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ON ARGUMENT STRUCTURE AND L-MARKING WITH MANDARIN CHINESE BA

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One of the perennial areas of investigation in Chinese grammar has been the so-called ba construction. The principal distinguishing characteristic of this construction is illustrated in (1) and (2). In (1) we see the typical SVO word order of an ordinary sentence in modern Mandarin Chinese, while in (2), a ba-construction sentence, what is understood as the object appears to the left of the verb, preceded by the particle ba.

(1) Wo dale Zhangsan.

I hit

'I hit Zhangsan.'

(2) Wo ba Zhangsan dale.

I hit Zhangsan

'I hit Zhangsan.'

For various reasons, this construction has intrigued Chinese grammarians of several traditions for many years, and it has recently become fairly well-known in generative circles as well. This is due in large part to Huang's (1982) discussion of it in his thesis, and to the reanalyses of these data in Koopman (1984) and Travis (1984).

In this paper I will take another look at the ba-construction, with special interest in what it can tell us about argument structure, proper government, and \bar{X} -theory.

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One initially very plausible way of analyzing ba-construction sentences such as (2) is to say that here the verb does not assign the internal theta-role that it ordinarily would and that instead this theta-role is assigned independently by ba. The ba-phrase appears to the left of the verb, the normal position for non-subcategorized PP's.

This type of analysis, proposed in Travis (1984), is an interesting counterexample to the theories of argument structure in Williams (1981) and Zubizarreta (1985), where it is claimed that a verb's internal theta-role may not be suppressed. A process such as English passive, for example, in which the external theta-role is assigned separately in a by-phrase, is allowed by these theories, but the above analysis of ba, in which the internal theta-role is assigned separately in the ba-phrase, is not.

It is thus interesting to note that the analysis of ba outlined above may be shown to be wrong. Consider the sentences in (4).

(4)a. Wo ku de Zhangsan hen shangxin.
I cry so-that very sad

b. Wo ba Zhangsan ku de hen shangxin.
I cry so-that very sad

'I cried so much that Zhangsan was very sad.'

In (4a) the verb ku 'cry' is followed by a "resultative" or "extent" clause. Since this verb does not have an internal theta-role, we would expect that it would not be able to appear with ba. This is not true, however, as seen in (4b). The object of ba there is not an argument of ku at all, but is the external argument of the embedded verb. This sentence shows that the ba-construction apparently does not involve suppression of the verb's theta-roles, and that despite initial appearances, the Williams/Zubizarreta proposals may be maintained.

If this is correct, it follows that theta-roles are assigned in (2) just as they are in (1). We must then assume that there is an empty category in object position in (2) and in embedded subject position in (4b). This is shown in (5).

(5)a. Wo ba Zhangsan dale [e]

b. Wo ba Zhangsan ku de [e] hen shangxin

We must now ask whether the relation between the empty category and its antecedent (Zhangsan) is one of control or movement. Control seems unlikely, for two reasons. First, it would entail the existence of PRO in object position in (5a), counter to our normal expectations, and second, we would have to say that verbs like ku 'cry' exceptionally allow a ba-phrase in

cases such as (5b). This verb is otherwise strictly intransitive, as seen in (6).

- (6)a. *Wo kule Zhangsan.
 b. *Wo ba Zhangsan kule.

I thus conclude that the ba-construction involves movement, not control.

The question which arises now is what type of movement is involved, i.e. whether it is A-movement or \bar{A} -movement. The pattern of possibilities for movement which obtains would lead us to believe that it is A-movement. This is seen in (7).

- (7)a. Neige nühai ku de Zhangsan nianbuxia neiben shu.
 that girl cry so-that read-NEG-continue that book
- b. Neige nühai ba Zhangsan ku de nianbuxia neiben shu.
 that girl cry so-that read-NEG-continue that book
- c.*Neige nühai ba neiben shu ku de Zhangsan nianbuxia.
 that girl that book cry so-that read-NEG-continue

'That girl cried so much that Zhangsan couldn't keep reading that book.'

It is possible to raise the subject of the embedded clause, as in (7b), but not the object, as in (7c). This pattern is of course typical of movement to an A-position.

