CLASSIFICATION OF OBJECT CONTROL VERBS

IN MANDARIN CHINESE

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DECLARATION

I hereby declare that this thesis is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in the thesis.

This thesis has also not been submitted for any degree in any university previously.

CHENG Yuanchen

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Summary

This thesis categorizes Mandarin object control verbs (OCVs) into four classes based on their ability to take different embedding sizes, by using a highly systematic approach of applying every single test to every single verb. There is evidence that English embedding verbs can take different kinds of complements, but it has always been hard to tell the embedding sizes in Mandarin because of the lack of verbal morphology. In this thesis, I investigate OCVs' interactions with different syntactic purposes, such as different material and extractions, to investigate their structural features. My results indicate that different sizes of embeddings for Mandarin OCVs must be distinguished. Tentatively, I suggest that four different embedding sizes can be categorized. However, I will not label nor provide detailed structural differences for my categorization, for two reasons. First, this thesis intends to give a comprehensive empirical documentation of OCVs' structural differences with a systematic methodology that can be applied to other languages to check behaviors of certain verbs or syntactic features that pattern together, instead of a theoretical explanation for their behaviors. Second, clues to the criteria for Mandarin OCVs' categorization have not been clear so far. Although detailed reasons why some OCVs pattern together will not be provided, we can see descriptive evidences for their structural differences. Certain OCVs' behaviors with *jiāng* 'will' can serve as evidence for Chinese finiteness distinction. OCVs' different acceptability levels on time adverb added before causee reflects which classes might be Raising to Object (RTO) and which are in fact Exceptional Case Marking (ECM). Embedded *qù*-purposive is also a major concern in this thesis, as it significantly improves various OCV structures.

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Classification of object control verbs in Mandarin Chinese

Introduction

Object control is a structure where the object of the main clause is co-referential with or 'controls' the understood but unspoken subject of an embedded clause, as shown in sentence (1).

(1) Rachel asked Pheobe [___ to leave].

In this sentence, the unspoken subject of the embedded predicate *to leave* is 'controlled' by *Pheobe*, the object of the main verb *asked*. I will refer to the main verb as the object control verb (OCV), and the verb in the embedded clause as the embedded verb (EV). Sentence (1) shows that the embedded clause of English OCV is non-finite.

In Mandarin Chinese, the group of OCVs consists of words with different meanings, such as 'persuade', 'send', 'force', and 'command'. These OCVs differ in their structure behavior. In this thesis, I will investigate a total number of 18 Mandarin Chinese OCVs to analyze their structural features. All OCVs are shown in the following table.

word	pinyin	meaning	note
送	sòng	send	
派	pài	assign	
请	qǐng	invite	marked as qǐng-i[1]
请	qǐng	politely ask	marked as qǐng-a
邀请	yāo qǐng	invite	
恳求	kěn qiú	beg	
求	qiú	beg	
劝	quàn	urge	
逼	bī	force	
说服	shuō fú	persuade	
迫使	pò shǐ	force	
叫	jiào	ask	
命令	mìng lìng	command	
要求	yāo qiú	require	
让	ràng	permit	marked as ràng-p[2]
允许	yǔn xǔ	permit	
让	ràng	make	marked as ràng-m

Table 1. OCVs in Mandarin Chinese

It is possible in a natural language that different control verbs take different embedding sizes. In English, embedding verbs can take different kinds of complements. Based on the kinds of complements they take, we can divide English embedding verbs into four different groups.[3] The first group can take *that*-CP and NP, 0but 00000cannot take *for*-CP or ECM, for example *regret*. Verbs in the second group, such as *hope*, can take *that*-

[1] *qǐng-i* and *qǐng-a* are distinguished by their actual meanings in sentences. If the meaning of *qǐng* can be replaced by 邀请(*yāo qǐng*, invite) it is classified as qǐng-i. Otherwise it will be categorized as *qǐng-a*.

[2] ràng-p and ràng-m are distinguished by their lexical meanings in sentences. If the meaning of ràng can be replaced by 允让 (yǔn ràng, permit), it is classified as ràng-p. Otherwise it will be categorized as ràng-m.

[3] From Erlewine's handout for Grammatical Analysis at NUS

CP and *for*-CP, but cannot take ECM or NP. The third group can take *that*-CP, ECM, and NP, but cannot take *for*-CP. *Believe* is an example of the third group. The fourth group, including *want* and *prefer*, takes all kinds of complements—*that*-CP, *for*-CP, ECM, and NP. These groups are shown in (2)-(5).

(2) *regret*: that-CP:ok; for-CP:*;ECM:*;NP:ok

a. I regret [CP that [TP he is no longer here]].
b. *I regret [CP for [TP him to no longer be here]].
c. *I regret [TP him to no longer be here].
d. I regret this outcome.

(3) *hope*: that-CP:ok;for-CP:ok;ECM:*;NP*

d. I hope [CP that [TP it doesn't snow this week]].
e. I hope [CP for [TP him to get well soon]].
f. * I hope [TP him to get well soon].
g. I hope *(for) a favorable outcome.

(4) *believe*: *that*-CP:ok; *for*-CP:*; ECM:ok; NP:ok

a. I believe [CP that [TP she is innocent]].
b. * I believe [CP for [TP her to be innocent]].
c. I believe [TP her to be innocent].
d. I believe her account.

(5) *want*, *prefer*: *that*-CP:ok; *for*-CP:*; ECM:ok; NP:ok

a. I want [CP that [TP he leave]].
b. I want [CP for [TP him to leave]].
c. I want [TP him to leave].
d. I want his immediate departure.

In English, clause types can be distinguished by morphological evidences. In comparison, it's hard to tell Mandarin verbs' abilities to take different kinds of embeddings, as there is no obvious morphological mark for clause types such as *that* and *for* in English. There has also been debate over whether Mandarin has finite-non-finite distinction (Grano 2015, Huang 2018), but it's hard to use verbal morphology to determine finiteness in Mandarin embedding. Therefore, in this thesis other evidence will be used to reflect

Mandarin OCVs' embedding sizes—I will investigate Mandarin OCVs' behaviors with additional material in the embedding (modals, adverbs etc.), and their grammaticality in different extraction and embedding structures, to analyze what their behaviors tell us about their structures.

My investigation results indicate that different Mandarin OCVs take different sizes of embedded clauses, based on which I categorize Mandarin OCVs into four different classes. Class A includes *yǔnxǔ*, and *ràng-m*. Class B contains *pòshǐ*, *jiào*, *mìnglìng*, *yāoqiú*, and *ràng-p*. Class-C OCVs are *kěnqiú*, *qiú*, *quàn*, *bī*, *shuōfú*. OCVs *sòng*, *pài*, *qǐng-i*, *qǐng-a*, and *yāoqǐng* belong to class D. Generally, the embedding sizes of OCVs decrease as their classes change from A to D. However, we should note that OCVs in an identical class do not always behave the same under a given condition. Classification of OCVs are shown in table 2.

OCV Class	OCV	pinyin	meaning
Class A	允许	yǔn xǔ	permit
	让-m	ràng-m	make
Class B	让-p	ràng-p	permit
	要求	yāo qiú	require
	命令	mìng lìng	command
	迫使	pò shǐ	force
	叫	jiào	ask
Class C	恳求	kěn qiú	beg
	求	qiú	beg
	劝	quàn	urge
	逼	bī	force
	说服	shuō fú	persuade
Class D	送	sòng	send
	派	pài	assign
	请-i	qǐng-i	invite
	请-a	qǐng-a	politely ask
	邀请	yāo qǐng	invite

Table 2. Mandarin OCV classes

All data presented in this thesis are based on my and other six native Chinese speakers' instinctive language judgement results. I interviewed six Chinese speakers (3 females) with form of one-to-one online elicitation, and five of them have lived or have been living in a foreign country from China during the past one year. None of my speaker has stayed in a non-Chinese environment for more than 3 consequent months before 18. Mean age of speakers is 26.

Sentences for judgement were presented to the speakers in batches, based on different types of extractions and movements. The use of lexical variations was kept as little as possible, so that minimal pairs can be safely formed to compare all the same structures with only the embedding verbs. Open class lexical items were changed to make examples more natural.

Sentences judgement scales are marked by √, ?√, ?, and *. Sentences marked with ticks (√) are good for all speakers. The combination of a question mark and a tick (?√) marks that a sentence is judged to be structurally correct by most speakers, with just one or two speakers (less than 2) doubting its correctness. Question mark (?) is used to mark sentences that received uncertain judgement results from most of my speakers—they hesitate to decide if these sentences sound natural. Sentences are marked with a star (*) if they are judged to be syntactically unnatural or wrong by all speakers.

In section 1, I will present how each OCV class behaves with movement inside their embeddings. In Section 2, I will discuss judgement results of OCVs with additional material inside their embeddings, such as modals and adverbs. Section 3 analyzes OCV classes based on the availability of embedded subject extraction (causee extraction). Section 4 discusses extraction of embedded object OCVs.

Section 1. Movement inside the embedding

Judgement results indicate that there should be four different sizes of embeddings for Mandarin OCVs—Class A, Class B, Class C, and Class D with their embedding sizes decreasing from A to D. In this section, I investigate OCVs' structural features with four kinds of movement inside OCV embeddings — *bèi*-passivilization, *bǎ*-fronting, *lián* 'even'-frontings, and object preposing. All OCVs disallow object preposing. Almost all OCVs allow *bǎ*-fronting and *lián* 'even'-fronting inside the embedded clause. For *bèi*-passivization, different OCV classes behave differently, with their embedding abilities decreasing from Class A to Class D.

1.1 Object preposing inside the embedding

Mandarin sentences can be formed with objects preposed somewhere after the subject as shown in (6), and the syntactic structure of object preposing has been analyzed in different ways (Ernst & Wang 1995, Paul 2002). Ernst and Wang (1995) shows that preposed objects are adjoined to VP and not necessarily IP. Paul (2002) argues that preposed objects should be analyze as internal topic.

(6) 学生 **这 个 问题** 可以[4] 回答。
xuéshēng **zhè gè wèntí** kěyǐ huídá
student **this CL question** can answer
Student can answer this question.

[4] *Kěyǐ* 'can' is used in baseline sentence (6) because this modal highly improves the acceptability of the baseline—sentence (6) without *kěyǐ* 'can' does not sound natural to all speakers, but the presence of *kěyǐ* 'can' makes the sentence acceptable to all speakers. In order to safely compare all other object fronting sentences with the baseline, *kěyǐ* 'can' is kept in all following object-fronting sentences. However, as both of my reviewers have pointed out, *kěyǐ* 'can' causes confound in that very few object control verbs are compatible with embedded *kěyǐ* 'can'. Therefore for other OCVs we don't know if the unacceptability of OCV object-fronting sentences comes with *kěyǐ* 'can' or the object fronting.

