

Wh-in-situ in Mandarin Chinese

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It is controversial whether an in-situ wh-phrase in Mandarin Chinese (MC) undergoes covert (LF) movement to its scope position. For example, while Huang (1982) argues that it does, Aoun and Li (1993) argue that it does not.¹ On the other hand, Tsai (1994a, 1999) argues that some in-situ wh-phrases undergo raising at LF, while others do not. Specifically an adverbial wh-phrase (e.g., *weishenme* ‘reason-why’) in MC raises at LF, while a nominal wh-phrase (e.g., *shenme* ‘what’) does not (see also Cole and Hermon 1998). In this squib, I argue that both adverbial and nominal wh-phrases undergo covert raising. I show evidence that an adverbial wh-phrase in MC undergoes covert feature movement, while a nominal wh-phrase undergoes covert phrasal movement (cf. Pesetsky 2000).

1. Nominal versus Adverbial Wh-phrases

It has been observed that some wh-in-situ elements in MC can occur within islands (e.g., sentential subjects and complex NPs), while others cannot (Huang 1982, Xu 1990, Lin 1992, Tsai 1994a,b, 1999). In particular, while nominal wh-elements such as *shenme* ‘what’, *shei* ‘who’, *na Numeral-Classifier N* ‘which N’, *nali* ‘where’ and *wei-le shenme* ‘purpose-why’ may take scope across an island, wh-adverbs such as *weishenme* ‘reason-

why' in MC may not (Tsai 1994a, 1999).² As (1) shows, *shenme* 'what' may take scope across a complex NP island, unlike *weishenme* 'reason-why' (Tsai 1999:42-43).

(1) a. Akiu kan-bu-qi [_{DP} [_{CP} Op_i [_{IP} e_i zuo shenme]] de ren_i]?

Akiu look-not-up do what DE person

'What is the thing/job x such that Akiu despises [people [who do x]]?'

b. *Akiu xihuan [_{DP} [_{CP} Op_i [_{IP} Luxun weishenme xie e_i]] de shu]?

Akiu like Luxun why write DE book

'What is the reason x such that Akiu likes [books [that Luxun wrote for x]]?'

Huang (1982) shows that the Q-operator in an A-not-A question patterns like *weishenme* 'reason-why' in that it may not take scope across an island. An A-not-A question is like a yes-no question in English, and it is marked by the presence of an A-not-A verb or modal:

(2) a. Ni shuo-bu-shuo Yingyu?

you speak-not-speak English

'Do you speak English?'

b. Ni hui-bu-hui shuo Yingyu?

you can-not-can speak English

'Can you speak English?'

Huang (1982) argues that an A-not-A question has a Q-operator that undergoes LF wh-movement from I to its scope position. This movement may not cross an island (Huang 1982, Shi 1994, Lin 1992). An example involving a complex NP-island is given in (3).

(3) *Ni zui xihuan [ta kan-bu-kan de shu]?

you most like he read-not-read DE book

‘lit. You like the book that he read or didn’t read?’ (Lin 1992: 320)

Following Tsai (1994a, 1999), I refer to the group of wh-phrases that can escape islands as nominal wh-phrases. I will use adverbial wh-phrases to refer to elements that cannot escape islands. This group includes both *weishenme* ‘reason-why’ and the Q-operator in an A-not-A question.

2. The Intervention Effect and Movement of the Wh-in-situ

I show in this section that an adverbial wh-phrase, but not a nominal wh-phrase, undergoes covert feature movement in MC. The evidence involves a constraint on LF wh-movement proposed in Beck (1996a,b) and modified in Pesetsky (2000).

2.1 The Intervention Effect

Beck (1996a,b) argues that in German, LF wh-movement may not cross a quantifier.³ The constraint is given in (4).

