the cause and the second verb signals the result. In (22), the action *da* 'hit' produces the result of being broken of the vase while in (23), the action of *la* 'pull' results in *kai* 'open' (of the door).

2. Achievement

(24) ta ***zhao*** ***dao*** le na ben shu.
S/he search arrive ASP that CL book
'S/he succeed in searching (found) that book.'

(25) wo ba yifu ***xi*** ***ganjing*** le.
I BA clothes wash clean ASP
'I washed the clothes clean.'

In this kind of fulfillment verb compound, the first element denotes the action and the second element expresses the achievement of the action verb. In (24), the meaning of *dao* is derived from its independent verbal meaning 'arrive' and the meaning of *dao* in this example can be described as 'succeed in or achieve the goal' of *zhao* 'searching'. In (25), the action of *xi* 'wash' achieve the result of *ganjing* 'being clean' of the clothes.

3. phase

There are some fulfillment verb compounds in which the second part denotes something more

like the type of action described by the first verb or the degree to which it is carried out than its result (Li & Thompson, 1981). These compounds can be called phase fulfillment verb compounds, in which the second element is highly restricted lexically. The following are the most commonly used phase verbs (the second element) in this kind of fulfillment verb compound:

(a) wan 'finish', which signals the completion of an action

(26) xie wan 'write-finish' — finish writing
duo wan 'read-finish' — finish reading
zuo wan 'do-finish' — finish doing

(b) zhao 'be on target':

(27) zhao zhao 'search-be on target — find
shuo zhao 'say-be on target' — say (it) right
cai zhao 'guess-be on target' — guess right

(c) zhu 'hold on'

(28) zhan zhu 'stand-hold on' — stand still
ting zhu 'stop-hold on' — stop firmly
zhua zhu 'grab-hold on' — grab onto

(d) hao 'completing the task signaled by the first verb', which is similar to but not identical with the meaning of wan 'finish'.

(29) xi hao 'wash-complete task — complete the task of washing
zuo hao 'do-complete task — complete the task of doing
tian hao fill out-complete task — complete the task of filling out

4. Chinese and English Satellites in the Corpora

In this study, two balanced corpora: the British National Corpus (BNC) and the Academia Sinica Balanced Corpus of Modern Chinese (Sinica Corpus) were used to compare satellites in Chinese and English. The BNC is a 100 million word corpus collected from samples of written and spoken language through a wide range of sources. This corpus was designed to represent a wide cross-section of British English from the later part of the 20th century, both spoken and written.

The written part of the BNC takes up 90% of the entire corpus while the spoken portion of it occupies 10% of the corpus. The BNC is a balanced corpus which collected samples from different genres. The building of the corpus started in 1991 and was finished in 1994. No new texts have been added after the completion of the project. However, the corpus was slightly revised before the release of the second edition BNC World (2001) and the third edition BNC XML Edition (2007). The Sinica Corpus is the first Balanced Modern Chinese Corpus and was designed for analyzing modern Chinese. The preliminary version was developed on a small-scale and opened to the academic community in 1994. The current corpus (Sinica 3.0), which was completed in 1997, contains 5 million words. Samples of the corpus were collected from different areas and classified according to five criteria: genre, style, mode, topic, and source. Therefore, the Sinica Corpus is a balanced corpus which is a representative sample of modern Chinese language. Like the BNC, written texts make up approximately 90% of this corpus and the spoken portion takes up 10% of the entire corpus. Both the BNC and the Sinica Corpus are balanced corpora and they are useful to make linguistic comparisons between modern English and modern Chinese.

In order to compare English satellites with Chinese satellites, 1,000 sentences were randomly selected from each corpus, which formed the base for the comparison. Each sentence was checked for whether it contains verb complexes of my interests and both Chinese and English satellites were identified. The corpus findings indicate that there are more satellites used in Chinese than in English as Chart 1 illustrates.