(6')[5] 张三　　**这　本 书**　　看　　过。
zhāngsān **zhè běn shū**　kàn　guò
Zhangsan **this CL book** read past-tense
Zhangsan read this book.

Sentence (6) presents object-presposing sentences without embedding. Object preposing can feed embeddings when the main verb takes a full clause, as shown in (7).

(7) 我 说/　认为/　觉得　　学生　　**这个　问题**　　可以 回答。
wǒ shuō /rènwéi /juédé　xuéshēng **zhègè　wèntí**　kěyǐ　huídá
I　say/　consider/ think　student　**this　question**　can　answer
I say/consider/think that student can answer this question.

(7') 我 说/　认为/　觉得　　张三　　**这　本 书**　　看　　过。
wǒ shuō /rènwéi /juédé　zhāngsān **zhè běn shū**　kàn　guò
I　say/　consider/ think Zhangsan **this CL book** read past-tense
I say/consider/think that Zhangsan read this book.

I tested OCVs' behaviors with preposed objects in their embedded clauses. Results show that Mandarin OCVs cannot take object preposing inside embeddings. The structure of object preposing inside OCV embedding is presented in sentence (8). I investigated how OCVs behave in object preposing structure presented by sentence (8). All Mandarin OCVs I tested failed to take embedded clause with object preposed before the embedded verb,.

(8) 我 OCV [学生　　***这个　问题***　　可以 回答]。
wǒ OCV [*xuéshēng **zhègè　wèntí***　*kěyǐ　huídá*]
I　OCV [student　**this　question**　can　answer]
I OCV student can answer this question.
OCV: **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*, **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*, **pòshǐ*, **jiào*, **mìnglìng*, **yāoqiú*, **ràng-p*, **yǔnxǔ*, **ràng-m*

[5] Sentence (6') is an example without *kěyǐ* that sounds natural with different content words.

(8') 我 OCV [张三　　**这　本 书**　看　过]。
wǒ OCV [zhāngsān **zhè běn shū**　kàn　guò]
I　OCV [Zhangsan **this CL book** read past-tense]
I OCV Zhangsan read this book.
OCV: **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*, **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*, **pòshǐ*, **jiào*, **mìnglìng*, **yāoqiú*, **ràng-p*, **yǔnxǔ*, **ràng-m*

Judgement results in sentence (8) indicate that all Mandarin OCVs cannot take an embedding with a preposed object, regardless of classes they belong to.

1.2 *bǎ*-fronting and *lián* 'even'-fronting inside the embedding

This section investigates OCVs' behaviors in two types of frontings: *bǎ*-fronting and *lián* 'even'-fronting. *Bǎ* is a Chinese lexical verb, historically meaning 'take, hold, handle' (see L. Wang 1954, H. Wang 1957, Bennett 1981, for instance). It can be used to form the construction [*bǎ*+NP+V+XP] (Li, 2006), with the meaning being 'to take NP and do [V XP] (to it)'. This structure changes the Mandarin SVO order and puts the object in front of the verb, as presented in (9).

(9) 我 **把** 书 翻 开。
wǒ **bǎ** shū fān kāi
I　**BA** book turn open
I open book.

Bǎ-fronting inside Mandarin OCV embedding is the structure where *bǎ* is attached in front of the embedded object, which is shown in (10). OCV behaviors in this structure is also indicated below.

(10)***bǎ*-fronting inside the embedding**

我 OCV [学生 **把** 书 给 张三]。
wǒ OCV [*xuéshēng **bǎ** shū gěi zhāngsān*]
I OCV [student **BA** book give Zhangsan]
I OCV student to give book to Zhangsan.
OCV: **sòng*, √*pài*, √*qǐng-a*, √*qǐng-i*, √*yāoqǐng*, √*kěnqiú*, √*qiú*, √*quàn*, √*bī*, √*shuōfú*, √*pòshǐ*, √*jiào*, √*mìnglìng*, √*yāoqiú*, √*ràng-p*, √*yǔnxǔ*, √*ràng-m*

Sentence (10) shows that among all tested OCVs, only *sòng* is unable to take *bǎ*-fronting inside the embedding.

Another type of fronting investigated is *lián* 'even'-fronting. *Lián,* 'even', is a focus strategy syntactically different from topic (Shyu, 1995). *Lián* is an optional sentence initial element, left adjacent to the focused element (Badan & Gobbo, 2011). It has been observed that *lián* occuring in the left periphery seems to have both Topic-like and Focus-like properties, making it difficult to understand the ultimate nature of *lián* (Badan & Gobbo, 2011). Similar to *bǎ*-fronting*, lián* 'even'-fronting also puts the object to the left of the verb, changing the original SVO order. Sentence (11) shows how *lián* 'even'-fronting behaves.

(11) 我 **连** 这 本 书 也 翻 开。
wǒ **lián** zhè běn shū yě fān kāi
I **even** this CL book also turn open
I even open this book.

Lián 'even'-fronting inside the embedding puts focus marker *lián* in front of the embedded object, and moves the focused object in front of the embedded verb. Sentence (12) shows *lián* 'even'-fronting inside the embedding and OCV behaviors in taking the fronting.

(12) ***lián*-movement inside the embedding**

我 OCV [学生 [**连** 这个 问题]$_{\text{focus}}$ 也 回答]。
wǒ OCV [xuéshēng [**lián** zhègè wèntí]$_{\text{focus}}$ yě huídá]
I OCV [student [**LIAN** this question]$_{\text{focus}}$ YE answer]
I OCV student to answer even this question.
OCV: **sòng*, √*pài*, √*qǐng-a*, √*qǐng-i*, √*yāoqǐng*, √*kěnqiú*, √*qiú*, √*quàn*, √*bī*, √*shuōfú*, √*pòshǐ*, √*jiào*, √*mìnglìng*, √*yāoqiú*, √*ràng-p*, √*yǔnxǔ*, √*ràng-m*

Sentence (12) shows that *sòng* is the only OCV unable to take *lián*-fronting inside the embedded clause. Mandarin OCVs in *bǎ*-fronting and *lián* 'even'-fronting inside the embedding behave similarly: for both *bǎ*-fronting and *lián* 'even'-fronting, *sòng* is the only OCV that disallows these frontings in their embeddings.

1.3 *Bèi*-passive inside the embedding

Bèi-construction in Mandarin Chinese is a typical passive construction. There are two types of *bèi*-passives: long passive with intervening subject between *bèi* and the verb, and short passive without overt subject. Short passives can be further divided into two different patterns: the lexical one with *bèi* and the verb forming a compound, and the phrasal one with *bèi* taking a VP (Ting 1998, Huang 1999). These two types of passives are shown in (13).

(13) **a. long *bèi*-passive**

学生 被 老师 批评 了。
xuéshēng bèi lǎoshī pīpíng le
student BEI teacher criticize LE
student is criticized by teacher.

b. short *bèi*-passive

学生　　被 批评　了。
xuéshēng bèi pīpíng　le
student　BEI criticize LE
student is criticized.

When long and short *bèi*-passives, as in (13), are embedded by OCVs, their embeddings' grammaticality varies. Different OCV classes display different abilities in allowning embedded *bèi*-passives. All Class-A OCVs allow *bèi*-passives inside the embedding. Some Class-B OCVs can feed embedded *bèi*-passives while some cannot. All OCVs in Class C and D do not allow embedded *bèi*-passives. *Bèi*-passives inside the embedding is the structure where the embedded object is passivized with *bèi* inside the embedding. Sentences (14) shows the structure of embedded *bèi*-passives

(14) **a. embedded short *bèi*-passive**
我 OCV [学生　　**被** 打]。
wǒ OCV [xuéshēng **bèi** dǎ]
I　OCV [student　**BEI** hit]
I OCV student to be hit.

b. embedded long *bèi*-passive
我 OCV [学生　　**被**　家长　打]。
wǒ OCV [xuéshēng **bèi**　jiāzhǎng dǎ]
I　OCV [student　**BEI** parents　hit]
I OCV student to be hit by parents.

Sentences in (14) shows *bèi*-passives inside the embedding. For investigation, I put all OCVs into the OCV slot and observe their grammaticality judgement results. All Class-A OCVs allow embedded *bèi*-passives, as in (15).

(15) **a. Class-A OCVs with embedded short *bèi*-passive**
√我　允许　/让　　[学生　　**被** 打]。
wǒ　yǔnxǔ /ràng-m　[xuéshēng **bèi** dǎ]

I permit/make [student **BEI** hit]
I permit/make student to be hit.

b. Class-A OCVs with embedded long *bèi*-passive
√我 允许/让 [学生 **被** 家长 打]。
wǒ yǔnxǔ /ràng-m [xuéshēng **bèi** dǎ]
I permit/make [student **BEI** hit]
I permit/make student to be hit.

Sentence (15) shows that all three OCVs in Class A can feed embedded *bèi*-passives. Comparatively, all Class-C and Class-D OCVs cannot feed embedded *bèi*-passives. Judgement results of OCVs in Class C and D are shown in the following sentence.

(16) **a. Class-C&D OCVs with embedded short *bèi*-passives**
我 OCV [学生 被 打]。
wǒ OCV [xuéshēng bèi dǎ]
I OCV [student BEI hit]
I OCV student to be hit.
OCV: **kěnqiú, *qiú, *quàn, *bī, *shuōfú* Class C
**sòng, *pài,* qǐng-i, *qǐng-a, *yāoqǐng* Class D

b. **Class-C&D OCVs with embedded long *bèi*-passives**
我 OCV [学生 被 家长 打]。
wǒ OCV [xuéshēng bèi dǎ]
I OCV [student BEI hit]
I OCV student to be hit.
OCV: **kěnqiú, *qiú, *quàn, *bī, *shuōfú* Class C
**sòng, *pài,* qǐng-i, *qǐng-a, *yāoqǐng* Class D

In sentences (16), All Class-C and Class-D OCVs are not good with embedded *bèi*-passives, indicating that they lack ability to take *bèi*-passives in their embedding. OCVs in Class B behave differently with embedded *bèi*-passives. Among all Class-B OCVs, only *ràng*-p can feed *bèi*-movement inside embedding. Sentence (17) shows judgement results for Class-B OCVs with embedded *bèi*-passives.

