1 Introduction

Mandarin passives are constructed with the morpheme *bei* and can be classified into two types: long (in which the agent is overt) and short (in which the agent is covert). The current squib will focus on the long passive construction. An example is given in (1).

(1)  Zhangsan bei jingcha zhuazou-le  
     Zhangsan BEI police arrest-ASP  
     ‘Zhangsan was arrested by the police.’

There are several competing analyses for the Mandarin long passive. The first is the movement hypothesis (e.g. Travis, 1984; Koopman, 1984; Li, 1990) in which the long passive involves NP-movement analogous to the kind that occurs in English *be* passives. The morpheme *bei* is treated as a preposition that both suppresses the subject and absorbs the accusative case of the object. The object thus undergoes movement to the subject position and the agent DP forms a PP adjunct with *bei*. While this analysis correctly predicts that the subject of the passive sentence is related to an empty category, counter-arguments have also been made. Evidence from sentences containing subject-oriented adverbs that denote intentionality suggest that the subject of passives can have the role of Agent or Experiencer and thus could not have acquired this role from the object position of a verb but must have received it in-situ. There is contention as to whether the PP composed of the head *bei* and the agent DP complement behave as a single constituent. Also, the agent-oriented anaphor *ziji* can be co-referential with the subject of the passive. For full discussion, see Huang et al. (2009).

An alternative approach is the complementation analysis (e.g. Hashimoto, 1987; Wei 1994) in which *bei* is treated as a verb head selecting an Experiencer subject and an Event complement clause. The object of the complement clause is deleted under identity with the matrix subject. While this analysis addresses the problems with the movement hypothesis approach, it is problematic in the way it treats the deleted object. This deleted object should be analogous to pro, however it is controversial whether pro can be in object position and it is unclear why the pro could not be replaced by an overt pronoun or anaphor. See Huang et al. (2009) for full discussion.
The final analysis of Mandarin long passives likens it to the English *tough* construction (e.g. Feng, 1995; Ting, 1995; Huang et al., 2009) which involves null operator (OP) movement. Under this approach, *bei* is still treated as a verb head that takes a theta-marked subject and clausal complement. However within the complement clause, a null OP merges as the object of the embedded verb and moves into [Spec,CP] to be coindexed with the matrix subject. This analysis is given in (2).

(2) Zhangsan bei jingcha zhuazou-le.
    ‘Zhangsan was hit by the police.’

This kind of analysis not only addresses the issues with the first two approaches, but it is also supported by independent evidence that A-bar movement is indeed involved. However, past literature provides only two tests, long distance movement and sensitivity to the Complex NP islands.

In this paper, I will show that the construction does exhibit long distance movement and that it is sensitive to the Complex NP island constraint. To provide further support for this analysis, I will broaden the paradigm to show that the construction is also sensitive to other island constraints such as coordination and sentential subjects, but not to wh-island constraints. To explain the last exception, I will invoke the distinction between CP- and IP-absorption languages (Richards, 1997), which was not available at the time the A-bar movement analysis was proposed for Mandarin long passives. Under this framework, the weak crossover diagnostic illuminates some interesting asymmetries in the language for which I will attempt to provide an analysis.
2 Tests for A-bar movement

As discussed in previous literature on Mandarin long passives, these constructions exhibit apparently ‘unbounded’ dependency (Huang, 1974). Some examples are given in (3).

(3) Long distance movement

a. Zhangsan bei [CP OPi Lisi pai jingcha [CP ti PROj zhuazou-le ti ]] 
   Zhangsan BEI OPi Lisi order policej ti PROj arrest-ASP ti 
   ‘Zhangsan experienced Lisi ordering the police to arrest him.’

b. Zhangsan bei [CP OPi Lisi jiao Mali [CP ti PROj pai jingcha [CP ti 
   Zhangsan BEI OPi Lisi told Mary tij PROj order policeyi PROk zhuazou-le tik ]]
   PROk arrest-ASP ti 
   ‘Zhangsan experienced Lisi telling Mary to order the police to arrest him.’