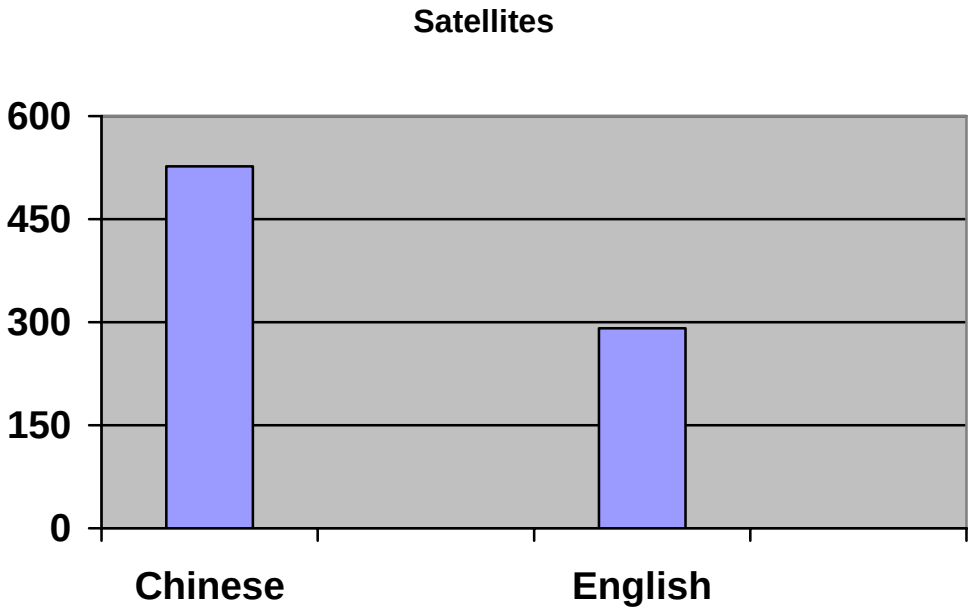

Chart 1 Number of Chinese and English Satellites found

It can be seen from Chart 1 that the token frequency of satellites (the total number of the satellites) is higher in Chinese than in English. In Chinese about 5 out of 10 sentences contain satellites while in English nearly 3 out of 10 sentences have satellites in them. In terms of type frequency (the number of different satellites), it is higher in Chinese than in English as Chart 2 indicates:

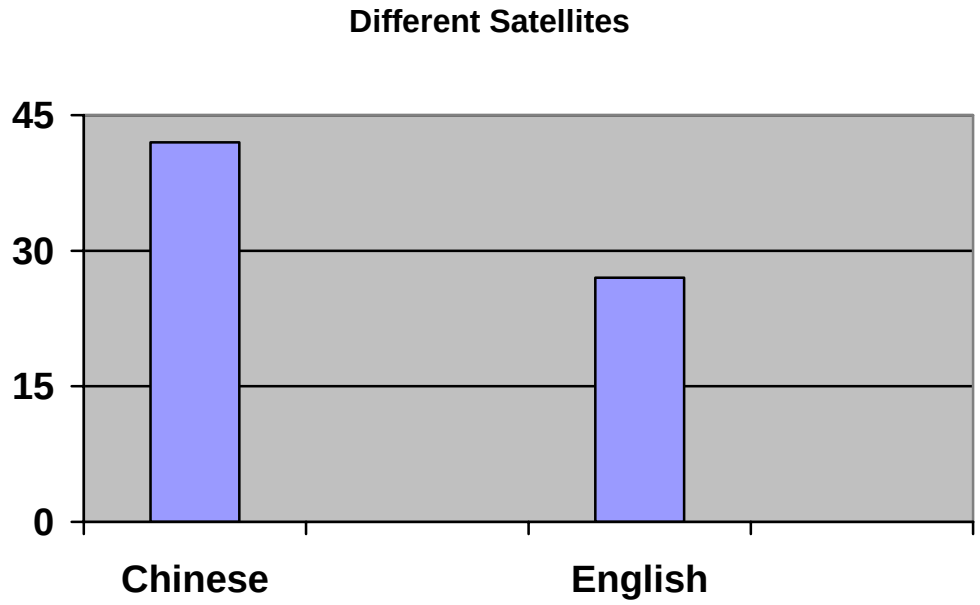

Chart 2 Number of different Chinese and English Satellites found

Talmy (1985, 1991) claims that both English and Chinese are basically satellite-framed languages, in which the core information of path expressions is conveyed by satellites rather than by main verbs. However, the corpus evidence shows that English and Chinese are quite different in the nature of satellites. As Table One and Table Two show, satellites in English are mainly verb particles while satellites in Chinese are basically the second elements in verbal compounds --- resultative (or directional) complements. Table One and Table Two list individual satellites and their counts (where number is lager than one) in English and in Chinese. In English, satellites largely overlap with prepositions while in Chinese, satellites overlap with verbs.

