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VO-OV Mixed Word Order in Mandarin Chinese and Its Effects

Abstract: This paper revisits the word order type of Mandarin with reference to the fifteen pairs of grammatical elements correlated with VO-OV language types proposed by Dryer (1992a, 2009, 2011) and Haspelmath (2006). The research indicates that among the fifteen pairs, ten pairs exist in Mandarin and the other five are absent. In the relevant ten pairs, Mandarin has four pairs exhibiting both VO and OV word orders, three pairs tend to be in OV order, and the last three tend to be in VO order. Therefore, Mandarin can be seen as a VO-OV mixed order type language. As in the case of the genetic advantages and defects acquired by biological mixed or hybrid species, Mandarin VO-OV mixed order on the one hand brings more available syntactic structures and much expressive convenience, while on the other hand it pays the price of resulting in structural ambiguity. However, the de-contextualized ambiguous structures can be clarified in meaning through contextual filtering in communications, so Mandarin obtains relatively more benefits from VO-OV mixed word order.

Keywords: contextual filtering; structural ambiguity; word order typology

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1 Introduction

There has been a debate on whether Mandarin is a VO or OV type language. Some scholars claim it is an OV type (Tai 1973, 1976; Li and Thompson 1974, 1975), and some argue it is a VO type (Light 1979; Huang 1982; Sun and Givón 1985). Xu (2006) suggests that Old Chinese is a VO-OV mixed language, but modern Chinese is a VO-prominent language. Considering the large Chinese-speaking region (Chinese dialect regions included), Hashimoto (1985) argues

that Chinese undergoes a gradual transition from progressive VO structure to regressive OV structure from the south to the north. Liu (2001) proposes the following hierarchy of Chinese word order: *Wu* and *Min* dialects (VO recessive) < Mandarin (VO moderate) < Cantonese dialect (VO dominant). The word order types of the main Chinese dialects can be summarized in Table 1.

Table 1: Word order types of Chinese dialects

Dialects	Word order type
Northern dialects	VO and OV
<i>Xiang</i> dialect	VO and OV
<i>Gan</i> dialect	VO dominant
<i>Hakka</i> dialect	VO dominant
Cantonese dialect	VO dominant
<i>Wu</i> dialect	VO and OV
<i>Min</i> dialect	VO and OV

It is generally held that Mandarin’s word order is influenced by that of the Northern dialects and less by the Southern dialects since Mandarin is established on the former ones. Hashimoto (1985: 40–41) argues that the word order of Northern dialects has been much influenced by the OV order of Altaic languages. This argument is supported by the fact that Northern spoken dialects have an OV tendency. In Chinese history, the official languages of the *Liao*, *Jin*, *Yuan*, and *Qing* dynasties, which are respectively Khidan, Jurchen, Mongolian and Manchu, are all in OV order and born in the Northern region. The official language of the Ming dynasty is the *Wu* dialect in both VO and OV orders. Another support is that a dominant OV order is preferred by the *Xining* dialect in Northern Qinghai province, the *Yinchuan* dialect in Ningxia Hui autonomous district, and the *Linxia* dialect in Gansu province. It can be assumed that the VO-OV mixed order of Northern spoken dialect has been much influenced by Altaic languages and Chinese historical official languages.

This paper argues that Mandarin is a VO-OV mixed order language with reference to the fifteen pairs of grammatical elements correlated with VO-OV languages suggested by Dryer (1992a, 2009, 2011) and Haspelmath (2006), which are listed in Table 2, and a cost–benefit analysis of Mandarin’s mixed word order is further presented. Dunn et al. (2011) claim that there is no evidence of a cross-linguistic word order correlation between certain pairs of elements and that although some correlations do exist, they are specific to individual families and not universal. But the problem with Dunn et al.’s work, as Dryer (2011) argues, is that they fail to use the three types of data in the

WALS atlas– typological, genealogical, and geographical – so their results are unacceptable.

Table 2: Pairs of grammatical elements correlated with VO-OV type language

VO correlate	OV correlate
adposition-NP	NP-adposition
copula-predicate	predicate-copula
“want”-VP	VP-“want”
tense/aspect auxiliary-VP	VP-tense/aspect auxiliary
negative auxiliary-VP	VP-negative auxiliary
complementizer-S	S-complementizer
question particle-S	S-question particle
adverbial subordinator-S	S-adverbial subordinator
article-N'	N'-article
plural word-N'	N'-plural word
noun-genitive	genitive-noun
noun-relative clause	relative clause-noun
adjective-standard of comparison	standard of comparison-adjective
verb-PP	PP-verb
verb-manner adverb	manner adverb-verb

2 Mandarin as a VO-OV mixed order language

2.1 Adposition-related structures

2.1.1 Preposition and postposition

- 1) OV: NP-adposition
VO: adposition-NP

Mandarin has both prepositions and postpositions, as in (1) and (2) respectively, and sometimes a preposition and a postposition may both appear in a PP, as in (3):

- (1) *caodi shang tang-zhe yi-xie ren*
grassland LOC lie-ASP one-CL people
'Some people are lying on the grassland.'
- (2) *zai menkou zhong-le liang-ke shu*
at gateway plant-ASP two-CL tree

‘...planted two trees at the gateway.’

- (3) *liu-le yi-ge zhitiao zai men shang*
 leave-ASP one-CL message on door LOC
 ‘...left a message on the door.’

The postposition with a specific spatial indication used to be labeled with “locative” in Chinese traditional grammar. The preposition *zai* in (2) and (3) has several English counterparts such as “in, at, on” introducing time, place, situation, scope, etc., but *zai* always combines with a postposition to form a “circumposition,” a preposition and a postposition between which an NP is inserted. Circumposition is proposed by Greenberg (1995) to replace “circumfix” (Greenberg 1980). Besides *shang* in (3), the other postpositions which *zai* can combine with are *xia* (‘under’), *li* (‘in’), *wai* (‘outside’), *qian* (‘front’), *hou* (‘back’), and so forth. Sometimes when a circumposition occurs in a PP, the preposition like *zai* in (3) actually does not contribute to the meaning of the PP, so it can be left out, but it is not the case for the postposition. Liu (2002) points out that in a circumpositional PP with the preposition *zai* and a postposition, the postposition marks a specific spatial location, while *zai* indicates a general spatial meaning. The former implicates the later semantically, which might be the motivation for *zai* to be omitted. Preposition and postposition have been taken as the most important parameters for VO and OV language types by typologists. Mandarin appears to be a VO-OV mixed type in terms of the adposition.

2.1.2 PP and verb

- 2) OV: PP-verb
 VO: verb-PP

Similar to prenominal and postnominal adpositions, preverbal PP and postverbal PP are quite common in Mandarin, as in (4) and (5):

- (4) *caochang shang zhan-zhe henduo ren*
 playground LOC stand-ASP many people
 ‘Many people are standing on the playground.’
 (5) *henduo ren zhan zai caochang shang*
 many people stand on playground LOC
 ‘Many people are standing on the playground.’

The PP *caochang shang* (‘on the playground’) in (4) precedes the verb, while it follows the verb in (5). Note that the postverbal PP in (5) includes a circumposition which has the same form as that in (3), but they differ in

syntactic positions, for the circumposition in (3) is postnominal. Mandarin tends to be in VO-OV mixed order in the light of the preverbal PP and postverbal PP.

2.2 Adverbial-related structures

2.2.1 Comparative structures

The order of adjective and standard in comparative structures correlates with that of V and O, which is as follows:

3) OV: standard of comparison-adjective

VO: adjective-standard of comparison

Mandarin has two kinds of comparative structures. One is the *bi* ('than') structure in which the adjective follows the standard of comparison, as in (6a), and the other is that the adjective precedes the standard of comparison, generally with the comparative markers *yu* or *guo* ('beyond') following the adjective, as in (6b).

(6) a. *renmin de liyi bi yiqie gao*
 people GENM interest than everything above
 'People's interest is above everything.'

b. *renmin de liyi gao yu yiqie*
 people GENM interest above than everything
 'People's interest is above everything.'