The examples in (3-a) and (3-b) show that Zhangsan can be ‘passivized’ across multiple CPs. The sentence in (3-a) is the passive version of the sentence Lisi ordered the police to arrest Zhangsan. The sentence in (3-b) is the passive version of the sentence Lisi told Mary to order the police to arrest Zhangsan. (See Huang et al. (2009) for evidence that the intervening clauses are indeed CPs and not TPs). This property of Mandarin long passives is quite unlike English passivization and would be problematic in both the movement and the complementation analysis. However, given that OP-movement is a type of A-bar movement, the result here is entirely predicted. The OP moves to the edge of each CP in succession until it reaches the left-most [Spec,CP] position embedded under bei, thus obeying subjacency.

Movement of the OP in Mandarin long passives is also subject to island conditions such as Complex NPs. This is shown below in (4).

(4) Complex NP Constraint

a. Lisi pai jingcha [CP PROj zhuazou-le [DP[CP da Zhangsan de ] ren ]] 
   Lisi order policej PROj arrest-ASP hit Zhangsan DE person 
   ‘Lisi ordered the police to arrest the person who hit Zhangsan.’

b. *Zhangsan bei [CP OPi Lisi pai jingcha [CP ti PROj zhuazou-le [[ da ti 
   Zhangsan BEI OPi Lisi order policej ti PROj arrest-ASP hit ti 
   de ] ren ]]] 
   DE person 
   ‘Zhangsan experienced Lisi ordering the police to arrest the person who hit him.’

In (4-a), I give the active sentence with Zhangsan as DP embedded inside the relative clause of a Complex NP. The example in (4-b) shows that in the passive construction, the OP that is coindexed with the matrix subject Zhangsan cannot move out of a relative clause that is the complement of an NP since this results in ungrammaticality.
Mandarin long passives with coordination also show that it is impossible to extract the OP from a conjoined phrase if it is not extracted from both conjuncts. Examples are given in (5).

(5) Coordinative Structure

a. Jingcha \([_{ConjP} \text{you da Zhangsan \[you ma Lisi \]}]_\text{OP}\) Police and hit Zhangsan and scold Zhangsan 'The police hit Zhangsan and scolded Lisi (at the same time).'</n

b. *Zhangsan, bei \([_{CP \text{OP}_i jingcha \[_{ConjP} \text{you da t}_i \[you ma Lisi \]}]_\text{OP}_i\) Zhangsan, BEI OP, police and hit t, and scold Lisi 'Zhangsan experienced the police hitting him and scolding Lisi.'

c. ?Jingcha \([_{ConjP} \text{you da Zhangsan \[you ma Zhangsan \]}]_\text{OP}\) Police and hit Zhangsan and scold Zhangsan 'The police hit Zhangsan and scolded him (at the same time).'</n

d. Zhangsan, bei \([_{CP \text{OP}_i jingcha \[_{ConjP} \text{you da t}_i \[you ma t}_i \]}_\text{OP}_i\) Zhangsan, BEI OP, police and hit t, and scold t, 'Zhangsan experienced the police hitting him and scolding him.'

Example (5-a) gives an active sentence in which hit Zhangsan and scold Lisi are coordinated VPs. The next example in (5-b) shows that in long passives, the OP cannot be extracted out of just one of the conjoined constituents. However, if the object of both hit and scold is the same experiencer as in (5-c), then in the passive construction, the OP can be extracted 'symmetrically' out of both VPs as in (5-d).

Mandarin long passives also exhibit sensitivity to the sentential subject constraint. This is exemplified by the following sentences in (6).

(6) Sentential Subject Constraint

a. \([_{CP jingcha zhuazou Zhangsan] shi hao shiqing}_\text{OP}_i\) police arrest Zhangsan is good thing 'For the police to arrest Zhangsan is a good thing.'

b. *Zhangsan, bei \([_{CP \text{OP}_i [_{CP t}_i jingcha zhuazou t_i]}] shi hao shiqing}_\text{OP}_i\) Zhangsan, BEI OP, police arrest t, is good thing 'Zhangsan experienced the police arresting him being a good thing.'

c. \([_{CP Zhangsan, bei [_{CP \text{OP}_i jingchan zhuazou t_i]}] shi hao shiqing}_\text{OP}_i\) Zhangsan, BEI OP, police arrest t, is good thing '(The fact) that Zhangsan was arrested by the police is a good thing.'
Example (6-a) gives a sentence in which the subject is an active clause. If in the passive construction, the OP is extracted out of that sentential CP as in (6-b), the sentence becomes ungrammatical. The only available interpretation of this sentence is if the entire passive construction becomes the sentential subject such that the OP is not extracted out of the island. This is shown in (6-c).