Thus the ba-construction in many ways looks like an ordinary case of NP-movement. One way in which it is not so ordinary, however, is that movement may affect just the specifier of NP, rather than the whole NP itself. This is demonstrated in (8).

- (8)a. Wo mianle Zhangsande zhi.
 I cancel -poss job
- b. Wo ba Zhangsande zhi mianle.
 I -poss job cancel
- c. Wo ba Zhangsan mianle zhi
 I cancel job

'I cancelled Zhangsan's job.'

In (8b), the entire object NP has been moved, as we would expect, but in (8c), only the specifier of that NP has been moved.

Sentences such as (8c) raise many interesting questions, but the one which I would like to address here concerns the way in which the trace of movement is properly governed in cases such as these. I will follow Chomsky (1986) in saying that in order for a trace to be properly governed it must be either

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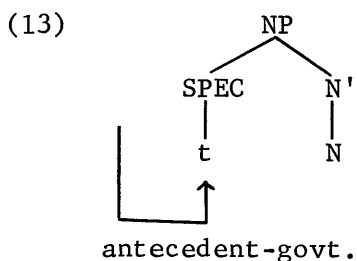
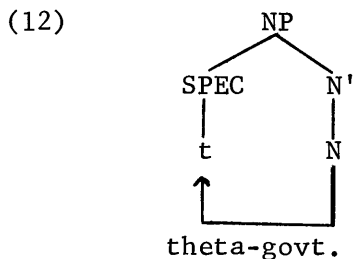
theta-governed or antecedent-governed. Government may not occur across a barrier, where this is defined in terms of blocking categories (BC), which is in turn defined in terms of L-marking. Definitions from Chomsky (1986) are given for reference in (9), (10), and (11).

(9) Where α is a lexical category, α L-marks β iff β agrees with the head of γ that is theta-governed by α .

(10) γ is a BC for β iff γ is not L-marked and γ dominates β .

(11) γ is a barrier for β iff (a) or (b):
 a. γ immediately dominates δ , δ a BC for β ;
 b. γ is a BC for β , $\gamma \neq$ IP.

Since (8c) is well-formed, we must assume that somehow the trace is properly governed. There are two ways this could occur. First, the trace could be properly governed from within the larger NP, presumably through theta-government by the head noun zhi 'job'. This is shown in (12). The second possibility is that the trace is properly governed from outside the NP, through antecedent-government by Zhangsan. This is shown in (13).



The available evidence indicates that (13) is correct, that is, that the specifier of NP may be properly governed only from outside the NP, through antecedent-government. The head noun does not properly govern its specifier. The main evidence for this comes from Torrego (1985), cited in Chomsky (1986). Torrego shows that in Spanish the complement of a head noun may be extracted across a wh-island, because the complement, being theta-governed by the head, is properly governed by the head. The specifier of a head noun, on the other hand, may not be

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extracted across a wh-island. This fact may be explained if we assume that specifiers, unlike complements, need to be antecedent-governed.

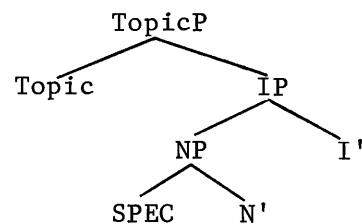
Further evidence for this position may arguably be found within Chinese itself. Huang (1982) has noted that although both subjects and objects may be topicalized in Chinese, specifiers of NP's may only be topicalized out of subject position, as seen in (14).

(14)a. Zhangsan, baba hen youqian.
 father very rich
 'Zhangsan, his father is very rich.'

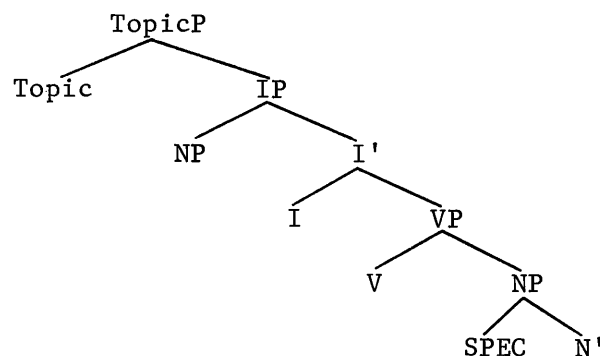
b. ?*Zhangsan, Lisi xihuan baba.
 like father
 'Zhangsan, Lisi likes his father.'

