THE PLACEMENT OF THE PREPOSITIONAL DATIVE CONSTRUCTION IN MANDARIN VARIETIES

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ABSTRACT

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This thesis studies the variable placement of the prepositional dative construction (PDC) in varieties of Mandarin Chinese. In Mandarin, the PDC can appear either in the pre- or postverbal preposition. However, the postverbal PDC is an apparent violation of the Postverbal Constraint in Chinese syntax. I therefore propose that the postverbal PDC is in fact a representation of verb duplication—a phonetically empty verb is duplicated between the direct object and the postverbal PDC. I also argue that the placement of the PDC is influenced by the speaker's home vernacular, other local varieties of Mandarin, and social factors, including gender, age of first contact, social network, and subjective language attitude.

In support of the claim, empirical data were collected through a survey, which consisted of and was conducted in the order of the following sections: elicitation task, grammatical judgment test, and demographic questions. The data suggests that at the production level, substrate influence of speakers' home vernacular is crucial in deciding the placement of PDC—Northerners showed significantly higher preference for the preverbal PDC than their Southern counterparts. However, social factors have a stronger influence at the perception level. Regular exposure to Taiwanese television programs may account for the high level of acceptance for the postverbal PDC across dialect areas in Mainland China. In conclusion, regional varieties of Mandarin are not only influenced by local vernaculars but also other social factors, including the competing region-wide influences of Mainland Standard Mandarin and Taiwanese Mandarin.

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1. Introduction

This thesis examines a variable syntactic feature in Mandarin that whose variation appears to be caused by substrate influence from regional Chinese dialects. I look at the variable placement of prepositional dative construction in Mandarin varieties.

The prepositional dative construction (PDC) is a means of adding an external indirect object to a verb with a preposition. In English, for example, an indirect object is often expressed with the prepositional "to" or "for", such as ‘I make a cake for you’ or ‘I give that to you’. In Mandarin, the prepositional dative construction is usually headed by the preposition *gei*. The following is an example of different placements of the prepositional dative construction in the Standard Mandarin spoken in Northeast China and the Mandarin variety spoken in Taiwan, namely, Taiwanese Mandarin. In Standard Mandarin, prepositional dative constructions always appear before the verb, as in (1). Taiwanese Mandarin speakers, however, prefer a postverbal PDC, as in (2).

(1) 我 等一下 給 你 打 電話 (Preverbal)
Wo dengyixia gei ni da dianhua
I later to you make phone call
‘I will give you a call later.’

(2) 我 等一下 打 電話 給 你 (Postverbal)
wo dengyixia da dianhua gei ni
I later make phone call to you
‘I will give you a call later.’

Very little work has been done in general on Chinese socio-syntactic variation by either sociolinguists or theoretical syntacticians. Few syntacticians have investigated postverbal PDC placement in Mandarin because such structures violate the widely-held Postverbal Constraint in

Chinese linguistics and are, therefore, considered non-standard. Although syntacticians are becoming increasingly interested in the syntax of non-standard dialects (see e.g. Kroch, 1994; Henry, 2004; Cornips & Corrigan, 2005; Adger & Smith, 2010), there is still a strong bias in the field toward equating languages with their standard varieties. In sociolinguistics, at the same time, there is growing enthusiasm for the study of variation at the syntactic level (see e.g. Tagliamonte, 1998; Montgomery, 1994; Henry, 1995), but very little empirical work is being carried out in East Asia.

In this thesis, I will first propose a syntactic analysis of the PDC as a representation of verb-copying (sections 2 and 3). I will then discuss the extent to which contact between Mandarin and other Chinese dialects can be considered a motivating factor for variable PDC placement (section 4). I describe additional social factors that are likely to influence the variable placement of PDC in Mandarin varieties: attitude toward speakers of different varieties, social network and frequency of media exposure, and gender (sections 5 and 6).

I outline the data collection methods that I used to test my hypotheses about the social factors responsible for PDC variation (section 6), and report the statistical analysis of the results (section 7). Data collection was conducted by means of elicitation tasks, acceptability judgments, and map labeling. I provide a discussion and some conclusions in sections 7 and 8. The goal of the empirical work is to understand to what extent the aforementioned social factors affect speakers' perception and production of PDCs.

2. Prepositional Dative Construction in Mandarin

In this chapter, I will start with the Postverbal Constraint to show that in Mandarin only one constituent can occur in the postverbal position. However, in some Mandarin varieties, the prepositional dative construction (PDC) can occur in the postverbal position following the direct

object, which is an apparent violation of the constraint. I will review previous studies on the PDC and propose a modified analysis of the PDC.

2.1 The Postverbal Constraint

The Postverbal Constraint states that a Mandarin verb may be followed by only one constituent (Chao, 1968; Li C. ,1975; Huang, 1982; Sybesma, 1999). The assumption further suggests that in a Mandarin sentence, if a constituent other than the direct object follows the verb as in (3a), the direct object is forced to move out of its postverbal base position. This situation may trigger movement of the object to the TOP position as in (3b), verb duplication as in (3c), or the *ba*-construction as in (3d) (Sybesma, 1999). In example (3a), there are two constituents (i.e. 'that book' and 'three day') that follow the verb *du* (to read), which violates the Postverbal Constraint. Therefore, the direct object is forced to move out its base postverbal position. In (3b), the direct object is pre-posed to the sentence-initial position as a strategy of topicalization. In (3c), the verb is duplicated between the two postverbal constituents, with one constituent following each verb. In (3d), *ba* creates an additional position for the topicalized direct object. All three structures aim to maintain only one constituent after each verb.

(3) a. *我已 經　讀 了　[那 本　書] [三　天]
wo yijing du le [na ben shu] [san tian]
I have read-ASP that-CL book three day
'I have been reading that book for three days.'

b. 那　本　書　我 已經　讀　了　三　天
na ben shu wo yijing du le san tian
that-CL book I have read-ASP three day
'That book I have been reading for three days.'

c. 我 已經　讀了　那本　書　讀　了　三　天
wo yijing du le na ben shu du le sān tian
I have read-ASP that-CL book read-ASP three day
'I have been reading that book for three days.'

d. 我 已經 把 那 本 書 讀 了 三 天
wo yijing ba na ben shu du le san tian
I have BA that-CL book read-ASP three day
'I have been reading that book for three days.'

However, there are some violations of the Postverbal Constraint such as the double object construction (SVOiOd) (example 4), the location complement (example 5), as well as the postverbal PDC. For durative and frequentatives, Huang (1982) incorporated one postverbal constituent into the other. For the double object construction, Li (1990) incorporated one of the postverbal constituents into the verb. She adopted Stowell's (1981) proposal of NP-incorporation ([v'[v V NP2]NP1]), where the NP2 is incorporated into the verb as one constituent.

Both of their analyses focused on the interpretation of the direct object not being an independent nominal constituent so that only one constituent follows the verb, and therefore the Postverbal Constraint can hold. In the next section, I will review previous studies on the structures with two objects, which will lead to my analysis of postverbal PDC.

(4) 她 送 [我] [一 個 禮物]
ta song [wo] [yi ge liwu]
she give me one-CL present
'She sent me a present.'

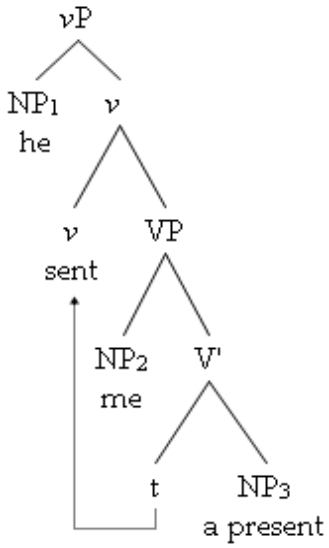
(5) 我 放 了 [一些 書] [在 桌 上]
wo fang le [yixie shu] [zai zhuo shang]
I put-ASP some book at table-top
'I put some books on the table.'

(6) 我 看 了 [兩 個 小時] [書]
wo kan le [xiang ge xiaoshi] [shu]
I read-le two-CL hour book
'I read for two hours'

2.2 Two Objects

A construction with two objects is often a violation of the Postverbal Constraint if both objects occur in the postverbal position. Such constructions include the double object construction and the prepositional dative construction, also known as the recipient construction (Sybesma, 1999:105). In the case of double object construction, Huang, Li, & Li, (2009: 82-84) adopted Larson's (1988) theory and showed that in example (7), though NP_2 and NP_3 are the only constituents that can be heard, there is a phonetically null trace (i.e. the V position) between NP_2 and NP_3. Therefore, only one constituent follows each verb.

(7) Double Object Construction



In the case of the prepositional dative construction, it is generally accepted that in Mandarin, the standard prepositional dative construction is represented as in (8), where *gei* is analyzed as a preposition, adding one external object to the argument structure of the verb.

(8) gei IO Verb DO 〔preverbal gei〕

However, Mandarin has syntactic possibilities for the prepositional construction as shown in example (9).

(9) a. Verb DO *gei* IO 〔postverbal *gei*〕

b. Verb *gei* IO DO 〔V-*gei* sequence〕

The status of the postverbal gei has been widely discussed by Chinese syntacticians, but the basic idea is that if the postverbal gei is not a preposition, then the Postverbal Constraint can hold. Li (1990:101-105) argued that the preverbal *gei* is preposition whereas the postverbal *gei* is in fact a verb. Huang & Ahrens (1999) stated that the *gei* in these variations is not a preposition. They suggested that the *gei* in (9a) is part of a Serial Verb Construction (SVC), and the *gei* in (9b) is part of a complex predicate. Nonetheless, if (9a) is analyzed as an SVC, both the verb and the *gei* should be able to take aspect markers at the same time as in the serial verb construction shown in (10). But in fact, for the structure shown in (9b), the verb and the *gei* cannot take aspect markers at the same time as shown in (11). Therefore, Zhang (1990) suggested that the postverbal *gei* is not a SVC but still a preposition.

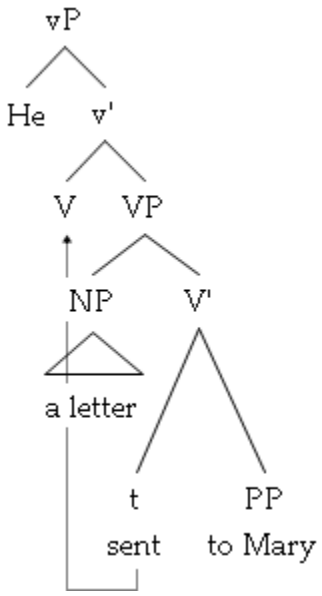
(10) 他 中 了 獎 買 了 一 台 車
ta zhong le jiang mai le yi tai che
he win-ASP prize buy-ASP one-CL car
'He won the prize and bought a car.'

(11) *我 寫 了 一 首 歌 給 了 你
*wo xie-le ye shou ge gei le ni
*I write-ASP one-CL song for-CL you
'I wrote a song for you.'

However, I argue that the *gei* in both (9a) and (9b) are of the same category—they are both part of a complex predicate, or to be more precise, verbal affixes. I will provide evidence in later sections that in the structure of (9a), *gei* is *not* a preposition because (i) it is a representation of the V-*gei* sequence through the account of verb duplication; (ii) it cannot take an aspect marker; (iii) the postverbal *gei* will transform into a V-*gei* sequence if the direct object is pre-

posed. In Larson work (1988:342), he proposed the following structure for the prepositional dative structure in Englsih (see example (12)), where the verb raises to the *v* position and leaves a trace in its original position.

(12) Prepositional Dative Construction



I adopt this analysis for the PDC in Mandarin because English and Mandarin share similar word order in such structure (see (12)). However, what is different from English is the so-called preposition *gei*. *Gei* is the Mandarin equivalent of the English preposition 'to'. Unlike English, *gei* can take many other syntactic functions in addition to a preposition that introduce a nominal object to a verb. Such being the case, the syntactic status of *gei* is pertinent to the analysis of PDC is Mandarin. In the next two sections, I will discuss the syntactic function of *gei* and identify the characteristics of Mandarin PDC.

(13) 他 寄 一 封 信 給 瑪莉
ta ji yi feng xin gei mali
he send one-CL letter to Mary
'He sent a letter to Mary.'

2.3 The Function and Category of *Gei*

Since the preverbal *gei* is usually analyzed as a preposition, I will begin my analysis with the nature of prepositions. In Mandarin Chinese, prepositions share two common features. One is their historical origin as verbs (Huang, Li, & Li, 2009), and the other is their demand for nominal objects**.** Chinese prepositions have their historical origins as verbs and some of them, such as *gei*, can still be used alone as verbs in modern Chinese. In fact, *gei*—as a preposition—has undergone an incomplete process of grammaticalization (Lee, 2008), during which it has developed from a content word to a function word but has still maintained its verbal meaning of 'transfer of possession'. Another important property of prepositions is that they can introduce a nominal as their complement, which makes the preposition *gei* the head of a prepositional phrase. This property is also shared by verbs—both prepositions and verbs can take a nominal object directly (Huang, Li, & Li, 2009). Given this syntactic and semantic similarity between verbs and prepositions, the boundary between verbs and prepositions is not always clear. Therefore, it is no surprise that in the V-*gei* sequence, *gei* can be analyzed as a verbal affix and attach to certain verbs to form a complex verbal predicate, or a compound verb. I will elaborate on this in section 3.

The inability to take an aspect marker is what distinguishes prepositions from verbs. In Mandarin, the aspect marker *le*[1] usually either follows a verb or occurs at the end of a sentence. Example (14a) shows that the preverbal *gei* is a preposition not a verb because it cannot take an aspect marker.

[1] 'Le' in Mandarin marks the change of status. It can be seen as the Chinese equivalent of English past tense or present perfect tense marker.

(14) a. *我 給 了 你 寄 一 封 信
*wo gei le ni jie yi feng xin
* I to-ASP you send one-CL letter
'I sent a letter to you.'

b. ?我 寄 一 封 信 給 了 你
?wo jie yi feng xin gei le ni
?I send one-CL letter to-ASP you
'I sent a letter to you last summer.'

c. 我 把 一 封 信 寄 給 了 你
wo ba yi feng xin ji gei le ni
I BA one-CL letter send-to-ASP you
'I send a letter to you'

d. 我 寄 給 了 你 一 封 信
wo jie gei le ni yi feng xin
I send to-ASP you on-CL letter
'I wrote you a letter.'

However, there is no consensus on whether an aspect marker can be attached to the postverbal *gei*. The postverbal *gei* in (14b) creates grammatical ambiguity if attached with an aspect marker. However, if the direct object (i.e. *yi feng xin* (a letter)) is pre-posed in the *ba* construction as in (14c), the sentence is then perfectly grammatical. This suggests that the postverbal *gei* itself does not function as an independent verb, and therefore should be analyzed as part of a complex verbal predicate because it can take an aspect marker when attached to a verb. In addition, the postverbal gei is not a verb either because it cannot appear in the V-not-V question (the equivalent of Yes-no questions in English) form as other Mandarin verbs do. For example,

(15) 你 吃 不 吃 飯?
ni chih bu chih fan
you eat not eat rice
'Do you eat rice/ will you eat?'

(16) *你 寫 信 給 不 給 他
*ni sie sin gei bu gei ta
*you write letter to not to him
'Will you write him a letter?'

In sentence (15), the verb *chih* (to eat) occurs in the format of A-not-A to form a interrogative sentence. However, in sentence (16), *gei* cannot appear in the A-not-A format, which implies that the postverbal *gei* is not a verb. Therefore, I argue that sentences (14b) and (14d) share a similar underlying structure, which is the V-*gei* sequence, where the preposition *gei* should be analyzed as part of a complex verbal predicate because in the V-gei sequence, the aspect marker cannot be attached to only the verb itself but after the sequence (see example (17)). I will provide a detailed account for the structure of the postverbal *gei* in the next chapter.