(4) *[…X_i…[Q…[…t_i^{LF}…]]]

LF wh-movement that violates (4) is said to exhibit the intervention effect.⁴ For example, the constraint in (4) is responsible for the contrast in (5) involving multiple question constructions. A multiple question in German has a wh-phrase in the scope position and one or more wh-phrase in-situ. It is argued that for semantic reasons, the in-situ element has to move at LF to a position reserved for wh-phrases. This movement is blocked if

there exists a quantifier (e.g., *niemand* ‘nobody’) along the movement path as shown in (5b) (Beck 1996a: 3-4).

- (5) a. Wen hat Luise wo gesehen? b. *Wen hat *niemand* wo gesehen?
 whom has Luise where seen whom has nobody where seen
 ‘Where did Luise see whom?’ ‘Where did nobody see whom?’

The constraint in (4) does not apply to overt wh-movement as (6) shows (Beck 1996a: 5).

- (6) Wo hat niemand Karl gesehen?
 where has nobody Karl seen
 ‘Where did nobody see Karl?’

Beck (1996b) notes that (4) may not be a universal constraint as English LF wh-movement does not seem to obey it.

Pesetsky (2000) argues that the intervention effect is a universal constraint when (4) is viewed as a constraint on wh-feature movement and not wh-phrasal movement. Pesetsky’s (2000: 67) characterization of the intervention effect is given in (7).

- (7) Intervention effect (universal characterization)

A semantic restriction on a quantifier (including wh) may not be separated from that quantifier by a scope-bearing element.

The intervention effect detects wh-feature movement and not wh-phrasal movement as wh-feature movement leaves the restriction on wh-quantification inside the clause, while wh-phrasal movement pied-pipes the restriction with the wh-phrase. The wh-related movement operations in German discussed in Beck (1996a,b) are analyzed as instances of feature movement.

2.2 Movement of the Wh-in-situ

Assuming following Pesetsky (2000) that the intervention effect detects covert feature movement, I show in this section that a wh-adverb undergoes covert feature movement in MC, as it exhibits the intervention effect. In particular, I show that *zhi* ‘only’, *bu/mei* ‘not’, *meiyouren* ‘nobody’, *henshao N* ‘few N’, *zuiduo Numeral-Classifier N* ‘at most numeral-classifier N’, *chang* ‘often’ and *ye* ‘also’ are interveners in MC, and they block LF movement of a wh-adverb.⁵ I show that the same interveners do not prevent a nominal wh-phrase from taking scope.

The examples in (8) show that *zhi* ‘only’ and *bu/mei* ‘not’ are interveners and they prevent *weishenme* ‘reason-why’ from taking scope. I use sentences with an embedded clause to determine whether *weishenme* ‘reason-why’ blocks LF wh-movement because *weishenme* occupies a position higher than *zhi* ‘only’ and negation.

(8) a. Ni renwei Lisi weishenme cizhi?

you think Lisi why resign

‘What is the reason x such that you think Lisi resigned for x?’

b. *Ni *zhi/bu* renwei Lisi weishenme cizhi?

you only/not think Lisi why resign

‘What is the reason x such that you only/don’t think Lisi resigned for x?’

Examples in (9) show that *zhi* ‘only’ and *bu/mei* ‘not’ block LF wh-movement of the Q-operator in an A-not-A question.

(9) a. Ta *zhi/bu* hui shuo Yingyu.

he only/not can speak English

b. Ta hui-bu-hui shuo Yingyu?

he can-not-can speak English

‘He can only/not speak English.’ ‘Can he speak English?’

c. *Ta *zhi/bu* hui-bu-hui shuo Yingyu?

he only/not can-not-can speak English

‘Can he only/not speak English?’

In addition to *zhi* ‘only’ and *bu/mei* ‘not’, *meiyouren* ‘nobody’, *henshao ren* ‘few people’, and *zuiduo liang-ge ren* ‘at most two people’ are also interveners as they block *weishenme* ‘reason-why’ from taking scope:

(10) a. Lisi weishenme cizhi?