(17) A. Class-B OCVs with embedded short passives

a.√我　让　[学生　被 打]。
wǒ　ràng-p [xuéshēng bèi dǎ]
I　permit [student　BEI hit]
I permit student to be hit.

b. *我叫　[学生　被 打]。
wǒ jiào [xuéshēng bèi dǎ]
I　ask [student　BEI hit]
Intended: I ask student to be hit.

c. ?我 命令　/要求　/迫使 [学生　被　打]。
wǒ mìnglìng /yàoqiú /pòshǐ [xuéshēng bèi dǎ]
I　command/require/force [student　BEI hit]
I command/require/force student to be hit.

B. Class-B OCVs with embedded long *bèi*-passives

a. √我　让　[学生　被　家长 打]。
wǒ　ràng-p [xuéshēng bèi jiāzhǎng dǎ]
I　permit [student　BEI parents hit]
I permit student to be hit by parents.

b. *我叫　[学生　被 家长　打]。
wǒ jiào [xuéshēng bèi jiāzhǎng dǎ]
I　ask [student　BEI parents hit]
Intended: I ask student to be hit by parents.

c. ?我 命令　/要求　/迫使 [学生　被 家长　打]。
wǒ mìnglìng /yàoqiú /pòshǐ [xuéshēng bèi jiāzhǎng dǎ]
I　command/require/force [student　BEI parents hit]
I command/require/force student to be hit by parents.

As shown by sentences in (17), *ràng-p* is the only OCV in Class B that clearly allows *bèi*-passives in the embedding, and *jiào* is the only Class-B OCV that clearly cannot feed such movement. The other three Class-B OCVs, *mìnglìng*, *yàoqiú*, and *pòshǐ,* are marked with question marks as speakers feel these three OCVs are strange with embedded *bèi*-passives, but are not as bad as *jiào* in the same structure.

All Class-A OCVs have the ability to feed embedded *bèi*-passives. Some OCVs in Class B allow *bèi*-passives t in the embedding. Class-C and Class-D OCVs do not allow embedded clause with *bèi*-passives. There is no significant difference between OCV behaviors in short and long embedded *bèi*-passives. Judgement results of all OCVs abilities in feeding embedded *bèi*-passives are shown in the following table.

OCV Class	**OCV**	**pinyin**	**meaning**	**bèi-movement in the embedding**
Class A	允许	yǔn xǔ	permit	√
	让-m	ràng-m	make	√
Class B	让-p	ràng-p	permit	√
	要求	yāo qiú	require	?
	命令	mìng lìng	command	?
	迫使	pò shǐ	force	?
	叫	jiào	ask	*
Class C	恳求	kěn qiú	beg	*
	求	qiú	beg	*
	劝	quàn	urge	*
	逼	bī	force	*
	说服	shuō fú	persuade	*
Class D	送	sòng	send	*
	派	pài	assign	*
	请-i	qǐng-i	invite	*
	请-a	qǐng-a	politely ask	*
	邀请	yāo qǐng	invite	*

Table 3. OCVs' behaviors with *bèi*-movement in their embedding

Section 2. Added material within embedding

Various kinds of added materials within the embedding are tested to investigate the size of embeddings under different OCVs. All OCVs allow some materials such as purposive *qù*, and resultative verb compound (RVC) *wán*. Among all materials investigated, only possibility modal *kěnéng* is not allowed by all OCVs. There are also materials only compatible with certain embeddings but not others, for example time adverb *míngtiān* (before embedding), necessity modal *bìxū*, and negation *bù.* These materials' compatibility with OCVs indicate different OCV classes' embedding abilities.

2.1 Materials allowed by all OCV classes

Section 2.1 tests whether the embedded clause can take purposive particles, preverbal adverbs, postverbal aspectual participles, and resultative verb compounds. Generally, these materials include pre-verbal purposive particles *lái* and *qù,* pre-verb adverbs, post-verb aspectual particles, and Resultative Verb Compounds (RVCs). As this section discusses materials inside the embedding, pre-verb and post-verb refers to lexical positions in relation to the embedded verb (EV).

Pre-verbal lexical items that are allowed by all OCVs include purposive particles *lái* and *qù.* These two particles are adjacently positioned to the left of the main verb to form the meaning of purposives in Chinese. Wei and Li (2018) argued that *lái*-purposives follow the same syntactic structure as bare purposives, and the only difference is *lái* is contained in a projection that is absent with bare purposives. In sentences (18), I present how OCVs behave with *lái- and qù*-purposives.

(18) **pre-verb purposive particles in OCV embedding**

a. purposive *qù*

我 OCV [学生 **去** 回答 问题]。
wǒ OCV [xuéshēng **qù** huídá wèntí]
I OCV [student **QU** answer question]
I OCV student to answer question.

b. purposive *lái*

我 OCV [学生 **来** 回答 问题]。
wǒ OCV [xuéshēng **lái** huídá wèntí]
I OCV [student **LAI** answer question]
I OCV student to answer question.

OCVs: √qǐng-a, √kěnqiú, √qiú, √quàn, √bī, √shuōfú, √pòshǐ, √jiào, √yāoqiú, √mìnglìng, √yāoqiú, √ràng-p, √yǔnxǔ, √ràng-m

Sentences in (18) show that all OCVs allow pre-verb purposive particles in their embeddings regardless of class. Another kind of pre-verb lexical items that accepts all OCVs are adverbs. I use time adverb *míngtiān* 'tomorrow' and *zhīhòu* 'afterwards' to test how OCVs' embedding sizes. Results are shown below in sentence (19).

(19) adverbs before EV inside OCV embedding

a. *míngtiān* 'tomorrow' in OCV embedding

我 OCV [学生 **明天** 回答 问题]。
wǒ OCV [xuéshēng **míngtiān** huídá wèntí]
I OCV [student **tomorrow** answer question]
I OCV student to answer question tomorrow.

b. *zhīhòu* 'afterwards' in OCV embedding

我 OCV [学生 **之后** 回答 问题]。
wǒ OCV [xuéshēng **zhīhòu** huídá wèntí]
I OCV [student **afterwards** answer question]
I OCV student to answer question afterwards.

OCV: √qǐng-a, √kěnqiú, √qiú, √quàn, √bī, √shuōfú, √pòshǐ, √jiào, √yāoqiú, √mìnglìng, √yāoqiú, √ràng-p, √yǔnxǔ, √ràng-m

As shown by (19), all OCVs can include adverbs before EV inside their embeddings. So far, we have known that the only pre-verb verbal materials that can be allowed by passives are *lái- and qù-* purposive adverbs. In terms of post-verb lexical items, aspectual particles and RVS are allowed by all OCVs. Mandarin Chinese verbs lack tense markers but distinguish between two aspects: perfective and imperfective (Liu 2015). I tested perfective marking particles *le* and *guò,* and imperfective marker *zhe*. It has been observed that there are two different types of *le*: the 'verb-*le*' adjacent to the verb, and the 'sentence-*le*' in sentence-final position (Chao 1968, Li & Thompson 1981, Li 1990 etc.). For the purpose of this thesis, I adopt verb-*le* in my investigations, as it is hard to interpret where sentence-final *le* is actually embedded in the whole sentence. *Zhe* and *guò* can also be positioned immediately after the verb or at the end of the sentence. In my tests, all aspect markers are adjacent to the EV. Another verbal element after the verb that is good with all OCVs is *wán* 'finish'. It forms a Resultative Verb Compound (RVC) with the EV. RVC refers to a compound construction with two verbal components, the first describing an action and the second indicating the result or change caused by or result from, but not necessarily entailed by the action (Li 2007). Verb *wán* 'finish' combines with the verb to form an RVC meaning 'finish doing'. Below are object control sentences with embedded *le*, *guò, zhe,* and *wán.*

(2**0) a. perfective marker *le* after EV**

我 OCV [学生 回答 **了** 问题]。
wǒ OCV [xuéshēng huídá **le** wèntí]
I OCV [student answer **LE** question]
I OCV student to have answered question.

b. perfective marker *guò* after EV

我 OCV [学生 回答 **过** 问题]。
wǒ OCV [xuéshēng huídá **guò** wèntí]
I OCV [student answer **already** question]
I OCV student to have answered question.

c. Imperfective marker *zhe* after EV
我 OCV [学生 回答 **着** 问题]。
wǒ OCV [xuéshēng huídá **zhe** wèntí]
I OCV [student answer **ZHE** question]
I OCV student to be answering question.

d. RVC *wán* afterEV
我 OCV [学生 回答 **完** 问题]。
wǒ OCV [xuéshēng huídá **wán** wèntí]
I OCV [student answer **finish** question]
I OCV student to finish answering question.

OCVs: √qǐng-a, √kěnqiú, √qiú, √quàn, √bī, √shuōfú, √pòshǐ, √jiào, √yāoqiú, √mìnglìng, √yāoqiú, √ràng-p, √yǔnxǔ, √ràng-m

Sentences in (20) tell us that all OCVs allow embedded aspect markers and RVCs. However, an examiner notes that aspect markers on EV may not necessarily tell us about the size of the embedding—as suggested by J. Huang (1989) and N. Huang (2018), based on some unpublished work by Grano, it is possible that these embedded aspect markers in Mandarin control complements are actually matrix aspect linearized in a special way due to restructuring that makes them "look like" being embedded. In summary, all OCVs can include the following materials in their embeddings: purposive *qù* and *lái* before the EV, adverbs *zhīhòu* and *míngtiān* before the EV, aspect markers *le, guò,* and *zhe* after the EV, and RVC *wán* after the EV. All OCVs should have the ability to embed all materials mentioned above.

2.2 Materials rejected in all OCV embeddings: *kěnéng*

Modality in Mandarin can be realized by modal verbs added before the main verb. Rizzi (1997) argues that there should be three different modal projections: epistemic modal verbs are in the complementizer layer, deontic modal verbs are in the inflectional layer, and dynamic modal verbs are in the lexical layer of the clause. See also Tsai (2015) for similar results specifically for Mandarin. If the tiers of modality is true, we can use it to test the embedding sizes of OCVs—OCVs that can take modal verbs in a higher layer is able to embed a larger size.

Among all items investigated, epistemic possibility modal *kěnéng* before the embedded verb is the only item that was rejected in all OCV embeddings. OCVs' behaviors with embedded *kěnéng* are shown in (21).