Let us assume, unlike Huang, that sentences such as these result from movement out of specifier position, directly into a topic position which is sister to IP. The relevant structures are given in (15).

(15)a.



b.



Let us assume in addition, following recent work by Zhiming Bao, that the topic position theta-governs IP, and that when lexically filled, it L-marks IP.

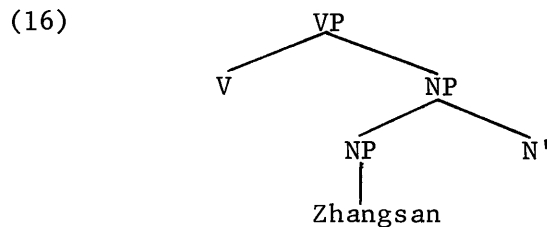
In a sentence such as (14a) (with structure (15a)), then, the specifier of the subject NP moves into topic position. From there it theta-governs and thus L-marks IP. Given the definition of L-marking in (9), and assuming agreement between the subject NP and the head of IP, the topic also L-marks the subject NP. This means that the antecedent in topic position governs the

trace in specifier of NP position, there being no barriers to prevent it. The trace is thus properly governed and the structure is well-formed.

Compare this with (14b)/(15b). Here the specifier of the object NP moves into topic position, where it L-marks IP and the subject NP. In this case there are barriers which block antecedent-government of the trace: VP and (by inheritance) IP. If we say that this trace in specifier position must be antecedent-governed, as in (13) above, then we correctly predict this sentence to be ungrammatical. If, on the other hand, we were to say that the specifier may be properly governed from within NP, as in (12) above, then we would expect no difference between the (a) and (b) cases.

We see, then, that given certain reasonable assumptions about topicalization, the contrast between (14a) and (14b) shows that the specifier of NP must be antecedent-governed in order to be properly governed. This is further support for the position taken by Torrego (1985).

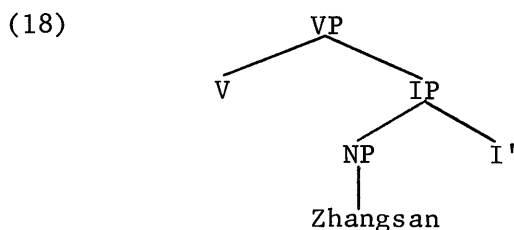
Now let us return to the problem of proper government of the trace in the *ba*-construction. The relevant structure for (8c) is given in (16).



The specifier of the NP, Zhangsan, moves to a preverbal position within VP. The larger NP is L-marked (by V), and the antecedent Zhangsan thus governs its trace, as required.

Consider now sentence (4b), repeated here as (17), and its structure in (18).

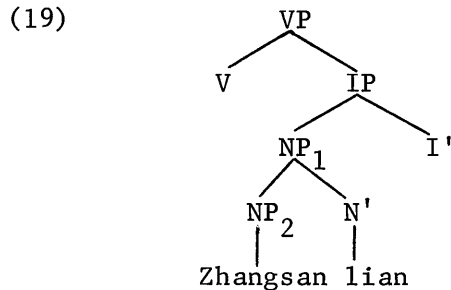
- (17) Wo ba Zhangsan ku de hen shangxin.
 I cry so-that very sad
 'I cried so much that Zhangsan was very sad.'



Here the verb L-marks IP and its specifier, the subject NP. This NP may then move to pre-verbal position, and it will

govern its trace.

Since the verb does L-mark the subject NP in (18), we would then predict that the specifier of that NP, i.e. NP₂ in (19), would also be able to undergo movement.