(17) a. *[V-le gei NP2 NP1] b. [V gei-le NP2 NP1]

2.4 The Nature of Mandarin PDC

As in English, in a Mandarin PDC, the indirect object is the intended recipient of the direct object and the PDC phrase is usually headed by the preposition *gei*. As for the placement of PDC in Mandarin, it can take either a pre- or postverbal position. In this thesis, I study the different placements of PDC in Mandarin varieties. To clearly define the target variants, I hereby propose that the target PDC structure has the following syntactic characteristics:

(i) the target PDC is not obligatory to the sentence structure. In other words, since the function of the PDC is to add an additional argument to the argument structure of a verb, the absence of the PDC will not affect the grammaticality of a sentence;

(ii) with the presence of the PDC, it is grammatical to have an ellipsis of the direct object, such as example (18) where the ellipsis of the direct object does not affect the grammaticality of (18b) as long as sufficient context is given.

These syntactic characteristics will rule out structures such as (19) and (20) where they apparently share a similar structure with the target PDC (i.e. (18)), but differ in that the deletion of the prepositional phrase does affect the grammaticality of the sentence as shown in example (20b).

(18) a. 他 給 我 倒 了 一 杯 水
ta gei wo dao le yi bei shui
He to me pour-le a cup water
'He poured a cup of water for me.'

b. 他 倒 給 我
ta dao gei wo
he pour to me
'He poured a cup of water for me.'

(19) a. 醫生 給 我 打 了 一 針
yɪsheng gei wo da le yi zhen
doctor to me give-ASP a shot
'The doctor gave me a shot.'

b.*醫生 打 了 一 針
*yisheng da le yi zhen
*doctor give-le a shot
'The doctor gave me a shot.'

(20) a. 妹 妹 給 媽媽 搥 搥 背
Mei mei gei mama chui chui bei
Sister to mom massage back
'Little sister gave mom a massage on her back.'

b. *妹妹 搥搥 背
*meimei chui chui bei
*Sister massage back
'Little sister gave mom a massage on her back.'

Both sentences (19) and (20) have a preverbal prepositional phrase headed by the preposition *gei*. However, these prepositional phrases are different from the target PDC because these sentences would be ungrammatical without the prepositional phrases. This suggests that the prepositional phrases are obligatory in the argument structure of the verb, as opposed to adding one external object to the verb, which is always optional. Sentence (21) also shares a similar structure with the target PDC on the surface, but it does not allow for the ellipsis of the direct object with the presence of prepositional dative phrase. Therefore, sentence (21) is also ruled out.

(21) a. 他 給 我 上 了 一 堂 課
ta gei wo shang le yi tang ke
he to me give-ASP one-CL lecture
'He gave me a lecture.'

b. *他上給我
ta shang gei wo
he give to me
'He gave me a lecture.'

In summary, the PDC is the mechanism of adding an external indirect object to the argument structure of a verb. In Mandarin, a prepositional dative phrase is a type of prepositional phrase headed by the preposition *gei*, and it is usually in the form of [*gei* + indirect object], which can occur in both pre- and postverbal positions while the majority of the prepositional phrases can only occur in a preverbal position. In this chapter, I discuss the nature of Mandarin PDC. I first argue that the pre- *gei* is preposition whereas the postverbal gei is a verbal affix, and then identify the syntactic characteristics of the target PDC.

3. Syntactic Analysis of the Postverbal PDC Variant

In this chapter, I will detail my account of the postverbal PDC structure. I have claimed that the postverbal *gei* serves as a verbal affix as part of a complex verbal predicate. I will continue to argue that the postverbal PDC is in fact a representation of verb duplication for the following reasons: (i) the postverbal *gei* can attach to a verb to form a complex verbal predicate; (ii) the postverbal PDC structure is an apparent violation of the Postverbal Constraint, and verb duplication is also triggered by the violation of the Postverbal Constraint.

3.1 What is the Postverbal PDC?

Although both pre- and postverbal PDC can be found in the speech of different Mandarin varieties, it is generally accepted that the preverbal PDC structure is the standard form because a) most of the prepositional phrases that indicate movement or directionality are preverbal, and b) postverbal PDC is considered to be a violation of the Postverbal Constraint (Sybesma 1999:1-2). In a broader sense, in Mandarin, preverbal structures are used in almost all prepositional phrases that indicate movement and directionality. For instance, a preverbal prepositional phrase can be directly ahead of a verb, such as in sentence (22), or it can also be pre-posed to a sentence-initial (i.e. pre-subject) position for topicalization, such as in sentences (23) and (24).

(22) 我 給 她 寫 了 一 封 信
wo gei ta xie le yi feng xin
I to her write-ASP one-CL letter
'I wrote her a letter.'

(23) 爲 她 我 寫 了 一 封 信
Wèi tā wǒ xiě le yì fēng xìn
To her I write-ASP one-CL letter
'For her I wrote a letter.'

(24) 從 書店 我 買 了 一 本 新 書
Cong shudian wo mai le yi ben xin shi
From bookstore I buy-ASP one-CL new book
'From the bookstore I bought a new book.'

Previous studies (Huang C.-T. J., 1982; Huang & Ahrens, 1999; Sybesma, 1999; Li Y.-H. A., 1990) have shown that the postverbal *gei* is syntactically different from the preverbal one—The postverbal *gei* to some extent maintains the verbal features and meaning of 'transfer of possession' while the preverbal *gei* is a preposition.

To properly define the postverbal PDC structure, recall that in section 2.4 I identified the syntactic characteristics of the PDC: (i) the absence of the postverbal PDC does not affect the grammaticality of a sentence; (ii) the presence of postverbal PDCs allows for the ellipsis of the direct object; (iii) postverbal *gei* selects a subclass of verb to which it attaches. Huang & Ahrens (1999) demonstrate that the combination of *gei* with its host is restricted—*gei* can only be attached to a transitive verb. In addition, not all verbs are compatible with prepositions in forming a compound verb. In Chinese, the use of a preposition, often times, is determined by the compatibility of the verb with the preposition. Therefore, I will propose an 'ellipsis test' as a diagnostic tool for the compatibility of verbs and prepositions.

The Ellipsis Test

Given that prepositions in Chinese are historically derived from verbs, in Modern Chinese a verb can form a complex verbal predicate—the *V-gei* sequence—by affixing a preposition, such as *da gei* (to call) in example (25) and *dao gei* (to pour water for) in example (26). When the direct object ellipsis occurs, the postverbal *gei* and the verb will form a 'V-*gei*' sequence as in sentences (25) and (26). The ellipsis of the direct object serves to test the compatibility of the two. The postverbal PDC is only allowed if a verb is compatible with a

preposition in forming a complex verbal predicate (i.e. a compound verb) with the ellipsis of the direct object.

(25) a. 我 打 電話 給 你
wǒ da diànhuà gěi nǐ
I make phone to you
'I will you give you a call.'

b. 我 打 給 你
wǒ da gěi nǐ
I make-to you
'I will give you (a call).'

(26) a. 我 倒 杯 水 給 你
wo dao bei shui gei ni
I pour CL-water for you
'I will get you a cup of water.'

b. 我 倒 給 你
wo dao gei ni
I pour-to you
'I will get you (some water).'

In sentence (27b), the ellipsis of the direct object makes the sentence ungrammatical, which implies that the verb cannot form a complex verbal predicate with the preposition *gei*. Therefore, the prepositional dative phrase headed by *gei* in (27a) is not the target PDC and cannot take the postverbal position as shown in (27c). Recall that in example (25) and (26), the ellipsis of the direct object does not affect the grammaticality of the sentence. This suggests that the verb and the preposition are compatible in forming a compound verb, and the prepositional phrase is therefore seen as the target PDC. In sentence (27), however, the ellipsis of the direct object makes sentence (27b) ungrammatical, which suggests that the verb *da* (to give a shot to) is not compatible with the preposition *gei* in the 'V-*gei*' sequence, and the prepositional phrase headed by *gei* cannot be seen as the target PDC.

(27) a. 醫生　給　我　打　針
yisheng gei wo da zhen
doctor to me give shot
'The doctor gave me a shot.'

b. *醫生　打　給　我
yisheng da gei wo
doctor give to me
'The doctor gave me (a shot).'

c. *醫生　打　針　給　我
yiisheng da zhen gei wo
doctor give shot to me
'The doctor gave me a shot.'

3.2 Postverbal Variation: Verb duplication

In this section, I will propose an analysis of the postverbal PDC structure for the Postverbal Constraint violation. Ramsey(1989:105) suggested that the PDC involves an empty predicate in the lower part of the sentence, and 'the empty predicate is an counterpart of particles like *back*, *off* and *out*'. For exmaple,

(28) 張三　送　一　本　書　給　李四
Zhangsan [song [yi ben shu [ϕ [gei lisi]]]]
Zhangsan give one-CL book to Lisi
'Zhangsan gave Lisi a book.'

In example (28), ϕ is the empty counterpart of the particle 'away', or '*zou*' in Mandarin. Ramsey(1989:105) assumed that the particle moves to incorporate into the matrix V. Therefore, in the PDC, the direct object is the subject of the phrase embedded in the VP. However, this contradics Larson's (1988) analysis that there is an empty verbal trace preceding the prepositional dative phrase headed by *gei* (see section 2.2). According Larson, the verb raises from the *V* position to the higher *v* position leaving an empty trace in the original *V* position. Therefore, based on the analyses of both Ramsey(1989:105) and Larson's (1988), I argue that there is an empty predicate preceding the prepositional dative phrase, but it is an empty verbal

predicate. This analysis is also supported by the common phenomenon of verb duplication in Mandarin.

Recall that Sybesma (1999) mentioned three possible constructions that may be triggered by the Postverbal Constraint violation (see section 2.1), one of which is verb duplication, also known as verb-copying. In modern Mandarin, verb duplication is a common construction where a verb is duplicated after its direct object when followed by adverbials (Tai, 1999). Tai (1999) divides verb duplicaiton into six categories based on the function of the adverbial complement: duration complement, descriptive complement, frequency complement, location complement, direction complement and resultative complememt. The following are some examples:

(29) a. 我 睡覺 睡 了 很 久
wo shui jiaoshui-le hen jiu [duration complement]
I sleep sleep-ASP very long
'I have slept for a while.'

b. 他 跑 步 跑 得 很 快
ta pao bu pao de hen kuai [descriptive complement]
he run run de very fast
'He runs fast.'

c. 我 去 美 國 去 過 兩 次
wo qu mei guo qu guo liang ci [frequency complement]
I go USA go-ASP two time
'I've been to the US twice.'

d. 他 寫 字 寫 在 黑板 上
ta xie zi xie zai heiban shang [location complement]
He write word write on blackboard top
'He wrote on the blackboard.'

Data adapted from (Tai, 1999, p. 99)

Therefore, I suggest that the postverbal PDC is also a representation of verb duplication for the following reaons: (i) there is an empty predicate between the direct object and the

postverbal dative phrase; (ii) the postverbal PDC, on the surface, is a violation of the Postverbal Constraint. For example, in sentence (30), the verb *xie* (to write) is copied between the direct object and the prepositional dative phrase. The duplicated verb is phonetically empty, but syntactically it forms a compound verb with the following *gei* (i.e. the 'V-gei' sequence). This accounts for (i) that the postverbal *gei* can take an aspect marker for some mandarin speakers (see example ((14b)); (ii) that some of the prepositional phrases cannot occur in the postverbal position (because not all prepostions are compatible with the empty verb in formaing an compound verb); (iii) the apparent violation of Postverbal Constraint.

(30) 我 寫 一 封 信 [寫] 給 你
wo xie ye feng xin [xie] gei ni
I write one-CL letter [write] to you
'I wrote you a letter.'

This being the case, the postvebral PDC is not a Postverbal Constraint violation but an empty verb duplication. With an empty verb preceding the prepositional dative phrase, the postverbal PDC would be the only constituent that follows the duplicated empty verb. The Postverbal Constraint thus holds. Moreoever, this also explains why some verbs allow for both the pre- and postverbal PDC structure whereas some verbs allow for only the preverbal prepositional phrase. With the empty verb immediately preceding the prepositional phrase, a postverbal PDC is possible only if the empty verb is compatible with the preposition in forming a compound verb. The following are some examples of verb duplication in the postverbal PDC:

(31) 我 唱 一 首 歌 [唱] 給 他
wo chang yi shou ge [chang] gei ta
I sing one-CL song [sing] to him
'I sang a song for him.'

(32) 他 寫 一 封 信 [寫] 給 我
ta xie ye feng xin [xie] gei wo
he write one-CL letter [write] to me
'He wrote me a letter.'

In sentences (31) and (32), a duplicated verb is inserted immediately following the direct object to generate a VOV structure; however, the duplicated verb is phonetically empty. Therefore, the postverbal PDC is the only constituent following the duplicated empty verb. In cases where the duplicated verbs are not compatible with the preposition in forming a compound verb, the postverbal prepositional dative phrases are not allowed. The following is an example of such:

(33) a. 妹妹 給 媽媽 捶捶 背
Meimei gei mama chuichui bei
Sister to mom beat back
'Little sister gave mom a massage on her back.'

b. *妹妹 捶捶 背 [捶] 給 媽媽
Meimei chuichui bei [chui] gei mama
Sister beat back beat to mom
'Little sister gave mom a massage on her back.'

c. *妹妹 捶 給 媽媽
meimei chui gei mama
sister beat to mom
'Little sister gave mom a massage.'

d. *妹妹 捶捶 背
meimei chuichui bei
sister beat back
'Little sister gave mom a massage.'

In example (33), based on my analysis, the prepositional dative phrase headed by *gei* cannot take the postverbal position and therefore is not a target PDC because (i) the verb is not compatible with *gei* in forming the V-*gei* sequence as in (33b); (ii) it does not allow for the

ellipsis of the direct object as in (33c); (iii) it is ungrammatical without the prepositional phrase as shown in (33d). All of these yield a consistent result: the prepositional phrase as in (33a) does not have the syntactic features of the target PDC and therefore cannot occur in a postverbal position. This analysis of the postverbal PDC structure suggests that the postverbal *gei* (example (34a)) and the V-*gei* sequence (example ((34b)) have a similar syntactic function—a verbal affix. In both (34b) and (35), *gei* is attached to the immediately preceding verb, and a postverbal prepositional dative phrase is possible only if the verb is compatible with *gei* in forming a compound verb.

(34) a. Verb DO *gei* IO [postverbal *gei*]

b. Verb *gei* IO DO [V- *gei* sequence]

(35) Verb DO [V] *gei* IO [postverbal *gei*]

Furthermore, the analysis can also be extended to other prepositional phrases of the same category, namely, prepositions that express the idea of movement including *gei* (to), *xiang* (toward/from), *wang* (toward), and *cong* (from). In sentence (36), the verb *zuo* (to do), or the duplicated verb 'ϕ', is not compatible with the preposition *wei* (for) in forming a compound verb, and therefore in this sentence, the postverbal prepositional phrase is not allowed.

(36) a. 他 爲 我 做 了 很多 事
ta wei wo zuo le henduo shi
He for me do-ASP many thing
'He has done many things for me.'

b. *他 做 了 很多 事 ϕ 爲 我
ta zuo le henduo shi ϕ wei wo
He do-ASP many thing ϕ for me
'He has done many things for me.'

Take another preposition, *xiang* (to/toward), for example: in example (37), the prepositional phrase *xiang bei* (toward north, 'northwards') can take either a pre- or postverbal position because it allows for the ellipsis of the direct object (as in (37b)) and it is compatible with the verb in forming a compound verb, namely, the V-*gei* sequence.

(37) a. 他 向 北 開 車
ta xiang bei kai che
he toward north drive car
'He drove northwards.'

b. 他 開 向 北
ta kai xiang bei
he drive toward north
'He drove northwards.'

c. 他 開 車 ϕ 向 北
tā kāi chē ϕ xiàng běi
He drive car ϕ toward north
'He drove northwards.'

In example (38), however, since the verb *zhi* (to show) is not compatible with *gei* and the ellipsis of the direct object is not allowed, the prepositional phrase headed by *xiang* (to) cannot take the postverbal position.

(38) a. 我 向 他 致 敬
wo xiang ta zhi jing
I to him show respect
'I show our respect to him.'

b. *我 致 向 他
*wo zhi xiang ta
*I show to him
'I show my respect to him.'