(21) 我 OCV [学生 **可能** 回答 问题]。
wǒ OCV [xuéshēng **kěnéng** huídá wèntí]
I OCV [student **may** answer question]
Intended: I OCV student may answer question.
OCV: **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*, **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*, **pòshǐ*, **jiào*, **mìnglìng*, **yāoqiú*, **ràng-p*, **yǔnxǔ*, **ràng-m*

Sentence (21) reflects that no OCV can embed *kěnéng*. One guess is that OCVs are not able to embed the layer of epistemic modals, which is proved to be not true based on OCV behaviors with other modals we will see in later sections. Another guess is that

semantically *kěnéng* does not match any mandarin OCV, and further discussions in this respect is needed.

2.3 Items reflecting different embedding abilities of OCV classes

Time adverb before the embedded clause, some modal verbs and adverbs before the EV (*jiāng, yǒukěnéng, xiǎng, kěyǐ, méi*), and focus marker *zhǐ* are good with certain OCVs but not others. They distinguish between different OCV classes' embedding sizes. Time adverbs added before the embedded clause help to determine if an OCV allows a full clause. OCV behaviors with pre-EV modal verbs and adverbs, especially *jiāng* 'will', might be evidence to suggest that Mandarin Chinese has finite-non-finite distinction. Investigation on OCVs with focus marker *zhǐ* reveals OCV classes' ability to take embeddings with focus layer.

2.3.1 Time adverb embedded in front of the causee

There has been a general question about the nature of the syntactic structure of Mandarin OCVs. Mandarin OCVs might have the causee outside of the embedded clause, a PRO in the embedded clause (22a), or might involve a form of Exceptional Case Marking (ECM) with the causee[6] in a lower clause (22b). As suggested by an examiner, I refer to these structures as forward and backward object control respectively. The difference between object control and ECM lies in whether the embedded verb assigns Case (±C) , which

[6] A causee is "caused" by an OCV to take an action as the subject of the embedded OCV clause.

leads to different positions of the causee (Li 1990). If OCV involves OC, it does not assign Case to the embedded clause (-C) and a PRO should be present in the embedded clause. In this case, the causee is an object of the OCV and no adjuncts can be allowed between OCV and the causee. If OCV is in fact ECM, it will assign Case (+C) to the embedded subject and the causee is included in the embedded clause. Under this condition, adjuncts are allowed before the causee.

(22) a. OCV as (forward) object control
[OCV causee$_i$ [$_{VP}$ PRO$_i$ VP]]

b. OCV as Excpetional Case Marking (ECM)
[OCV [$_{FULL\ CLAUSE}$ causee VP]]

As mentioned above, adjuncts between OCV and the causee are not allowed in (22a) but are accepted in (22b). I tested whether time adverb *míngtiān* 'tomorrow' added in front of the embedded subject (causee) is allowed by different OCV classes. It is grammatical to position *míngtiān* 'tomorrow' in front of a sentence subject without embedding, as shown below.

(23) 明天　学生　上课。
míngtiān xuéshēng shàngkè
tomorrow student have class
Tomorrow student will have class.

I investigated whether sentence (23) can be embedded by different OCVs. OCVs show different levels of acceptability, indicating different embedding sizes and restrictions. All OCVs in Class A allow pre-causee time adverbs. Class-B, C, and D OCVs cannot include time adverbs inside embedding before the causee. Interestingly, all Class-B and C OCVs

sounds better with pre-causee time adverb marked with question mark than Class-D OCVs. And some OCVs in Class B were judged as "might be good but is not as good as Class-A OCVs" (marked with ?√). Sentences below give one example for each acceptability level.

(24)√我 **允许** 明天 学生 上课。 CLASS A
wǒ yǔnxǔ míngtiān xuéshēng shàngkè
I permit tomorrow student have class.
I permit student to have class tomorrow.

(25)?√ 我 **要求** 明天 学生 上课。 CLASS B
wǒ yāoqiú *míngtiān xuéshēng shàngkè*
I command tomorrow student have class.
I command student to have class tomorrow.

(26)? 我 **说服** 明天 学生 上课。 CLASS C
wǒ shuōfú míngtiān xuéshēng shàngkè
I persuade tomorrow student have class.
I persuade student to have class tomorrow.

(27)*我 **邀请** 明天 学生 上课。 CLASS D
Wǒ yāoqǐng míngtiān xuéshēng shàngkè
I invite tomorrow student have class.
I invite student to have class tomorrow.

Sentences (19)-(22) shows a range of acceptability between OCVs from Class A to Class D. Class-A OCVs like *yǔnxǔ* are grammatical when the time adverb *míngtiān* is added in front of the phrase [*xuéshēng shàngkè*], and they are marked with '√' in the following table to indicate grammaticality. Some Class-B OCVs might be able to allow pre-causee adverb, but they don't sound as good as OCVs in Class A, which are marked with ?√ in the following table. Speakers' judgements on Class-C OCVs such as *shuōfú* with a pre-causee time adverb vary, and many need to think for a while to decide grammaticality. Speakers feel Class-C OCVs cannot take time adverbs before embedding, but are not as

bad as group-D OCVs. I mark this group of OCV with '?'. *yāoqǐng* represents group-D OCVs which do not allow time adverb before embedding, and I mark them with '*'. Judgement results of the groups of OCVs are listed as below.

Group	**OCV**	**pinyin**	**meaning**	**Pre-embedding time adverb**
Class A	允许	yǔn xǔ	permit	√
	让-m	ràng-m	make	√
Class B	命令	mìng lìng	command	? √
	要求	yāo qiú	require	? √
	让-p	ràng-p	permit	? √
	迫使	pò shǐ	force	?
	叫	jiào	ask	?
Class C	恳求	kěn qiú	beg	?
	求	qiú	beg	?
	劝	quàn	urge	?
	逼	bī	force	?
	说服	shuō fú	persuade	?
Class D	送	sòng	send	*
	派	pài	assign	*
	请-i	qǐng-i	invite	*
	请-a	qǐng-a	politely ask	*
	邀请	yāo qǐng	invite	*

Table 4. Mandarin OCVs' different abilities to take pre-embedding time adverb

Based on table 4, we can observe that Class-A OCVs allow a full clause. Class-B and C OCVs are more restricted in embedding, but it's not clear if there is difference in embedding sizes between group B and C. Group-D OCVs cannot include embedded time adverb before the causee. As discussed earlier, OCVs that allow adjunct to intervene between OCV and the causee look like ECM. OCVs that cannot include embedded

adverbs before causee should be OC in nature, or in very special cases ECM with some restrictions prohibiting them from placing adjuncts before the embedded clause.

However, the ECM approach comes with a problem—if they are genuine control ECM structure, sentences like (24) would violate the Theta Criterion. The embedding verb needs to theta-mark the causee while the causee should have been theta-marked within the embedded clause. Therefore, as one of my reviewers suggested, it is possible that the structures that have pre-causee time adverbs may not be control structures in nature[7]. Mandarin OCVs allowing time adverbs before the embedded causee might be object control verbs under some conditions, but are in fact an ECM verb under some other conditions. This resembles *permit* in English, which is an object control verb in *I permit John to leave* but an ECM/RTO verb in *I permit there to be food on the table*.

2.3.2 *Jiāng, yǒukěnéng, xiǎng, xīwàng, kěyǐ,* and *méi* added inside embedding

This section is related to the long-existing debate whether Mandarin Chinese has finite-non-finite distinction. Many authors have argued against a finite/non-finite distinction in Mandarin, including Xu (1985), Y. Huang (1994), Hu et al. (2001). In contrast, Zhang (2016) argues that Mandarin does draw a distinction between dependent and independent clauses, since putative control verbs with overt subjects can also bear all signature properties of control and show syntactic control indeed. Grano (2016) points out that a

[7] This reviewer has also mentioned that "Backward Object Control"(Potsdam 2009) might be a possible resolution, which analyzes control as movement. I take the ECM approach in this thesis in comparison to the forward object control approach.

finiteness/non-finiteness distinction exists in Mandarin, if we define 'finiteness' in a broad sense as "a set of properties that together allow a clause to stand alone as a syntactically unembedded assertion".

How and where to distinguish between finiteness and non-finiteness in Mandarin is also debated. Grano (2012, 2015) proposes a hypothesis that all control verbs are only able to take vP-like complements but not full clauses, and all other non-control predicates can take clausal complements. He also argued that the finiteness distinction can be viewed as a vP-clause (vP/CP) distinction. If it is true that all control predicates take only vP complements, then we can assume that a finiteness distinction exists in Mandarin Chinese. Contra Grano, Huang (2018) argued that Mandarin restructuring control predicates can combine with full clausal CP complements, and therefore the finite/non-finite distinction can be observed even within CPs. Following Huang's (2015, 2018) diagnostics of clausehood that *jiāng* is a future T head and modal auxiliaries are Modal heads, I test whether OCVs allow *jiāng* (T-head), some modal verbs (Modal-head), and embedded control verbs (V-head), to investigate whether there is any kind of distinction. The morphemes tested include *jiāng, yǒukěnéng, xiǎng,* and *kěyǐ.*

Generally only Class-A OCVs allow *jiāng, yǒukěnéng, xiǎng, kěyǐ,* and *méi* in their embeddings before the embedded verb. Structure of object control sentences with the six added items in the embeddings is shown as below.

(28) 我 OCV [学生 **将/有可能/想/希望/可以/没** 回答 问题]。
wǒ OCV [xuéshēng **jiāng /yǒukěnéng /xiǎng /xīwàng /kěyǐ /méi huídá** wèntí]
I OCV [student **will/be possible/want/hope/be able/not yet** answer question]
I OCV student to be able to answer question etc..

I tested all OCVs in the OCV slot shown in structure (28) and collected judgement results. My results show that for each OCV, its behavior generally remain identical when matched with different items, and there is significant distinction between Class-A OCVs and OCVs in other classes. In other words, the tested items pattern together and might be evidence that there is finiteness distinction in Mandarin Chinese. Class-A OCVs are generally grammatical in the position shown in (28), as marked by √ in the following table. Some OCVs in Class A are judged to be merely acceptable but not as good as the other Class-A OCVs with the six added modals/adverbs, as marked by ?√ in the following table. Most OCVs belonging to Class B, C, and D do not allow the added items, which are marked with * in the following table. A few Class-B, C, and D OCVs are marked with question marks, indicating that speakers feel they are strange in the context but are not totally bad or speakers need to take a longer time to think over their grammaticality. Item judgement patterns are summarized in the following table.