(6a) is more common in spoken Mandarin, while (6b) is preferred in written form. So in terms of the comparative structures, Mandarin still shows a mixed word order type.

2.2.2 Manner adverb and verb

4) OV: manner adverb-verb

VO: verb-manner adverb

In most languages, manner adverbs usually express some kind of modality of the actors, which brings about the term "modal adverb." Manner adverbs in Mandarin often convey the manners of the agentive subject, but maintain a syntactic relation with the verb. Manner adverbs in Mandarin have two positions in many cases, as in (7) and (8):

- (7) a. *Zhangsan jijimangmang de zou-le*
 Zhangsan in a hurry MM leave-ASP
 ‘Zhangsan left in a hurry.’
 b. *Zhangsan zou de jijimangmang de*
 Zhangsan leave MM in a hurry MM
 ‘Zhangsan left in a hurry.’
- (8) a. *Ah Q kelianbaba de ku-le*
 Ah Q ruefully MM cry-ASP
 ‘Ah Q cried ruefully.’
 b. *Ah Q ku de kelianbaba de*
 Ah Q cry MM ruefully MM
 ‘Ah Q cried ruefully.’

It is not common for manner adverbs to be both preverbal and postverbal among many other languages. Mandarin tends to be VO-OV mixed order in terms of this parameter. Mandarin preverbal and postverbal manner adverbs don’t serve as different syntactic functions but rather result in a subtle meaning difference, which will be discussed later.

2.3 NP-related structures

2.3.1 Relative clause and noun

The order of relative clause and noun does not show a clear-cut tendency in VO and OV languages. The statistical result by Dryer (1992a) indicates a strong preference for VO to place the relative clause after the noun, with Chinese as the only exception. We hold a different point of view because Mandarin actually is a VO-OV mixed language rather than a typical SVO language. If Mandarin is excluded, the statistical proportion between RelN and NRel in VO languages would be 0/60. The case in OV languages is quite different. There is a weaker preference for OV languages to have prenominal relative clauses, i.e. nearly half the OV statistical data prefer postnominal relative clauses.

- 5) OV: relative clause-noun (weak)
 VO: noun-relative clause

What about the syntactic position of relative clauses in Mandarin? The prenominal attributive elements in (9) should be seen as a relative clause from typological perspective:

- (9) a. *Laozhang qu-le yi-ge hen hui zuo cai de nüren*
 Laozhang marry-ASP one-CL very skilled make dish MM woman
 ‘Laozhang married a woman who was very skilled in making dishes.’

Among all the prenominal attributive elements in VO languages, the relative clause is located in the lowest position on the grammatical hierarchy, so it is the most unlikely one to precede the noun it modifies. But it is not the case in (9a), which suffices it to say Mandarin does not fall into the category of a typical VO language. However, the case hasn’t ended at this point. The relative clause may follow the noun it modifies in Mandarin, as in (9b). Another example is in (10):

- (9) b. *laozhang qu-le yi-ge nüren hen hui zuo cai (de)*
 Laozhang marry-ASP one-CL woman very skilled make dish (MM)
 ‘Laozhang married a woman who was very skilled in making dishes.’
- (10) a. *kaoshi zuobi de xuesheng yilü kaichu*
 exam cheat MM student all expel
 ‘All the students who cheat in the exam will be expelled.’
- b. *xuesheng kaoshi zuobi de yilü kaichu*
 student exam cheat MM all expel
 ‘All the students who cheat in the exam will be expelled.’

So can we assume that the order of the relative clause and the noun it modifies supports that Mandarin is a mixed type? Obviously we cannot. The fact that the NRel-order languages and the RelN-order languages are nearly equal in number in Dryer’s OV data proves that Mandarin is more like an OV language in this case.

2.3.2 Genitive and noun

- 6) OV: genitive-noun
 VO: noun-genitive (weak)

Dryer’s data indicates the GenN order is overwhelmingly preferred among OV languages, while the preference for the NGen order among VO languages is much weaker. The genitive generally precedes the noun in Mandarin and the opposite order is unacceptable, as in (11b) and (12b):

- (11) a. *Laozhang de erzi hen congming*
 Laozhang GENM son very clever
 ‘Laozhang’s son is very clever.’

- b. **erzi Laozhang de hen congming*
 son Laozhang GENM very clever
 'Laozhang's son is very clever.'
- (12) a. *wo de shu diu-le*
 I GENM book lose-ASP
 'My book was lost.'
- b. **shu wo de diu-le*
 book I GENM lose-ASP
 'My book was lost.'

Though many VO languages have both the GenN order and the NGen order, we can't give examples of the NGen order in Mandarin. So for this parameter Mandarin is not a VO type language.

2.3.3 Functional marker and noun

The noun-related functional markers include articles and plural words. We start out with articles. The order of an article and a noun has the following correlation with VO and OV:

- 7) OV: noun-article
 VO: article-noun

Strictly speaking, Mandarin has no articles, but if *zhe* (close to the English definite article 'the' but much more like 'this') and *yi* (close to the English indefinite article 'a' but much more like 'one') are taken as the counterparts of articles, an analogy can be made. The fact is that *zhe* and *yi* must precede nouns, which supports that Mandarin is a VO type language.

Let's take another look at plural words. Plural words serve as plural function of nouns, usually encoded in lexical forms, and in complementary distribution with articles. The order of a plural word and a noun has the following correlation with VO and OV:

- 8) OV: noun-plural word
 VO: plural word-noun

There are some ways to express plural or collective meanings in Mandarin. The plural morpheme *men* can't be applied to non-human nouns, but only to human nouns and pronouns (such as *women*, 'we,' *nimen*, 'you,' and *tamen*, 'they,' *haizimen*, 'children,' and so on). Compound nouns made up of a noun morpheme and a classifier morpheme are quite common, such as *mapi* ('horse'), *niuqun* ('cattle'), *bupi* ('cloth'), *zhizhang* ('paper'), *shuben* ('book'), *renkou* ('population'), and many others, which indicate collective

meanings. But if the classifier morpheme is left out, the noun morpheme alone doesn't indicate the collective meaning. Note that the noun morpheme always precedes the classifier morpheme, and not vice versa. Some indefinite pronouns, such as *yixie* ('some'), *bushao* ('quite a few' or 'quite much'), *henduo* ('many' or 'much'), etc., always combine with countable or uncountable nouns to form a phrase with a plural meaning. Quite similar to articles, Mandarin does not have plural words in a strict sense.

2.4 Higher predicate and subordinate verb

Higher predicates have higher syntactic status than subordinate verbs. The higher predicates include "want" type verb, tense/aspect auxiliary, negative auxiliary, and copula verb. They will be examined one by one.

"want" type verb:

9) OV: verb-want

VO: want-verb

The "want" verbs in Mandarin include *xiang* ('want'), *xiwang* ('hope'), *dasuan* ('intend') and so forth, all preceding their subordinate verbs. For example:

- (13) a. *wo xiang mashang qu Beijing*
I want at once go Beijing
'I want to go to Beijing at once.'
- b. *mashang qu Beijing wo xiang*
at once go Beijing I want
'I want to go to Beijing at once.'
- c. **wo mashang qu Beijing xiang*
I at once go Beijing want
'I want to go to Beijing at once.'
- d. **wo mashang qu xiang Beijing*
I at once go want Beijing
'I want to go to Beijing at once.'

The structure (13b) results from provisional pragmatic combination rather than a syntactic structure, so *wo xiang* ('I want') is usually separated by a comma from the previous part at syntactic level. Then in terms of the order of "want" type verb and its subordinate verb Mandarin pertains to VO type.

tense/aspect auxiliary:

10) OV: verb-tense/aspect auxiliary

VO: tense/aspect auxiliary-verb

Mandarin does not have overt tense marking in morphology. Time adverb and time noun are often employed to express time point or time interval. While aspect morphological marker does exist, such as *zhe* ('durative aspect marker'), *le* and *guo* ('perfective aspect marker'), and *zai* ('progressive aspect marker'), but they are morphemes attached to verb rather than auxiliary. So this parameter is ruled out.

negative auxiliary:

11) OV: verb-negative auxiliary

VO: negative auxiliary-verb

Mandarin does not have a negative auxiliary but has a negative particle which may precede or follow an auxiliary or verb with different meanings. The pre-auxiliary negative particle is as follows:

(14) *zheer bu neng fang shu*

here NEG AUX put book

'The book cannot be put here.'