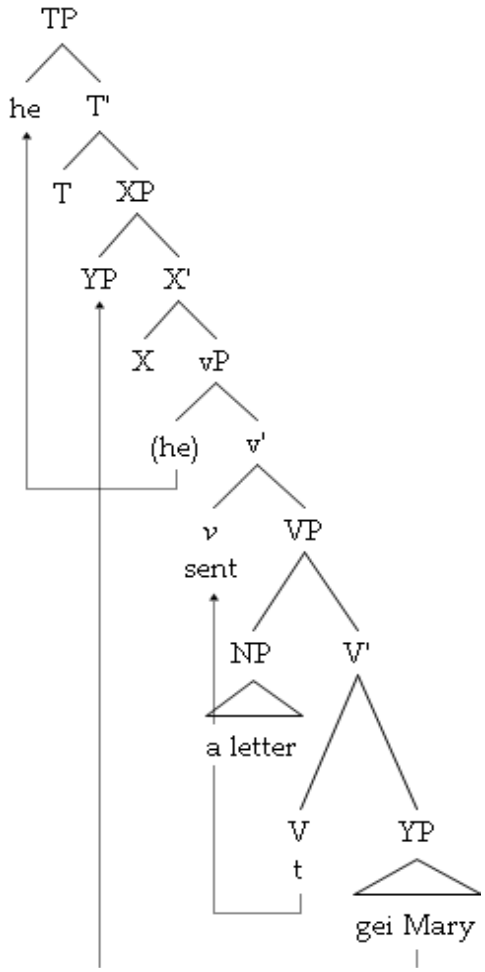
c. *我 致 敬 ϕ 向 他
*wo zhi jing ϕ xiang ta
*I show respect ϕ to him
'I show my respect to him.'

Example (39) below is the tree diagram that shows the syntactic structure of the PDC. The verb raises from the *V* position to the *v* position, leaving a empty trace before the postverbal dative phrasre, and the empty trace is where the verb is copied. The node Z has an EPP feature [uN*] (a strong uninterpretable N feature) that looks for a noun. This is a formal uN feature, which is not associated with a thematic role and has no theta role to assign (Adger, 2003:251). Therefore, the subject he moves to the Specifier position. The node X, on the other hand, has a [uP*] feature that moves the *gei* phrase up to the YP position, which explains why most of the prepositional phrases in Mandarin are in the preverbal position, as well as the *bei*-construction and the *ba*-construction.

However, in Mandarin, the [uP*] feature is not always strong. Mandarin speakers have the choice of not moving the prepositional dative phrase up to adjoin to the left of *v*', yielding the PDC appearing in the postvebral position. In other words, for Mandarin speakers, the placement of the PDC is floating, and I further hypothesize that the major factor that influences speakers' choice of the PDC placement is speakers' home vernacular(s), along with other social factors. In the next chapter, I will give a brief introduction of the Chinese dialects and discussion the subtrate influence of dialects on Mandarin varieties.

(39)

Proposed Tree Diagram of the PDC



In summary, I argue that the postverbal PDC is a representation of verb duplication, where an empty verb is duplicated between the direct object and the postverbal PDC. I also propose the Ellipsis Test to assess the compatibility of the verb and the postverbal PDC—if the ellipsis does not affect the grammaticality of a sentence, then the postverbal PDC is allowed. This analysis also applies to other prepositional phrases. A prepositional phrase can occur in the postverbal position only if the preposition is compatible with the verb in forming a compound verb. In the case of the PDC in Mandarin, since the placement of the PDC can be either pre- or postverbal, I further propose that that the PDC is a floating structure that can be either adjoined to the *V* position, or can be raised to the left of the *v* position. Mandarin speakers therefore have the option of keeping the PDC in this base position or moving it to the left of *v* (i.e. YP, see (39)).

In the following sections, I will show that the choice of pre- and postverbal PDC is influenced by speakers' home vernacular(s) and other social factors.

4. Sociohistorical Background

4.1 Chinese Vernaculars—Languages or Dialects?

Chinese dialects are typically defined somewhat differently from American English dialects. American English dialects are generally mutually intelligible with one another, and so are most dialects of other well-studied languages such as German and French. However, speakers of different Chinese dialects, in some cases, may not be able to understand each other at all; phonologically, they can be different languages. For example, the southern dialect Taiwanese—the home vernacular of the majority of the people in Taiwan—and Taiwanese Mandarin, a variety of Mandarin spoken by most of the Taiwanese people, are mutually unintelligible.

In other words, in Chinese dialectological terminology, the so-called 'dialects' are defined on sociopolitical grounds not on linguistic grounds. The idea of dialect refers to any regional vernaculars that are not Mandarin. Such being the case, are these regional vernaculars considered languages or dialects? From a linguistic point of view, the Chinese 'dialects' could be considered different languages, just as French and Italian in the Romance language family (Ramsey, 1989). However, from a sociopolitical point of view, the Chinese vernaculars are considered one language because they are spoken by a single group with a common cultural heritage and, moreover, there is a single set of standards for the written language generally accepted by Chinese speakers (Ramsey 1989:16-18). There is also a commonly accepted standard spoken dialect: Mainland Standard Mandarin. According to Zhang (2005:439),

Mainland Standard Mandarin (MSM) takes the Beijing Mandarin phonological system as its norm of pronunciation and modern vernacular literary language as its norm of grammar.

4.2 Dialect Geography and Isoglosses

The first scientific classification of the Chinese dialects was proposed in 1937 by Li Fang-Kuei. This classification was based on a single criterion: the divergent development of Middle Chinese voiced stops into distinct phonemes in China's spoken modern dialects (Norman, 2004:181). Based on Li's study, Yuan (1961) proposed the following dialect groups:

1.Mandarin	3.Xiang	5.Hakka	7.Min
2.Wu	4.Gan	6.Yue (Cantonese)	

Without rejecting this scheme, Norman (1988) proposed a new set of diagnostic features for categorizing the Chinese dialects that takes into account phonological, syntactic and lexical features[2]. Ramsey (1989), in his book 'The Language of China,' adopts this classification and provides an atlas of Chinese dialect isoglosses (see Figure 1).

[2] Norman (2004:181-182) used the following criteria to classify Chinese into different dialects: 1. The third-person pronoun is *ta* or cognate to it. 2. The subordinative particle is *de* or cognate to it. 3. The ordinary negative is *bu* or cognate to it. 4. The gender marker for animals is prefixed, as in the word for 'hen' *muji*. 5. There is a register distinction only in the *ping* tonal category. 6. Velars are palatalized before *i*. 7. Zhan or words cognate to it are used for 'to stand'. 8. Zou or cognate to it are used for 'to walk'. 9. Erzi or words cognate to it are used for 'son'. 10. *Fangzi* or words cognate to it are used for 'house'.

Figure 1 The Chinese Language: Basic North-South Division (Ramsey, 1989:22 Figure 5)

As shown in Figure 1, the Chinese dialects are divided between the North and the South (Ramsey, 1989). The South has long been inhabited by the ethnic Han Chinese whereas the North is home to relatively more recent settlers who were assimilated by the Han people through frequent contact and intermarriage. Given that language change is a slow and gradual process, it is probably not surprising to find that the northern dialects are rather unified while the southern dialects are more divergent, especially in terms of their phonology and lexicons (Norman, 2004:20-26; Ramsey, 1989:183-186).

The northern Chinese varieties, usually known as Mandarin dialects, are primarily spoken across the Yellow Plain and the Huangtu Plateau. The dialect extends all the way southwest

across the provinces of Sichuan and Yunnan. As mentioned in the previous section, Modern Standard Chinese is based on the speech of the educated residents of Beijing (Ramsey, 1989; Zhang, 2005), but the fine line between Modern Standard Chinese and the Beijing dialect is not always clear (see also Zhang 2005:439 for discussion).

The southern varieties— also referred to as 'non-Mandarin dialects' by Ramsey (1989: 21)—are spoken in the area southeast of the Yangtze River. Unlike northern varieties that are generally mutually intelligible, southern dialects are not. Therefore, the southern dialect group is further divided into six subgroups. They are briefly introduced as follows, with a map (Figure 2) showing the geographical distribution:

- Wu (吳) dialect—spoken in the southeast costal area, around Shanghai and Zhejiang province
- Gan (贛) dialect—spoken in Jiangxi province
- Xiang (湘) dialect—spoken in Hunan province
- Hakka (客家) dialect—widely scattered form Sichuan to Taiwan
- Yue (粵) dialect (also known as Cantonese)—spoken in Guangong and Guangxi provinces as well as Hong Kong
- Min (閩) dialect—spoken in Fujian province and coastal areas of the South as well as Taiwan

Figure 2 The Southern Chinese Dialects (Ramsey, 1989:23 Figure 6)[3]

[3] For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis.

Notably, the provinces of Sichuan, Yunnan, and Guizhou are geographically located in the South, but their dialects are categorized as those of the Northern provinces. Moreover, in my pilot study[4] with people from Sichuan province, I discovered that though the dialect in Sichuan province is phonologically similar to the northern varieties, it is syntactically closer to the southern dialect group in terms of the PDC placement. Thus, in this research, I will further divide the northern dialect group into North and Southwest. The Southwest group comprises Sichuan, Yunna and Guizhou provinces. Based on this classification of Chinese dialects, I will recruit subjects from each of the eight dialect areas in my research. They are: northern dialect area, southwest dialect area, Wu dialect area, Gan dialect area, Xiang dialect area, Hakka dialect area, Yue dialect area, and Min dialect area (Table 1).

Table 1 Chinese Dialect Classification

Categories	Dialect areas
Northern dialect area	Northern dialect area
Southwest dialect area	Sichuan, Guizhou, and Yunnan provinces
Southern dialect areas	Wu dialect area Gan dialect area Xiang dialect area Hakka dialect area Yue dialect area Min dialect area

4.3 The Current Sociolinguistic Situation in Mainland China

Mandarin is the official spoken language of the People's Republic of China (PRC). Since the 1950s, the Chinese government has been active in promoting Mandarin, including the design

[4] In the pilot study (Peng 2010 ms), I interviewed 10 Chinese informants of various dialect backgrounds respectively. The interviews were concerned with subjects' choices of pre- and postverbal PDC in both Mandarin and their home vernaculars. I discovered that unlike other northern dialect speakers, informants from Sichuan province did not show a preference for either pre- or postverbal PDCs.

and the promulgation of a new phonetic system, Hanyu Pinyin. By 2006, Chinese officials reported that about 53.06 percent of the population in China could communicate with it (Institute of Applied Linguistics, Ministry of Education, 2006).

Most Chinese speakers grow up speaking their home vernacular(s) and Mandarin simultaneously. Since Mandarin was originally a Northern dialect, it is phonologically more familiar to the people in the North than in the South. Mandarin is generally mutually intelligible with Northern dialects whereas the Southern dialects are phonologically very different from Mandarin. In other words, speakers of the so-called Southern dialects (Cantonese, Min dialects, Wu dialects, etc.) are either bilingual or have standard Mandarin as a second language. Schoolchildren in the south acquire standard Mandarin at the first grade. They use Mandarin in school and speak their home vernacular(s) outside school (Ramsey, 1989:29). Adults use their home vernaculars for local businesses and daily informal conversation. As I will show in section 4.4, Mandarin has developed regional varieties due to substrate influence from speakers' L1 dialects. Moreover, given the bilingual situation of Mandarin and a distinctive vernacular, it can be inferred that Southern Mandarin varieties vary from Standard Mainland Mandarin to a greater degree, compared with their Northern counterparts. In the next section, I will use Taiwanese Mandarin as an example of how a vernacular Southern dialect (Southern Min) can have syntactic, phonological, and lexical influences on Mandarin.

4.4 The Mandarin Variety in Taiwan

In this section, I use my native variety of Taiwanese Mandarin as a case study to demonstrate the dialect diversity of Mandarin, and to develop some hypotheses about the origins of PDC variation.

4.4.1 Sociolinguistic Setting of Taiwan

Taiwan is an island separated from the southeast coast of Mainland China by the Taiwan Strait. Statistics for Taiwan's current ethnic distribution are unavailable and in any case ethnicity is difficult to determine in modern Taiwan because of extensive intermarriage. Huang (1995:319-353) reports that in the early 1980s the population was composed of four major ethnic groups, each of which has its own language, given in parentheses: 5% aborigines (Austronesian languages), 73.3% Southern Min (Southern Min) people, 12% Hakka (Hakka), and 12% Mainlanders[5] (Mandarin). Except for the aborigines who have been on the island for several thousand years, the rest of the population was originally from Mainland China. The Southern Min and the Hakka emigrated from the Southeast coast of China around 200 years ago, and the Mainlanders fled to Taiwan from various provinces of China after 1949 when the Mainland was taken over by the Communists.

The relation between China and Taiwan is rather complicated. Though not widely recognized as an independent country internationally, Taiwan has its own president and government that are different and independent from that of the People's Republic of China. The relationship is referred to in English as 'Cross-Strait Relations', a neutral term that does not involve the legal or political status of their respective governments. In addition, due to the different political ideologies of the two governments, Taiwanese people can move more freely than Mainland Chinese between Taiwan and the Mainland for the purpose of travel, academic exchange, and business.

[5] Mainlander refers to Mainland Chinese immigrants who moved to Taiwan at the end of or after the Chinese Civil War in 1949.

Mandarin has been spoken in Taiwan for more than 60 years, and is now spoken by the majority (89.97%[6]) of people in Taiwan (Ke 1991:5). The remaining minority includes the elderly who were educated under Japanese rule before 1945 (Kuo, 2005). Mandarin has been taught in schools since 1945 when Taiwan was restored[7] to China at the conclusion of World War II. Mandarin was promoted and even imposed by the government through school education to the local residents in Taiwan where the majority of the people spoke Southern Chinese dialects— Southern Min and Hakka. Mandarin was taught and learned as a second language for the second generation after the civil war. Because of the success of the Mandarin movement in Taiwan, Mandarin has served as a lingua franca in Taiwan, and is the language not only of school, but of government, media and many everyday interactions (Teng, 2002:231). By the third generation, the boundary between the ethnic groups was no longer clear because of the intermarriage between the groups, and Mandarin has become the dominant language on the island.

Taiwanese Mandarin differs from Mainland Standard Mandarin in its lexicon, phonology and syntax. In particular, the following are examples of features of Taiwanese Mandarin: (i) the retroflex sounds in Standard Mandarin are pronounced as alveolar-palatal affricates or fricatives in Taiwanese Mandarin (Kuo, 2005), (ii) in example (40), the structure of [*gei*+obj+complement] illustrates the innovative function and the grammaticalization of *gei* in Taiwanese Mandarin, which is not observed in Standard Mandarin (Lee, 2008), and (iii) example (41) shows that *you* (have) has developed the function of an aspect marker in Taiwanese Mandarin (Tseng, 2003; Ling, 1991; Kubler C. C., 1981).

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[6] Ke (1991:5)

[7] After the Sino-Japanese War (1894-1895), China ceded Taiwan to Japan under the Treaty of Shimonoseki in 1895.

(40) 真 是 有 給 他 驚訝
Zhenshi you gei ta jingya
Really have give it surprising
'It made me surprised.'

(41) 我 有 看 過 這 部 電影
wo you kan guo zhe bu dianying
I have see-ASP this-CL movie
'I have seen this movie.'

These differences have likely arisen through two factors: Firstly, through normal linguistic divergence due to a long period of social separation and Taiwan's independent economic and cultural identity, which I describe in section 4.4.2, and secondly, through substrate influence from local Taiwanese languages and dialects, which I describe in section 4.4.3. Both are relevant to understanding how variation in PDCs has come about, both in Taiwanese Mandarin as well as in other mainland varieties of Mandarin.

4.4.2 Divergence from Mainland Mandarin

From the end of the Chinese Civil War in 1949 until 1987—when the Taiwanese government allowed limited family visits—Taiwan was disconnected from Mainland China. The political tension blocked the contact of people on both sides, including correspondence or any means of telecommunication. Although the majority of Taiwanese and Mainland Chinese were geographically and politically isolated from one another, those living overseas were able to mix freely. More recently, the gradual alleviation of the tension has increased the contact across the strait. From 2008, negotiations began to restore transportation, commerce, and communications between the two sides.

