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Extraction in control structures in Chinese*

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This squib observes that object extraction in Chinese control structures is sensitive to the syllable-count of the control verb. Monosyllabic control verbs do not allow extraction of their objects, but disyllabic control verbs do. It is proposed that monosyllabic control verbs in Chinese are required to be merged with the following infinitive verb. An intervening trace of the moved object blocks the phonological merger and thus object extraction is barred in control structures.

Key words : Syntax, Chinese, control structures, movement, phonological merger

Dans cette note, il est mis en évidence que l'extraction de l'objet dans les structures à contrôle en chinois est sensible au nombre de syllabes du verbe à contrôle. Contrairement aux verbes à contrôle disyllabiques, les monosyllabiques n'admettent pas l'extraction de leur objet. On propose qu'en chinois il est nécessaire qu'un verbe à contrôle monosyllabique fusionne avec le verbe infinitif subséquent. Cette fusion phonologique est bloquée en présence d'une trace de l'objet déplacé. C'est pourquoi, l'extraction de l'objet n'est pas permise dans les structures à contrôle.

Mots clés : Syntaxe chinoise, structures à contrôle, mouvement, fusion phonologique.

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1. CHINESE CONTROL STRUCTURES AND LI'S (1990) CASE THEORY

In her theory of Case in Chinese, Li (1990) makes the following claims: (i) Chinese is head-final except under the requirement of Case assignment, (ii) Case is assigned from left to right in Chinese, (iii) a verb assigns at most one Case, and (iv) complement clauses need Case.

According to Li, the verb *qu* 'go' in (1) is a nonfinite verb. In principle, there are two possible structures for (1), as shown in (2a) and (2b), respectively. In (2a), the NP is analyzed as the subject of the embedded infinitive. In (2b), the NP is the object of the matrix verb, which controls PRO in the embedded infinitive. The former is an ECM structure, whereas the latter is a control structure.

- (1) Wo yao ta qu.
1SG want 3SG go
'I want him to go.'
- (2a) Subj V [NP V] (ECM)
(2b) Subj V [NP][PRO V] (Control)

Notice that *ta* '3SG' in (1) cannot be extracted, as shown in (3).¹ *t*' is the trace of *ta* '3SG'.

- (3) *Ta, wo yao t qu.
3SG 1SG want go
'As for him, I want him to go.' (Li 1990 : 134)

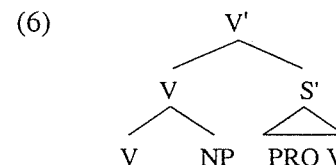
Audrey Li, and Dingxu Shi for helpful discussion on various occasions. Thanks also go to the anonymous reviewer for comments on earlier version of this squib. Needless to say, all errors remain my own.

¹ Huang (1999) has a similar observation, but he stipulates that in the 'V-NP-V' configuration in Chinese, the NP is in a position inaccessible to deletion/movement. However, I assume that passives should be treated differently from the control structure. See Tang (2001) for an explanation of the ungrammaticality of the patient argument movement in Chinese long passives.

Notice that the ungrammaticality of (3) has nothing to do with the pronominal properties of the extracted element. Movement of proper names and common nouns is also barred in this structure.

- (4) *Zhangsan, wo yao t qu.
Zhangsan 1SG want go
'As for Zhangsan, I want him to go.'
- (5) *Zhe ge ren, wo yao t qu.
this CL person 1SG want go
'As for this person, I want him/her to go.'

Li argues that the ungrammaticality of (3) favors the control structure in (2b). The reason is as follows. Under her analysis both the NP and the embedded infinitive need Case. In the control structure in (2b), the NP is adjoined to the main verb so that both the NP and the embedded clause can get Case from the main verb without violating the Adjacency Condition on Case assignment (cf. Stowell 1981). The partial representation of (2b) is (6).²



To rule out the extraction of NP in the configuration in (6), Li (1990) argues that such movement violates the Empty Category

² Regarding the grammaticality of (i), Li (1990 : 97) assumes that infinitives are subject to the Case Filter in Chinese but not in English (cf. Stowell 1981). Since the infinitive in (i) does not need Case, the adjunction of the NP is not necessary and there will be a different structure for English control sentences.

(i) Who did you persuade to come?