(15) *wo bu neng chi zhe-ge pingguo*

I NEG AUX eat this-CL apple

'I cannot eat this apple.'

(16) *jintian women bu neng gan gongzuo*

today we NEG AUX do work

'We cannot do the work today.'

The postverbal negative particle expresses quite a different meaning, as the following:

(17) *zheer fang bu xia shu*

here put NEG down book

'Here is no room for the book.'

(18) *wo chi bu liao zhe-ge pingguo*

I eat NEG finish this-CL apple

'I cannot eat up this apple.'

(19) *jintian women gan bu cheng gongzuo*

today we do NEG successfully work

'We are failing to do the work today.'

The examples (14)–(16) tend to express subjective attitude, while (17)–(19) objective attitude. Nevertheless, since the negative particles in the above examples are usually labeled with "negative adverb" in Chinese grammar rather than negative auxiliary, this parameter is also excluded.

The order of copula and predicate correlates with VO and OV in the following way:

12) OV: predicate-copula

VO: copula-predicate

Similar to English “be,” the copula is usually employed predicatively with nominals, adjectives, and locatives. But there is no element analogous to the copula in Mandarin, so we leave it out of account in the present discussion.

2.5 Suprasentential element and sentence

The last three pairs correlated with VO-OV involve suprasentential elements and sentence. The suprasentential elements include complementizer, question particle, and adverbial subordinator, which tend to be the partner of verb, while sentence to be the partner of O:

13) OV: sentence-complementizer

VO: complementizer-sentence

14) OV: sentence-question particle

VO: question particle-sentence

15) OV: sentence-adverbial subordinator

VO: adverbial subordinator-sentence

There is no grammatical element analogous to complementizer in Mandarin, so the VO-OV correlated pair in 13) is left out.

The question particle is not uncommon among languages. Almost all the declarative sentences with the question marker *ma* at the sentence end may shift to a question sentence in Mandarin, which is much like Japanese with the sentence-end question marker *ga*. Note that there are many more cases for Mandarin to form a question sentence with a question pronoun. In this kind of question sentence, the question pronoun stays in the syntactic position occupied by the original grammatical element without any order change.

(20) *shui qu Beijing*

who go Beijing

‘Who will go to Beijing?’

(21) *Zhangsan ba shenme dasui-le*

Zhangsan BA what break-ASP

‘What did Zhangsan break?’

(22) *wo zenme zuo zhe-dao cai*

I how make this-CL dish

‘How can I make this dish?’

- (23) ni qu naer
 you go where
 'Where are you going to?'

In (20) the subject is replaced by the sentence-initial question pronoun *shui* ('who'), (21) and (22) substitute the question pronouns *shenme* ('what') and *zenme* ('how') for the original intra-sentence elements, and in (23) the sentence-final question pronoun *naer* ('where') is employed. It is necessary to make it clear that, quite differently from Mandarin, Japanese question sentences can be made with a sentence-initial question marker alone, yet allows a sentence-final question marker to appear in the same sentence, while it is unacceptable for Mandarin to allow a sentence-initial question pronoun and sentence-final question marker to occur simultaneously in the same structure (cf. in *shui qu ne*, 'who will go', *ne* is not a question marker but rather a pragmatic functional marker) (Jin 1996). Nevertheless, with respect to the sentence-final question marker *ma*, Mandarin falls into the OV family.

The last correlated pair involves the order of adverbial subordinator and sentence. All the adverbial subordinators in Mandarin precede sentence, indicating an assumptive, causal, conditional, or other relations between the subordinate clause and the main clause, such as *ruguo* ('if'), *name* ('then'), *yinwei* ('because'), *suoyi* ('therefore'), *suiran* ('though'), *danshi* ('but'), and so forth. An additional point is that the modal particle *dehua* (similar to 'if') may appear at the end of subordinate conditional clause whether the adverbial subordinator *ruguo* ('if') is overt or covert, as in (24):

- (24) a. *ruguo* mingtian xiaoyǔ, wǒ jiù bù lái-le
 if tomorrow rain, I then NEG come-MOD
 'If it rains tomorrow, then I will not come.'
 b. (*ruguo*) mingtian xiaoyǔ *dehua*, wǒ jiù bù lái-le
 (if) tomorrow rain MOD, I then NEG come-MOD
 'If it rains tomorrow, then I will not come.'

Obviously, in terms of this parameter, Mandarin tends to be a member of the VO type.

2.6 Summary

In the previous discussion, we examined the word order in Mandarin in detail based on the fifteen pairs of grammatical elements correlated with VO and OV. The result is that five pairs are absent or atypical and ten pairs are relevant, as summarized in Table 3.

Table 3: VO-OV tendency in Mandarin on fifteen pairs of grammatical elements

VO and OV mixed	VO dominant	OV dominant	absent or atypical
adposition and NP	article and noun	genitive and noun	plural word and noun
PP and verb	adverbial	relative clause	copula and predicate
	subordinator and S	and noun	
manner adverb and verb	“want” and VP	question particle	complementizer and S
		and S	
standard of comparison			negative auxiliary and
and adjective			VP
			tense/aspect auxiliary
			and VP

Table 3 shows that plural word, copula, complementizer, negative auxiliary, and tense/aspect auxiliary are absent or atypical in Mandarin, so they are not taken into consideration. The first column indicates that the pairs that correlate and support Mandarin to be a VO-OV mixed type are adposition and NP, PP and verb, manner adverb and verb, and standard of comparison and adjective. The remaining six pairs are evenly distributed to support Mandarin to be either VO or OV order. Correlated with the former are article and noun, adverbial subordinator and S, and “want” and VP, and with the later are genitive and noun, relative clause and noun, and question particle and S. So Mandarin Chinese arrives at neither typical VO order nor OV order, but rather a VO-OV mixed type.

3 Cost-benefit analysis to Mandarin VO-OV mixed type

As is evidenced in the above section, Mandarin Chinese is a VO-OV mixed type, in which quite many modifiers can either precede or follow their heads, and it even has both preverbal and postverbal objects. Does the mixed type lead to confusion or structural chaos for Chinese speakers? In what way does it make up for that if it does? It is believed that Mandarin Chinese obtains benefits at the price of violating the consistent branching direction. But what are the benefits? The answers are provided in the following sections.

3.1 VO and OV

Besides the pairs supporting Mandarin to be a mixed-order language, the order of V and O is quite free on extensive occasions. Though the preverbal object in Chinese traditional grammar is labeled “secondary subject” or “secondary topic,” it cannot be denied that it is the verb-governed internal argument. An example is (25):

- (25)a. *wo zuoye zuowan-le*
 I homework finish-ASP
 ‘I finished my homework.’
 b. *wo zuowan-le zuoye*
 I finish-ASP homework
 ‘I finished my homework.’

(25a) and (25b) are both acceptable though the former seems more natural than the latter to many Chinese native speakers. But no distinction can be made between VO and OV in subordinate clause, as in (26):

- (26)a. *wo zuoye zuowan-le qu shangdian*
 I homework finish-ASP go shop
 ‘I will go to the shop after finishing my homework.’
 b. *wo zuowan-le zuoye qu shangdian*
 I finish-ASP homework go shop
 ‘I will go to the shop after finishing my homework.’

Some Chinese researchers used to take *zuoye* (‘homework’) as “topic” rather than “object,” but this kind of labeling-like operation is far beyond word order typology research. STV word order type is not evidenced yet and can be taken as pragmatic preference in a certain theoretical framework. But if a pragmatically preferred word order has become a relatively stable structure, it should be taken as the result of syntactic rules instead of pragmatic movement. (25a) and (26a) are classified into SOV type, which is supported by Mandarin left-right branching configuration (Jin and Yu 2012).