During the period of separation, Taiwan has developed a variety that is different from Beijing Mandarin. According to Cheng (1985:372), three forces have shaped Taiwanese

Mandarin: (i) a drift towards the features that are universal to Chinese as a whole (see examples in section 4.4.1); (ii) the tendency to borrow from local dialects or native languages; (iii) the tendency to adopt features that are simpler and more regular. Southern Min (i.e. Taiwanese), to a large extent, has contributed to the formation of Taiwanese Mandarin (Cheng, 1985: 372; Teng, 2002:233). Taiwanese Mandarin, therefore, can be defined as a mixture of the linguistic structures of Southern Min and Mandarin (Teng, 2002).

The example of Taiwanese Mandarin infers that in different areas of Mainland China, Mandarin is diverging from the Mainland standard, and developing various varieties. Mandarin speakers have a tendency to carry over the features of their home vernacular(s), which is one of the major forces for the divergence of Mandarin (Cheng, 1985). In the next section, I will again take Taiwanese Mandarin as an example to discuss the substrate influence from regional vernaculars.

4.4.3 Substrate Influence

The influence from one's first language (i.e. the home vernacular) on a second language is referred to as substratum influence (Sankoff, 2003; Thomason & Kaufman, 1988:21), or interlanguage transfer (Gass & Selinker, 2008), which in this case is the influence of a speaker's home vernacular(s) on Mandarin. Growing up speaking home vernaculars, speakers of Mandarin are usually either bilinguals or have standard Mandarin as a second language. As a result, the Mandarin they speak is influenced by their home vernacular(s) and has developed into new varieties. In addition, since the vernaculars influence the choice of variants in Mandarin at the speech community level, even monolingual Mandarin speakers will be affected by the local vernacular(s) of their community.

Taiwanese Mandarin has been influenced by local dialects such as Southern Min and Hakka. Kubler (1981, 1985) describes the Taiwanese Mandarin variety as a linguistic outcome of language contact with preexisting local languages. He found that when speaking Mandarin, native speakers of Southern Min tend to substitute [ʂ] with [s], and to substitute [ʐ] with [dz] before vowels. Syntactically, the use of *you/meiyou* (have/ not have) as auxiliaries in Taiwanese Mandarin is said to be due to the influence from Southern Min (Kubler, 1985:162). Southern Min speakers are conscious of the correspondence between *bou* (not) in Southern Min (42a) and *meyou* (not/ have not) in Mandarin (42b), and tend to translate word for word, creating the syntactic structure of (42c). (Examples are from Kubler 1985:162).

(42) a. 你 看見 他 了 沒 有 (Standard Mainland Mandarin)
ni kanjian ta le me you
you see him-ASP not have
'Did you see him?'

b. 你 有 看到 他 沒 有 (Taiwanese Mandarin)
ni you kandao ta mei you
you have see him not have
'Did you see him?'

c. 你 有 看見 他 不 (Southern Min)
Li u khua:ki: I bou
You have see him not
'Did you see him?'

The lexicon of Taiwanese Mandarin is also subject to the influence of Southern Min. Table 2 shows some examples of such. The equivalents of 'bicycle', 'businessman', and 'to cook' in Taiwanese Mandarin employ the corresponding morphemes in Southern Min, instead of morphemes in Standard Mandarin, although the morphemes are realized using Mandarin phonology.

Table 2 Lexicon Influence from Southern Min			
Standard Mandarin	Southern Min	Taiwanese Mandarin	English Gloss
tsɨ ɕiŋ ʈʂʰɤ /自行車	k^h ta $tɕ^h$ja	tɕiɑʊ tɑ ʈʂʰɤ /腳踏車	Bicycle
ʂɑŋ rəŋ /商人	$tɕ^h$əŋ li laŋ	ʂɤŋ i rəŋ /生意人	Businessman
tsuɔ fɤɛn /做飯	tsu ts^haj	ʈʂu ts^haɪ /煮菜	To cook

4.5 Standard and Local Varieties of Mandarin

In summary, the evidence for substrate influence from Southern Min on Taiwanese Mandarin suggests that Mandarin has developed different varieties, not only in Taiwan, but in different areas of Mainland China and Hong Kong, in part because every area has its own local dialect(s). Thus, local divergence from Mainland Standard Mandarin is likely to be to some degree externally motivated through language/dialect contact. However, Mandarin varieties must also have undergone normal internal language change over time, through the same sociolinguistic mechanisms as any other dialects previously studied, such as pressure from above and below within the community (Labov 2001), association of certain features with local reference groups (Eckert 2000) and so forth.

Thus Mandarin varieties are not only influenced by local non-Mandarin dialects, but also (as Ling 1991 also found), by each other. Zhang (2001, 2005) demonstrates that this is certainly true of the local Beijing variety of Mandarin. Zhang shows that Beijing 'yuppies' have adopted *Gaˇngtái* (Hong Kong and Taiwan) tone features to demonstrate their cosmopolitanism. With its export of popular culture, Taiwan is known to the mainlanders for their 'cosmopolitan lifestyle and urban identity' (Zhang, 2005:434). In addition, the local Beijing variety of Mandarin is also important in shaping the local varieties. Beijing, as the capital city of China for the past six centuries, is the political and cultural center of the country (Norman, 2004:246). As the language

of government and public affairs, Beijing Mandarin is considered the standard code used in mass media broadcasting all over the country (Chen, 1999:53). Therefore, in the present study, I also anticipate the influence of the Beijing variety of Mandarin on regional Mandarin varieties, which can be more clearly observed from the Southern varities because they differ from the Nothern varieties to a greater extent.

5. Hypotheses

I will investigate to what extent speakers' choices of variants in Mandarin are affected by their home vernaculars and by their attitudes to other dialects in the Mandarin-speaking community, especially Beijing and Taiwan, as well as other sociolinguistic factors. I hypothesize that the influence of home vernaculars is at the speech community level; even for individuals who do not speak any of the local vernaculars, their choices of pre- and postverbal variants are still influenced by the vernaculars of their home communities. The social factors that I will describe, on the other hand, affect the choice of variants at the individual level. An individual's preference for the pre- and postverbal PDC variants will likely be influenced by the following social factors: gender (section 0), age (section 5.3), frequency of exposure to other varieties (section 5.4), and language attitude toward other varieties (section 5.5).

5.1 Subjects

Thirty subjects with various dialect backgrounds were recruited through my personal network. They were offered refreshments for participation. There were 6 Taiwanese Mandarin speakers and 24 Mainland Mandarin speakers (Table 2). For the mainland Mandarin speakers, 8 were from the Northern dialect area, 8 from the Southern dialect area and 8 from the Southwest

dialect area (Sichuan, Yunnan, and Guizhou province). The ratio of males to females in each subgroup is 1:1. All subjects were required to have received formal education in their regions of origin at least to the age of 16 in order to ensure that they had acquired idiomatic use of the Mandarin variety of their area.

Table 3 Number of subjects

	Male	Female
from Taiwan	3	3
from Northern dialect area	4	4
from Southern dialect area	4	4
from Southwest dialect area	4	4

5.2 Gender

Gender is a crucial factor in the sociolinguistic studies of social stratification and change (Labov, 2001). In linguistic change from above[8], women usually adopt an incoming prestige form at a higher rate than men (Labov 2001:274). For example, women led the adoption of the new (r)-pronouncing norm in New York City (Labov 1966a); in Belfast, the raising of /ɛ/ from [a] toward [e] in neck, desk, etc. is favored by women (Milroy & Milory 1978:352). Women are usually more conservative than men in the choice of variants, and favor the prestige forms in careful speech.

The preverbal variant of the PDC is considered the standard, prestige form in the Beijing variety of Mandarin/MSM and is expected to be evaluated as the MSM standard by all Mandarin speakers. Among the speakers who are from areas where the preverbal PDC is not the favored form in their local vernaculars, females are expected to show a stronger preference than males

[8] Linguistic change from above refers to "the importation of a new prestige feature from outside the speech community, or the re-distribution of forms with known prestige values within the community" (Labov 2001:274).

for the preverbal PDC when speaking Mandarin. Recruited informants were categorized as either male or female, and the male to female ratio is 1:1 for each super-group of dialect area (i.e. Northern, Southwestern and Southern).

5.3 Age of Contact

It is commonly believed that older second language learners rarely achieve the native-like fluency that children learners do (Gass & Selinker, 2008). Therefore, the earlier in life a speaker has contact with another variety, the more likely the speaker will acquire the variant. Nonetheless, it should be noted that in the present study, it is difficult to control informants' contact age because speakers were mostly recruited on a college campus. About half of the informants (n=14/30) had their first contact with other varieties between the ages of 21-25.

In the present study, I hypothesize that people who have had earlier contact with different Mandarin varieties will acquire the PDC variant of another variety more easily. For example, a Taiwanese with early exposure to Northern Mandarin varieties will be more likely to acquire the preverbal PDC. As mentioned in section 4.4.1, Taiwanese have more freedom of movement than Mainlanders and are expected to have had more face-to-face contact with Mainlanders than vice versa. However, Mainlanders will have had access to Taiwanese Mandarin via study abroad or mass media, such as TV and the internet. Both types of contact will be discussed in the next section.

5.4 Frequency of Input

Frequency of input is crucial in explaining sociolinguistic variation and language change (Ellis, 2002). "Difference between individuals results from their differing histories of input" (Ellis, 2002: 170). Ellis (2002:144) stated that the acquisition of grammar is the frequency-biased

abstraction of regularities out of many thousands of constructions, and an individual's pattern of syntax is determined by interaction and associations of the members in one's social network (2002:164). In fact, individual differences in grammatical accepability judgment directly reflect the pattern of the frequency-biased abstraction in one's linguistic experience, and more recently read sentences are judged to be more grammtically acceptable (Luka & Barsalou, 1998).

In this study, I examine two common types of input of the target variants: social network and media exposure. According to Milroy (2003:549), social network is 'the aggregate of relationships contracted with others' and should be seen as 'the dynamics underlying speakers' interactional behaviors'. Through interaction with one another, individual speakers will possibly accommodate to different features of the others' speech (Trudgill, 1986), and the more they talk to each other, the more they will talk alike (Ellis, 2002). I define media exposure as language input from media (TV, radio, internet, etc) to which a speaker is exposed.

It is noteworthy that althought Taiwanese have better opportunities to interact with Mainlanders face to face than vice versa, the asymmetrical opportunities do not suggest that Taiwanese Mandarin are more influenced by the Mainland Mandarin varieties than the other way around because these face to face interactions only occur during trips, which are usually short and infrequent. In contrast, some Mainland Mandarin speakers are regularly exposed to television broadcasts from Taiwan, which can potentially influence their language use at the individual level, though the role of the broadcast media in language variation, and especially television, has long been disputed (Stuart-Smith, 2006).

Essentially, together with social network, I hypothesize that the more frequently a speaker is exposed to different Mandarin varieties—whether through social network or through media exposure—the more likely the speaker will acquire the other variant. I expect the effect of

social network to be stronger than the effect of media exposure. In the present study, a social network rating was assigned to each speaker. The rating was calculated using the responses to the following questions:

- Do you attend any groups in which speakers of different Chinese varieties are highly involved (e.g. a church, a sports team, or a student association, etc.)?
- Do you attend the same classes or work in the same workplace as at least two Chinese people who speak a different dialect from your own?
- Do you live in a neighborhood with a sizeable Chinese/Taiwanese population?
- Do you voluntarily involve yourself with Chinese students/coworkers in your free time?

And for each of the questions, the respondents were given the following choices of answer:

- No.
- Yes, with 1-5 Chinese involved.
- Yes, with 6-10 Chinese involved.
- Yes, with 11-15 Chinese involved.
- Yes, more than 16 Chinese involved.

The social network index was calculated as follow: 1 point for informants who chose ‘no’; 2 points for ‘1-5 people involved’; 3 points for ‘6-10 people involved’; 4 points for ‘11-15 people involved’; 5 points for ‘more than 16 people involved’ (see appendix for survey questions 81-84). Each question was weighted equally. The sum of the points for each of the four questions represented the individual’s social network index score. The minimum possible score was 5, with 1 point for each question, and the maximum possible score was 20, with 5 points for each question. A low score indicated the speaker had little contact with speakers of other Mandarin

varieties, and a high score indicated greater contact with speakers of other Mandarin varieties. I discuss the media exposure evaluation and rating in a later section.

5.5 Language Attitude

Language attitude is a listener's underlying beliefs about a speaker's group membership (Preston, 2003). People's attitudes towards languages or their varieties often reflect their perceptions of the speakers of these languages (Preston, 2003). In other words, a language variety is given the social characteristics with which its speakers are associated. Ling (1991) studied the variety of Mandarin spoken by the overseas Mainland Chinese community. This community mixed regularly with expatriate speakers of Taiwanese Mandarin. She showed that speakers of different Mandarin varieties were associated with different stereotypes and presuppositions. For example, Taiwanese Mandarin was associated with being soft, wealthy, and elegant, while Standard Mainland Mandarin was seen as being natural, reliable, and kind (1991:34). Ling (1991:50) found that Mainland expatriates' positive attitude to Taiwanese culture had facilitated their accommodation to Taiwanese Mandarin phonologically and lexically, and in general the longer a Mainland Chinese stayed in contact with Taiwanese Mandarin, the more (s)he favored the Taiwanese Mandarin variety, which in turn affected the adoption of features in Taiwanese Mandarin.

At the time, Taiwanese Mandarin was considered by mainlanders to be a prestige variety because it was associated with a socioeconomically more advanced community than China, due to the impact of Taiwanese cultural products since the early 1980s (Zhang 2005:437). Exported from Taiwan and Hong Kong, such pop music, films, and TV dramas represented 'a prosperous modern cosmopolitan lifestyle and a new urban identity' (Zhang 2005:437). Fourteen years after Ling's study, with China having become one of the world's most important emerging economies,

Zhang (2005:431) also observed that Chinese young professionals working in foreign companies in Beijing now speak a "new variety" of Mandarin, which is characterized as a mixture of Mandarin, English, Cantonese, and expressions from Taiwanese Mandarin: the reason being that all these languages index a modern, metropolitan identity. By code-switching among these languages, speakers can portray themselves as they wish to be identified. Speakers' subjective evaluation of Mandarin dialects, especially with regard to their relative prestige, will therefore be considered in the present study.

In the realm of dialect contact, Trudgill (1986:39) also argues that 'if a speaker accommodates frequently enough to a particular accent or dialect, then the accommodation may in time become permanent, particularly if attitudinal factors are favorable.' Such being the case, I hypothesize that an individual is more likely to adopt the non-standard postverbal variant of the PDC variable if the speaker has a favorable attitude toward the variety. In other words, speakers with substrate-influenced post-verbal PDC are more likely to use preverbal PDC if they have a favorable attitude to Beijing/MSM/Northerners.

In order to measure speakers' language attitude, the informants were given an empty map of Greater China and asked to draw boundaries where they thought Mandarin was spoken differently. They were also asked to label these areas with their own impressions, thoughts, or stereotypes of the people who live in each one. However, qualitative analysis of the maps falls outside the scope of this thesis, and will be reserved for future work.

6. Methodology

In order to examine the spontaneous production and perception of PDCs from speakers of different Mandarin varieties, I administered a survey to collect empirical data in support of my

hypotheses. The survey consisted of and was conducted in the order of the following sections: elicitation tasks, acceptability judgments, map labeling, and demographic questions. Demographic questions were given at the end of the map task to avoid any possible interference with the previous tasks.