English Satellites	N	English Satellites	N
out	55	round	9
up	31	along	8
in	28	across	6
back	27	around	5
down	23	over	4
into	20	past	3
on	17	to	3
through	14	beyond	2
away	13	above	2
off	13		

Table 1 English satellites and their counts (number >1)

Chinese Satellites	English Gloss	N	Chinese Satellites	English Gloss	N
lai	come	75	wan	finish	7
qu	go	55	chuqu	exit come	7
chu	exit	52	guoqu	cross go	6
chulai	exit come	36	jin	enter	6
dao	arrive, achieve	35	diao	drop, away	5
shang	ascend	32	hao	complete	4
qilai	rise come	32	huilai	return come	3
zou	walk, away	21	qing	clean	3
qi	rise	18	jinlai	enter come	3
zhu	hold on	17	zhao	be on target	3
xia	descend	16	ding	stop, hold	3
kai	open	14	jinqu	enter go	2
shangqu	ascend go	12	po	break	2
xialai	descend come	10	qingchu	clear	2
xiaqu	descend go	10	si	die, dead	2
hui	return	8	cheng	achieve, succeed	2
huiqu	return go	8	ru	enter	2
guolai	cross come	7			

Table 2 Chinese satellites and their counts (number >1)

The corpus data displayed in Table One and Table Two suggest that English and Chinese have different frequency patterns of different kinds of satellite in verb complexes. The corpus findings inform us that the most frequently used satellites in English are path satellites such as *in* and *out*, *up* and *down* while in Chinese the most frequent ones are motion verbs used as verb complements such as *lai* 'come' and *qu* 'go' which often indicate direction toward or away from the speaker. Chart Three and Chart Four display the distribution patterns of the top eight satellites in English and Chinese. In English, the eight most frequent satellites occupies 74% of all the satellites while in Chinese, the eight most frequent satellites takes up 64% of all the satellites.