Structural ambiguity is the most overt price that Mandarin pays for allowing both preverbal and postverbal objects. Consider the following classic example:

- (27)*ji bu chi-le*
 chicken NEG eat-ASP
 ‘The chicken did not eat.’ or
 ‘(Somebody) did not eat the chicken.’

The example (27) might be interpreted in two ways: the first one, as SV structure, omits the object; while the second omits the subject leaving OV structure. It is an important characteristic of Mandarin to have OV and SV interpretations to NounV, which is uncommon among OV languages with overt morphological nominative or accusative case marker. But in actual daily communication, misunderstanding seldom occurs since many decontextualized ambiguous structures can be resolved through contextual filtering.

What can Mandarin gain by having both preverbal and postverbal objects at the cost of allowing ambiguous structures? Although we cannot dig out all the benefits, the following ones can be identified theoretically:

(i) Definiteness and indefiniteness are distinguished on preverbal object and postverbal object respectively;

(ii) Focus and non-focus are distinguished on postverbal object and preverbal object respectively;

(iii) The preverbal object is free to carry “secondary topic” function;

(iv) The preverbal object is free to carry old information for textual cohesion without the definiteness marker;

(v) The preverbal object allows OVC structure to meet the need of “verb being the second in the right” and to achieve structural balance;

(vi) The preverbal object when following the subject highlights the agentive subject (especially in BA structure).

Since structural ambiguity might be contextually filtered out on most occasions, Mandarin obviously has more benefits than costs from the free order of V and O.

3.2 Adposition and PP

As is evidenced in 2.1.1, Mandarin Chinese has both prepositions and postpositions. However, there are, in fact, three syntactic possibilities, i.e., PrepN, NPost, and PrepNPost. The order principle for relators by Dik (1997) claims that the preferred position of the relator is between the two elements related by it, which may apply to Mandarin when a noun indicating location is introduced by an adposition, as in the following examples:

(28) *heiban shang xie-zhe zi*

blackboard LOC write-ASP word

‘There are some words written on the blackboard.’

(29) *fāng zai menkou*

put at gateway
 'put at the gateway'

In (28), the noun *heiban* ('blackboard') and the verb *xie* ('write') are related by the locative postposition *shang* ('on'), while in (29) the preposition *zai* ('at') is employed to relate the verb and the location. Besides the mixed type of adposition, preverbal PP and postverbal PP are quite common, which always cause ambiguity, for instance:

(30) *Laozhang zai huoche shang xie zi*
 Laozhang on train LOC write word
 'Laozhang was on the train and wrote words.' or
 'Laozhang was not on the train and the words he wrote were on the train.'

(31) *women zai fangding shang faxian-le diren*
 we on roof LOC find-ASP enemy
 'We were on the roof and found the enemy.' or
 'We found the enemy who was on the roof.'

VO language generally takes postverbal PP, but both (30) and (31) in SVO order employ preverbal PP and preposition. Ambiguity might be avoided when SVO order with preverbal PP takes postposition. Mandarin *zai* ('on') deriving from verb diachronically has not completely grammaticalized into a typical adposition, still covering preposition and verb classes, which can either follow the subject to form SV structure or precede the noun to form PP structure. So the above examples may have two interpretations.

It seems syntactically wasteful for a language with word order as its important grammatical means to allow an element to either precede or follow the verb without any semantic difference. So it is quite wise for Mandarin to take flexible word order to express semantic difference. Consider the following example:

(32) *zai chuang shang tiao*
 on bed LOC jump
 'be jumping on the bed'

(33) *tiao zai chuang shang*
 jump on bed LOC
 'to jump onto the bed'

The above two examples show the semantic difference of act in temporal order, which is generalized by Tai (1985) as the Principle of Temporal Sequence (PTS), i.e., linear order of linguistic elements corresponds to the temporal sequence of concepts represented. It is the same case as for some preverbal PPs, as in the following:

(34) *xiang qian zou*
toward front walk
'to walk forwards'

(35) *wang wo zheer ti*
toward I here kick
'to kick to me'

Without contextual restriction, both (34) and (35) indicate that the act has not been achieved yet, but rather express "to determine the direction first and then act." Moreover, preverbal and postverbal PP might be related to "subjectivity" and "objectivity." In (32), *zai chuang shang* ('on the bed') and *tiao* ('be jumping') both express a subjective act, without indication of objective consequence, while *zai chuang shang* ('onto the bed') in (33) highlights objective consequence. The subtle difference can be evidenced by the following examples:

(36) **wo yibuxiaoxin zai chuang shang tiao*
I accidentally on bed LOC jump
'I was jumping on the bed accidentally.'

(37) *wo yibuxiaoxin tiao zai chuang shang*
I accidentally jump on bed LOC
'I jumped onto the bed accidentally.'

We will further discuss in section 3.5 the subjective and objective difference in preverbal and postverbal adverbial modifiers. That the same element in different syntactic positions might differ in meaning is not particular to Mandarin. Consider the following English examples:

- (38) a. the visible stars
b. the stars visible

(38a) might refer to a category of stars that can always be seen, while (38b) might refer to stars that are visible at a particular time.

To close this section, we assume that the mixed use of PP might produce decontextualized structural ambiguity, but trigger semantic difference for expressive convenience on many occasions.

3.3 Relative clause

A prepositional noun modifier hierarchy maintains in VO language (Hawkins 1983: 75; Dryer 1992b), as the following:

N-Num > N-Dem > N-Adj > N-Gen > N-Rel

The above hierarchy indicates the relative clause tends to follow the noun in the VO language type, as is statistically evidenced by Dryer (1992a) that VO overwhelmingly prefers a postnominal relative clause, with Chinese as the only one exception. Decontextualized structural ambiguity always results from Mandarin-particular prenominal relative clause, as is in the following examples:

(39) *jinkou qiche*

import car

‘to import the cars’ or ‘the imported cars’

(40) *buchong cailiao*

supplement materials

‘the supplementary materials’ or ‘to supplement the materials’

(41) *yao si-le liehe de gou*

bite die-ASP hunter GENM(MM) dog

‘to bite dead the hunter’s dog’ or

‘the dog that bit the hunter dead’

(42) *piping Xiaoli de shifu*

criticize Xiaoli GENM(MM) master

‘to criticize Xiaoli’s master’ or ‘the master who criticizes Xiaoli’

The above four examples can be interpreted either as V-Gen-O structure or as N-Rel structure. (41) and (42) might be resolved through syllable rhythm, while (39) and (40) are context-dependent. Another ambiguous example mentioned by Lu (1984) is also caused by prenominal relative clause:

(43) *women meiyou zuo bu hao de shiqing*

we NEG do NEG good MM thing

‘we don’t do things that are not good.’ or

‘we don’t have things that cannot be done well.’

In (43), the first interpretation will be ruled out if the prenominal elements *zuo bu hao de* are placed after the noun, leading to a postnominal relative clause:

(44) *women meiyou shiqing zuo bu hao de*

we NEG thing do NEG good MM

‘we don’t have things that cannot be done well.’

Ambiguity can be avoided by allowing a postnominal relative clause in the following similar cases:

(45) a. *wo wang-le wei haizi de nai le*

I forget-ASP feed baby MM milk ASP

‘I forgot to feed the baby with milk.’ or

‘I forgot the milk that was to feed the baby.’

- b. *wo wang-le nai wei haizi de le*
 I forget-ASP milk feed baby MM ASP
 'I forgot the milk that was to feed the baby.'
- (46) a. *wo kan-le yi-ge yue de baozhi*
 I read-ASP one-CL month MM newspaper
 'I have read all the newspaper published in one month.' or
 'the newspaper that I have read for one month'
- b. *na-fen baozhi wo kan-le yi-ge yue de*
 the-CL newspaper I read-ASP one-CL month MM
 'the newspaper that I have read for one month'
- (47) a. *ta shi qunian sheng de haizi*
 she is last year bear ASP(MM) baby
 'She bore a baby last year.' or
 'She is a baby who was born last year.'
- b. *ta shi haizi qunian sheng de*
 she is baby last year bear MM
 'She is a baby who was born last year.'