6.1 Elicitation Task

The elicitation task was geared to elicit the actual production of the target variants. All the responses were typed down on a computer for later analysis. The elicitation task was conducted in the form of one-on-one, face-to-face interviews. There were 11 target sentences and 11 filler sentences as well as 2 picture description questions. This section was designed to elicit the following transitive verbs that are commonly used with the target PDC: *na* (to take), *zhun bei* (to prepare), *da dian hua* (to call), *ji* (to send), *dao* (to pour), *fa* (to send), *song* (to take, to bring), *dai* (to bring), *mai* (to buy). In order to collect enough target variants for later analysis, a valid sample has to contain at least 5 target variants, including post- or preverbal PDCs. If an informant failed to produce at least 7 target variants, the sample would be seen as invalid and the informant would not be qualified for the remaining tasks. Thirty valid samples were collected out of 33 participants.

Since the verb *bang* (to help) is a common substitute for the target PDC in some cases as shown in (43) I sometimes explicitly asked the informants to avoid the use of the verb *bang* (to help) to increase the number of target structures elicited. It was usually the case that when an informant was told not to use the verb *bang* (to help) as in (43a), the target PDC—either (43b) or (43c)—was elicited.

(43) a. 我 幫 你 倒 杯 水
wo bang ni dao bei shui
I help you pour-CL water
'I will pour the water for you.'

b. 我 給 你 倒 杯 水
wo gei ni dao bei shui
I to you pour-CL water
'I will pour the water for you.'

c. 我 倒 杯 水 給 你
wo dao bei shui gei ni
I pour-CL water to you
'I will pour the water for you.'

6.2 Acceptability Test

The acceptability test aimed to elicit speakers' judgments of sentences with pre- or postverbal PDCs. In the acceptability judgment test, the informants were asked to rate the written sentences on a scantron form on a scale from 1 to 5, with 1 being 'extremely unnatural' and 5 being 'perfectly natural'. The ratio of targets to fillers was 1:3—20 targets consisting of 10 preverbal and 10 postverbal PDCs, and 60 fillers (i.e. sentences without the PDC). All tokens and fillers were normalized at a length of 10-13 characters.

Generally, sensible answers are given to judgments on sentences of known grammaticality. However, a syntactically grammatical sentence can be rejected for pragmatic or lexical issues (Henry, 2004). Therefore, before starting the present project, I carried out a pilot test to make sure all the sentences were free of pragmatic or lexical issues. I also mentioned explicitly to the informants during the test that (i) being natural means you can imagine yourself saying that sentence to express a similar meaning and it is also about how much you like the sentence; and (ii) that they should not judge the sentence by its meaning. I directed subjects to look at sentence (44) for an example. I told them that even if their own mom had never cooked in

her life, they should have no reason not to judge it as a grammatically correct and natural sentence.

(44) 媽媽 爲 全 家 煮 了 一 頓 晚餐
mama wei quan jia zhu le yi dun wancan
mom for all family cook-ASP one-CL dinner
'Mom cooked dinner for the family.'

Fillers create general background against which the experimental sentences are judged. According to Cowart (1996), using a mixed filler list as opposed to a pure list can increase the overall ratings on tokens substantially. Therefore, though no special procedures are required for generating filler sentences, the best strategy is to employ a balanced list of fillers that includes approximately equal numbers of sentences at a wide range of acceptability values (Cowart, 1996). For this study, I constructed 60 fillers with various levels of acceptability. The fillers were constructed based on the following schemes, with 20 fillers in each category:

The 'ba' construction. The *ba* construction is a strategy of topicalization in which an object is pre-posed to the pre-verbal position preceded by *ba*. The object of *ba* is the affected item in the event described (Huang, Li, & Li, 2009). However, the occurrence of *ba* is not always obligatory in such topicalized sentences. In some cases, the omission of *ba* makes the sentence ungrammatical whereas in other cases it does not. Fillers of this type were constructed based on the grammatical use of *ba* and the non-use of *ba* in topicalized sentences. The latter were expected to have a moderate level of acceptance because Mandarin does have the mechanism of pre-posing the object to the sentence initial position.

Verb duplication. In Mandarin, verbs—if followed by two constituents—are duplicated in the position between the two constituents. Fillers of this type consist of the grammatical

use of verb duplication and the nonuse of verb duplication where it is necessary. The acceptance rate of the latter is expected to be fairly low.

The use/misuse of the particle 'suo'. In Mandarin, the occurrence of the particle *suo* is optional in most sentences. The use of *suo* is sometimes considered redundant in an informal setting. Therefore, I adopt the particle *suo* to construct fillers of moderate acceptance rating.

6.3 Map Labeling

The purpose of this task was to conduct a qualitative study of the participants' language attitudes toward Mandarin varieties. To connect their social assumptions with the regions where the speakers are from, Preston (2003) suggests that it is useful to ask respondents to draw maps of where they think varieties are different. In the map labeling section, the informants were given an empty map of Greater China and asked to draw boundaries where they thought Mandarin was spoken differently. They were also asked to label these areas with their own impressions, thoughts, or stereotypes of the people who live in each one.

6.4 Demographic Questions

The demographic questions were primarily concerned with informants' dialect background and the social factors mentioned in sections 5 above, including gender, age of first contact, social network, media exposure, and their home dialects (see Appendix for a full list of questions). The last question specifically asked the informants about the use of the pre- and postverbal PDC variants in their home vernaculars. I would therefore be able to make a connection between their home vernaculars and the Mandarin varieties they speak—whether the choice of one variant over the other is influenced by speakers' home vernaculars.

7. Result, Data Analysis and Discussion

In this section, I will present and discuss the statistical results of the data collected. For both the elicitation task and the acceptability judgment test, I will (i) compare the results within groups to investigate informants' choices of the pre- and postverbal variants in each dialect; (ii) compare the results between groups to find whether there are regional differences in choosing the pre- and postverbal variants.

As for the statistical methodology, I will use the Wilcoxon sign-rank test (Wilcoxon, 1945) for within-group comparisons and Wilcoxon rank-sum test (Wilcoxon, 1945) for between-group comparisons. The sign-rank and rank-sum tests are often used as alternatives to the paired Student's t-test to assess the population medians of the two related samples when the population cannot be assumed to be normally distributed. All the results were calculated using R version 2.13.0 (2011-04-13)[9].

7.1 The Elicitation Task

7.1.1 Statistical Result

The following three major structures were produced in the elicitation task:

(45) a. S + *gei* + I.O. + V + D.O.[10]

b. S + V + D.O. + *gei* + I.O.

c. S + *ba* + D.O. + V-*gei* + I.O.

Structure (45a) is the preverbal PDC, and (45b) is the postverbal PDC. Structure (45c) is the 'V-*gei*' sequence, which I also categorize as the postverbal variant because it is often a result

[9] Copyright (C) 2011 The R Foundation for Statistical Computing

[10] I.O. stands for indirect object, and D.O. stands for direct object.

of object pre-posing. If a non-target structure was elicited, the informants were asked 'What else can you say?' in order to increase the likelihood of eliciting the target variants. The following is the result of the elicitation task sorted by the informant's dialect background:

Table 4 Elicitation Task: Taiwan (N=6)

#[11]	postverbal	preverbal	% preverbal
018	5	4	44
006	5	0	0
020	12	0	0
027	9	0	0
028	12	0	0
029	6	0	0
Sum	49	4	8[12]

Table 5 Elicitation Task: North (N=8)

#	postverbal	preverbal	% preverbal
003	0	9	100
007	0	7	100
019	0	11	100
030	1	11	92
012	1	6	86
004	1	4	80
010	3	7	70
022	4	7	64
Sum	10	62	86

Table 6 Elicitation Task: South (N=8)

#	postverbal	preverbal	% preverbal
013	2	8	80
021	3	7	70
005	2	4	66
023	4	4	50
017	8	6	43
031	8	4	33
016	10	5	33
001	5	1	16
Sum	42	39	48

Table 7 Elicitation Task: Southwest (N=8)

#	postverbal	preverbal	% preverbal
002	1	4	80
025	3	9	75
032	2	6	75
024	3	8	73
026	3	8	73
008	4	4	50
015	4	4	50
011	5	3	38
Sum	25	46	65

Table 8 Total % preverbal for each dialect region

Dialect area	North	Southwest	South	Taiwan
% preverbal	87	64	50	8

[11] The column annotates the subject number. Since the informants' names and personal information are required not to be disclosed, I numbered the informants for the convenience of data presentation.

[12] The number is obtained by 49/49+4=8%

Table 8 summarizes the result of the elicitation task: comparing the informants of different dialect backgrounds, informants from the Northern dialect area show a higher probability of spontaneously producing the preverbal PDC than their Southwestern counterparts, followed by the informants from the Southern dialect area.

Comparisons within groups

In order to assess the statistical significance of the data, I used the Wilcoxon sign-rank test (Table 5) to determine whether, for each dialect group, there was a significant difference in producing the pre- and postverbal PDC. In this and the tables to follow, a single asterisk * indicates a result that was statistically significant at the $p < 0.05$ level.

Table 9 Wilcoxon sign-rank test Elicitation Task

Dialect Area	P-value
North	0.014*
Southwest	0.058
South	0.865
Taiwan	0.036*

Table 9 above shows that for Taiwanese speakers, there is a significant difference between their percentage use of each variant ($p = 0.036$). In Taiwan, the post-verbal PDC is the majority variant. Only 4 preverbal structures were produced out of the 53 target tokens elicited. In addition, it should be noted that the informant who produced the four preverbal PDCs came to the U.S. at the age of 16 and had had intensive exposure to the expatriate Mainland Chinese community. This suggests that Taiwanese Mandarin speakers generally favor the postverbal PDC, and early exposure to other Mandarin varieties may indeed help speakers to acquire the

postverbal variant. In contrast, informants from the Northern dialect area have a statistically significant preference for the preverbal PDC ($p = 0.014$).

However, informants from the Southwestern dialect area did not show significant preference for either pre- or postverbal variants ($p = 0.058$). But it should be noted that the p-value is very close to the critical value 0.05, and more than half of Southwesterners (5 out of 8) produced 73-80% of the preverbal PDC, which suggests there is still a slight tendency in this region for using the preverbal PDC.

The Southerners' case is relatively more complicated. Although Table 6 shows that informants from the Southern dialect area produced more postverbal variants than the preverbal ones, statistically, there is almost no difference in producing the pre- and postverbal PDC ($p = 0.865$). Though for Southerners there was no significant difference in producing the pre- and postverbal PDCs, it would be interesting to see if southerners actually produced significantly more postverbal PDCs than their Northern counterparts. Therefore, in the next section, I will make a comparison between groups.

Comparisons between Groups

Taiwanese informants (see Table 4), who were geographically most distant from Northern (Beijing) influence, clearly showed a stronger preference for the postverbal PDC than the three mainland dialect areas in China. Looking just at those three dialect areas, I used the Wilcoxon rank-sum test (Wilcoxon, 1945) to assess if there are significant differences in producing the PDCs because the answers cannot be assumed to be normally distributed.

Let the likelihood of spontaneously producing the preverbal PDC variant for the informants from Northern, Southern and Southwestern dialect areas be *a*, *b*, and *c* respectively. Recall that the result of the elicitation task was a>c>b, with Northerners producing 87%

preverbal PDCs, Southwesterners producing 64% preverbal PDCs and Southerners producing 50% preverbal PDCs (see Table 8). Table 10 shows the result of the Wilcoxon rank-sum test for between-group comparisons:

Table 10 Comparison between groups: elicitation

Groups	p-value
a, b (Northern, Southern)	0.005*
a, c (Northern, Southwestern)	0.027
b, c (Southern, Southwestern)	0.113

*indicates statistically significant difference in a Wilcoxon rank-sum test, $p < 0.05$

Informants from the Northern dialect area produced significantly[13] more preverbal PDCs, compared with their Southern counterparts. Southwesterners lie in between, but their preferences are more similar to those of Southerners than Northerners. However, no significant difference was observed either between the Northern and the Southwestern group, or between the Southwestern and the Southern group.

7.1.2 A Regional Breakdown of the Elicitation Results

In general, high percentages of postverbal PDCs were elicited from the informants of the Northernmost dialect region, Northeast China: the informants from Shenyang (n=1), Tianjin (n=1) and Jinan (n=1) produced 100% preverbal PDCs. Moving south down to the Beijing area, the postverbal PDC started to emerge but the preverbal structure was still the primary structure elicited. The informant from Hebei produced 92% preverbal PDCs and the informant from Beijing produced 70% preverbal PDCs.

[13] I adopt the Bonferonni correction here for the multiple comparisons, according to which the hypotheses should be tested at a significant level of 0.05 /3=0.01667 (the new critical value) to maintain the same error rate as in a single hypothesis test.

Continuing farther south to the central part of China, to regions such as Anhui and Sichuan Province, an approximately equal number of pre- and postverbal PDCs were elicited, with the informant from Hefei (n=1) producing 64% preverbal PDCs, Nanjing (n=1) 66%, and Sihchuan province (n=8) 64% on average. In the Southernmost dialect area, the postverbal PDC was the dominant structure elicited. An average of 48.9% preverbal PDCs were elicited among the 8 Southern informants. Finally, very few postverbal PDCs were elicited from Taiwanese Mandarin speakers. In general, there is a gradually decreasing preference for the preverbal PDC moving from the North to the South. Figure 3 shows the proportion of the preverbal PDC out of all the target variants elicited[14]. The percentile represents the percentage of preverbal PDCs each informant produced during the elicitation task.

[14] Number of Preverbal PDC elicited/total number of pre- and postverbal PDCs elicited

Figure 3[15] The Proportion of Preverbal PDC Elicited by Individual Informants

7.2 Acceptability Judgment

Speakers' perception of variation can be very different from their actual production. In this section, I will move on to the acceptability judgment test to see if informants' opinions about pre- and post-verbal PDCs are consistent with their production of PDCs in the elicitation task.

[15] The background map is adapted from Google Maps. http://maps.google.com/

7.2.1 Statistical Result

In the acceptability judgment test, informants were instructed to rate 20 target sentences, including 10 preverbal and 10 postverbal PDCs, on a 5-point Likert scale with 1 being extremely unnatural and 5 being perfectly natural. The 20 target sentences were given with 60 fillers for the purpose of distraction. Participants were usually more focused on ungrammatical fillers. They often asked questions and spent more time on fillers, and appeared to be unaware of the special significance of the target sentences. This strongly suggests that PDC placement has no **overt** sociolinguistic value for Mandarin speakers.

In this section, I will (i) compare the results within groups to see if informants prefer one variant to another; (ii) compare the results between groups to see if there are regional differences in judging the pre- and postverbal PDC, and if these results are consistent with the elicitation task results. Table 11-Table 14 displays the results of the acceptability test sorted by the dialect area where the informants are from. Each informant's average rating of pre- and postverbal PDC is given to the right of their informant number and gender.

Table 11 Acceptability Test: Taiwan

#	gender	preverbal	postverbal
06	F	2.4	4.6
18	F	3.8	4.8
20	F	3.9	4.4
27	M	3.4	4.9
28	M	2.6	4.2
29	M	3.1	4.7
median		3.25	4.65

Table 12 Acceptability Test: North

#	gender	preverbal	Postverbal
03	F	4.3	4.6
04	F	4.9	4.7
07	M	4.4	3.4
10	M	4.3	4.4
12	F	4.3	4.1
19	M	4.4	2.7
22	F	4.1	4.6
30	M	4.9	4.7
median		4.35	4.5

Table 13 Acceptability Test: South			
#	gender	preverbal	postverbal
1	F	4.1	4.6
5	F	4.9	5.0
13	M	5.0	4.8
16	F	4.8	5.0
17	F	4.5	5.0
21	M	3.8	3.8
23	M	4.1	4.7
31	M	3.9	4.2
median		4.3	4.75

Table 14 Acceptability Test: Southwest			
#	gender	preverbal	Postverbal
2	F	4.9	4.9
8	F	4.0	4.6
11	M	3.7	4.4
15	F	4.3	5.0
24	F	4.6	4.9
25	M	5.0	5.0
26	M	4.8	5.0
32	M	4.1	4.5
median		4.45	4.9

As shown is Table 15, in judging the preverbal PDC, there seems to be a tendency of decreasing preference from the North to the South.