Lisi why resign

‘What is the reason x such that Lisi resigned for x?’

b. *Meiyouren/henshao ren/zuiduo liang-ge ren weishenme cizhi?

nobody/few person/at most two-Cl person why resign

‘What is the reason x such that nobody/few people/at most two people resigned for x?’

They also block the Q-operator in an A-not-A question from taking scope as shown in

(11).

(11) a. Lisi qu-bu-qu?

Lisi go-not-go

‘Is Lisi going?’

b. *Meiyouren/henshao ren/zuiduo liang-ge ren qu-bu-qu?

nobody/few person/at most two-Cl person go-not-go

‘Is nobody/few people/at most two people going?’

Chang ‘often’ and *ye* ‘also’ are also interveners as they block *weishenme* ‘reason-why’ and the Q-operator in an A-not-A question from taking scope:⁶

(12) a. Ta weishenme ma ta?
 he why scold he

‘What is the reason x such that he scolded him for x?’

b. *Ta chang/ye weishenme ma ta?
 he often/also why scold he

‘What is the reason x such that he often/also scold(ed) him for x?’

(13) a. Ta qu-bu-qu?
 he go-not-go

‘Is he going?’

b. *Ta chang/ye qu-bu-qu?
 he often/also go-not-go

‘Is he also going/Does he often go?’

Unlike the adverbial wh-phrases, nominal wh-phrases do not exhibit the intervention effect. For example, (14) shows that *zhi* ‘only’ and *bu/mei* ‘negation’ do not prevent *shenme* ‘what’ from taking scope.

(14) a. Ta mai-le shenme?
 he sell-PERF what

‘What is the thing x such that he sold x?’

b. Ta *zhi* /*mei* mai shenme?
 he only/not sell what

‘What is the thing x such that he only sells/did not sell x?’

In (15), we see that *meiyouren* ‘nobody’, *henshao ren* ‘few people’ and *zuiduo liang-ge ren* ‘at most two people’ also do not block LF movement of *shei* ‘who’.

(15) a. Lisi gan gen shei dajia?

Lisi dare with who fight

‘Who is the person x such that Lisi dares to fight with x?’

b. *Meiyouren/henshaoren/zuiduo liang-ge ren* gan gen shei dajia?

nobody/few person/at most two person dare with who fight

‘Who is the person x such that nobody/few people/at most two people dare(s) to fight with x?’

Chang ‘often’ and *ye* ‘also’ also do not block *shenme* ‘what’ from taking scope as shown in (16).

(16) a. Ta mai-(le) shenme?

he buy-PERF what

‘What did he buy?’

b. Ta chang/ye mai shenme?

he often/also buy what

‘What does he often/also buy?’

The fact that an adverbial wh-phrase, but not a nominal wh-phrase, exhibits the intervention effect suggests that an adverbial wh-phrase, but not a nominal wh-phrase, undergoes covert feature movement.⁷

3. Nominal wh-phrase and covert phrasal movement

What I have shown in the previous section is that a nominal wh-phrase does not undergo feature movement as it does not exhibit the intervention effect. The facts however are consistent with the claim that a nominal wh-phrase does not undergo movement at all (Tsai 1994a, 1999), as well as the claim that it undergoes covert phrasal movement. While the lack of island effects with a nominal wh-phrase may lead one to conclude that

no movement is involved with a nominal wh-phrase (Tsai 1994a, 1999, Cole and Hermon 1998), I argue that a nominal wh-phrase undergoes covert phrasal movement in MC (Huang 1982, Pesetsky 2000:119). The evidence comes from Antecedent Contained Deletion (ACD) constructions involving a relative clause in MC.

3.1 Antecedent Contained Deletion as a Diagnostic of Covert Phrasal Movement

ACD constructions provide a way to determine whether covert phrasal movement is involved in wh-in-situ (Pesetsky 2000: 3-4). In an ACD construction, the antecedent VP appears to contain the elided VP. An example of an ACD construction is given in (17), with the corresponding interpretation in (18).