Because Mandarin has no relative pronouns like "that" or "who" in English to mark the postnominal relative clause, various theoretical assumptions are proposed in Chinese traditional grammar.

Syntactic economy might be achieved with RelN or NRel with respect to the order of V and O. Mandarin OV order prefers RelN while VO order NRel, which follows Semantic Adjacency Rule (Bybee 1985; Givón 1991; Lu 1998), i.e. O is as syntactically adjacent to V as possible to indicate their semantic adjacency, which is similar to the Distance Iconicity Principle by Haiman (1983). For instance:

- (48) *Xiaoli qu-le yi-ge nüren hen hui zuo cai (de)*
 Xiaoli marry-ASP one-CL woman very skilled make dish MM
 'Xiaoli married a woman who was very skilled in making dishes.'
- (49) *Xiaoli ba yi-ge hen hui zuo cai de nüren qu huijia le*
 Xiaoli BA one-CL very skilled make dish MM woman marry back
 home ASP
 'Xiaoli married a woman who was very skilled in making dishes.'

The above two examples are acceptable, and V and O are syntactically adjacent. But consider the following:

- (50) *Xiaoli qu-le yi-ge hen hui zuo cai de nüren*
 Xiaoli marry-ASP one-CL very skilled make dish MM woman
 'Xiaoli married a woman who was very skilled in making dishes.'
- (51) ?*Xiaoli ba yi-ge nüren hen hui zuo cai de qu huijia le*

Xiaoli BA one-CL woman very skilled make dish MM marry back home ASP

‘Xiaoli married a woman who was very skilled in making dishes.’

(50) tends to be less natural than (48) and (49), and (51) is even unacceptable, both violating the V and O adjacency requirement. We don’t make subtle semantic distinctions among the above examples when interpreted in English, but the difference in Mandarin does exist, which reveals that Chinese seems like an opportunistic language. Preverbal *hen hui zuo cai* (‘very skilled in making dishes’) expresses “Xiaoli knew that the woman was very skilled in making dishes before the marriage”, while the postverbal means “Xiaoli found that the woman was very skilled in making dishes after the marriage.” Mandarin also demonstrates syntactic opportunism in employing both left and right branching in the same structure, as in (52):

(52) *da-le banbeizi guanggun de Xiaoli zuijin qu-le*
 stay-ASP half a lifetime single MM Xiaoli recently marry-ASP
yi-ge nüren hen titie ta
 one-CL woman very considerate he

‘Xiaoli, who had stayed single for half a lifetime, recently married a woman who was very considerate to him.’

Structurally, (52) is in SVO order, in which subject-relative clause precedes the noun modified, while object-relative clause follows its head. Besides following V and O semantic adjacency rule, this kind of mixed branching also facilitates the structure to be psychologically processed, which accords with the syntactically processing strategy “big chunk being peripheral” proposed by Lu (1993: 111, 198). What if Mandarin SVO order takes postnominal subject-relative clause and preverbal object-relative clause? Consider the following example:

(53) *?Xiaoli da-le banbeizi guanggun zuijin qu-le*
 Xiaoli stay-ASP half a lifetime single recently marry-ASP
yi-ge hen titie ta de nüren
 one-CL very considerate he MM woman

‘Xiaoli, who had stayed single for half a lifetime, recently married a woman who was very considerate to him.’

For Chinese native speakers, (53) is less acceptable than (52), and only if it is deliberately constructed for a certain purpose. The above two examples involve subject-relative clause and object-relative clause in the same structure maintaining a different syntactic position in terms of their respective heads.

The following instance is quite common when taking prenominal clauses for both subject and object in SOV order:

- (54) *da-le banbeizi guanggun de Xiaoli zuijin ba*
 stay-ASP half a lifetime single MM Xiaoli recently BA
yi-ge hen *ta de nüren qu huijia le*
 one-CL very considerate he MM woman marry back home ASP

‘Xiaoli, who had stazed single for half a lifetime, recently married a woman who was very considerate to him.’

But when in SVO order, postnominal clauses for both subject and object usually function as predicate of their heads, to form several independent sentences without any coordinators, as in (55):

- (55) *Xiaoli da-le banbeizi guanggun, zuijin qu-le*
 Xiaoli stay-ASP half a lifetime single, recently marry-ASP
yi-ge nüren, hen *ta*
 one-CL woman very considerate he

‘Xiaoli had stayed single for half a lifetime. Recently he married a woman. She was very considerate to him.’

The structure in (55), which is labeled as a “run-on sentence” in Chinese traditional grammar, is quite common in Mandarin.

Actually, for VO order language to employ a prenominal relative clause, misunderstanding might arise resulting from the fact that the clausal predicate element and the head modified are prone to VO structure, which may be one of the motivations for VO language to prefer NRel.

3.4 Degree of grammaticalization of comparative structure and preposition

As mentioned in section 2.2.1, Mandarin has two kinds of typical prepositions in comparative structures: one is *bi* (‘than’) preceding the adjective and the other is *yu* or *guo* (‘beyond’) following the adjective. The former is common in spoken Chinese, while the later is always in written style. Ambiguity seldom arises in comparative structures. But the problem is that if the order principle for relators by Dik (1997) is applicable to comparative structures, the standard of comparison following the adjective should favor preposition while that preceding the adjective should employ postposition, but Mandarin shows preference for preposition in both cases. The comparative structure with

the preposition *bi* ('than') goes against the order principle for relators, as in the following example:

- (56) *Zhangsan bi lisi gao*
 Zhangsan than Lisi tall
 'Zhangsan is taller than Lisi.'

The relator *bi* ('than') in (56) serves as a preposition instead of a postposition, failing to relate the standard of comparison and the adjective. This might be explained by incomplete grammaticalization of the relator in contemporary Chinese. *bi* ('than') is still in the transition from verb to preposition. There appears to be an act of comparison between *Zhangsan* and *Lisi* in (56) which actually contains two statements: "Compare X with Y", and then "X is Adj."

The fact is that in Mandarin, except for the locative postposition, most prepositions are still in the transitional stage from verb to adposition, as in the example we mentioned in section 3.2:

- (57) *Laozhang zai huoche shang xie zi*
 Laozhang on train LOC write word
 'Laozhang was on the train and wrote words.' or
 'Laozhang was not on the train and the words he wrote were on the train.'

Although *zai* in (57) is interpreted as "on", it actually falls into both adposition and verb classes. When *zai* is verb-prominent, then "Laozhang was on the train" but "the words he wrote were not necessarily on the train", for example, Laozhang was on the train to sign his name for the people on the platform who saw him off and the signature books were in the hands of other people; while when *zai* is adposition-prominent, then "the words that Laozhang wrote were on the train" but "Laozhang was not necessarily on the train", as the situation in which Laozhang stood outside of the train and wrote words on the body of train. Consider the following more examples:

- (58) a. *zai chuang shang tiao*
 on bed LOC jump
 'to jump on the bed'
 b. *tiao zai chuang shang*
 jump onto bed LOC
 'to jump onto the bed'
- (59) a. *xiang qian zou*
 towards front walk
 'to walk forward'
 b. *zou xiang qian*

walk toward front

'to walk forward'

- (60)a. *wang nanfang kai*
towards south drive
'to drive to the south'
- b. *kai wang nanfang*
drive toward south
'to drive to the south'

The postpositions in (58b), (59b) and (60b) have been grammaticalized into relatively typical adpositions, while the prepositions in (58a), (59a) and (60a) still have vestiges of verb class. This can be evidenced by allowing the attachment of a negative particle ahead of the so-called prepositions in preverbal PP, as (61a), (62a), and (63a), while it is ungrammatical to attach a negative particle before the typical prepositions in postverbal PP, as in (61b), (62b), and (63b). The Mandarin negative particle is not allowed to precede completely grammaticalized adpositions.