The final island effect to test is wh-islands, which interestingly, Mandarin long passives are not sensitive to. This is shown in the two sentences in (7).

(7) Wh-Island Constraint

a. Zhangsan, bei \([CP \ OP_i \ shei \ j \ [CP \ t_i \ PRO_j \ zhuazou-le \ t_i]]\)?
   Zhangsan, BEI \ OP_i \ who \ order \ police_j \ t_i \ PRO_j \ arrest-ASP \ t_i
   ‘Who did Zhangsan experience ordering the police to arrest him?’

b. Zhangsan, bei \([CP \ OP_i \ Lisi \ paizhe_i \ shei_j \ [CP \ t_i \ PRO_j \ zhuazou-le \ t_i]]\)?
   Zhangsan, BEI \ OP_i \ Lisi \ order \ who_j \ t_i \ PRO_j \ arrest-ASP \ t_i
   ‘Who did Zhangsan experience Lisi ordering to arrest him?’

In these two sentences, there is a wh-phrase in the embedded clause, which also must move into [Spec,CP] at LF in order to be interpreted. Therefore, it may be surprising that the movement of the OP into [Spec,CP] is also licit. Our understanding of the phenomenon observed here can be informed by a distinction made between CP- and IP-absorption languages (Richards, 1997). Crucially, CP-absorption languages like Chinese allow for multiple specifiers in the CP domain. Thus, the movement of one phrase into [Spec,CP] does not block other constituents from also moving into [Spec,CP] of the same clause since multiple landing sites are available in that domain. From this perspective, the grammaticality of (7-a) and (7-b) are expected.

An additional property of A-bar movement and one that should be observed in CP-absorption languages is weak crossover effects. However, there is no such effect in a sentence like (8).

(8) Zhangsan, bei \([CP \ OP_i \ [ta_i-de \ pengyou] \ da-le \ t_i]\]
   Zhangsan, BEI \ OP_i \ his_i \ friend \ hit-ASP \ t_i
   ‘Zhangsan experienced his friend beating him.’

In this sentence, the subject DP of the embedded clause contains a pronoun that is co-indexed with the OP. Given that Chinese is a CP-absorption language, the null OP should move directly into an A-bar position (i.e. Spec,CP), crossing a co-indexed pronoun, thus inducing a weak crossover. However, the sentence is grammatical even with the given co-indexation. This is especially puzzling since weak crossover is observed in other constructions such as the one in (9).

(9) \(Ta_{*i/j-de \ mama} \ xihuan shei_i?\)
    \(his_{*i/j} \ mother \ likes \ who_i\)
    ‘Who_i does his_{*i/j} mother like?’
In the sentence in (9), the wh-phrase shei must be interpreted in [Spec,CP] at LF. Thus it covertly moves into that position, crossing the pronoun ta. The sentence is grammatical only if ta and shei are not co-indexed, since co-indexation of these two phrases would cause a weak crossover effect.

An immediate but unsatisfactory solution to the discrepancy between (8) and (9) is to propose that there is an A-position that OP (but not wh-phrase) can move into that is above the subject but below the final A-bar landing site. Thus, the weak crossover effect is obviated by this intermediate movement. This solution is undesirable since the prevention of weak crossover effects through A-movement is characteristic of IP-absorption languages. To propose that Chinese somehow exhibits behaviours of both types, or to abandon the distinction entirely, would be premature given the paucity of evidence. Even if we were to consider A-movement as a possible explanation, the argument should only hold for local movement. As in IP-absorption languages, long distance movement should still exhibit weak crossover effects. However, this is not true, as we can see from the sentence in (10).

(10) Zhangsan_i bei [CP OP_i [ta_i-de pengyou] pai jingcha_j [CP t_i PRO_j zhuazou-le Zhangsan_i BEI OP_i his_i friend order police_j t_i PRO_j arrest-ASP t_i ]]

‘Zhangsan experienced his friend ordering the police to arrest him.’

Unlike the sentence in (8), the sentence in (10), has two CPs embedded under bei, with the subject DP containing the co-indexed pronoun in the higher embedded CP. Since the null OP has moved from its merge position into an A-bar position in the lowest CP, all subsequent movements must also be A-bar movements. Thus, regardless of whether there is an A-position available above the subject, it is not available in the case of long distance OP-movement. Thus, it is again surprising that there is still no weak crossover effect in this case.