OCV Class	OCV	pinyin	meaning	*jiāng*	*yǒukěnéng*	*xiǎng*	*xīwàng*	*kěyǐ*	*méi*
				will	***maybe***	***want***	***hope***	***be able to***	***no***
Class A	允许	yǔn xǔ	permit	?√	?√	√	?√	?√	√
	让-m	ràng-m	make	?√	√	√	√	√	√
Class B	让-p	ràng-p	permit	*	*	*	*	?	?
	要求	yāo qiú	require	*	*	*	*	*	?
	命令	mìng lìng	command	*	*	*	*	*	?
	迫使	pò shǐ	force	*	*	*	*	*	*
	叫	jiào	ask	*	*	*	*	*	*
Class C	恳求	kěn qiú	beg	*	*	*	*	*	*
	求	qiú	beg	*	*	*	*	*	*
	劝	quàn	urge	*	*	*	*	*	*
	逼	bī	force	*	*	*	*	*	?
	说服	shuō fú	persuade	*	?	?	?	*	?
Class D	送	sòng	send	*	*	*	*	*	*
	派	pài	assign	*	*	*	*	*	*
	请-i	qǐng-i	invite	*	*	*	*	*	*
	请-a	qǐng-a	politely ask	*	*	*	*	*	*
	邀请	yāo qǐng	invite	*	*	*	*	*	*

Table 5. OCVs with embedded *jiāng, yǒukěnéng, xiǎng, xīwàng, kěyǐ,* and *méi*

Distribution of OCVs' grammaticality with *jiāng, yǒukěnéng, xiǎng, xīwàng, kěyǐ,* and *méi* in the embedding is shown in the table above. Most Class-A OCVs are able to embed *jiāng, yǒukěnéng, xiǎng, xīwàng, kěyǐ,* and *méi*. In comparison, most OCVs in Class B, C, and D cannot take these six modals/adverbs in their embedded clause. In Class A, *yǔnxǔ* allows less embedded materials than *ràng-m*. As mentioned above, I assume Huang's (2015, 2018) diagnostics are eligible that *jiāng* is T-head that marks finiteness. Therefore, acceptability of embedded *jiāng* is evidence that OCV takes finite clauses, and OCVs

who do not allow embedded *jiāng* are only able to take non-finite clauses. My data show that there is distinction between these two kinds of embeddings, and thus there should be distinction in finiteness in Mandarin Chinese.

2.3.3 Focus marker *zhǐ*

In Mandarin, sentence focus can be marked by focus marker *zhǐ*. When *zhǐ* is added to the embeddings, different embedding abilities of OCV classes are reflected. Embedded *zhǐ* does not accept certain OCVs. *Zhǐ* cannot be embedded when OCV is *sòng*, *pài*, *qǐng-i,* and *yāoqǐng*. To better understand focus marking in object control, I further investigated *zhǐ* in the main clause before the main verb (OCV). *Zhǐ* before OCV can put focus on both the OCV and the embedded verb, which indicates that *zhǐ* in the main clause c-commands both the OCV and the embedded verb.

In an OCV sentence, *zhǐ* before OCV can lead to ambiguous interpretations—the focus can be on OCV or the embedded verb as shown by (25). The ambiguity is evidence that *zhǐ* c-commands both the OCV and the embedded verb.

(29)我 只 要求 学生 回答 问题。
wǒ zhǐ yāoqiú xuéshēng huídá wèntí
I only require student answer question
√ I only **[require]** student to answer question.
(I don't force them or persuade them.)
√ I require student to only **[answer]** question.
(I don't require them to dance.)

In sentence (29), *zhǐ* can put focus on *yāoqiú* and *huídá,* showing that *zhǐ* c-commands both OCV and the embedded verb. When *zhǐ* is before the embedded verb, it only c-commands the embedded verb as shown in (30a). To investigate if OCVs can take *zhǐ* in the embedded clause, I tested all OCVs in the same structure as sentence (30a). Four OCVs belonging to Class D do not allow *zhǐ* in the embedded position, as shown by sentence (30b)

(30) a. 我 **OCV** [学生 只 回答 问题]。
wǒ **OCV [**xuéshēng zhǐ huídá wèntí]
I **OCV** [student only answer question]
I only OCV student to answer question.
(I don't OCV student to dance.)
OCV: √qǐng-a, √kěnqiú, √qiú, √quàn, √bī, √shuōfú, √pòshǐ, √jiào, √yāoqiú, √mìnglìng, √yāoqiú, √ràng-p, √yǔnxǔ, √ràng-m

b. *我 **派/送/邀请/请** [学生 只 回答 问题]。
wǒ **pài/sòng/yāoqǐng/qǐng-i** [xuéshēng zhǐ huídá wèntí]
I **assign/send/invite/invite** [student only answer question]
Intended: I only assign/send/invite/invite student to answer question.
(I don't assign/send/invite/invite student to dance.)

Sentences in (26) show that *pài*, *sòng*, *yāoqǐng*, and *qǐng-i* are not able to take *zhǐ* in embedding, and all other OCVs can. These four OCVs that cannot take embedded *zhǐ* happen to all belong to Class D. Judgement results are presented in the following table.

Class	OCV	pinyin	meaning	*embedded zhǐ*
Class A	允许	yǔn xǔ	permit	√
	让-m	ràng-m	make	√
Class B	让-p	ràng-p	permit	√
	要求	yāo qiú	require	√
	命令	mìng lìng	command	√
	迫使	pò shǐ	force	√
	叫	jiào	ask	√
Class C	恳求	kěn qiú	beg	√
	求	qiú	beg	√
	劝	quàn	urge	√
	逼	bī	force	√
	说服	shuō fú	persuade	√
Class D	送	sòng	send	√
	派	pài	assign	*
	请-i	qǐng-i	invite	*
	请-a	qǐng-a	politely ask	*
	邀请	yāo qǐng	invite	*

Table 6. Judgement results of OCVs with embedded *zhǐ*

Table 6 shows only *pài*, *sòng*, *yāoqǐng*, and *qǐng-i* cannot take embedded *zhǐ*. In Class D, only *qǐng-a* can take *zhǐ* inside its object control embedding. Embedded focus marker *zhǐ* reflects different embedding abilities of OCVs. All OCVs in Class A, B, and C can take *zhǐ* in their embedding. Four out of five Class-D OCVs cannot take *zhǐ* inside the embedding.

Section 3. Extraction of embedded subject (causee extraction)

Mandarin OCVs behave differently with respect to extraction of the subject of the embedded clause (causee extraction) . I investigated five types of movement inside causee extraction and observed OCV behaviors in each structure. These five types of movement are relativization, topicalization, *bèi*-passivization, *bǎ*-fronting, and focus fronting with *lián* 'even'. OCVs' abilities to feed causee extraction generally decrease as their classes change from A to D.

3.1 different embedding abilities of OCVs in causee extraction

For *bǎ*-fronting in causee extraction, all OCVs are unable to fit into the structure. All other types of movement in causee extraction reflect different embedding sizes of OCVs. All Class-A OCVs can feed all the rest four kinds of movement in causee -*bèi*-passives. Most Class-B OCVs can feed causee extractions. All Class-C and D OCVs cannot feed causee extraction, with an exception of *yāoqǐng* in causee-*bèi*-passives. These five types of movements are presented with the following group of sentence structures.

(31)Causee-relativization

我 OCV 回答 问题 的 人$_i$ 是 这个 学生$_i$。
[wǒ OCV huídá wèntí] de rén shì zhègè xuéshēng
[I OCV answer question] DE person is this student
The person that I OCV to answer question is this student.

(32) Causee-topicalization

[这个 学生 i]， 我 OCV ti 回答 问题。
[zhègè xuéshengi], wǒ OCV ti huídá wèntí
[This student], I OCV answer question
I OCV this student to answer question.

(33) Causee-*bèi*-passivization

这个 学生 i [**被** 我 [OCV ti 回答 问题]]。
zhègè xuéshēngi [**bèi** wǒ [OCV ti huídá wèntí]]
This student [**BEI** I [OCV answer question]]
This student is OCVed to answer question by me.

(34) Causee-*lián*-fronting

我 **[连** 这个 学生 i] 也 OCV ti 回答 问题。
wǒ [**lián** zhègè xuéshēngi] yě OCV ti huídá wèntí
I [**LIAN** this studenti] YE OCV ti answer question
I even OCV this student to answer question.

(35) Causee-*bǎ*-movement

我 [**把** 这个 学生 i] OCV ti 回答 问题。
wǒ [**bǎ** zhègè xuéshēngi] OCV ti huídá wèntí
I **[BA** this studenti] OCV ti answer question
I even OCV this student to answer question.

Sentences (31)-(35) display different types of causee extraction. For each structure, different OCV classes behave differently. First, causee -*bǎ*-fronting, as in xxxxx, is impossible with all OCVs. Sentence (36) shows the ungrammaticality of OCVs in causee-*bǎ*-fronting.

(36)我 **把** 这个 学生 i [OCV ti 回答 问题]。
wǒ **bǎ** zhègè xuéshēngi [OCV ti huídá wèntí]
I **BA** this studenti [OCV ti answer question]
I even OCV this student to answer question.
OCV: **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*, **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*, **pòshǐ*, **jiào*, **mìnglìng*, **yāoqiú*, **ràng-p*, **yǔnxǔ*, **ràng-m*

As shown by (36), no OCV can feed causee *bǎ*-fronting. All other types of causee extractions I investigated vary in acceptability based on the OCV. Sentences (37)-(40) below show different OCVs' behaviors in other causee extractions.