- (61)a. *bu(bie/mei) zai chuang shang tiao*
NEG on bed LOC jump
'don't/didn't jump on the bed'
- *b. *tiao bu(bie/mei) zai chuang shang*
jump NEG on bed LOC
'to jump not onto the bed'
- (62)a. *bu(bie/mei) xiang qian zou*
NEG towards front walk
'don't/didn't walk forward'
- *b. *zou bu(bie/mei) xiang qian*
walk NEG toward front
'to walk not forward'
- (63)a. *bu(bie/mei) wang nanfang kai*
NEG toward south drive
'don't/didn't drive to the south'
- *b. *kai bu(bie/mei) wang nanfang*
drive NEG toward south
'to drive not to the south'

The Chinese *ba* structure has been a hot topic for its particular SOV order, in which *ba* is traditionally regarded as a preposition. The following example shows *ba* is still much more verb-prominent:

- (64)a. *ba gongzhong liyi fang zai xin shang*
BA public interest have in heart LOC

‘to have public interest in heart’

- b. *bu(bie/mei) ba gongzhong liyi fang zai xin shang*
 NEG BA public interest have in heart LOC
 ‘don’t/didn’t have public interest in heart’

The Principle of Temporal Sequence (Tai, 1985) is applicable to the order of the incompletely grammaticalized preposition and the main verb. It is the same case to *ba* structure. It is for this reason that *ta ba heiban shang de zi ca-le* (‘He erased the words already on the blackboard’) is acceptable, while *ta ba heiban shang de zi xie-le* (‘He wrote the words already on the blackboard’) is unacceptable.

Typologically, preverbal PP prefers postposition, but Mandarin preverbal PP favors preposition just for its underlying verb property. So besides stylistic difference between the two kinds of comparative structures mentioned at the beginning of this section, the comparative structure with *bi* (‘than’) also demonstrates temporal sequence and the act of comparing, while that with *yu* or *guo* (‘beyond’) emphasizes the consequence of comparing. Therefore, as to comparative structures with different functions, Mandarin gains a great deal rather than loses.

3.5 Adverbial modifier of verb

Mandarin has both preverbal and postverbal adverbial modifiers of verbs to express subtly different meaning which is unavailable in other lexical forms. This is a cost-efficient syntactic strategy. Consider the following examples:

- (65)a. *wo duo na-le yi-ge pingguo*
 I more take-ASP one-CL apple
 ‘I took one more apple.’
 b. *wo na duo le yi-ge pingguo*
 I take more ASP one-CL apple
 ‘I took one more apple.’
 (66)a. *Laozhang wan lai-le shi fenzhong*
 Laozhang late come-ASP ten minutes
 ‘Laozhang came ten minutes late.’
 b. *Laozhang lai wan le shi fenzhong*
 Laozhang come late ASP ten minutes
 ‘Laozhang came ten minutes late.’

In the English interpretation of the above two examples, no semantic difference in the pairs is evident, but it is not the case in Chinese. Zhang (2003)

proposed that the different meanings of the mirror-like distribution of preverbal and postverbal adverbials might be explained by subjectivity and objectivity, (65a) and (66a) being “with intention,” and (65b) and (66b) “without intention.” Liu (2005) holds a similar view but in different terms, as (67a) being related with “controllability” and (67b) with “uncontrollability”:

- (67)a. *jingji huanman de zengzhang*
economy slowly MM increase
‘The economy is slowly improving’
b. *jingji zengzhang de huanman*
economy increase MM slowly
‘The economy is improving slowly’

The mirror-like distribution of preverbal and postverbal adverbials is not confined to adverbial manner. Consider the following examples involving a locative adverbial (Zhang, 2003):

- (68)a. *Laozhang zai yiyuan si-le*
Laozhang in hospital die-ASP
‘Laozhang died in the hospital.’
b. *Laozhang si zai le yiyuan*
Laozhang die in ASP hospital
‘Laozhang died in the hospital.’
(69)a. *feiji xiang Beijing fei*
plane towards Beijing fly
‘The plane flies to Beijing.’
b. *feiji fei xiang Beijing*
plane fly towards Beijing
‘The plane flies to Beijing.’
(70)a. *Xiaowang zai di shang sa shui*
Xiaowang on ground LOC sprinkle water
‘Xiaowang sprinkled the water on the ground.’
b. *Xiaowang ba shui sa zai di shang*
Xiaowang BA water sprinkle on ground LOC
‘Xiaowang sprinkled the water on the ground.’

Though the English interpretations don’t show any difference, as to the paired Chinese structures, (68a), (69a) and (70a) are regarded to be subjectivity-related, and (68b), (69b) and (70b) objectivity-related. In fact, the underlying reason for the difference is due to the verbal property of the preposition in preverbal PP. The subject and the preposition with verbal property are prone to an underlying SV structure, with a relation of subjective selectivity or controllability between the subject and the preposition-like verb,

while the subjective controllability will not hold in postverbal PP since the prenominal adposition has become a typical preposition.

Now return to the manner adverb. The problem concerned is whether the above subjectivity-objectivity interpretation applies to the semantic difference of preverbal and postverbal manner adverbs. To be specific, we have to mention the relation between adverb and adjective modifiers. In some languages, modifiers fall into the third important word class following noun class and verb class, covering modifiers of noun and verb, such as Turkish, while in some other languages, modifiers are further classified in terms of their different heads into adverb and adjective, such as English and Mandarin Chinese. In English, many adverbs can be derived from the adjective by morphological change (adding the suffix “ly”), which suffices to support that adjective and adverb have a nuclear semantic element in common. But Mandarin is a little bit different from English. Without morphological change, Mandarin adverb and adjective are usually identified through syntactic position. The same word might be labeled either as an adverb when it modifies the verb or as an adjective when it modifies the noun, e.g., *man che* (‘slow train’) and *man zou* (‘slowly walk’).

An adjective in Mandarin can serve as a predicate without a copula. Since adverb and adjective are closely related and cannot be distinguished morphologically, what if the manner adverb directly follows the subject? Obviously, the subject and manner adverb can easily be regarded as an underlying SV structure, e.g.:

- (71)a. *Zhangsan hen man de pao*
 Zhangsan very slowly MM run
 ‘Zhangsan very slowly runs’
 b. *Zhangsan pao de hen man*
 Zhangsan run MM very slowly
 ‘Zhangsan runs very slowly’

In (71a), an underlying SV structure maintains between the subject *Zhangsan* and the manner adverb *hen man* (‘very slowly’), while it is not the case in (71b). The typical SV structure indicates an “agent-act” relation, which can be easily transferred to other similar structures, including the SAdv structure in the current discussion. But note that the underlying SV structure is more easily established when there is a “degree adverb” like *hen* (‘very’) preceding the manner adverb. In (71a), *hen man* (‘very slowly’) can be subjectively controlled by the subject *Zhangsan* just because of the structural transference of “agent-act” relation, while in (71b), the subject loses control of

the postverbal manner adverb, and rather tends to manifest an objective uncontrollability relation.

From the above discussion, it is clear that semantic difference is the key motivation for allowing manner adverb and other adverbials to either precede or follow the verb. With respect to this case, we might assume that it is the minimal price of two syntactic positions for Mandarin to pay for maximal expressive functions.

So far we have discussed the most important five syntactic performances and their motivations in Mandarin: VO and OV, adposition and PP, relative clause, comparative structure, and manner adverb. Generally speaking, Mandarin appears to be quite opportunistic and economical, in other words, Mandarin makes full use of word order to express subtly different meanings at a minimal cost (structural ambiguity in most situations might be contextually filtered). A typical OV language such as Japanese, by contrast, has to place all the subordinate elements before their heads to comply with left-branching direction, and pays a higher price for it, for example, with quite a number of morphological markers and an increase in the difficulty of psychological processing the structures, i.e., higher requirement in short-term memory.

3.6 Other parameters

3.6.1 “Want” type verbs

All “want” type verbs in Mandarin precede their subordinate verbs. But if *neng* (‘can’) is included in “want” type, then both “*neng* V” and “V *de*” are acceptable, as in (72), and their respective negative forms are in (73):

(72)a. *zhe-ge pingguo neng chi*
 this-CL apple can eat
 ‘This apple is eatable.’

b. *zhe-ge pingguo chi de*
 this-CL apple eat MOD
 ‘This apple is eatable.’