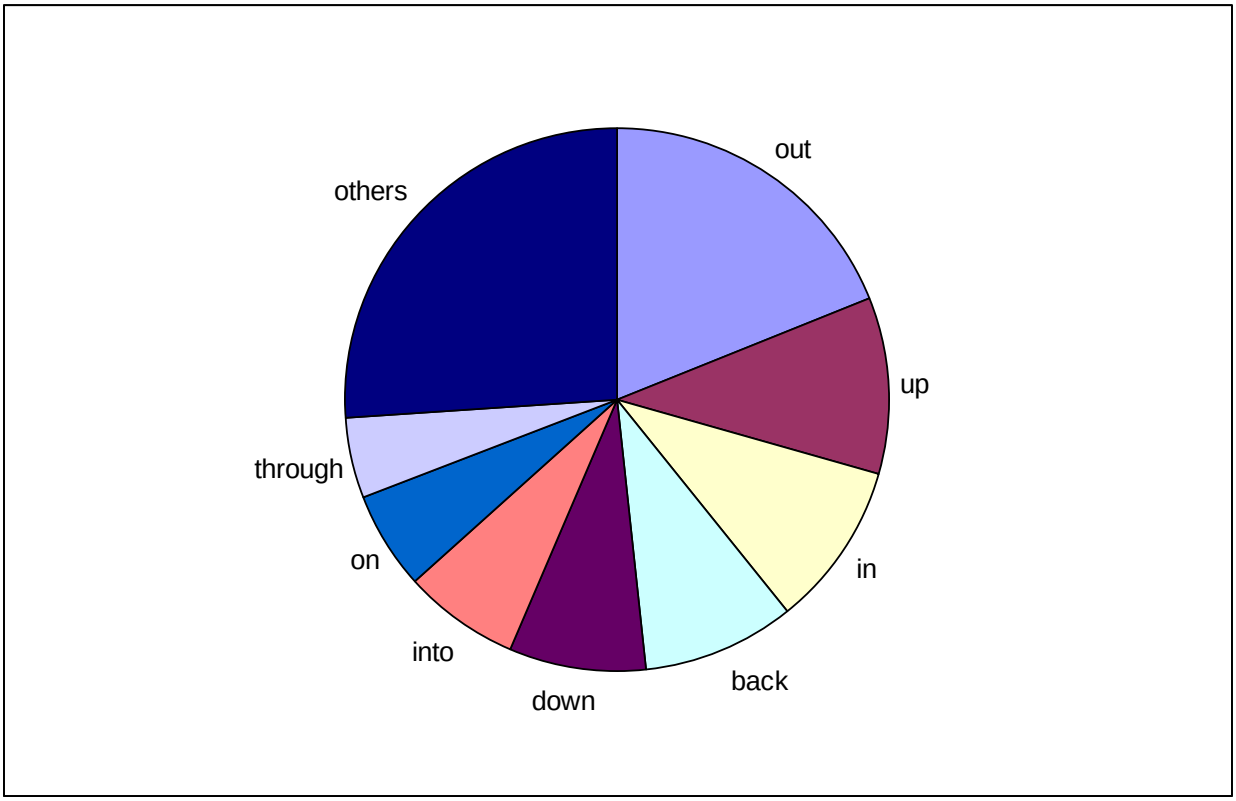

Chart 3 Frequency Distribution of the Eight Most Frequent Satellites in English

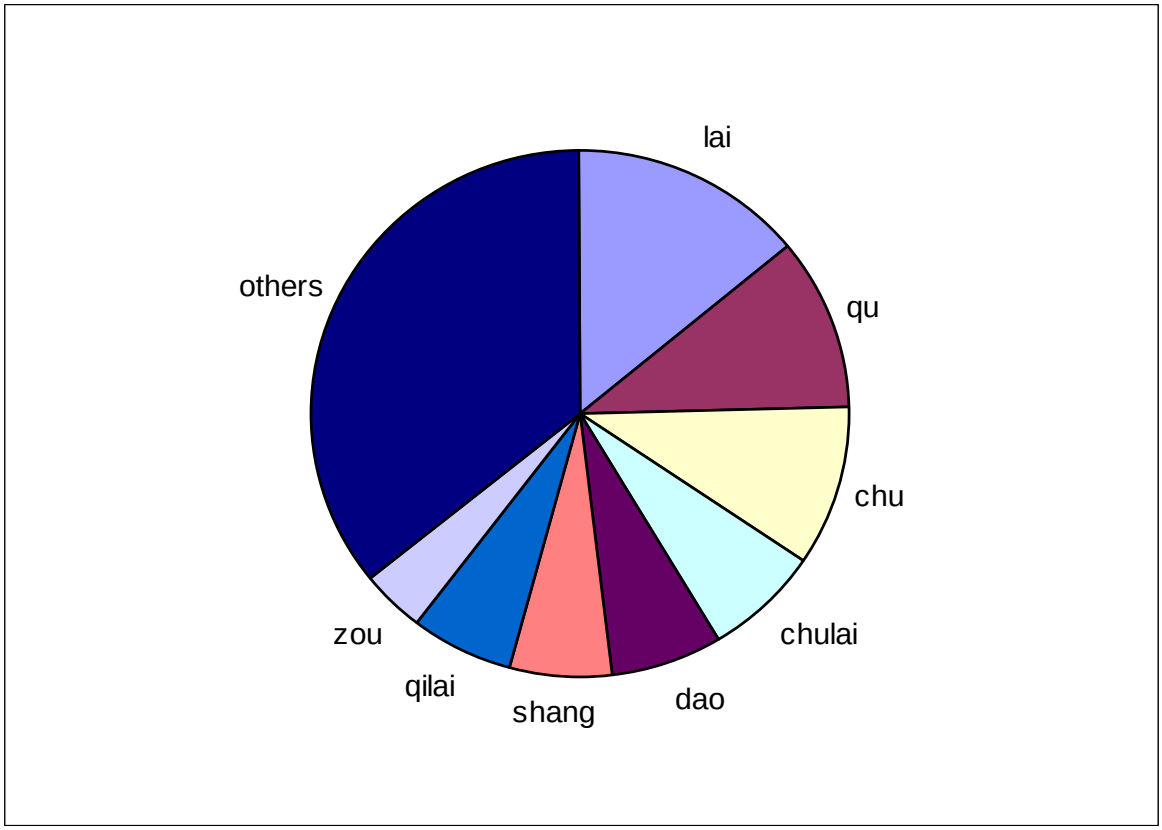

Chart 4 Frequency Distribution of the Eight Most Frequent Satellites in Chinese

As Chart 4 indicates, the most frequent double complement (satellite) is *chulai* ‘exit come’. The common use of *chulai* with another verb to form a compound is due to the fact that many Chinese verbs do not specify fulfillment or result and thus, they often need another verb or compound to perform this function. *Chulai* is the most frequent satellite used together with another verb to signal fulfillment or result. Another double complement frequently used as a satellite is *qilai* ‘rise come’. Most of the instances with *qilai* signal the aspectual meaning of inceptiveness. In such kind

of use, *qilai* ‘rise come’ does not specify direction of real motion but indicate that the situation has started and will continue as in the case *ku qilai* ‘began to cry’. Here, this directional verb has been extended to function as an aspectual marker.