(17) Mary [_{VP} invited [_{DP} everyone that I did [_{VP} Δ]]].

(18) Mary [_{VP} invited [_{DP} everyone that I [_{VP} invited t]]].

One property of VP ellipsis is that an elided VP requires a linguistic expression, that is a pronounced VP, as its antecedent (Hankamer and Sag 1976). The ACD construction has been used to argue for the existence of covert phrasal movement of the argument containing the ellipsis site (see for example May 1985, Larson and May 1990).⁸ This is because without such a movement, there is no VP antecedent of the form [invited t] for (17) to have the interpretation in (18). After covert phrasal movement, there is a VP of the form [invited t] that can serve as antecedent for the elided VP.

(19) [_{DP} everyone that I [_{VP} invited t]] [Mary [_{VP} invited t]]

Pesetsky (2000: 6) shows that wh-in-situ in a multiple wh-question in English may contain an instance of ACD:

(20) Which girl invited [which student that John did [_{VP} Δ]]?

This fact is used to argue that in-situ wh-phrases may undergo covert phrasal movement.

3.2 Antecedent Contained Deletion in Mandarin Chinese

It is not immediately obvious whether ACD involving a relative clause is available in MC.⁹ While a VP can be elided in MC with *shi* ‘be’ preceding the elided VP, as shown in (21a), it is not possible to omit a VP inside a relative clause leaving behind *shi* ‘be’ as in (21b).

(21) a. Ta xihuan Zhangsan. Wo ye shi.

he like Zhangsan I also be ‘He likes Zhangsan. I do too.’

b. *Ta xihuan mei-ge wo ye shi de ren.

he like every-Cl I also be DE person ‘He likes everyone I do.’

ACD constructions involving a relative clause in MC requires the presence of a modal such as *neng* ‘can’ or *gan* ‘dare to’. Examples are given in (22).

(22) a. Ta neng zuo mei-jian wo bu neng de shi.

he can do every-Cl I not can DE thing

‘He can do everything I can’t.’

b. Ta gan zuo mei-jian wo bu gan de shi.

he dare do every-Cl I not dare DE thing

‘He dares to do everything I don’t dare to.’

The elided VP is contrasted with the antecedent VP by negation. The possibility of VP ellipsis in an ACD construction in MC also depends on the choice of the verb. There is a

contrast between light verbs such as *zuo* ‘do’ and verbs which have more semantic content, such as *chi* ‘eat’.

- (23) a. Ta neng chi mei-dao wo bu neng *(chi) de cai.
 he can eat every-Cl I not can eat DE dish
 ‘He can eat every dish I can’t (eat)’
- b. Ta gan chi mei-dao wo bu gan *(chi) de cai.
 he dare eat every-Cl I not dare eat DE dish
 ‘He dares to eat every dish I don’t dare to (eat).’

The elided VP requires a linguistic expression as its antecedent as the discourse given in (24) shows.

- (24) [Observing Zhangsan doing something]
 #wo bu neng/gan.
 I not can / dare ‘I can’t/ dare not.’

The ACD constructions in (22) have the interpretations given in (25).

- (25) a. Ta neng zuo mei-jian wo bu neng zuo t de shi.
 he can do every-Cl I not can do DE thing
 ‘He can do everything I can’t do.’
- b. Ta gan zuo mei-jian wo bu gan zuo t de shi.
 he dare do every-Cl I not dare do DE thing
 ‘He dares to do everything I don’t dare to do.’

I assume that like English, the ACD in MC, involves covert phrasal movement and that this movement creates a VP antecedent of the form [zuo t] ‘do t’ to serve as antecedent for the elided VP in (25a) and (25b).