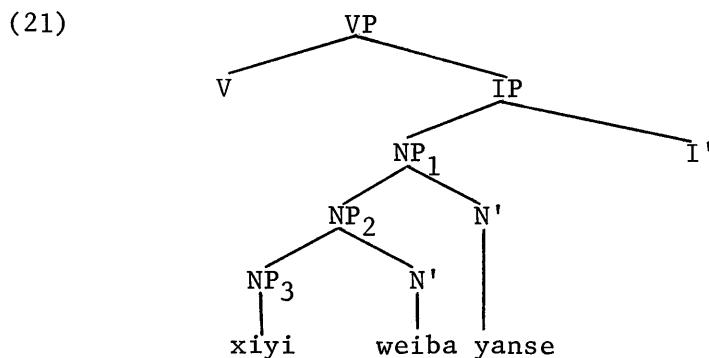
This is in fact correct, as seen in (20).

- (20)a. Wo ku de Zhangsande lian hongle.
 I cry so-that -poss face red
- b. Wo ba Zhangsande lian ku de hongle.
 I -poss face cry so-that red
- c. Wo ba Zhangsan ku de lian hongle.
 I cry so-that face red

'I cried so much that Zhangsan's face turned red.'

In (20b), the subject NP has moved to the left of the verb, while in (20c) only the specifier of that NP has moved.

Although the specifier of the embedded subject is able to move, as we have just seen, we would predict that the specifier of the specifier of the embedded subject, i.e. NP₃ in (21), would not be able to move.



This is because the verb L-marks only IP and NP₁. NP₂ is not L-marked, and thus if NP₃ is moved to a pre-verbal position, it will not antecedent-govern its trace. NP₂ and (by inheritance) NP₁ are barriers for NP₃, thus blocking government. In other

words, the system of L-marking assumed here predicts that NP₁ and NP₂ may move in structure (21), but that NP₃ may not.

Interestingly, this prediction is not upheld by the data. Consider sentence (22a), which has the structure given in (21). If we prepose NP₁, we get (22b), which is grammatical, as expected. Preposing NP₂ alone gives us the grammatical sentence (22c). Finally, we can try to prepose NP₃, which yields (22d). This sentence is grammatical, contrary to our expectations.

- (22)a. Wo jiao de xiyide weibade yanse lüle.
I shout so-that lizard-poss tail-poss color green
- b. Wo ba xiyide weibade yanse jiao de lüle.
I lizard-poss tail-poss color shout so-that green
- c. Wo ba xiyide weiba jiao de yanse lüle
I lizard-poss tail shout so-that color green
- d. Wo ba xiyi jiao de weibade yanse lüle.
I lizard shout so-that tail-poss color green

'I shouted so much that the lizard's tail's color became green.'

The problem here seems to be that the definitions from Chomsky (1986) that I have been using say that IP in (21) is L-marked, since it is theta-governed, and that NP₁ is L-marked, since it is the specifier of IP. L-marking arbitrarily stops at this point, however, leaving NP₂ and NP₃ as non-L-marked blocking categories. Sentence (22d) above showed us that L-marking should apparently not stop at this point.

Revising the definition of L-marking so that we get the desired results in (21)/(22) perhaps surprisingly requires only minor modifications. The previous definition states that any node which agrees with the head of a theta-governed category is L-marked. In our example in (21), for instance, IP is theta-governed, and IP and NP₁ agree with the head of IP. Thus both IP and NP₁ are L-marked, as we have seen. Suppose now that we say that any node which agrees with the head of an L-marked category is itself L-marked. Assume in addition that there is agreement within NP between the specifier and the head. In (21), then, NP₂ agrees with the head of NP₁. Since NP₁ is L-marked (it agrees with the head of IP), it follows that NP₂ is also L-marked. If NP₂ is L-marked, then NP₃ will be L-marked, and so on. This revised definition, given here in (23), thus makes L-marking of specifiers recursive.

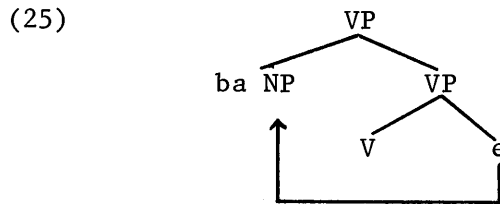
- (23) Where α is a lexical category, α L-marks β iff (a) or (b):
a. α theta-governs β
b. β agrees with the head of γ that is L-marked by α .