(73) a. *zhe-ge pingguo bu neng chi*
 this-CL apple NEG can eat
 ‘This apple is not eatable.’

b. *zhe-ge pingguo chi bu de*
 this-CL apple eat NEG MOD

‘This apple is not eatable.’

Note that there is another case when “*neng* VC” and “V *de* C” structures are also acceptable (C is the abbreviation of “complement” in Chinese traditional grammar, which can be assigned to quite many postverbal adjectives), as in the following:

(74)a. *wo neng chi bao*
I can eat full
‘I can be full.’

b. *wo chi de bao*
I eat MOD full
‘I can be full.’

(75)a. *wo bu neng chi bao*
I NEG can eat full
‘I cannot be full.’

b. *wo chi bu bao*
I eat NEG full
‘I cannot be full.’

Cross-linguistically, a VO language prefers a preverbal modality element while an OV language prefers a postverbal one. But Mandarin allows both a preverbal and postverbal modality element in different lexical forms. Chi (2010) suggested that both “*neng* V” (‘can do’) and “V *de/bu* C” (‘V MOD/NEG C’) might indicate ability modality and probability modality, and “*bu neng* VC” (‘cannot VC’) expresses obligation modality, but “V *de/bu* C” (‘V MOD/NEG C’) can also be employed to express psychological modality. Similar to the cases of preverbal and postverbal PP, relative clause and manner adverb, “*neng* V” and “V *de* C” may carry different semantic functions, but simultaneously pays the cost that the object in “V *de* C” structure is compelled to precede the verb in most cases.

3.6.2 Verb and tense/aspect marker

Strictly speaking, Mandarin doesn’t have tense/aspect auxiliaries, but shows detailed distinction in aspect markers, such as preverbal *zai* marking progressive aspect, and three postverbal markers, *guo* marking remote perfect aspect, *le* marking near perfect aspect, and *zhe* indicating durative aspect of act and state (Jin 2004). Note that the progressive aspect marker *zai* and the preverbal adposition *zai* we mentioned in the previous sections are the same word morphologically. A confusing question arises, as in (76b):

(76)a. *Xiaoli zai kan shu*

Xiaoli ASP read book

'Xiaoli is reading a book.'

b. *Xiaoli zai tushuguan kan shu*

Xiaoli ASP(or 'in') library read book

'Xiaoli is reading a book in the library' or 'Xiaoli reads books in the library.'

zai in (76b) might serve as either an aspect marker indicating progressive aspect or as a preposition to introduce a PP indicating habitual aspect. The later can be excluded by pre-attaching another tense/aspect marker *zheng*, as in (77):

(77) *Xiaoli zhengzai tushuguan kan shu*

Xiaoli ASP library read book

'Xiaoli is reading a book in the library.'

Mandarin seems to distinguish duration of act from duration of state by placing different aspect markers in different syntactic positions. The duration of act is indicated by the preverbal marker *zai*, while the duration of state by the postverbal marker *zhe*. Different aspects are distinguished but paying the costs of ambiguity and the introduction of an additional marker, *zheng*.

It used to be acceptable that Mandarin aspect markers include two kinds, one of which is an almost grammaticalized verbal suffix, such as *zhe*, *le*, and *guo*, and the other ungrammaticalized *zai*, while tense in Mandarin is mainly carried by ungrammaticalized time adverbs, such as *jiang* or *hui* ('will') of future tense, *cengjing* ('once') of past tense, and *zhengzai* ('just') of present tense. It is necessary to make it clear that the postverbal aspect markers *le* and *guo* can be tense-aspect unified indicators, introducing both past tense and perfect aspect. *le* is used to express near tense, while *guo* remote tense, as in (78) and (79) respectively:

(78) *Xiaoli qu-le Beijing*

Xiaoli go-ASP Beijing

'Xiaoli went to Beijing.'

(79) *Xiaoli qu-guo Beijing*

Xiaoli go-ASP Beijing

'Xiaoli has been to Beijing.'

More to the point, Dryer (1992a: 99, 126) provided evidence that in both VO and OV languages, tense/aspect particles tend to be preverbal lexical forms, while tense/aspect affixes tend to be verbal suffixes, which is identical to a cross-linguistic grammaticalization process. As to Mandarin, the time adverbs *zai* and *jiang* are close to particles, while the postverbal aspect

markers *zhe*, *le*, and *guo* have grammaticalized into suffixes, which conforms to typological universals.

So in general, for Mandarin, present and future tenses tend to be encoded with preverbal time adverbs or particles, and past tense prefers postverbal tense/aspect unified markers or some time adverbs. Progressive aspect favors time adverbs while durative and perfect employ verbal suffixes. Mandarin seems to make the most of syntactic positions and grammatical elements to encode tense and aspect meaning, manifesting the particular characteristics of a VO-OV mixed language. Certainly, Mandarin pays the higher price for its relatively free syntactic strategies on this point. That modifiers are allowed to both precede and follow their heads not only leads to inconsistent branching direction but also requires Mandarin learners to pay more time to learning it. Consistency in both branching direction and morphology is the prerequisite for an efficient language (including being easy to learn and being efficient in psychological processing), while Mandarin fails to achieve this when encoding the tense/aspect category.

3.6.3 Sentence and question particle

As is mentioned in section 2.5, a VO language prefers a presentential question particle, while in an OV language it is a postsentential question particle. If only the sentence-final question marker *ma* is taken into account, Mandarin falls into the OV family. However, four types of question sentence can be identified in Mandarin.

The first type involves the substitution of a question pronoun for any questioned element without word order change, as in (80):

- (80) a. *shui qu-le Shanghai*
 who go-ASP Shanghai
 ‘Who went to Shanghai?’
 b. *qu Shanghai de shi shui*
 go Shanghai ASP is who
 ‘Who was it that went to Shanghai?’
 c. *Zhangsan shenme shijian qu Shanghai*
 Zhangsan what time go Shanghai
 ‘When will Zhangsan go to Shanghai?’
 d. *Zhangsan zenme qu Shanghai*
 Zhangsan how go Shanghai
 ‘How does Zhangsan go to Shanghai?’

- e. Zhangsan du-le shui de shu
 Zhangsan read-ASP who GENM book
 'Whose book did Zhangsan read?'

The second type is a yes-no question on a certain act, with a negative marker inserted between a VP duplication, which is quite peculiar among other languages.

- (81)a. *Zhangsan qu bu qu Beijing*
 Zhangsan go NEG go Beijing
 'Will Zhangsan go to Beijing?'
 b. *Zhangsan du mei du-guo zhe-ben shu*
 Zhangsan read NEG read-ASP this-CL book
 'Did Zhangsan read this book?'

The third is a general question with a sentence-final question marker *ma*, which is most common in Mandarin. Similar to other OV languages, a Mandarin general question sentence cannot be identified as a question or a statement until its end, based on whether the question marker *ma* occurs or not.

- (82)a. *Zhangsan qu Beijing ma*
 Zhangsan go Beijing QM
 'Will Zhangsan go to Beijing?'
 b. *Zhangsan du-guo zhe-ben shu ma*
 Zhangsan read-ASP this-CL book QM
 'Did Zhangsan read this book?'

The last type concerns alternative questions, with an alternative word *haishi* ('or') as the relator between two objects or acts to be selected.

- (83)a. *Zhangsan qu Beijing haishi (qu) Shanghai*
 Zhangsan go Beijing or (go) Shanghai
 'Will Zhangsan go to Beijing or (go to) Shanghai?'
 b. *ni he kafei haishi (he) cha*
 you drink coffee or (drink) tea
 'Will you drink coffee or (drink) tea?'

From the above examples, it might be assumed that Mandarin takes advantage of syntactic linear sequence to establish question structure, demonstrating its flexible syntactic operation to express various questions. Different question functions can be achieved economically through the least structure or words.