The following ACD constructions illustrate that a nominal wh-phrase, such as *na-Numeral-Classifier N* ‘which N’, like a universal quantifier, can license ACD in MC:

- (26) a. Ta neng zuo na-yi-jian wo bu neng de shi.
 he can do which-Numeral-CL I not can DE thing
 ‘Which is the thing x such that he can do x and I can’t do x?’
- b. Ta gan zuo na-yi-jian wo bu gan de shi.
 he dare do which-Numeral-CL I not dare DE thing
 ‘What is the thing x such that he dares to do x and I don’t dare to do x?’

The fact that a nominal wh-phrase in-situ can license ACD suggests that a nominal wh-phrase undergoes covert phrasal movement in MC (Huang 1982, Pesetsky 2000:119, contra Aoun and Li 1993, Tsai 1994a, 1999, Cole and Hermon 1998).

4 Conclusion

I show in this squib that there is evidence that an adverbial wh-phrase undergoes covert feature movement in MC, while a nominal wh-phrase undergoes covert phrasal movement. Given that a nominal wh-phrase does not exhibit island effects, while an adverbial wh-phrase does, the analysis presented here implies that island effects detect wh-feature movement and not wh-phrasal movement in MC. This is unlike the situation in English, where island effects detect wh-phrasal movement and not wh-feature movement (Pesetsky 2000: 58).¹⁰ There seems to be parametric variation in whether island effects detect phrasal movement or feature movement in a particular language.

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¹ Aoun and Li (1993) argue that a *wh*-operator (and not a *wh*-phrase) undergoes raising at LF.

² There are some disagreements about whether *zenmeyang* ‘how’ observes island effects. Xu (1990) and Lin (1992) find that *zenmeyang* ‘how’ does not obey island conditions. On the other hand, Tsai (1994b) claims that while a manner-*zenmeyang* show island effects, an instrumental-*zenmeyang* does not. See Shi (1994) for a dialectal difference.

³ Negation and *only* are considered “quantifiers” in Beck (1996a,b) as they block LF *wh*-movement.

⁴ The terminology is from Hagstrom (1998, 2000) and it is also used in Pesetsky (2000).

⁵ The counterparts of these elements in German have been shown to be interveners (Beck 1996a,b). Unlike the universal quantifier in German and Korean, the universal quantifier *meigeren* ‘everyone’ is not an intervener in Chinese. The existence of cross-linguistic variation in the set of interveners has been noted in the literature (see Beck 1996a,b, Beck and Kim 1997, Hagstrom 1998). As Beck (1996a,b) notes, the cross-linguistic differences in whether a certain element is an intervener is unexpected given that the constraint is formulated as a semantic constraint. Hagstrom (1998: 58) suggests that whether an element is an intervener may be lexically determined. See Hagstrom (1998, 2000) for details. See Tanaka (1997) for intervention effects in Japanese involving *sika-nai* ‘only’.

⁶ That *chang* ‘often’ cannot appear before an A-not-A verb is reported in Cheng, Huang and Tang (1996) and Zhang (1997).

⁷ One may wonder if the intervention effect found with LF movement of an adverbial *wh*-phrase in Chinese could be considered inner (negative) island effects, which are found with movement of “non-referential” *wh*-phrases like *how* and *why*, but not “referential” *wh*-phrases like *what* (Rizzi 1990, but see Kuno and Takami (1997)). Studies on the inner (negative) island effects have focused mainly on overt *wh*-movement, and it is not clear that the constraint applies at LF (see Kuno and Takami (1997) for an S-structure constraint for the negative island effects). Because the intervention effect is observed only with LF-movement, and that Chinese *wh*-phrases do not undergo overt movement, I assume that *wh*-adverbs in Chinese exhibit the intervention effect and not the inner (negative) island effect.

⁸ See Hornstein (1994, 1995) for the claim that ACD is licensed by object shift. See Kennedy (1997) and Johnson (2000) for arguments that object shift is not the source of ACD.

⁹ See Liu (1999) for the existence of ACD in the comparative construction in Chinese.

¹⁰ See Ochi (1998) for a proposal that feature movement has a looser locality constraint than phrasal movement. See Cheng (1997) for an opposite view.