5. Differences of English and Mandarin Chinese Verb Lexicalization

Another important factor to account for the fact that there are more verb compounds in Chinese than in English is the differences of English and Chinese verb lexicalization. Chinese is a strongly satellite language, which regularly uses its satellites to specify realization or fulfillment. Perhaps most of Chinese verbs require a satellite for their realization. The following example is entirely acceptable in Chinese but sounds strange in English:

(30) wo sha le zhu (keshi mei sha si)
I kill ASP pig (but not kill die)
* 'I killed the pig but it didn't die'

(31) wo sha si le zhu.
I kill die ASP pig
'I killed the pig.'

The semantics of the above examples can be explained as follows. In (30), the first clause means that I performed the action with the intention of killing the pig and the second clause in parentheses indicates that the action did not achieve the goal: success in killing the pig. However, with the confirmational satellite *si* 'die' in (31), the sentence is now an undeniable assertion that I succeeded in killing the pig.

So the English verb *kill* used to gloss the Chinese verb *sha* does not really correspond in meaning. Therefore, a sentence gloss like *'I killed the pig but the pig didn't die*' is really contradictory in English but thus incorrectly represents the non-paradoxical Chinese original. The original meaning is that *'I performed the action with the intent to kill, but the pig didn't die*.' English verb such as *kill, open, kick* are generally construed to refer to a simplex action of the

fulfillment type and they specify the attainment of a certain final state.

In Chinese, the concept covered by a typical English verb such as *kill* is divided into two parts: the final outcome, usually conformed by a verb satellite and an action performed with the intent to lead to that outcome, which is signaled by the verb. As a result, the unitary concept of an English verb often has a counterpart in Chinese two-part conceptualization expressed by a verb plus another verb (satellite). Hence, quite a few fulfillment verb compounds in Chinese come into being this way.

Furthermore, the semantics of the Chinese verb-satellite system ranges more widely than in English. Some Chinese verbs can enter into constructions not only with resultative verbs (satellites) to indicate fulfillment, but also with those that express underfulfillment, overfulfillment, antifulfillment and other event (Talmy, 2000).

(a) fulfillment

(32) wo ba kuaizi **zhe** **duan** le.
I OBJ chopstick break broken ASP
'I broke the chopstick.'

In (32), the first verb *zhe* means to squeeze in on an object with the intent to break it and the second verb *duan* express the fulfillment that the action achieves its goal of breaking it.

(b) underfulfillment

(33) wo ba kuaizi **zhe** **wan** le.
I OBJ chopstick break bend ASP
'I broke the chopstick bent.' (I squeezed in on the chopstick to break it, but only managed to bend it.)

In (33), the verb *zhe* 'break' takes a state-change satellite *wan* that denotes a 'bent' state. Usually in the efforts of breaking something, a bent state for the object is on the way to a broken state. Therefore, the verb *wan* 'bent' indicates an insufficient fulfillment of the full scope of intention. Thus, the resultative verb *wan* in this example sentence marks underfulfillment.

(c) overfulfillment

(34) wo ba kuaizi **wan** **zhe** le.
I OBJ chopstick bend broken ASP
'I bent the chopstick broken.' (I squeezed in on the chopstick to bend it, but wound up breaking it.)

In (34), the verb *wan* ‘bend’ takes a state-change satellite that denotes a broken state. Since the concept of breaking is on a continuum with that of bending and conceived as lying beyond it, the resultative verb that marks this excess is properly termed as overfulfillment (Talmy, 2000).

(d) antifulfillment

(35) wo ba yifu **xi** **zang** le.
I OBJ clothes wash dirty ASP
‘I washed the clothes dirty.’ (I washed the clothes [e. g., in a lake] but it turned out dirtier than before.)

In (35), the verb *xi* ‘wash’ takes the state-change satellite *zang* ‘dirty’ to express the following combined meaning: immerse and rub the clothes with the intention to make them clean, but they turned out to be dirtier than before. Talmy (2000) terms a satellite for this semantic effect on the verb as an antifulfillment satellite.