4 Grammatical elements uncorrelated with VO-OV in Mandarin

This section briefly deals with the performance of some grammatical elements typologists found so far uncorrelated with VO or OV language in Mandarin, involving demonstratives (Dem), numerals (Num), adjectives (Adj), adverbs of degree (Adv), negative particles, tense/aspect particles, and tense/aspect suffixes. These elements are classified as noun-related and predicate-related as discussed respectively in the following. Two tendencies can be generalized from the un-correlation, one of which is that the elements are almost evenly distributed in VO and OV, and the other that the elements overwhelmingly precede or follow their heads in both VO and OV languages, as follows:

- (i) DemN in both VO and OV;
- (ii) NumN and NNum evenly distributed in OV, while NumN preferred in VO;
- (iii) NAdj in both VO and OV (weak);
- (iv) AdvAdj and AdjAdv evenly distributed in OV, while AdvAdj preferred in VO (weak);
- (v) Preverbal negative particle in both VO and OV;
- (vi) Preverbal tense/aspect particle in both VO and OV;
- (vii) Tense/aspect verbal suffix in both VO and OV.

4.1 Noun-related elements

The noun-related elements concern demonstratives, numerals, and adjectives. As to demonstrative and noun, like other languages, Mandarin shows a preference for DemN. This may be well accounted for by the High-identifiability Precedence Principle (Lu 1998), since the demonstrative lies in the higher position of the identifiability hierarchy, i.e. appearing to be much more identifiable than other elements.

NumN and NNum are almost evenly distributed in OV languages. In accordance with left-right branching and structural harmony, left branching OV should prefer NumN, but this is not the case. We have mentioned in 3.3 that a prepositional noun modifier hierarchy maintains in a VO language, which shows evidence for the fact that NumN is preferred in VO. Among the modifiers, a numeral shows a strong tendency to precede noun, and next from

strong to weak are demonstrative, adjective, genitive and relative clause (Croft 2003: 123).

Demonstrative and genitive in Mandarin are only allowed to precede noun, but numeral and adjective can either be prenominal or postnominal, similar to the case of the relative clause we discussed earlier.

- (84)a. *wo you san-liang qiche*
 I have three-CL car
 'I have three cars.'
- b. *wo you qiche san-liang*
 I have car three-CL
 'I have three cars.'
- (85)a. *qianmian lai-le yi-ge hen piaoliang de guniang*
 front come-ASP one-CL very pretty MM girl
 'A very pretty girl came in front.'
- b. *qianmian lai-le yi-ge guniang hen piaoliang*
 front come-ASP one-CL girl very pretty
 'A girl came in front who is very pretty.'

sanliang ('three-CL') in (84b) and *hen piaoliang* ('very pretty') in (85b) function as postnominal modifiers syntactically, but to Chinese native speakers seem to have the attribute of an underlying predicate without copula. This might be accounted for by the Proximity Principle of NP (Wu 1986; Lu 1998), i.e., modifier-noun order tends to be more semantic proximate than noun-modifier order, which might be a typological universal. For the fact that nearly half of the OV languages prefer NNum and NAdj, it can be assumed that in these languages both numeral and adjective are considered closer to predicate class rather than to nominal class. Since Mandarin is VO-OV mixed, it takes for granted that it allows numeral and adjective to either precede or follow the noun they modify.

The prenominal and postnominal numeral and adjective in Mandarin subtly differ in meaning, the former being close to the elements of modification and restriction while the later are closer to elements of predication.

4.2 Predicate-related elements

The predicate-related elements include adverb of degree, negative particle, tense/aspect particle, and tense/aspect suffix. Typologically AdvAdj and AdjAdv are evenly distributed in OV, while AdvAdj is preferred in VO in a

weak tendency. Both AdvAdj and AdjAdv are acceptable in Mandarin, as in (86) and (87) respectively:

- (86)a. *hen/ji hao*
 very good
 ‘Very good!’
 b. *yichang fanmang*
 very busy
 ‘Very busy!’
- (87)a. *hao de hen*
 good MM very
 ‘Very good!’
 b. *fanmang yichang*
 busy very
 ‘Very busy!’

It is necessary to point out that AdvAdj is more commonly used than AdjAdv in Mandarin. Some adverbs of degree are not allowed to follow an adjective. Generally speaking, the adverbs of degree which may follow an adjective can also precede it, but it is not the case vice versa. So it may be assumed that Mandarin prefers AdvAdj in a weak tendency.

- (88)a. *tai hao le*
 very good MOD
 ‘Very good!’
 b. **hao tai le*
 good very MOD
 ‘Very good!’
- (89)a. *hao ji le*
 good very MOD
 ‘Very good!’
 b. *ji hao*
 very good
 ‘Very good!’

The above examples involve simple adverbs of degree, but the modifier of an adjective which appears to be a relatively complex structure tends to follow the adjective, which can be also accounted for by the Proximity Principle (Wu 1986; Lu 1998), i.e., the structure of a complex modifier preceding an adjective tends to be more semantically proximate than that of a complex modifier following an adjective. In other words, the loose relation of head-modifier order assigns the postposed modifier with an underlying attribute of prediction, for example:

- (90)a. *Laozhang shangxin de bu deliao*
 Laozhang sad MM NEG all right
 'Laozhang was terribly sad.'
- b. *Laozhang shangxin de san tian mei chi fan*
 Laozhang sad MM three day NEG eat dinner
 'Laozhang was so sad that he didn't eat dinner for three days.'

The complex modifiers of *shangxin* ('sad') in the above two examples both indicate "high degree" of sadness, while that of (90b) shows a much stronger predication which may be considered as "secondary predicate", quite similar to the case in which postnominal relative clause may be a kind of predicate of its head. So Mandarin demonstrates different degrees of semantic proximity in terms of the order of adjective and its modifier.

The second predicate-related element goes to a negative particle, which tends to precede the verb in both VO and OV languages. The negative particles in Mandarin involve *bu*, *mei*, and *bie*. *bu* is used to negate an act either "at present" or "in the future" with respect to the speech time, while *mei* is to deny an act "in the past" (an act didn't happen in the past). Mandarin has the negative particles precede the verb without exception. This typological universal can be explained by sequence iconicity. It is logically rational for the negative particle to precede the verb since the act denied has not occurred yet.

Both VO and OV prefer a preverbal tense/aspect particle while tense/aspect a verbal suffix. We have discussed Mandarin tense/aspect markers in section 3.6.2. Here we briefly mention it again. In Mandarin, tense is usually carried by a time noun and time adverb or a preverbal particle, while aspect mainly by a verbal suffix, such as durative aspect and perfect aspect markers *zhe*, *le* and *guo*, but progressive aspect marked by *zheng zai* is one exception, which precedes verb as a particle. The preverbal progressive aspect particle and durative or perfect aspect verbal suffix also manifest sequence iconicity, since the former depicts an act in progress while the later expresses a durative state after an act, as in (91a) and (91b) respectively:

- (91)a. *Xiaoli zhengzai xie xin*
 Xiaoli ASP write letter
 'Xiaoli is writing a letter.'
- b. *Xiaoli chuan-zhe yi-jian hong qunzi*
 Xiaoli wear-ASP one-CL red skirt
 'Xiaoli is in a red skirt.'

In the above examples, preverbal particle and verbal suffix indicate the successive relation of act and state, which is consistent with linguistic

universals. In short, Mandarin does not show any exotic cases in terms of the seven uncorrelated grammatical elements.

5 Conclusion

In this paper, with ample examples, we have shown evidence for Mandarin as a VO-OV mixed type language and made a cost-benefit analysis of this genetically hybrid order. On the one hand, the lack of morphological changes drives Mandarin to make the most of its flexible word order to express quite many subtle semantic differences, but it pays the price for it on the other hand. Besides increasing Mandarin learners' difficulty in learning and confusion in branching direction, structural ambiguity is the single most overt cost. However, it is quite lucky that in daily communication, a large number of decontextualized ambiguous structures may be resolved through contextual filtering and syllable rhythm, so Mandarin obtains more benefits from VO-OV mixed order in general.

Abbreviations: ASP, aspect marker ; AUX, auxiliary; BA, *ba* marker; CL, classifier; GENM, genitive marker; LOC, locative postposition; MM, modifier marker; MOD, modality marker; NEG, negative marker; QM, question marker.

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