Principle (ECP) because the trace of the NP will not be governed by the main verb in the adjunction configuration in (6).³

Let us assume with Li (1990) that sentences such as (1) are instances of control sentences in Chinese.

2. EXTRACTION IN CONTROL STRUCTURES

Recall that extraction of the object in control structures is prohibited in Chinese. Li (1990) uses this piece of evidence to support her analysis of infinitives in Chinese. Nevertheless, I notice that the picture is not complete. Some control sentences may allow extraction of the object. For example, (8) is supposed to be derived by moving the object of the control verb *yaoqiu* 'require'.⁴ (8) shows that *zhe ge xuesheng* 'this student' can undergo passivization. According to Li's analysis, moving *zhe ge xuesheng* 'this student' should be wrongly ruled out by the ECP. (8) is a counterexample to Li's analysis.

- (7) Wo yaoqiu zhe ge xuesheng jieshi zhe ge wenti.
1SG require this CL student explain this CL question
'I ask this student to explain this question.'
- (8) Zhe ge xuesheng bei wo yaoqiu t jieshi zhe ge wenti.
this CL student BEI 1SG require explain this CL question
'This student is asked by me to explain this question.'

How to rule out the ungrammatical example in (3) on the one hand and rule in the grammatical example in (8) on the other hand?

³ The definition of government Li (1990 : 81) adopts is the following:

- (i) A governs B iff A m-commands B and there is no C, C a barrier for B, such that C excludes A.
(ii) A excludes B if no segment of A dominates B.

⁴ Whether the movement in Chinese long passives is A or A' is controversial. See Huang (1999), Tang (2001), and references cited therein for details.

There seems to be a contrast between monosyllabic control verbs and disyllabic control verbs in Chinese with respect to the extraction of the object. Although both (9) and (13)=(7) are control sentences, the only difference between these two sentences is the 'weight' of the verb: *yao* 'want' in (9) is monosyllabic whereas *yaoqiu* 'require' in (13) is disyllabic. Neither passivization (=10)), topicalization (=11)), nor relativization (=12)) of the object of the monosyllabic control verb *yao* 'want' is possible. Interestingly, the acceptability improves if the control verb is disyllabic, as in (14)=(8)), (15), and (16).⁵

Monosyllabic control verbs

- (9) Wo yao zhe ge xuesheng jieshi zhe ge wenti.
1SG want this CL student explain this CL question
'I want this student to explain this question.'
- (10) *Zhe ge xuesheng bei wo yao t jieshi zhe ge wenti.
this CL student BEI 1SG want explain this CL question
'This student is asked by me to explain this question.'
(passivization)
- (11) *Zhe ge xuesheng, wo yao t jieshi zhe ge wenti.
this CL student 1SG want explain this CL question
'As for this student, I want him to explain this question.'
(topicalization)
- (12) *[wo yao t jieshi zhe ge wenti] -de xuesheng.
1SG want explain this CL question -DE student
'The student who I want to explain this question'
(relativization)

⁵ Notice that the judgments are relative rather than absolute. Although (15) and (16) may sound slightly unnatural to some speakers, there is still a sharp contrast between (11) and (12), on the one hand, and (15) and (16), on the other hand.

Disyllabic control verbs

- (13) Wo yaoqiu zhe ge xuesheng jieshi zhe ge wenti.
ISG require this CL student explain this CL question
'I ask this student to explain this question.'
- (14) Zhe ge xuesheng bei wo yaoqiu t jieshi zhe ge wenti.
this CL student BEI ISG require explain this CL question
'This student is asked by me to explain this question.'
(passivization)
- (15) Zhe ge xuesheng, wo yaoqiu t jieshi zhe ge wenti.
this CL student ISG require explain this CL question
'As for this student, I ask him to explain this question.'
(topicalization)
- (16) [wo yaoqiu t jieshi zhe ge wenti] -de xuesheng.
ISG require explain this CL question -DE student
'The student who I ask to explain this question'
(relativization)

Other monosyllabic control verbs include *jiao* 'ask', *quan* 'persuade', *cui* 'urge' and *qing* 'invite'. Examples of disyllabic control verbs include *mingling* 'order', *quanshuo* 'persuade', *cuicu* 'urge', and *yaoqing* 'invite'. The contrast between these two sets of control verbs can further be illustrated in (17) and (18).