(e) other-event

(36) wo ba yifu **xi** **po** le.
I OBJ clothes wash torn ASP
'I washed the clothes torn.’ (I washed the clothes and it got torn in the process)

In verb-satellite relations, the state indicated by the satellite could lie somewhere along the conceptual axis leading to the intended goal. “Thus, the state expressed by the satellite was either before the starting point, almost at the goal, or past the goal” (Talmy, 2000). However, in (36), the verb *xi* ‘wash’ takes the satellite with the meaning of *po* ‘torn’. This satellite expresses a state that results from the action of *xi* ‘wash’ but *po* ‘torn’ does not lie somewhere along the axis of the intended goal. Therefore, such a satellite like *po* ‘torn’ in (36) can be termed as an other-event

satellite.

Unlike Chinese, English generally uses one word to express action and goal suck as *pull*. However, it is very common for Chinese to use two words such as *pull open* to indicate action and goal respectively. As a result, VV fulfillment compounds to denote action and goal are very common in Chinese.

6. Conclusions

Both English and Chinese are typically satellite-framed languages. However, they are quite different in the nature of satellites. Satellites in English are mainly verb particles while satellites in Chinese are basically second elements in verbal compounds – the resultative complements. This distinction is largely due to the fact that Chinese is a verb-serialized language in which verbs in a sequence without any intervening conjunctions are quite common but English is not.

The corpus findings suggest that these two languages have different frequency and distribution patterns of different kinds of satellite in verb complexes. The results inform us that the most frequently used satellites in English are path satellites such as *in* and *out* while in Chinese the most frequent ones are motion verbs such as *lai* ‘come’ and *qu* ‘go’. The corpus evidence also indicates that there are more satellites used in Chinese than in English. This difference largely results from their differences in verb lexicalization. Chinese regularly uses its satellites to specify realization or fulfillment (e.g. *la kai* ‘pull open’, *sha si* ‘kill die’) but that is not the case in English.

References

Berman, Ruth A & Slobin, Dan Isaac. 1994. *Relating Events in Narrative: A Crosslinguistic Developmental Study*. Hillsdale, New Jersey: Lawremce Erlbaum Associates, inc., Publsihers.

Chang, Claire Hsun-huei. 1990. On serial verbs in Mandarin Chinese: VV compounds and

Co-Verbal Phrases. *Ohio State University Working Papers in Linguistics*, 39, Dec., 316-339.

Chao, Yuen Ren. 1968. *A Grammar of Spoken Chinese*. Berkeley: University of California Press.

Chen, H. C. (ed.) 1997. *Cognitive Processing of Chinese and Related Asian Languages*. Hong Kong: The Chinese University Press.

Huang, Shuanfan. 1998. Chinese as a headless language in compounding morphology. In Packard, Jerome L. (ed.). *New Approaches to Chinese Word Formation*. 261-283. Berlin: Mouton de Gruyter.

Langacker, Ronald. 1987. *Foundations of Cognitive Grammar, I: Theoretical Prerequisites*. Stanford, CA: Stamford University Press

————. 1991. Cognitive Grammar. In Droste, F.G & Joseph, J.E. (eds). *Linguistic Theory and Grammatical Description.* 275-306. Amsterdam/Philadelphia: John Benjamins.

Li, Charles N. and Thompson, Sandra A. 1981. *Mandarin Chinese: A Functional Reference Grammar*. Berkeley: University of California Press.

Nicolaids, Elena & Yin, Hui. 2001. Acquisition of Chinese and English compounds by bilingual children. *Paper presented at Boston University Conference on Language Development*. Boston: MA.

Packard, Jerome L. (ed.) 1998. *New Approaches to Chinese Word Formation*. Berlin: Mouton de Gruyter.

Talmy, L. 1985. Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen (ed.), *Language typology and syntactic description: Vol. 3. Grammatical categories and lexicon*. 36-149. Cambridge: Cambridge University Press.

————. 1991. Paths to realization: A typology of event conflation. *Proceedings of the Annual meeting of the Berkeley Linguistic Society*, *17*. [Supplement on *Buffalo Papers in Linguistics 91-01* (pp. 182-187).]

————. 2000. *Toward a Cognitive Semantics*. Cambridge, Mass.: MIT Press.

Wardhaugh, Ronald. 1997. *Understanding English Grammar: A Linguistic Approach*. Oxford, UK: Blackwell Publishers Ltd.

Yip, Po-Ching & Don, Rimmington. 1998a. *Basic Chinese: A Grammar and Workbook*. London and New York: Routledge.

————. 1998b. *Intermediate Chinese*. London and New York: Routledge.