Table 15 Overall rating in the acceptability test				
	North	Southwest	South	Taiwan
Preverbal	4.49	4.43	4.39	3.20
Postverbal	4.01	4.79	4.64	4.60

Comparison within groups

Table 16 Wilcoxon signed-rank test: acceptability	
Area	P-value
North	0.44
Southwest	0.036*
South	0.062
Taiwan	0.036*

Table 16 is the result of the Wilcoxon signed-rank test. It shows whether a statistically significant difference was found between the average ‘naturalness’ rating for pre- and post-verbal PDCs for speakers in each dialect region. For Taiwanese, the average ratings of pre- and postverbal PDC are significantly different from each other. Informants from Taiwan judged the

postverbal PDC as being more natural than its preverbal counterpart, which is consistent with the result of the elicitation task (see Table 4).

As for the informants from the Northern dialect area, the difference between the median judgment values for preverbal and postverbal PDCs is not significant. Therefore, informants from the Northern dialect area do not find either one of the pre-verbal or post-verbal PDC variant to be more natural than the other, a result that is in contrast to their higher rate of production of preverbal PDCs than postverbal PDCs in the elicitation task. The informants from the Southern dialect area did not show a significant preference for either of the variants, either. This is consistent with the results of the elicitation task. Finally, informants from the Southwestern dialect area showed a slight preference for the preverbal PDC, which again is inconsistent with the result of the elicitation task. Table 17 below summarizes the overall result of both the elicitation task and the acceptability judgment. Informants from the Northern and the Southwestern dialect areas showed inconsistent results across the elicitation task and the acceptability judgment test.

Table 17 Preference for pre- and postverbal PDCs across tasks

	Elicitation	Acceptability	Result
North	pre	no preference	inconsistent
Southwest	no preference	post	inconsistent
South	no preference	no preference	consistent
Taiwan	post	post	consistent

Comparison between groups

In this section, I will compare the regional differences in rating the pre- and postverbal PDC by using the Wilcoxon rank-sum test. For informants from Northern, Southern and Southwestern dialect areas, let the ratings of preverbal PDC be a1, b1, and c1 respectively, and

the average of postverbal PDC be a2, b2, and c2 respectively. Table 18 summarizes the result of the Wilcoxon rank-sum test.

Table 18 The Wilcoxon rank-sum test :
Comparison between groups (Acceptability Test)

Preverbal PDC		Postverbal PDC	
Comparison	p-value	Comparison	p-value
a1, b1	0.7105	a2, b2	0.0804
a1, c1	0.8733	a2, c2	0.0342
b1, c1	0.9159	b2, c2	0.7054

Although the results comparing the average ratings of preverbal PDC is Southern < Northern < Southwestern (b1<a1<c1, see Table 15), the Wilcoxon rank-sum test suggests that there are no significant differences between any of them (see Table 18). In other words, statistically, there is no significant regional difference in judging the preverbal PDC.

Comparing the average ratings of postverbal PDC, the result is Southwestern>Southern>Northern (c2>b2>a2, see Table 15), with no significant differences between them, either. This again suggests that statistically, there are no significant differences in judging the postverbal PDCs. In summary, statistically, at the perception level, there are no significant differences among informants of all three mainland dialects in judging the pre- and postverbal prepositional dative construction. Only in Taiwan was there a strong preference in the judgment task for one of the PDC variants (postverbal). On the mainland, informants judged postverbal and preverbal variants to be equally acceptable. However, informants from the Southern dialect area did rate the preverbal PDC lowest (average rating=4.39), compared with their Northern and Southwestern counterparts (average ratings=4.49 and 4.43, respectively), which is consistent for Southerners preference in production for preverbal PDCs.

Substrate Influence: A Summary

In this section, I will discuss the extent to which elicitation and judgment results were consistent, and what I do or do not find surprising with my hypothesis of substrate influence. In order to examine the substrate influence on the production and perception of PDC, I asked informants if their home vernaculars have a preference for either pre- or postverbal PDC (see appendix for survey question 91) because it was difficult (or even impossible) to find this information in the existing literature. Though the results of these judgments are not expected to be accurate since people are bad at giving metalinguistic information, they do provide some kind of guideline. Table 19 summarizes the result of the question:

Table 19 Result of survey question 91:
Does your dialect allow for both preverbal PDC structure and postverbal PDC structure?

Dialect area	Preference for pre-verbal PDC	Both pre- and post-verbal PDC possible	Preference for post-verbal PDC
North	4	4	0
Southwest	2	6	0
South	1	3	4
Taiwan	0	0	8

Looking at the answers to question 91 (see Table 19), none of the Northern home dialects favor the postverbal PDC. Southern home dialects, on the other hand, have a stronger preference for the postverbal PDCs, compared with the Northern ones. Half of the Southern informants (n=4) indicated that their home vernaculars favor the postverbal PDC and 3 of them indicated non-preference, especially the Southernmost three dialects—Min, Hakka, and Yue (Cantonese). And the major dialects in Taiwan—Southern Min, and Hakka— only allow for the postverbal PDC. Recall that in the elicitation task, I found that there is a gradually decreasing preference in general for the preverbal PDC moving from the North to the South. Judging by the

answers given to the question about home dialects, this also happens to perfectly reflect the use of PDCs in regional home dialects (see Table 19). Thus I conclude that my hypothesis about substrate influence has support.

At the perception level, only Taiwanese showed a strong preference in the judgment task for one of the PDC variants (postverbal). All the informants from the mainland judged postverbal and preverbal variants to be equally acceptable. This suggests that home dialects do not have a strong influence on Mandarin speakers' judgments of PDC placement in Mandarin. One possible exception was informants from the North, who rated the postverbal PDC lowest (average rating=4.0111, see Table 15), which is consistent with the survey question 91 that Northern dialects favor the preverbal PDC structure (see Table 19).

Across the production and judgment tasks, both Taiwanese and Southern informants showed consistent results, yet for different reasons. Geographically and politically distant from Beijing, Taiwanese informants are primarily affected by substrate influence and not by the Mainland Standard Mandarin, and therefore it is not surprising that they behaved consistently in both tests, showing a strong preference for the postverbal variant. However, Southern informants are under pressure from both substrate influence and the Beijing influence that I discussed in section 4.5. These competing influences result in a high level of tolerance for both pre- and post-verbal variants.

Southwestern informants, with relatively neutral substrate influence (i.e. pre- and postverbal PDC are generally equally acceptable in Southwestern dialects), surprisingly judged the postverbal PDCs to be more acceptable than the preverbal ones, which cannot be attributed to substrate influence. Thus, while the influence of substrate non-Mandarin dialects can be used to

interpret the production results, they cannot explain why people made the judgments that they did. In the next section, I will resort to social factors to account for the inconsistencies.

7.3 Demographic Questions: Social Factors

In this section, I will discuss the effect of social factors, including gender, age, and social network, at both the perception and the production levels.

7.3.1 Gender

In section 5.1, I hypothesized that Northern female informants should use fewer postverbal PDCs because females tend to be linguistically more conservative than males. Given no substrate influence of Southern dialects, female informants from the North and the Southwest should show a lower level of preference for the non-standard postverbal PDC than their male counterparts. Therefore, I will control for the effect of substrate influence on Mandarin by only looking at the effect of gender on the two northernmost varieties (i.e. Northern and Southwestern dialect areas).

I adopt the Permutation Test to assess the significance of gender difference in both producing and judging the postverbal variant. Table 20 is the result of the gender effect from the Northern and the Southwestern informant groups, tested by both the Permutation Test and the Wilcoxon Rank-sum test.

Table 20 The Gender Effect

	p-value: the north			p-value: the southwest		
	acceptability		elicitation	acceptability		elicitation
	preverbal	postverbal		preverbal	postverbal	
Permutation Test	0.589	0.258	0.492	0.906	0.653	0.94
Wilcoxon	0.3688	0.3807	0.4596	1	0.8817	1

Statistically, there is no significant difference between Northern males and females at either the production or perception level. However, it is noteworthy that for the acceptability test, the Permutation Test p-value for the preverbal PDC (p-value=0.589) is higher than the p-value for the postverbal PDC (p-value=0.258). This suggests that compared with the preverbal PDC, there is a greater gender difference in judging the postverbal PDC. Males rated the postverbal PDC higher than females, compared with the difference in the preverbal PDC, which were relatively similar. This suggests that males show a higher level of acceptance than females in judging the postverbal PDC, which is the non-standard variant.

In the case of the Southwestern dialect area, the result is rather similar. At the perception level, males and females in the Southwestern dialect area did not show significant difference in judging the pre- and postverbal PDCs. Similar to the result of the Northern dialect area, compared with the insignificant difference in preverbal PDC, the gender difference is larger in judging the postverbal PDC. Male informants rated the postverbal PDC higher than their female counterparts, which suggests that females are slightly more conservative than males in the face of the non-standard variant. In addition, it should be noted that in the present study, since the non-standard postverbal PDC is the preferred variant in Taiwanese Mandarin, which is regarded as a prestige variety (Zhang, 2005; Ling, 1991). The postverbal PDC is therefore not a stigmatized form, so that the gender effect is not clearly observed.

7.3.2 Age

As for the age of first contact, I hypothesized that people who have had earlier contact with different Mandarin varieties will acquire the PDC variant of other varieties more easily (see section 5.3). For example, if a Taiwanese has early and frequent contact with people from

Beijing, the person will more likely adopt the preverbal variant. I again will control for the effect of substrate influence on Mandarin by only looking at the age effect on the two northernmost varieties (i.e. the Northern and Southwestern dialect areas).

Recall that in the Taiwanese group, only one informant produced 44% preverbal PDC in the elicitation task, while the remaining group members produced 0% preverbal PDC (see Table 4), and the informant indicated that he/she had had relatively early contact with other varieties at the age of 16. Also, Northern and Southwestern informants with early contact demonstrated higher acceptability for the postverbal PDC. In the Northern group, informants 03 and 22 had early exposure (before the age of 16) to other varieties, and therefore showed higher levels of acceptance for the postverbal PDCs than the preverbal ones. In the Southwestern group, informants 008 and 015 also had early exposure (before the age of 16) to different Mandarin varieties, and demonstrated significantly higher levels of acceptance for the postverbal PDC (see Table 14). Thus, early exposure to other varieties appears, as expected, to increase the likelihood of adopting the variants in those varieties. (For regression analysis on age effect, see section 667.3.4.)

7.3.3 Social Network

In section 5.4, I hypothesized that a speaker's choice of variants is also influenced by that speaker's social network. Informants were given 4 questions regarding their social network (see section 5.4), and the individual informant's social network index is the summation of the points from each question. Table 21 to Table 24 are the survey result of the social network questions. NI stands for 'social network index'. The minimum possible NI score is 5, and the maximum possible score is 20. The higher the score, the more contact a speaker has with speakers of other Mandarin varieties.

Table 21 Social Network: Taiwan				
#	Pre-verbal	Post-verbal	%pre-verbal	NI
006	2.4	4.6	0%	5
018	3.8	4.8	44%	17
020	3.9	4.4	0%	12
027	3.4	4.9	0%	5
028	2.6	4.2	0%	5
029	3.1	4.7	0%	5

Table 22 Social Network: South				
#	Pre-verbal	Post-verbal	% pre-verbal	NI
001	4.1	4.6	17%	11
005	4.9	5	67%	11
013	5	4.8	80%	13
016	4.8	5	33%	19
017	4.5	5	43%	12
021	3.8	3.8	70%	18
023	4.1	4.7	50%	11
031	3.9	4.2	33%	12

Table 23 Social Network: North				
#	Pre-verbal	Post-verbal	% pre-verbal	NI
003	4.3	4.6	100%	13
004	4.9	4.7	80%	7
007	4.4	3.4	100%	9
010	4.3	4.4	70%	10
012	4.3	4.1	86%	11
019	4.4	2.7	100%	7
022	4.1	4.6	64%	17
030	4.9	4.7	92%	10

Table 24 Social Network: Southwest				
#	Pre-verbal	Post-verbal	% pre-verbal	NI
002	4.9	4.9	80%	12
008	4	4.6	50%	17
011	3.7	4.4	38%	13
015	4.3	5	50%	6
024	4.6	4.9	73%	12
025	5	5	75%	7
026	4.8	5	73%	13
032	4.1	4.5	75%	8

Social Network v.s. Elicitation

I ran a regression analysis of the social network indices and the percentage of preverbal PDCs elicited from each informant (Table 25). Only Taiwan showed a significant correlation between social network and the percentage of preverbal PDCs elicited—the more a speaker has contact with other Mandarin varieties, the more likely the speaker will produce the preverbal PDC. However, since there was one Taiwanese informant producing 44% preverbal PDCs, with the remaining group members producing 0% preverbal PDC, it might be a result of early contact (see sections 7.3.2), instead of social network[16]. As for the Northern, Southwestern, and Southern groups, no significant correlation was observed, which suggests that in the case of the

[16] Ideally one would need to carry out a multifactor analysis to test for the effects of the social factors independently, but this falls outside the scope of the thesis.

PDC, having speakers of other Mandarin varieties in one's social network has no or little influence on one's production of preverbal PDCs.

Table 25 Regression: Social network v.s. elicitation (%preverbal PDC)				
	North	Southwestern	South	Taiwan
P-value	0.244	0.558	0.787	0.037*
Multiple R-squared	0.218	0.060	0.013	0.705
Correlation	-0.466	-0.246	0.115	0.840

Social Network v.s. Acceptability

The following is the statistical regression analysis of the social network indices and the level of preference for the preverbal PDC. The difference between average ratings for the preverbal PDC and the postverbal PDC represents the preference for the preverbal PDC: the higher the value is, the more an individual informant favors the preverbal PDC.

According to Table 26, the Northern dialect area showed a significant correlation between social network and the preference for preverbal PDC (p-value=0.0408<0.05). For Northerners, without the substrate influence of southern dialects, the more one is exposed to other varieties, the higher level of acceptance one will have. It should also be noted that the p-value for Taiwan is 0.09352 (larger than 0.05 but smaller than 0.10), which means, at the significance level=0.10, statistically, there is a significant correlation between social network and the preference for preverbal PDC as well. In the case of Southwestern and Southern dialect areas, the correlation is not significantly observed because informants from the two areas did not show preference for either of the variants in the previous elicitation and acceptability judgment tests. Therefore, it is reasonable that statistically there is no significant relation between social network and acceptability judgment for informants from the Southern and Southwestern dialect areas. In

conclusion, social network indeed influences the choice of pre- or postverbal variant, and the influence of social network is stronger at the perception level than at the production level.

Table 26 Regression: Social network v.s. Acceptability				
	North	Southwestern	South	Taiwan
P-value	0.041*	0.751	0.281	0.094**
Multiple R-squared	0.529	0.018	0.190	0.546
correlation	-0.728	-0.134	0.435	0.739

7.3.4 Media Exposure

Media exposure was measured by asking the informants 'Do you often watch Taiwanese television programs?' (see appendix for survey question 90). The informants were given the following choices of answer:

① No.

② Yes, but no more than five hours a week.

③ Yes, 5-10 hours a week.

④ Yes, 10-15 hours a week.

⑤ Yes, more than 15 hours a week.

The number of the choice represents the frequency of contact. The greater the number is, the more frequent one had been exposed the Taiwanese television programs. To assess the influence of media exposure on the perception and production of PDC, I put all of the mainlanders together and ran a regression against media exposure. Table 27 is the Analysis of Variance (ANOVA) of social factors against the acceptability test, and Table 28 is against the elicitation task. In both tables, I also include age of contact, and social network score to assess their influence for all of those mainland speakers across dialect areas.