- (17) *Tamen bei wo jiao/quan/cui/qing t likai.
they BEI ISG ask/persuade/urge/invite leave
'They were asked/persuaded/urged/invited to leave by me.'
(monosyllabic)
- (18) Tamen bei wo mingling/quanshuo/cuicu/yaoqing t likai.
they BEI ISG order/persuade/urge/invite leave
'They were ordered/persuaded/urged/invited to leave by me.'
(disyllabic)

If the observation of the extraction of the object in Chinese control structures is correct, the descriptive generalization of the data could be stated as (19).

- (19) Object extraction in Chinese control structures is sensitive to the syllable-count of the control verb. Monosyllabic control verbs do not allow extraction of their objects, but disyllabic control verbs do.

The dichotomy between monosyllabic control verbs and disyllabic control verbs with respect to the extraction of the object does not seem to be accidental. The generalization in (19) suggests that the constraint imposed on the extraction is basically morphological/phonological.

3. PHONOLOGICAL MERGER

To derive (19), I propose that monosyllabic control verbs are bound morphologically in Chinese. As they are bound, they need some support required by morphology/phonology. Let us call this operation 'phonological merger'.

Given that the monosyllabic control verbs are bound, I assume that phonological merger requires that monosyllabic control verbs in Chinese be merged with an adjacent element to their right. Let us now consider the ungrammatical example in (20)(=4) and see how the analysis of phonological merger rules it out.

- (20) *Zhangsan, wo yao t qu.
Zhangsan ISG want go
'As for Zhangsan, I want him to go.'

In (20), the monosyllabic control verb *yao* 'want' is supposed to be merged with the infinitive verb *qu* 'go'. A possible way to rule out merging *yao* 'want' with *qu* 'go' is to assume that the

intervening empty category, i.e. the trace of the moved object, blocks the phonological merger. As a result, (20) is unacceptable.⁶

On the other hand, assuming that disyllabic control verbs in Chinese are not morphologically bound, they are not required to be merged with any elements. As a result, the object of the verb can be extracted without violating any constraints. The grammaticality judgments in the above examples immediately follow. If the hypothesis of phonological merger is correct, the contrast between monosyllabic control verbs and disyllabic control verbs shows a syntactic effect on the phonological operation.

As pointed out to me by the anonymous reviewer, movement of the object of a monosyllabic control verb will become acceptable if the trace is replaced with a resumptive pronoun, such as *ta* '3SG' in (21) (cf. (20)). In my analysis, the resumptive pronoun can be the host with which the monosyllabic control verb is merged. The contrast between (20) and (21) further shows that the prohibition of movement in (20) is basically a phonological issue.

- (21) Zhangsan, wo yao ta qu.
Zhangsan 1SG want 3SG go
'As for Zhangsan, I want him to go.'

The empty category that blocks phonological merger of monosyllabic control verbs should be a trace. The grammaticality of (22) shows that monosyllabic control verbs can be adjacent to PRO. There should be a contrast between a trace and PRO in phonological merger.⁷

⁶ The proposed analysis is reminiscent of the analysis of *wanna*-contraction in English (Lightfoot 1976, Chomsky and Lasnik 1978, Jaeggli 1980, among many others). It has been assumed that phonological contraction of *want + to* ⇒ *wanna* is blocked by *wh*-traces in *wanna*-contraction, as in (i).

(i) Who do you want *t* to buy a car? ⇒ *Who do you wanna buy a car?

⁷ Deontic modals are control verbs in Chinese, as argued by Lin and Tang (1996). The contrast between a trace and PRO can also be observed in *wanna*-contraction in English. Thanks to the anonymous reviewer drawing my attention to (22).

- (22) Zhangsan yao/xiang/neng/hui PRO shuo yingyu.
Zhangsan want/want/can/can speak English
'Zhangsan wants to/can speak English.'