(37)Causee -relativization

我 OCV t_i 回答 问题 的 人$_i$ 是 这个 学生。
wǒ OCV t_i huídá wèntí de rén$_i$ shì zhègè xuéshēng
I OCV answer question DE person is this student
The person that I OCV to answer question is this student.
OCVs in classes: A √*yǔnxǔ*, √*ràng-m*;
B √*pòshǐ*, √*jiào*, √*mìnglìng*, √*yāoqiú*, √*ràng-p*;
C **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*;
D **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*

(38)Causee-topicalization

[这个 学生 i]， 我 OCV ti 回答 问题。
[zhègè xuéshengi], wǒ OCV ti huídá wèntí
[This student], I OCV answer question
I OCV this student to answer question.
OCVs in classes: A √*yǔnxǔ*, √*ràng-m*;
B ?*pòshǐ*, √*jiào*, √*mìnglìng*, √*yāoqiú*, √*ràng-p*;
C ?*kěnqiú*, **qiú*, **quàn*, **bī*, ?*shuōfú*;
D **sòng*, **pài*, **qǐng-a*, **qǐng-i*, ?*yāoqǐng*

(39)Causee -*bèi*-passivization

这个 学生 i [**被** 我 [OCV ti 回答 问题]]。
zhègè xuéshēngi [**bèi** wǒ [OCV ti huídá wèntí]]
This student [**BEI** I [OCV answer question]]
This student is OCVed to answer question by me.
OCVs in classes: A √*yǔnxǔ*, √*ràng-m*;
B √*pòshǐ*, ?*jiào*, √*mìnglìng*, √*yāoqiú*, ?*ràng-p*;
C **kěnqiú*, **qiú*, ?*quàn*, ?*bī*, ?*shuōfú*;
D **sòng*, **pài*, **qǐng-a*, **qǐng-i*, √*yāoqǐng*

(40)Causee-*lián*-fronting

我 [**连** 这个 学生 i] 也 OCV ti 回答 问题。
wǒ [**lián** zhègè xuéshēngi] yě OCV ti huídá wèntí
I [**LIAN** this studenti] YE OCV ti answer question
I even OCV this student to answer question.
OCVs in classes: A √*yǔnxǔ*, √*ràng-m*;
B ?*pòshǐ*, √*jiào*, √*mìnglìng*, √*yāoqiú*, √*ràng-p*;
C **kěnqiú*, **qiú*, **quàn*, **bī*, ?*shuōfú*;
D **sòng*, **pài*, **qǐng-a*, **qǐng-i*, ?*yāoqǐng*

Sentences (37) to (40) show the different availability of causee extraction from different OCVs. Generally, OCVs' embedding sizes decrease as their classes change from A to D. Some OCVs are marked with '?' as speakers take relatively longer time to judge their

grammaticality and feel hard to give a definite judgement. The judgements shown are summarized in the table below.

OCV class	**OCV**	**pinyin**	**meaning**	**causee extraction**				
				relativization	**topicalization**	***bèi*-extraction**	***lián*-fronting**	***bǎ*-extraction**
Class A	允许	yǔn xǔ	permit	√	√	√	√	*
	让-m	ràng-m	make	√	√	√	√	*
Class B	迫使	pò shǐ	force	√	?	√	?	*
	叫	jiào	ask	√	√	?	√	*
	命令	mìng lìng	command	√	√	√	√	*
	要求	yāo qiú	require	√	√	√	√	*
	让-p	ràng-p	permit	√	√	?	√	*
Class C	恳求	kěn qiú	beg	?	?	*	*	*
	求	qiú	beg	*	*	*	*	*
	劝	quàn	urge	*	*	?	*	*
	逼	bī	force	*	*	?	*	*
	说服	shuō fú	persuade	√	?	?	?	*
Class D	邀请	yāo qǐng	invite	?	?	√	?	*
	送	sòng	send	*	*	*	*	*
	派	pài	assign	*	*	*	*	*
	请-i	qǐng-i	invite	*	*	*	*	*
	请-a	qǐng-a	politely ask	*	*	*	*	*

Table 7. Judgement results of Mandarin OCVs in extraction of embedded subject

Table 7 shows OCVs' abilities to feed causee extraction. All Class-A OCVs can feed all causee extraction structures except for *bǎ*-fronting. No OCV is compatible with causee-*bǎ*-fronting. Most Class-B OCVs can feed causee extracton structures, and most Class-C and D OCVs are unable to feed causee extraction. In Class C and D, *shuōfú* and *yāoqǐng* are hard for speakers to judge with respect to causee extraction, and they can feed some

causee extraction structures. We can infer that *shuōfú* and *yāoqǐng* have a larger size of embedding in causee extraction than the other Class-C and D OCVs for some speakers.

From table 7, we can tell that when causee is extracted, Class-A OCVs allow a full clause; Class-B OCVs might be able to allow a full embedded clause in some causee-extraction structures; most Class-C and D OCVs are not good in causee extractions.

3.2 purposive-*qù* in causee extraction

Table 7 shows that many OCVs cannot feed causee extraction. However, when purposive-*qù* is added in front of the embedded verb, many sentences would change from ungrammatical to grammatical. In other words, purposive-*qù* enhances OCVs' ability in feeding causee extractions. The following sentence gives an example with purposive-*qù* in causee-focus fronting with OCV *pài*.

(41)a. *我 [连 这个 学生 i] 也 派 ti 回答 问题。
wǒ [lián zhègè xuéshengi] yě pài ti huídá wèntí
I [LIAN this studenti] YE assign ti answer question
Intended: I even assign this student to answer question.

b. √我 [连 这个 学生 i] 也 派 ti **去** 回答 问题。
wǒ [lián zhègè xuéshengi] yě pài ti **qù** huídá wèntí
I [LIAN this studenti] YE assign ti **QU** answer question
I even assign this student to answer question.

Sentences in (41) shows the case where purposive-*qù* enables an ungrammatical OCV in causee-focus fronting to be grammatical in the same position of the same structure. In

other cases, in this case causee extraction improves with purposive-*qù,* but sentences are still not judged as entirely natural.

(42)a. *[这个 学生 i]， 我 求 ti 回答 问题。
[zhègè xuéshengi], wǒ qiú ti huídá wèntí
[This studenti], I beg ti answer question
Intended: I beg this student to answer question.

b. ? [这个 学生 i]， 我 求 ti **去** 回答 问题。
[zhègè xuéshengi], wǒ qiú ti **qù** huídá wèntí
[This studenti], I beg ti **QU** answer question
I beg this student to answer question.

Sentence (42a) is ungrammatical, but with purposive-*qù* sentence (42b) sounds much better although it's still not entirely grammatical for most speakers. The adding of purposive-*qù* can also improve degraded causee extractions, and make them more natural. Sentences in (43) shows improvement in causee-*bèi*-extraction of OCV *jiào* with purposive-*qù*.

(43)a. ？这个 学生 i [被 我 [叫 ti 回答 问题]]。
zhègè xuéshēngi [bèi wǒ [jiào ti huídá wèntí]]
This studenti [BEI I [ask ti answer question]]
This student is asked to answer question by me.

b.√ 这个 学生 i [被 我 [叫 ti **去** 回答 问题]]。
zhègè xuéshēngi [bèi wǒ [jiào ti **qù** huídá wèntí]]
This studenti [BEI I [ask ti **QU** answer question]]
This student is asked to answer question by me.

Sentence (43a) is judged to be confusing, not ungrammatical but not as good as Class-A OCVs in causee extractions. It changes to be grammatical as in (43b) with *qù* added in

front of the embedded verb. In the following table, I summarize OCV improvement and mark all OCVs that are improved by the addition of purposives-*qù* with yellow color.

OCV class	**OCV**	**pinyin**	**meaning**	**causee extraction**				
				relativization	**topicalization**	***bèi*-extraction**	***lián*-fronting**	***bǎ*-extraction**
Class A	允许	yǔn xǔ	permit	√	√	√	√	*
	让-m	ràng-m	make	√	√	√	√	*→√
Class B	让-p	ràng-p	permit	√	√	?→√	√	*→ ?
	要求	yāo qiú	require	√	√	√	√	*→ ?
	命令	mìng lìng	command	√	√	√	√	*→√
	迫使	pò shǐ	force	√	?→√	√	?→√	*→√
	叫	jiào	ask	√	√	?→√	√	*→√
Class C	恳求	kěn qiú	beg	?→√	?	*→ ?	*→√	*→ ?
	求	qiú	beg	*→√	*→ ?	*	*→√	*→√
	劝	quàn	urge	*→√	*→√	?→√	*→√	*→√
	逼	bī	force	*→√	*→√	?→√	*→√	*→√
	说服	shuō fú	persuade	√	?→√	?→√	?→√	*→√
Class D	送	sòng	send	*→√	*→√	*→√	*→√	*→√
	派	pài	assign	*→√	*→√	*→√	*→√	*→√
	请-i	qǐng-i	invite	*→√	*→√	*→√	*→√	*→√
	请-a	qǐng-a	politely ask	*→ ?	*→√	*→√	*→√	*→√
	邀请	yāo qǐng	invite	?→√	?→√	√	?→√	*→√

Table 8. OCV embedding abilities improved with embedded qù-purposives in causee extraction

Table 8 shows that embedded *qù* significantly improves OCV embedding abilities in causee extraction. Tang (2002) proposes that there is a phonological restriction on monosyllabic control verbs, that they need to phonologically merge with other syllables to control the embedded clause. He argues that is why monosyllabic control verbs like *jiào* is only able to control embeddings in extractions with *qù* or *lái* attached as a merging

node. Also, this merging requirement is able to explain why some originally ungrammatical OCVs sounds better with purposives but are not grammatical—they satisfy the phonological merging requirement but probably have constructed strange matches with purposives semantically or syntactically. It also explains why *lái*-purposives function similarly with *qù*-purposives to improve OCV embedding abilities in causee extractions. Tang's hypothesis works perfectly with sentences (41) to (43). However, it does not answer why *qù*-purposives can also enhance disyllabic OCVs' embedding ability as shown in (44).

(44) a. *我 把 这个 学生 i [邀请 ti 回答 问题]。
wǒ bǎ zhègè xuéshēngi [yāoqǐng ti huídá wèntí]
I BA this studenti [invite ti answer question]
Intended: I invite this student to answer question.

b. √我 把 这个 学生 i [邀请 ti **去** 回答 问题]。
wǒ bǎ zhègè xuéshēngi [yāoqǐng ti **qù** huídá wèntí]
I BA this studenti [invite ti **QU** answer question]
I invite this student to answer question.

Sentences in (44) show improvement of *yāoqǐng*'s embedding ability with embedded *qù* in causee-*bǎ*-extraction. Tang's proposal does not answer why originally ungrammatical disyllabic OCVs such as *yāoqǐng* can be grammatical with *qù* in causee extraction. For OCVs that are disyllabic, they should not necessarily need to be phonologically merged with other syllables following Tang's hypothesis. Therefore, Tang's proposal should be correct to account for purposives with monosyllabic OCVs, but purposives improving disyllabic OCVs' embedding abilities might be working differently. New proposals and hypothesis for improvement of disyllabic OCVs' ability in taking embeddings with *qù* in extractions should be further discussed.

Section 4. Extraction of embedded object

I tested how different Mandarin OCVs behave with respect to extraction of the object of the embedded clause. I investigated six types of embedded object extraction, including relativization, topicalization, *bèi*-passivization, *bǎ*-movement, focus fronting with *lián*, and object preposing. Four out of the six embedded object extraction structures are possible with all OCVs. Only *bǎ*-extraction and long *bèi*-passivization reflect sensitivity to different OCVs. OCVs' abilities to feed embedded obejct extraction generally decreases as their classes change from A to D.