Table 27 Analysis of Variance (ANOVA) Table: Acceptability					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Media	2	1.96	0.98	4.067	0.036*
Age	3	0.608	0.202	0.841	0.49
NI	1	0.104	0.104	0.431	0.52
Residuals	17	4.098	0.241		

Table 27-1 Coefficients:			
	Estimate	Std. Error	Pr(>|t|)
factor(Media)2[17]	-0.681[18]	0.264	0.020*
factor(Media)3	-0.635	0.382	0.115
factor(Age)2	0.035	0.220	0.876
factor(Age)3	-0.212	0.624	0.738
factor(Age)4	-0.655	0.555	0.254
NI	-0.024	0.036	0.520

Table 28 Analysis of Variance (ANOVA) Table: Elicitation					
	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Media	2	0.332	0.166	3.565	0.051*
Age	3	0.048	0.016	0.34	0.797
NI	1	0.034	0.034	0.74	0.402
Residuals	17	0.793	0.047		

Table 28-1 Coefficients:			
	Estimate	Std. Error	Pr(>|t|)
factor(Media)2	-0.251	0.116	0.046*
factor(Media)3	-0.286	0.168	0.107
factor(Age)2	-0.064	0.097	0.520
factor(Age)3	-0.088	0.274	0.752
factor(Age)4	-0.143	0.244	0.565
NI	-0.014	0.016	0.402

**p-value<0.01, *p-value<0.05

[17] The number 2 represents the choice No.2 in the survey question—watching Taiwanese for no more than five hours a week.

[18] A speaker's level of acceptance for the postverbal PDC is calculated as 'the average rating of preverbal PDC- the average rating of preverbal PDC'. The lower the value is, the more one like the preverbal PDC. Thus a negative correlation coefficient suggests that higher Taiwanese media exposure correlates with a higher judgment value of post-verbal PDCs.

Overall, media exposure has a significant effect at both the perception and production level, and it is the only social factor that shows a significant result in this multiple regression. According to the tables above, it has a greater influence on the acceptability test than on the elicitation task. More importantly, the coefficients (see Table 27-1 and Table 28) confirm the direction of the effect—a high Taiwanese media exposure score correlates with a high judgment value of post-verbal PDCs. Interestingly, according to Table 27-1, watching less than 5 hours/week of Taiwanese television program raises the judgment value of the postverbal PDC variant the most. Watching more than five hours, however, does not significantly increase the acceptance level of the postverbal variant, compared with watching less than five hours. In other words, certain amount of media exposure indeed helps to improve the 'naturalness' of a non-native variant.

On the other hand, age of contact and social network do not have significant influence on both tests for mainlanders as a whole, which again supports the claim that speakers' perception is more easily influenced than their actual production, so at the perception level there are more factors that come into play, resulting in the inconsistency between the production and perception where the pre- and postverbal PDC variants were judged to be equally acceptable.

7.3.5 Summary

In this section, I will summarize the competing and complementary influences of substrate influence and social factors on PDC variant choice. In the case of syntactic variation, I have—though through anecdotal evidence from non-linguist informants—shown that the age of contact and social networks do not have a comprehensive effect on informants across the Mainland, but only regional or restricted influence on individuals. Only media exposure has a comprehensive effect on informants of all mainland dialect areas. In addition, social factors in

general have stronger influence at the perception level than at the production level. Therefore, the perception of variants is influenced by more factors than the production, which results in a higher level of inter-individual variation within a group.

The inconsistency between the results of elicitation and acceptability tasks for Northerners can be accounted for by the competing effect of substrate influence and social factors. At the community level, substrate influence plays a crucial role in producing the preverbal variants. However, the effects of social network and age of contact counteracted the substrate influence in judging the PDC variants at the individual level. Informant 03 and 22, who rated the postverbal PDCs significantly higher[19] than the preverbal ones, had the highest and the second highest social network indices, respectively, among the 8 Northern informants, and both of them indicated early exposure to other varieties (before the age of 16). Therefore, it can also be inferred that what the informants think they would say can be very different from what they would actually say.

In the Southwestern group, informants 008, 011, and 015 show clear preferences[20] for the postverbal PDC in the acceptability judgment task. Informants 008 and 011 have the highest and second highest social network indices, 17 and 13 respectively, which means the two informants had relatively intensive exposure to different Mandarin varieties. Also, informants 008 and 015 had early exposure (before the age of 16) to different Mandarin varieties, which increases the likelihood of being influenced by speakers of other varieties.

Media exposure also influences the choice of PDC variants. For all the mainland informants, Taiwanese television programs show a greater effect on the acceptability test than

[19] The rating for postverbal PDC exceeds the rating for preverbal PDC by at least 0.3 points.

[20] Their ratings for the postverbal variant exceed the preverbal variant by at least 0.6 points.

the elicitation task, both effects being significant. This provides a reasonable account for mainlanders judging postverbal PDCs tolerantly, with no significant difference between the pre- and postverbal variants across all dialect areas.

In summary, the influence of social factors on individual informants do account for the inconsistency across the elicitation and acceptability judgment tests. Social network and age of contact influence individual speaker's perception of variants: the more frequently one is exposed to a different variety the more natural the variety sounds. The younger a speaker has contact with a different variety, the more natural the variety sounds. This further suggests that linguistic perception is different from production: in the case of syntactic variation, the perception of variants is more easily influenced by social factors than simply the substrate influence.

8. Conclusion

Syntactically, the postverbal PDC is an apparent violation of the long-held Postverbal Constraint in Chinese syntax. However, based on Larson (1988) and Sybesma (1999)'s studies, I argued that there is an empty verb duplicated between the direct object and the prepositional dative phrase, and therefore the postverbal PDC is not a violation of the Postverbal Constraint. I also suggested that the PDC can be attached either to the right of the duplicated empty verb or to the left of v'. This floating structure allows Mandarin speakers to produce both pre- and postverbal PDCs.

In the realm of sociolinguistics, the use of the PDC in Mandarin is influenced by speakers' home vernaculars, along with other social factors. For speakers of Mandarin, at the production level, the choice of pre- or postverbal PDC is primarily influenced by their home vernaculars. In the elicitation task, the probability of producing preverbal PDC was seen to gradually decrease from the North to the South. This appears to reflect the use of the PDC in regional dialects, at

least according to my informants. Informants who were native speakers of Hakka, Yue and Min, the Southernmost three dialects, had a strong preference for the postverbal PDC while native speakers of the Northern and Southwestern dialects favored the preverbal PDC in general. In addition, the substrate influence affects the choice of variants only at a community level, not at an individual level. For example, four of the Taiwanese informants indicated preference for the postverbal PDC even if they do not speak any dialects at all.

However, at the perception level, home vernaculars play a much less important role in judging sentences with pre- and postverbal variants. In the acceptability test, informants from the mainland did not show significant difference in judging the acceptability of pre- and postverbal PDCs. The postverbal PDCs are equally acceptable to informants across dialect areas. Although there are individual differences among the informants, no significant regional difference was found between groups on the Mainland. Taiwanese informants, however, actively preferred the post-verbal variant in the judgment task. This shows that they are only somewhat influenced by the Beijing standard language norms.

Therefore, I turned to social factors to account for the inconsistency between the production and the perception of the PDC variants. The age of contact, social network and media exposure are all responsible for the discrepancy between the production and perception of the PDC. Individuals with early exposure to different varieties demonstrated higher level of preference for the non-locally-preferred PDC variant at both the perception and production level. I have also shown that for Northern informants there is a significant positive correlation between social network and the level of acceptance for the postverbal PDC.

Moreover, speakers' preference for the pre- and postverbal variants is not only influenced by speakers' home vernacular(s), but also speakers of other Mandarin varieties. Given the strong

political and cultural influence of Beijing, informants from the Southern and Southwestern dialect areas have also developed high level acceptance for the preverbal PDC. Taiwanese Mandarin, through the broadcast of its popular television programs, also has a significant influence on all Mainlanders, especially at the perception level. This explains why even Northern speakers developed a high level of tolerance for the postverbal PDC. A gender effect, however, was not clearly observed in this study because the non-standard postverbal variant is not a stigmatized form, but males did show a slightly higher level of acceptance for the postverbal PDC.

In summary, for Mandarin speakers, there is no overt sociolinguistic value attached to the placements of PDC variants. Variation in the placement of the PDC in Mandarin is substantially constrained by the substrate influence of speakers' regional vernaculars. However, when asked to make overt judgments about the naturalness of pre- and post-verbal PDCs, mainland respondents showed considerable tolerance for both variants, while Taiwanese respondents exhibited a significant preference for the postverbal variant. Under the influence of social factors, as well as Standard Mainland Mandarin and Taiwanese Mandarin through television programs, informants from across the mainland showed high level of acceptance in judging the pre- and postverbal PDC. Taiwanese media exposure is the only factor that has a comprehensive effect on informants across the Mainland—a positive correlation between Taiwanese media exposure and the judgment value of postverbal PDCs, but certain amount (5-10 hrs/week in this study) of exposure helps to improve the 'naturalness' of a non-native variant.

Thanks to the wide penetration of new media channels, exposure to other varieties of Mandarin might be increasing for speakers of all dialects. Although the Chinese state promotes a single standard Mandarin, it is clear that Mandarin is already diverse, and that varieties of

Mandarin will only continue to acquire new social meanings, as they are heard more frequently by more people in more places.

Suggestions for improvement

In the present study, the sample size is rather small. Therefore, one extreme value can affect the statistical result considerably. Given the small sample size, if one informant has a relatively different background from other informants in the same dialect area, the informant may affect the result of the area to a large extent. A larger sample size would also allow for the use of *t*-test, which is under the assumption that the two compared populations follow normal distribution. In addition, since not all the Southern dialects favor the preverbal PDC, it will make more sense to further divide the Southern dialects into two groups based on the preference of pre- and postverbal PDCs, which will make the substrate influence of Southern dialects more clearly observed. Sociolinguistic value

As for the measurement of social network, it is difficult to collect data for the numbers of the varieties that the informants were actually exposed to because Mandarin speakers are usually not very aware of the varieties that they are exposed to, not to mention to identify the numbers of different varieties since there are so many different Mandarin varieties.

Appendices

Appendix- Survey Questionnaire

本研究之目的爲了解受測者的母語語言使用。
本研究共分爲三個部分：第一部分爲誘發使用測驗，第二部分爲接受度測驗，第三部分爲地圖標記與簡答。誘發使用測驗將以面談方式進行，接受度測驗爲單一選擇題，簡答部份則是以手寫方式作答。您所提供的答案將只作爲學術研究之用，不會用於其他任何用途。本研究亦不涉及隱私，也不會要求您留下任何聯絡方式，請安心作答。

This research aims to examine the use of respondents' native language.
There are three parts to this survey: an elicitation task section, an acceptability judgment section, and a map labeling section. They will be in the form of an interview, multiple choice questions, and a hand-drawn map, respectively. The questionnaire will not require you to provide any personal or confidential information. Please answer the questions honestly and to the best of your ability.

第一部分：誘發使用測驗 Part One: Elicitation Task

本測驗將以一對一面談方式進行。在這個部分的面談當中，你將會被給予數個情境問題，請依據情境，用完整的句子回答問題。請注意：在本測驗當中，問題將以口述方式呈現。

This is a one-on-one interview. You will be given several scenario questions, please answer the questions with complete sentences. (Note: Questions will not be presented to subjects in a written form.)

No.	Questions
1.	你突然接到電話，你的朋友打電話來，需要一份文件的電子檔，他告訴你所有的資訊而且你願意幫忙寄這個電子郵件，你會跟他說什麼？[21] You get a call from your friend asking for a document by email. He tells you all the information you need and you are willing to help. What would you say?
2.	今天下課之前，有個同學邀請你去他家吃飯，你沒有很想去，因爲你想要跟家人多一點相處時間，你會如何回復同學的邀約？ Right before you leave class, a friend invites you over for dinner. You don't really want to go because you want to spend some quality time with your family. What would you say to your friend?
3.	假設你的媽媽要你跟餐廳確認今晚的晚餐訂位，你會怎麼回覆媽嗎？ Your mom is asking you to confirm the time and the number of participants for a dinner tonight at a restaurant. What would you say in response?
4.	今天是畢業典禮，你跟你的好朋友即將分離，你想要對你的好朋友獻上祝福，你會怎麼跟你的朋友說？

[21] I will explicitly tell participants not to use *bang* (to help) to increase the chance of using of AP structure.

	Today is Graduation Day. You are leaving your good friends. You want to give your best wishes to one of them. What would you say to him or her?
5.	你需要一篇期刊論文作爲你某項作業的參考資料。你知道你的朋友 有這篇文章，你希望他可以把這篇文章用電子郵件發過來，你會怎麼跟他說？You need an article as a reference for an assignment. You know that your friend has the article and you would like him/her to email it to you. What would you say to your friend?
6.	你在家裡接到一通電電話，是一個親戚打來的，他要找你的爸爸，但是你的爸爸現在不在家，你會怎麼回答這位親戚？ You get a call at home. It is from a relative. He is looking for your dad, but your dad is not at home. What would you say to the relative in response?
7.	你即將要和一群朋友吃飯，但是有一個人遲遲沒有出現，你是唯一有這個人的電話號碼的人，你會跟其他人說什麼？ You are going to have a dinner with a bunch of friends, and you are all waiting for one last person. You happen to be the only one who has the person's number. What would you say to the other people?
8.	在上學的路上有人請你幫忙寫問卷，但是你已經快要遲到了，沒有辦法寫這份問卷，你會怎麼回答請你幫忙的人？ Someone asks you participate in a survey on your way to school. You are almost late and won't be able to help with the survey. What would you say in response to the person who asks for help?
9.	你去好友家中做客，如果口渴了想要喝水，你會跟主人說什麼？ You are a guest at a close friend's house. If you feel like having a cup of water, what would you say to the host?
10.	你的好友約你下課後一起去吃晚餐聊天，但是你已經事先有其他安排了，你會怎麼回答？ Your friend wants to grab a meal with you after class, but you already have plans. What would you say in response?
11.	你的媽媽要你聯絡一位久沒碰面且目前人在美國的遠親，但是你唯一有的連絡方式就是他的電子郵件地址，因此你會跟媽媽說？ Your mom wants you to contact a relative who you have not seen for a long time. However, the only contact information you have is his/ her email address. What would you say to your mom?
12.	在航空公司櫃檯，地勤人員告訴你，你原本訂的班機因爲天氣因素取消了，並且他們重新爲你安排了另一班班機，但是顯然地這個重新安排的班機你無法配合，你會如何跟地勤人員反應？ At the check-in counter of an airline, the clerk tells you that your flight is cancelled due to the bad weather, and that they have already rescheduled another flight for you. Obviously, the rescheduled flight does not suit your schedule. What would you say to the airline staff?
13.	一個在國內的朋友一直想要一個美國的名牌包包。你買下了這個包包當作她的生日禮物，你會怎樣告訴她這個好消息？ A friend back home has wanted an American brand name bag for a while. You would like to buy the bag for her as a birthday present. What would you tell her about the good news?

14.	你今天要參加一個朋友的聚會，結果你遲到了。所有人都在等你，請問你會怎麼跟大家解釋？ You are attending a casual get-together with your friends, but you are late. Everyone is waiting for you. What would you say to apologize?
15.	你去醫院探望一位朋友，他趟在床上想要吃藥，但是杯子裡沒有水，你知道水在哪並且想要幫忙。你會跟他說什麼？ You are visiting a friend at the hospital. He is in bed. He needs to take some medicine but the glass is empty. You feel like doing something to help. What would you say to him?
16.	你要去拜訪一位朋友，他會在機場接你，然而你的飛機因爲大雪延誤了一小時，你想要打電話通知這個朋友，你在電話中會怎麼跟他說？ You are visiting a friend that you know very well. He is going to pick you up at the airport. However, the flight is delayed for an hour due to a blizzard. You want to call the friend and let him know about the delay. What would you say on the phone?
17.	你等一下下課後要跟你的朋友去吃飯，但是你不知道幾點下課，所以希望能夠用短信聯絡。你會在上課前跟你的朋友說什麼？ You are going to have dinner with a friend after class, but you are not sure when your class will let out. You would like to keep in touch by text. What would you say to your friend before class?
18.	跟朋友聊天的時候，朋友說了一句話你聽不是很懂，你會如何問他？ You are talking with a friend. Your friend just said something that you do not understand. What would you say to ask him to explain?
19.	你的老闆來你家作客，他突然喉嚨不太舒服開始咳嗽，剛好家裡有熱水，你會跟他說？ Your friend comes to visit. He has a sore throat and starts to cough. You know you have some hot water available. What would you say to him?
20.	你正在跟你的好友們聚餐，但是你等一下還有事情，必須提前離開，你會怎麼跟其他人說？ You are eating with your friends, but you have to leave early. What would you say to the other people?
21.	你剛剛跟你的朋友碰面，他離開時忘了帶走自己的外套，他打電話告訴你他會回來拿，但是你想直接把外套送去，你會跟他說？ You just met your friend and he forgot to take his jacket with him when he left. He called and told you that he will come back and pick it up. However, you are willing to drop his jacket off at his place. What will you will tell him?