Notice that it is not the case that nothing can be extracted out of control structures in Chinese. (19) only precludes extraction of the object of monosyllabic control verbs. As long as the argument is not the object of the control verb, extraction should be acceptable. For example, *Zhangsan* in (23) is the object of the verb *zhuazhu-le* 'arrested'. Obviously, as *Zhangsan* is not the object of the monosyllabic control verb *pai* 'send', its extraction does not violate (19) and the sentence in (24) is perfectly acceptable in Chinese.⁸ On the contrary, *jingcha* 'police' is the object of the control verb *pai* 'send' in (25) and the ungrammaticality of its extraction is predictable, according to the generalization stated in (19).

- (23) Lisi pai jingcha zhuazhu-le Zhangsan.
Lisi send police arrest-PERF Zhangsan
'Lisi sent the police to arrest Zhangsan.'
- (24) Zhangsan bei Lisi pai jingcha zhuazhu-le *t*.
Zhangsan BEI Lisi send police arrest-PERF
'It was Zhangsan who Lisi sent the police to arrest.'
- (25) *Jingcha bei Lisi pai *t* zhuazhu-le Zhangsan.
police BEI Lisi send arrest-PERF Zhangsan
'It was the police who Lisi sent to arrest Zhangsan.'

I notice that there is an apparent counterexample to the generalization in (19). For example, the object of the monosyllabic control verb *bi* 'force' can be extracted unexpectedly. Topicalization of *Zhangsan* in (26) is perfectly acceptable.

⁸ *Zhangsan* and the empty object of *zhuazhu-le* 'arrested' in Chinese passives like (24) have a relation of 'unbounded dependency', which was first observed by Huang (1974).

- (26) Zhangsan, wo bi zou-le.
Zhangsan 1SG force leave-PERF
'As for Zhangsan, I forced him to leave.'

Notice that *bi* 'force' and *zou* 'leave' may form a complex verb *bi-zou* 'force-leave' in Chinese. Such a complex verb is also known as a 'VV resultative compound'. (27) shows that the complex verb can be used as a causative verb and *Zhangsan* is the complement of this complex verb.

- (27) Wo bi-zou-le Zhangsan.
1SG force-leave-PERF Zhangsan
'I forced Zhangsan to leave.'

To rule in (26), I assume that (26) is derived from (28) instead of (29), in which *bi-zou* 'force-leave' should be analyzed as a VV compound and the moved element is in fact the complement of this complex verb. Hence, no phonological merger is violated in (28) and the seemingly problematic sentence in (26) can be resolved.

- (28) Zhangsan, wo bi-zou-le *t*.
Zhangsan 1SG force-leave-PERF
'Zhangsan, I forced him to leave.'
- (29) *Zhangsan, wo bi *t* zou-le.
Zhangsan 1SG force leave-PERF

Whether *bi* 'force' and the verb following it can form a compound depends on the choice of the second verb.⁹ For example, I assume that *bi-zou* 'force-leave' in (26) and *bi gajia* 'force remarry' in (30) do not have the same status. (31) shows that unlike

⁹ The formation of the VV compounds in which the first verb is a control verb is quite restricted. It seems that only unaccusative verbs can be the second V in such VV compounds, such as *zou* 'leave' in *gan-zou* 'drive away-leave' = 'to expel' and *si* 'die' in *bi-si* 'force-die' = 'to bound to death'.

bi-zou 'force-leave', *bi* 'force' and *gajia* 'remarry' do not form a complex verb and *Mali* cannot be reanalyzed as the complement of this complex verb. In other words, *Mali* should be originated in a position between *bi* 'force' and *gajia* 'remarry' in (30). After the extraction of *Mali*, the intervening trace blocks phonological merger and thus (30) is ungrammatical. The contrast between (26) and (30) is predictable and the grammaticality of (26) should not be a counterexample to the generalization stated in (19).

- (30) *Mali, wo bi *t* gajia-le.
Mali 1SG force remarry-PERF
'As for Mali, I forced her to remarry.'
- (31) *Wo bi-gajia-le Mali.
1SG force-remarry-PERF Mali

If the proposed analysis in this squib is correct, prohibition of the object extraction in Chinese control structures is basically morphological/phonological. However, one may be curious about why phonologically empty elements, particularly traces, can block phonological merger. To answer this question, we need to consider what role phonology plays in movement. The exploration of the phonological nature of movement is definitely beyond the scope of this squib. I only keep to an informal sketch of the data of extraction in Chinese control structures here and leave the related issues for future research.

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