Since it L-marks all of the NP's in (21), it correctly predicts

that they may all be preposed, as was shown in (22).

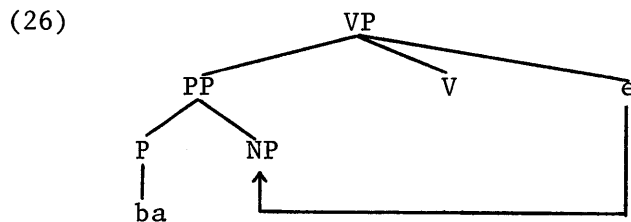
In our discussion so far, I have argued that the ba-construction involves movement and we have seen which NP's are able to undergo this movement. The final question which I address here concerns the position to which these NP's move.

One possibility is that the NP together with ba is adjoined to VP, as in (25).



There are at least two reasons to reject this option, however. First, we have seen that the pattern which obtains with this construction is highly suggestive of A-movement, and thus cannot be the result of adjunction. Second, it is not the case that the ba-phrase appears to the left of all the material in the VP, as adjunction would lead us to expect.

Another possibility is that the NP moves into the object position of a PP headed by ba, as in (26).



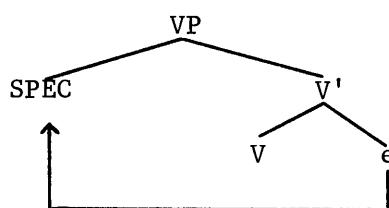
This avoids the problems of the adjunction analysis, but it leads to a clear violation of the Projection Principle, since we are moving an NP into a complement position.

Thus it appears at first that neither adjunction nor substitution yields a satisfactory analysis. A way out of this dilemma may be found, I believe, in a suggestion made by Kuroda (1986). Kuroda points out that the \bar{X} -system of Chomsky (1986) allows for a specifier of CP, IP, and NP, but nothing is said about specifier of VP. He states further that a conceptually simpler \bar{X} -system would allow for specifiers of all four categories. Let us adopt this aspect of Kuroda's analysis. We can then say that the NP moves into a non-thematic specifier of VP position, as in (27).

(27)

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(27)



Since the specifier of VP, unlike the specifier of IP, is unable to receive Case from its head, ba is inserted as a Case-marker. Under this view, the ba-construction is quite similar to what we usually think of as passive. With ordinary passive, a post-verbal NP moves into a non-thematic specifier of IP position, where it receives nominative Case. With the ba-construction, a post-verbal NP moves into a non-thematic specifier of VP position, where it receives Case from ba.

In conclusion, we have seen three main theoretical implications from this brief look at the ba-construction. First, we saw that despite initial appearances, the ba-construction is not a counterexample to the proposals made by Williams (1981) and Zubizarreta (1985) regarding argument structure, in that ba does not involve suppression of the verb's internal theta-role. Second, we saw that once we accept a movement analysis of the ba-construction, we need to modify the definition of L-marking in such a way that L-marking of specifiers is recursive. Finally, we saw that the movement analysis of the ba-construction also suggests that \bar{X} -theory makes available a non-thematic specifier of VP position, in addition to the specifier of IP.

The above discussion of course by no means exhausts the questions and issues which arise in connection with the ba-construction. For example, although I have analyzed this construction in terms of NP-movement, I have said nothing about how this interacts with the assignment of abstract Case. If Case-absorption is involved, as we would expect, then it is not entirely clear how this operates in cases where only the specifier of NP moves. A type of Exceptional Case Marking into NP's, as proposed in Massam (1985), may be necessary.

I have also not said anything about the effects of Subjacency on examples like (22d), where the most deeply embedded NP is raised. Since this sentence is grammatical, despite the fact that the NP must cross two NP boundaries when it moves to pre-verbal position, it would seem to argue for the relativized definition of barriers for Subjacency discussed in Chomsky (1986).

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