22. 請使用完整的句子描述右方圖片。您可以使用超過一個以上的句子。 Please describe the picture on the right with complete sentences. Feel free to use as many sentences as necessary.	 Figure 4 Picture for Elicitation (1)
23. 請使用完整的句子描述右方圖片並且猜測他們講電話的對象是誰。您可以使用超過一個以上的句子。 Please describe the picture on the right with complete sentences and guess who they might be talking to. Feel free to use as many sentences as necessary.	 Figure 5 Picture for Elicitation (2)

第二部分：接受度測驗 Part Two: Acceptability Test

在本問卷當中，我們將會給予你一個特定情境。請根據情境，配合本身的使用習慣，在 1 到 5 的量表上，標選出這個句子聽起來對你的自然程度。請注意，作答時的思考方向爲：「我會不會這樣說？這樣的說法自不自然？」請依個人語言使用習慣及直覺作答。1 表示這樣的講法聽起來非常不自然，自己從不會這樣使用。5 表示非常自然，完全可以接受，而且自己也可能使用類似的說法。請根據句子的標號在卡片上塗卡作答。

In this part of the survey, you will be rating sentences under a given context. Based on how natural they sound to you and what you would say in your everyday life, please rate the following sentences on a scale from 1 to 5, with 1 being extremely unnatural and 5 being perfectly natural. Please note that the criterion for this judgment is ‘how natural would the sentence sound in your own speech?’ Please respond to the sentences based on your personal use of the language and native intuition. Please provide your rating for each numbered item in the corresponding space on the provided scantron form.

情境：這是一個非常輕鬆，幾乎沒有壓力的場合。你正在跟你最熟悉的朋友閒聊或是分享生活中的小事。你使用的是最親切而且沒有距離的語言。

Scenario: In judging the following sentences, pretend you are talking to a close friend or a family member about something trivial. There is no stress or tension. You may use casual speech with informal language.

Filler Type1: Lack of 'ba' where it is obligatory
1. 他水打翻了，衣服也弄濕了。 He spilled the water and his clothes got all wet.
2. 我課本放進書包裡，才不忘記帶。 I put the textbook into my bag so that I will not forget to bring it.
3. 下午會下雨，出門時記得窗戶關上。 It will rain this afternoon. Remember to close the window before you leave.
4. 他飯都吃完了，現在應該不餓了。He ate all the food so he is not hungry anymore.
5. 弟弟媽媽惹火了，被痛打一頓。My brother irritated my mom and was punished for it.
6. 他小孩打了一頓，氣終於消了。He was no longer angry after he punished his child.
7. 我已經明天的作業都寫完了。I have already done the homework for tomorrow.
8. 我下午上課的時候東西拿給你。I will give it to you in class this afternoon.
9. 吃晚餐的時候，我飯打翻了。I overturned a bowl of rice at dinner.
10. 姊姊洗碗的時候不小心碗打破了。My sister broke the bowl while doing dishes.
11. 不要把自己的想法加諸在別人身上。Do not impose your ideas on other people.
12. 他今天早上太匆忙，把衣服穿反了。He was in such a rush that he put his shirt on inside out.
13. 記得把下午要報告的資料準備好。Please get the materials ready for the presentation in the afternoon.
14. 媽媽把大哭的孩子一把抱進懷裡。The mother held the crying child in her arms.
15. 他把身上所有的錢都花光了。He spent all the money he had on him.
16. 我已經把　心全部都用完了。I have run out of patience.
17. 突然來的大雨把衣服都弄濕了。The sudden rain drenched the clothes.
18. 他把所有的事情都搞砸了。He messed up everything.
19. 你竟然把明天要考試都忘記了。You even forgot that there is an exam tomorrow.
20. 明天一定要把期末報告寫完。I must finish my final paper tomorrow.

Filler Type2: (Lack of)Verb duplication where it is necessary
1. 他跑步得很快，沒人追得上他。He runs so fast that no one can keep up with him.
2. 妹妹唱歌得很好，大家都愛聽。My sister sings so well that everyone likes to listen to her singing.
3. 我昨天考試得很糟糕，很不開心。I did very poorly on the exam yesterday so I

was really unhappy.
4. 她寫字得很慢，功課都寫不完。She wrote so slowly that she couldn't even finish her homework.
5. 弟弟吃飯得很快，一下就吃完了。My brother ate so quickly that he was finished in no time.
6. 他看書看得很累，快要睡著了。He was so exhausted from reading that he even fell asleep .
7. 我去日本過兩次，很喜歡日本。I have been to Japan twice and I like it a lot.
8. 他寫字在黑板上，跟大家說明。He wrote on the blackboard to make things clear to everyone.
9. 睡覺了三個小時，我還是很累。I still feel tired after sleeping for 3 hours.
10. 我寫作業了五個小時還沒寫完。I have been doing homework for 5 hours but haven't finished yet.
11. 他上課上得很累，一回來就睡了。He went to bed as soon as he got back from the tiring class.
12. 路途中我們坐車坐了很久。It was a long journey.
13. 今天是　末，我睡覺睡得很晚。It is the weekend today so I woke up late.
14. 明天要上課，看電視不要看太晚。Don't watch TV too late. You have to go to class tomorrow.
15. 爸爸看報　看得很　心。Dad is reading the newspaper very intently.
16. 　　唱歌唱得很大　。The neighbor is singing very loudly.
17. 爸爸每天都工作工作得很累。Dad is tired from working every day.
18. 他　鋼琴　得真的非常好。He plays piano very well.
19. 媽媽打電話打得很開心。Mom enjoyed talking on the phone.
20. 她在房間練習鋼琴練習了很久。She has been practicing piano in her room for a long time.

Filler type3: the use of topic marker *suo*

1. 這就是他所結婚的地方。This is where he got married.
2. 他是我所愛了三年的人。He is the person that I loved for 3 years.
3. 在那場戰爭中所死去的人太多。Too many people died during the war.
4. 這裡有我所懷念的一切。This place is all I long for.
5. 他所想的跟我不太一樣。What he thinks is different from what I think.
6. 他就是我所想要找的人。He is the person that I am looking for.
7. 明天就是他所出發的日子了。Tomorrow is the day he will set out.
8. 這就是他所生氣的原因。This is the reason he gets angry.
9. 這些是政府所重視的問題。These are the problems that the government is most concerned with.
10. 他在那場意外中所喪生。He died in that accident.
11. 他所花的時間是我們所看不到的。What we don't see is the time he spent.
12. 他所重視的是你花了多少時間。What he pays the most attention to is the amount

of time you‘ve spent.
13. 我所看到的是你沒有用心。I did not see that you care.
14. 這些才是我想知道的事。This is what I want to know.
15. 很多事情不如表面所看到的。Often, things are not as good as they may appear on the surface.
16. 這房子就是我多年來所想要的。This house is what I have wanted for many years.
17. 明天就是你所期待已久的日子。Tomorrow is the day you've long awaited.
18. 你所看不到的是他平時的努力。What you don't see is how much effort he puts in.
19. 你確定這些都是你所想要的嗎？Are you sure that these are what you want?
20. 事情跟我所想的差了很多。Things are much different from what I thought.

Token 1: Preverbal PDC structure

1. 你現在口渴嗎，我給你倒杯水。Are you thirsty? I will get you a cup of water.
2. 世事難料，您給孩子買保險了嗎。This world is unpredictable--have you purchased a health insurance package for your kids?
3. 外面在下雨，我給你拿把雨傘。It is raining outside. I'll get you an umbrella.
4. 我去他家吃饭，順便给他带菜。I went to his place for a meal, and brought some food with me.
5. 剛给他發信了，會给我回的。I just emailed him. He will get back to me.
6. 妹妹給媽媽泡了一杯茶。Little sister brewed mom a cup of tea.
7. 我等一會兒給你發短信。I will text you later.
8. 我給你準備了一個禮物。I have prepared a gift for you.
9. 我給媽媽寫了一張卡片。I wrote mom a card.
10. 他请我吃饭，順便让我给他带酒。He invited me to a dinner and had me bring over some wine.

Token 2: Preverbal PDC structure

1. 外婆織了一件毛衣給我。Grandma knitted me a sweater.
2. 他下星期會打電話給我。He will call me next week.
3. 我明天會寫一封信給你。I will write you a letter tomorrow.
4. 我上完課以後打電話給你。I will call you after class.
5. 他昨天打了一通電話給我。He gave me a call yesterday.
6. 爸爸回來時買了一個禮物給我。Dad bought a gift for me on his way back.
7. 他從美國寫了一張明信片給我。He sent me a postcard from the US.
8. 外婆過年時包了一個紅包給我。Grandma gave me a red envelope on New Year's Day.
9. 我等一會兒發短信給你。I will text you later.
10. 媽媽買了一個新手機給弟弟。Mom bought a new cell phone for little brother.

第三部分：地圖標記與簡答 Part Three: Map Labeling

說明：本測驗的目的是爲了解您對於大中華區中不同地區普通話使用的印象與個人看法。請在以下的空白地圖上，標記出您對於各地普通話使用的印象與個人看法。請先爲這些區域畫上疆界，再標記上您對於這些地區普通話使用的印象與個人看法。當您完成這個測驗後，請繼續回答下面問題。

This is to understand your personal impression of the different Chinese varieties in the Greater China Area. You will be given a map of the Greater China Area. Please draw boundaries where you feel people speak Mandarin Chinese differently and write in labels for each of these areas. To label these areas, please write down any impressions, thoughts, or stereotypes that you have of the region. When you finish the map task, please answer the question that follows.

Figure 6 Map for the Labeling Task

這是一個情境問題。如果一位正在學中文的朋友考慮到台灣學習中文並且詢問你的看法，請問你會給他怎樣的意見？

This is a scenario question. A friend of yours is thinking about studying abroad and asks you, ‘what are your thoughts on studying Chinese in Taiwan instead of Mainland China?’ What advice would you give to your friend?

第四部分：社交網絡及個人基本資料 Part Four: Personal Information

這個部分是要了解您平日的社交網絡。以下五個問題是要了解您與不同地區人民互動的緊密程度，請在卡片上回答一下問題。

This section is to understand your social network, or how integrated you are with people from different regions. Please mark on the scantron to answer the question.

81. 你是否經常參加以中國大陸/台灣地區人民爲主要組成的份子的教堂，體育活動或是其他任何學生組織？

◯ 無。
◯ 有，1-5 人。
◯ 有，6-10 人。
◯ 有，11-15 人。
◯ 有，16 人以上。

Do you attend any groups in which speakers of different Chinese varieties are highly involved (e.g. a church, a sports team, a student association, etc.) ?

◯ No.
◯ Yes, 1-5 people are involved.
◯ Yes, 6-10 people are involved.
◯ Yes, 11-15 people are involved.
◯ Yes, more than 16 people are involved.

82. 你的班上或是工作場所中是否有超過兩位以上的中國學生或同事說不同的方言？

◯ 無。
◯ 有，1-5 人。
◯ 有，6-10 人。
◯ 有，11-15 人。
◯ 有，16 人以上。

Do you attend the same classes or work in the same workplace as at least two Chinese people who speak a different dialect than your own?

◯ No.
◯ Yes, 1-5 people.
◯ Yes, 6-10 people.
◯ Yes, 11-15people.
◯ Yes, more than 16 people.

83. 你平常是否和住在附近的華人學生交流？

◯ 無。
◯ 有，1-5 人。
◯ 有，6-10 人。
◯ 有，11-15 人。
◯ 有，16 人以上。

Do you live in a neighborhood with a sizeable Chinese/Taiwanese population?

◯ No.
◯ Yes, 1-5 people.
◯ Yes, 6-10 people.
◯ Yes, 11-15people.
◯ Yes, more than 16 people.

. 你平常閒暇時刻是否會自願參與華人學生的活動？

◯ 無。
◯ 有，1-5 人參與其中。
◯ 有，6-10 人參與其中。
◯ 有，11-15 人參與其中。
◯ 有，16 人以上參與其中。

Do you voluntarily involve with Chinese students/coworkers in your free time?

◯ No.
◯ Yes, 1-5 people are usually involved.
◯ Yes, 6-10 people are usually involved.
◯ Yes, 11-15people are usually involved.
◯ Yes, more than 16 people involved.

以下部分爲基本資料問題，包含性別、年齡、以及您的方言背景，以方便我們分析社會要素對於語言改變所產生的影響。

The following questions serve to understand your personal background including gender, age, and dialectal background in order to analyze the influence of social factors on the variation of language.

85. 您的性別爲 ① 男性 ② 女性

What is your gender? ① Male ② Female

86. 您的年齡爲① 16-20 歲 ② 21-25 歲 ③ 26-30 歲 ④30-35 歲 ⑤ 35 歲以後

What is your age? ① 16-20 ② 21-25 ③ 26-30 ④30-35 ⑤ Over 35

87. 您初次和來自中國大陸/台灣地區的人民有較密切接觸是在
① 15 歲以前 ② 16-20 歲③ 21-25 歲 ④ 26-30 歲 ⑤ 30 歲以後

How old were you when you first had intense contact with speakers of another variety of Chinese?
① Younger than 15 ② 16-20③ 21-25 ④ 26-30 ⑤ Over 30

88. 請問您是否會說任何地區性方言 (該方言流利程度需近似母語)
① 不會 ② 會，且我的方言屬於北方方言 ③ 會，且我的方言屬於南方方言。

Do you speak a regional dialect (with native proficiency)?
① No ② Yes, I speak a Northern dialect ③ Yes, I speak a Southern dialect.

89. 請問您來自哪一個方言區？

○ 北方方言區
○ 西南方言區
○ 吳語方言區
○ 贛語方言區
○ 湘語方言區
○ 客家方言區
○ 粵語方言區
○ 閩南方言區

What dialect area in China are you from?

① Northern dialect- Yellow Plain and Loess Plateau
② Southwest dialect area- Sichuan and Yunnan province
③ Wu (吳) dialect-southeast coastal area, around Shanghai and Zhejiang province

④ Gan (贛) dialect- Jiangxi province
⑤ Xiang (湘) dialect- Hunan province
⑥ Hakka (客家) dialect- widely scattered from Sichuan to Taiwan
⑦ Yue (粵) dialect- also known as Cantonese, Guangong/ Guangxi province, Hong Kong
⑧ Min (閩) dialect (Taiwanese) - Fujian, coastal areas in the South and Taiwan

90. 請問您平常是否會觀看來自台灣地區的電視節目.

①不會。
②會，每週 5 小時以內
③會，每週 5 至 10 小時
④會，每週 10 至 15 小時
⑤會，每週超過 15 小時

Do you often watch Taiwanese television programs?

① No.
② Yes, but no more than five hours a week.
③ Yes, 5-10 hours a week.
④ Yes, 10-15 hours a week.
⑤ Yes, more than 15 hours a week.

91. 請問您的方言中是否同時允許「我打電話給你」和「我給你打電話」兩種講法？

① 兩者都可以
② 不，只能說「我給你打電話」
③ 不，只能說「我打電話給你」
④ 兩者都不行，有其他說法

Does your dialect allow for both pre-verbal PDC structure and post-verbal PDC structure? (Note: In the Chinese version, I give actual example sentences in both the pre-verbal PDC and post-verbal PDC structures.)

① Both structures are allowed.
② Only pre-verbal PDC structure.
③ Only post-verbal PDC structure.
④ Neither of the structures are allowed.

本問卷到此結　，非常　　您　　作答
This is the end of the survey. Thank you for your participation!

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