4.1 Embedded object extraction structures accepting all OCVs

Four embedded object extraction structures are compatible with all OCVs. These four structures are relativization, topicalization, focus fronting with *lián*-even-fronting, and object preposing. Embedded object relativization forms a relative clause that describes the OCV's embedded object. Topicalization moves the embedded object to be the topic of the whole sentence. Focus fronting moves a *lián*-marked embedded object. Object preposing puts the embedded object immediately after the subject of the OCV. Each structure is illustrated with one sample sentence in (45).

(45)a. relativization in embedded object extraction

[我 OCV 学生 回答 ti] 的 问题 是 这个。
[wǒ OCV xuéshēng huídá ti] de wèntí shì zhègè
[I OCV student answer ti] DE question is this
The question that I OCV student to answer is this.

b. topicalization in embedded object extraction

[这个 问题 i]， 我 OCV 学生 回答 ti。

[zhègè wèntíi]， wǒ OCV xuéshēng huídá ti

[this question], I OCV student answer ti

I OCV student to answer this question.

c. focus fronting in embedded object extraction

我 [连 这个 问题 i] 也 OCV 学生 回答 ti。

wǒ [lián zhègè wèntíi] yě OCV xuéshēng huídá ti

I [even this questioni] YE OCV student answer ti

I even OCV student to answer this question.

d. object preposing in embedded object extraction

我 [这个问题 i] OCV 学生 回答 ti。

wǒ [zhègè wèntíi] OCV xuéshēng huídá ti

I [this questioni] OCV student answer ti

I OCV student to answer this question.

OCV: √qǐng-a, √kěnqiú, √qiú, √quàn, √bī, √shuōfú, √pòshǐ, √jiào, √yāoqiú, √mìnglìng, √yāoqiú, √ràng-p, √yǔnxǔ, √ràng-m

Sentences in (45) show different embedded object extraction structures that accept all OCVs. Relativization, topicalization, focus fronting with *lián*, and object preposing of embedded objects does not distinguish between different OCVs..

4.2 embedded object-*bǎ*-extraction and *bèi*-extraction

OCVs in embedded object-*bǎ*-extraction and embedded object-*bèi*-passivization are compatible with different embedding sizes. In embedded object-*bǎ*-extraction, the embedded object is extracted to the front of the OCV by *bǎ,* as shown in (46a). Embedded object-*bèi*-passivization extracts the embedded object to the front of the whole sentence by *bèi,* as shown in (46b).

(46)a. embedded object-*bǎ*-extraction

我[**把**问题 i] OCV [学生 回答 ti]。
wǒ [**bǎ** wèntíi] OCV [xuéshēng huídá ti]
I [**BA** questioni] OCV [student answer ti]
I OCV student to answer question.

b. embedded object-*bèi*-extraction

[张三 i] **被** 老师 OCV [李四 打 ti]。
zhāngsāni **bèi** lǎoshī OCV [lǐsì dǎ ti]
Zhangani **BEI** teacher OCV [Lisi hit ti]
Zhangsan is OCVed by teacher to be hit by Lisi.

Sentences (46a) and (46b) display the structures of embedded object-*bǎ*-extraction and *bèi*-extraction respectively. Some of Class-A and Class-B OCVs can feed these structures, while OCVs in Class C and D generally cannot feed embedded object *bèi*- or *bǎ*-extraction. OCVs' grammaticality in (46a) and (46b) are shown in the following sentences.

(47)a. embedded object-*bǎ*-extraction

我 [**把**问题 i] OCV [学生 回答 ti]。
wǒ [**bǎ** wèntíi] OCV [xuéshēng huídá ti]
I [**BA** questioni] OCV [student answer ti]
I OCV student to answer question.
OCVs in classes: A **yǔnxǔ*, √*ràng-m*;
B **pòshǐ*, √*jiào*, ?*mìnglìng*, ?*yāoqiú*, ?*ràng-p*;
C **kěnqiú*, ?*qiú*, **quàn*, ?*bī*, ?*shuōfú*;
D **sòng*, ?*pài*, ?*qǐng-a*, **qǐng-i*, **yāoqǐng*

b. embedded object-*bèi*-extraction

张三 i **被** 老师 OCV [李四 打 ti]。
zhāngsāni **bèi** lǎoshī OCV [lǐsì dǎ ti]
Zhangani **BEI** teacher OCV [Lisi hit ti]
Zhangsan is OCVed by teacher to be hit by Lisi.
OCVs in classes: A √*yǔnxǔ*, √*ràng-m*;
B **pòshǐ*, √*jiào*, ?*mìnglìng*, ?*yāoqiú*, ?*ràng-p*;
C **kěnqiú*, ?*qiú*, **quàn*, ?*bī*, ?*shuōfú*;
D **sòng*, ?*pài*, ?*qǐng-a*, **qǐng-i*, **yāoqǐng*

Sentences in (47) show the results in embedded object *bèi-* and *bǎ*-extraction with different OCVs. OCVs with these two extractions show similar grammaticality judgment results, with the only difference being that *yǔnxǔ* is good with embedded object-*bèi-*extraction but not with embedded object-*bǎ*-extraction. I summarize these judgements in table 9.

group	**OCV**	**pinyin**	**meaning**	***bǎ*-extraction**	***bèi*-extraction**
Class A	允许	yǔn xǔ	permit	*	√
	让-m	ràng-m	make	√	√
Class B	命令	mìng lìng	command	?	?
	要求	yāo qiú	require	?	?
	让-p	ràng-p	permit	?	?
	迫使	pò shǐ	force	*	*
	叫	jiào	ask	√	√
Class C	恳求	kěn qiú	beg	*	*
	求	qiú	beg	?	?
	劝	quàn	urge	*	*
	逼	bī	force	?	?
	说服	shuō fú	persuade	?	?
Class D	送	sòng	send	*	*
	派	pài	assign	?	?
	请-i	qǐng-i	invite	*	*
	请-a	qǐng-a	politely ask	?	?
	邀请	yāo qǐng	invite	*	*

Table 9. OCVs in embedded object *bèi-* and *bǎ*-extraction

From table 9, we can observe that OCVs show similar class embedding ability distribution in embedded object *bèi-* and *bǎ*-extraction. Many OCVs are marked with '?' in this table as speakers feel hard to decide if they are grammatical in the context, and

generally they are not as good as OCVs that can feed the given structure. Only *ràng-m* and *jiào* can feed both embedded object *bèi-* and *bǎ*-extraction.

4.3 *qù* with *bǎ-* and *bèi-* embedded object extraction

As discussed before in section 3.2, *qù* significantly improves all causee extraction structures. However, such improvement does not apply to all embedded object extraction structures. There are two structures in embedded object extraction that reflect different embedding abilities of OCVs, *bǎ-* and *bèi*-extraction**.** *qù* added in the embedding can only improve object-*bèi*-extraction. Adding *qù* does not improve object-*bǎ*-extraction. The following pair of sentences gives an example of how *qù* improves object-*bèi*-extraction.

(48)a. ?[张三 i 被] 老师 逼 [李四 打 ti]。
[zhāngsāni bèi] lǎoshī bī [lǐsì dǎ ti]
[Zhangani BEI] teacher force [Lisi hit ti]
Zhangsan is forced by teacher to be hit by Lisi.

b. √[张三 i 被] 老师 逼 [李四 **去** 打 ti]。
[zhāngsāni bèi] lǎoshī bī [lǐsì **qù** dǎ ti]
[Zhangani BEI] teacher force [Lisi **QU** hit ti]
Zhangsan is forced by teacher to be hit by Lisi.

Sentences (48a) and (48b) present how the ability of OCV *bī* to feed object-*bèi*-extraction improves with the addition of *qù.* In comparison, the same OCV's ability to feed object-*bǎ*-extraction is not improved with *qù*, as shown by (49).

(49) a. ? 我 [把问题 i] 逼 [学生 回答 ti]。
wǒ [bǎ wèntíi] bī [xuéshēng huídá ti]
I [BA questioni] force [student answer ti]
I force student to answer question.

b. ? 我 [把问题 i] 逼 [学生 **去** 回答 ti]。
wǒ [bǎ wèntíi] bī [xuéshēng **qù** huídá ti]
I [BA questioni] force [student **QU** answer ti]
I force student to answer question.

As shown by (49), the grammaticality of object-*bǎ*-extraction with OCV *bī* does not improve with embedded *qù.* The same improvement differences apply to most OCVs in object-*bǎ*- and *bèi*-extraction. The following table displays a summary of the acceptability of embedded object-*bǎ*- and *bèi*-extraction, with improved items marked with yellow color.

OCV	**pinyin**	**meaning**	***bǎ*-extraction**	***bèi*-extraction**	group
允许	yǔn xǔ	permit	*	√	Class A
让-m	ràng-m	make	√	√	
命令	mìng lìng	command	?	?	Class B
要求	yāo qiú	require	?	?	
让-p	ràng-p	permit	?	? →√	
迫使	pò shǐ	force	*	*→√	
叫	jiào	ask	√	√	
恳求	kěn qiú	beg	*	*→**?**	Class C
求	qiú	beg	?	? →√	
劝	quàn	urge	*	*→√	
逼	bī	force	?	? →√	
说服	shuō fú	persuade	?	?	
送	sòng	send	*	*→**?**	Class D
派	pài	assign	?	? →√	
请-i	qǐng-i	invite	*	*→√	
请-a	qǐng-a	politely ask	?	? →√	
邀请	yāo qǐng	invite	*	*→√	

Table 10. OCV embedding abilities improved with embedded *qù*

Table 10 shows the improvement difference of object-*bǎ*- and *bèi*-extraction with embedded *qù*. Only four OCVs' *bèi*-extraction are not improved with *qù,* compared to all OCVs' object *bǎ*-extraction not improved with *qù*.

Recall Tang's hypothesis (2002) mentioned before in 3.2 that monosyllabic control verbs are required to phonologically merge with an adjacent lexical item. Another issue that should be considered for his proposal is why the improvement of embedded object extraction in (48) is applicable even though monosyllabic OCV *bī* is unable to be phonologically merged with *qù.* Another issue worth of studying is why *qù* in *bǎ*-extractions does not improve the acceptability of OCVs, as *qù* does with OCV behaviours in *bèi*-extraction.

Section 5. Extraction of embedded VP

Finally, topicalization of the embedded VP is also tested. All OCVs are ungrammatical with topicalization of the embedded VP, but their grammaticality is improved with *qù* added in the embedding. These examples topicalize the embedded VP to the front of the whole sentence, as shown in (50).