Despite what we have seen so far, it is not the case that we can never get a weak crossover effect with OP-movement in the long passive construction. The sentence in (11) is a case where it can be observed.

(11) Zhangsan_i bei [CP OP_i jingcha qing [ta_i/k-de pengyou]_j [CP t_i PRO_j Zhangsan_i BEI OP_i police ask [his_i/k friend]_j t_i PRO_j jiezou-le t_i ]]

pick up-ASP t_i

‘Zhangsan experienced the police asking his friend to pick him up.’

The crucial difference between (11) and the sentences given above is that in (11), the DP containing the pronoun is the object rather than the subject of the embedded clause. In this case, the pronoun must not be co-indexed with the null OP, otherwise there is a weak crossover effect.

The asymmetry between the subject and object observed here suggests that, while the null OP moves across the object, it does not in fact move across the subject. In other words, the landing site of the A-bar movement involving the null OP is to the left of the object by to the right of the subject. To achieve this, there are two options: i) re-analyse the location
of the A-bar landing site, or ii) re-analyse the position of the embedded subject DP. The first option does not in fact resolve the issue, since positing an additional A-bar position below the subject does not prevent the OP from subsequently moving into [Spec,CP]. In fact, this movement would still be necessary in order for the OP to obey subjacency.

This leaves the second option, which is to posit a different position for the subject of the embedded clause such that it is to the left of [Spec,CP]. One possibility is to propose that the subject DP is also in a [Spec,CP] position. As such, the null OP would not move across it and weak crossover would not result if the subject contained a co-indexed pronoun. However, there is no reason why this analysis (i.e. subjects being in Spec,CP) would not extend to matrix clauses as well. Thus, it is difficult to explain why (8) and (10) are grammatical, but (9) is not under this approach.

The alternative then, is the posit that the subject DP of the embedded clause is somehow outside of the embedded clause, beyond of the scope of the null OP. An analysis in which this might be true is one in which bei is treated as a control verb. Under this approach, bei is a two-place predicate that selects as its objects the DP which we have thus far treated as the embedded subject, as well as a CP complement. The subject of the embedded clause is a PRO which is co-indexed with the object DP of bei. This analysis is presented in (12) for the sentence in (10).

(12) Zhangsan bei ta-de pengyou pai jingcha zhuazou-le.

‘Zhangsan experienced his friend ordering the police to arrest him.’
In the tree above, we can see that the null OP in the embedded clause never moves across the overt pronoun, which is a part of the DP that is now the object of the verb *bei* and merges outside of the embedded CP.

This last analysis is desirable for several reasons. Firstly, it correctly accounts for the asymmetry between the (former) embedded subject DP and object DP. Since the OP must move over the object in embedded clause, a weak crossover would result if the object DP contained a co-indexed pronoun. However, since the subject is now re-analyzed as the object of the matrix verb *bei*, it is outside the scope of OP-movement. Thus even when there is a co-indexed pronoun in this constituent, the sentence is still grammatical. Secondly, this analysis accounts for the difference in grammaticality between sentences (8) and (10) vs. (9). Since the pronoun in (9) is clearly part of a DP that is within the same clause as the wh-phrase, A-bar movement of that wh-phrase to the left edge of the clause will necessarily cross over that pronoun and produce a weak crossover effect. Lastly, recall the movement hypothesis proposed to account for Mandarin long passives (see Introduction). In this approach, *bei* was analyzed as a preposition heading an adjunct PP and selected the Agent DP as its complement. This was abandoned in both the complementation analysis and the A-bar analysis of the long passive since evidence suggested that *bei* and the Agent do not behave as a single constituent. While this is true, I believe that there is still a strong intuition that *bei* and the Agent of the embedded clause are somehow related by selection. The analysis that I’ve proposed, which is a modification of Feng’s (1995) original analysis, is able to capture this relation while maintaining the A-bar movement approach.

### 3 Conclusion

In this paper, I have shown that the A-bar movement analysis of Mandarin long passives is supported by evidence from sensitivity to islands that were previously untested. Additionally, these constructions are insensitive to wh-islands, which is consistent with the fact that Mandarin is a CP-absorption language. Finally, evidence from asymmetries in weak crossover effects prompted a re-analysis of the embedded subject which not only accounts for all of the data, but also better captures the relation between the matrix verb *bei* and the thematic Agent.
References