(50)[回答　问题]i，　我 OCV 学生 ti。
[huídá　wèntí]i ，wǒ OCV xuésheng ti
[answer question]i, I　OCV student ti
I OCV student to answer question.
OCV: **sòng*, **pài*, **qǐng-a*, **qǐng-i*, **yāoqǐng*, **kěnqiú*, **qiú*, **quàn*, **bī*, **shuōfú*, **pòshǐ*, **jiào*, **mìnglìng*, **yāoqiú*, **ràng-p*, **yǔnxǔ*, **ràng-m*

Sentence (50) shows the structure of embedded VP topicalization, where all OCVs are ungrammatical. All OCVs investigated are unable to feed VP extraction. In previous discussions, we have observed that *qù* enhances many OCVs' ability to feed causee extraction and embedded object extraction structures. The same effect of improvement by *qù* works for VP extraction as well, as shown in the following sentences.

(51)[回答　问题]i，　我 OCV 学生　　去 ti。
[huídá　wèntí]i ，wǒ OCV xuésheng qù ti
[answer question]i, I　OCV student　QU ti
I OCV student to answer question.
OCV: *? sòng*, *? pài, ? qǐng-a, ? qǐng-i, ? yāoqǐng, ? kěnqiú, ? qiú, ? quàn, ? bī, ? shuōfú, ? pòshǐ, ? jiào, ? mìnglìng, ? yāoqiú, ? ràng-p, ? yǔnxǔ, ? ràng-m*

In sentence (51) with *qù*, speakers' judgement results vary but they consistently feel that examples with *qù* embedded sound better than without *qù.* Therefore, I mark all OCVs in this structure with '?'. All OCVs are unable to feed VP extraction, but they become better when *qù* is added in the embedded clause.

Similar to the effect shown in (48), Tang's proposal cannot account for this type of phenomenon where *qù* is not immediately attached to a monosyllabic OCV but successfully improves the embedding ability of the OCV. Further discussion is needed to cover all three types of embedding-size improvement: 1) monosyllabic OCV with *qù* added next to it; 2) disyllabic OCV with *qù* attached next to it; 3) monosyllabic/disyllabic OCV with *qù* attached but not next to it. Here I list each type with one example sentence below. For most sentences we tested, *lái* have the same improvement function as *qù* does on OCVs' embedding abilities.

(52) **A[8]. monosyllabic OCV with adjacent *qù***

a. ？这个 学生 i [被 我 [叫 ti 回答 问题]]。
zhègè xuéshēngi [bèi wǒ [jiào ti huídá wèntí]]
This studenti [BEI I [ask ti answer question]]
This student is asked to answer question by me.

b.√ 这个 学生 i [被 我 [叫 ti **去** 回答 问题]]。
zhègè xuéshēngi [bèi wǒ [jiào ti **qù** huídá wèntí]]
This studenti [BEI I [ask ti **QU** answer question]]
This student is asked to answer question by me.

B[9]. disyllabic OCV with adjacent *qù*

a. *我 把 这个 学生 i [邀请 ti 回答 问题]。
wǒ bǎ zhègè xuéshēngi [yāoqǐng ti huídá wèntí]
I BA this studenti [invite ti answer question]
Intended: I invite this student to answer question.

b. √我 把 这个 学生 i [邀请 ti **去** 回答 问题]。
wǒ bǎ zhègè xuéshēngi [yāoqǐng ti **qù** huídá wèntí]
I BA this studenti [invite ti **QU** answer question]
I invite this student to answer question.

C[10]. monosyllabic/disyllabic OCV with long-distance *qù*

a. ?[张三 i 被] 老师 逼 [李四 打 ti]。
[zhāngsāni bèi] lǎoshī bī [lǐsì dǎ ti]
[Zhangani BEI] teacher force [Lisi hit ti]
Zhangsan is forced by teacher to be hit by Lisi.

b. √[张三 i 被] 老师 逼 [李四 **去** 打 ti]。
[zhāngsāni bèi] lǎoshī bī [lǐsì **qù** dǎ ti]
[Zhangani BEI] teacher force [Lisi **QU** hit ti]
Zhangsan is forced by teacher to be hit by Lisi.

So far, Tang's hypothesis covers the first type by arguing that monosyllabic OCV is required to phonologically merge with some other syllables. It's possible that the

[8] Same as sentences (43)
[9] Same as sentences (44)
[10] Same as sentences (48)

mechanisms that enable these three types of embedding size improvement are different and we may need to consider this issue from different perspectives.

Conclusion

Similar to English embedding verbs, Mandarin OCVs take different complements. Mandarin OCVs display different abilities in taking embedded clauses in different extraction and embedding structures. Based on their embedding abilities and sizes, Mandarin OCVs can be categorized into four different classes. Class A includes *yǔnxǔ* and *ràng-m*. Class B contains *pòshǐ*, *jiào*, *mìnglìng*, *yāoqiú*, and *ràng-p*. Class-C OCVs are *kěnqiú*, *qiú*, *quàn*, *bī*, *shuōfú*. OCVs *sòng*, *pài*, *qǐng-i*, *qǐng-a*, and *yāoqǐng* belong to class D. Generally, the acceptability of embedded materials and extractions put of the embedded clause of OCVs decrease as their classes change from A to D.

I test OCV behaviors in different extractions and embeddings. Some structures accept all OCVs regardless of their classes, such as *bǎ*-movement inside the embedding, embedded object relativization, and embedded object topicalization. There are also structures that reject all OCVs, for example extraction of VP and embedded object *bǎ*-extraction. Many reflect different embedding sizes of OCVs. In these structures, Class-A OCVs usually allow a full clause; Class-B OCVs allow a smaller embedding size than Class A; Class-C OCVs have less ability in allowing embeddings than Class B; OCVs in Class D ado not allow any embedding.

OCVs with time adverbs embedded before the causee reflect that Class-A OCVs should be ECM and all other OCV Classes are RTO. Different OCV classes' behaviors with adverb *jiāng* and modals embedded pattern together and might be evidence that Chinese is finite-distinct, following Huang's (2018) diagnostics.

In many structures that reject some OCVs, embedded *qù* significantly improves rejected OCVs' grammaticality, enabling them to feed movements that were originally not possible. An exception is causee-*bǎ*-extraction, which is not improved by embedded *qù*. There are three types of embedding size improvement with *qù.* The first happens on monosyllabic OCV with *qù* attached next to it. The second happens on disyllabic OCV with *qù* attached next to it. The third type is on monosyllabic/disyllabic OCV with *qù* attached but not next to it. Tang's proposal (2002), that phonological merge is needed for monosyllabic OCVs, can account for the first type, and further discussion is needed to explain the second and the third type.

As I have pointed out earlier in the summary part, this thesis aims to give a comprehensive empirical documentation of OCVs' structural differences in Mandarin Chinese with a tentative descriptive categorization, by analyzing descriptively. This thesis does not label each OCV class with an exact name or structure, as clues to the criteria for classification have not been clear so far. My descriptive analysis intends to demonstrate a systematic approach that can be used in studies of other languages, and to inspire future studies to find out the criterion for Mandarin OCVs' structural classification.

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Appendices

OCV	pinyin	meaning	bèi-movement in the embedding	Pre-embedding time adverb	*jiāng* *will*	*yǒukěnéng* *maybe*	*xiǎng* *want*	*xīwàng* *hope*	*kěyǐ* *be able to*	*méi* *no*	*embedded zhǐ*
允许	yǔn xǔ	permit	√	√	?√	?√	√	?√	?√	√	√
让-m	ràng-m	make	√	√	?√	√	√	√	√	√	√
让-p	ràng-p	permit	√	?√	*	*	*	*	?	?	√
要求	yāo qiú	require	?	?√	*	*	*	*	*	?	√
命令	mìng lìng	command	?	?√	*	*	*	*	*	?	√
迫使	pò shǐ	force	?	?	*	*	*	*	*	*	√
叫	jiào	ask	*	?	*	*	*	*	*	*	√
恳求	kěn qiú	beg	*	?	*	*	*	*	*	*	√
求	qiú	beg	*	?	*	*	*	*	*	*	√
劝	quàn	urge	*	?	*	*	*	*	*	*	√
逼	bī	force	*	?	*	*	*	*	*	?	√
说服	shuō fú	persuade	*	?	*	?	?	?	*	?	√
送	sòng	send	*	*	*	*	*	*	*	*	√
派	pài	assign	*	*	*	*	*	*	*	*	*
请-i	qǐng-i	invite	*	*	*	*	*	*	*	*	*
请-a	qǐng-a	politely ask	*	*	*	*	*	*	*	*	*
邀请	yāo qǐng	invite	*	*	*	*	*	*	*	*	*

Appedix1: Summary table of OCV behaviors in some structures (no added *qù*)

OCV	pinyin	meaning	causee extraction					*bǎ-* extraction	*bèi-* extraction
			relativization	topicalization	*bèi-* extraction	*lián-* fronting	*bǎ-* extraction		
允许	yǔn xǔ	permit	√	√	√	√	*	*	√
让-m	ràng-m	make	√	√	√	√	*→√	√	√
让-p	ràng-p	permit	√	√	?→√	√	*→?	?	?→√
要求	yāo qiú	require	√	√	√	√	*→?	?	?
命令	mìng lìng	command	√	√	√	√	*→√	?	?
迫使	pò shǐ	force	√	?→√	√	?→√	*→√	*	*→√
叫	jiào	ask	√	√	?→√	√	*→√	√	√
恳求	kěn qiú	beg	?→√	?	*→?	*→√	*→?	*	*→?
求	qiú	beg	*→√	*→?	*	*→√	*→√	?	?→√
劝	quàn	urge	*→√	*→√	?→√	*→√	*→√	*	*→√
逼	bī	force	*→√	*→√	?→√	*→√	*→√	?	?→√
说服	shuō fú	persuade	√	?→√	?→√	?→√	*→√	?	?
送	sòng	send	*→√	*→√	*→√	*→√	*→√	*	*→?
派	pài	assign	*→√	*→√	*→√	*→√	*→√	?	?→√
请-i	qǐng-i	invite	*→√	*→√	*→√	*→√	*→√	*	*→√
请-a	qǐng-a	politely ask	*→?	*→√	*→√	*→√	*→√	?	?→√
邀请	yāo qǐng	invite	?→√	?→√	√	?→√	*→√	*	*→√

Appedix2: Summary table of OCV behaviors in some structures (improved by added *qù*)