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The Dummy DE in Chinese Resultatives

1. Introduction*

This paper discusses a number of differences and correspondences between the Chinese resultative sentences in (1) and (2), and searches for a unified analysis[1].

(1) a. Zhang San ku lei le
Z. cry tired LE[2]
Zhang San cries [himself] tired
b. Zhang San ku shi le shoujuan
Z. cry wet LE handkerchief
Zhang San cried the handkerchief wet

(2) a. Zhang San ku de lei le
Z. cry DE tired LE
Zhang San cries [himself] tired
b. Zhang San ku de shoujuan shi le
Z. cry DE handkerchief wet LE
Zhang San cried the handkerchief wet

We will be particularly concerned with the observation that although the sentences in (1) do not seem to differ semantically from their respective counterparts in (2), there are a number of obvious syntactic differences: the examples in (2) contain an element *de*,[3] which is absent in (1) and in (1b) the word order of the result-denoting phrase is the reverse of the order in (2b).

Generally speaking, however, the element *de* is not optional, although it seems as to be so in (1) and (2). In the examples in (3), for instance, its presence is obligatory.

(3) Zhang San ku *(de) lian ta muqin dou meiyou banfa le
Z. cry DE even his mother all not-have way LE
Zhang San cried such that even his mother could not do anything about it anymore

I will argue that these questions can be dealt with satisfactorily once it is assumed that Chinese resultatives contain an intervening projection between the matrix clause[4] and the result denoting part of the sentence. I will refer to this projection as ExtP, or Extent Phrase.

This paper will concentrate on syntactic arguments for the existence of ExtP, and not discuss its function. As to the function of ExtP, let me just point out the following. First, the basic structure for result sentences in Chinese which I will argue for here is given in (4) below. The ExtP is a complement to the matrix verb in essentially the same way as Hoekstra (1988, 1990) argues that the result denoting small clause (SC) in sentences like *The joggers ran [the pavement thin]* is the complement to the matrix verb: it telecizes the a-telic, inherently dynamic matrix predicate by specifying the state which terminates this event. Phrased

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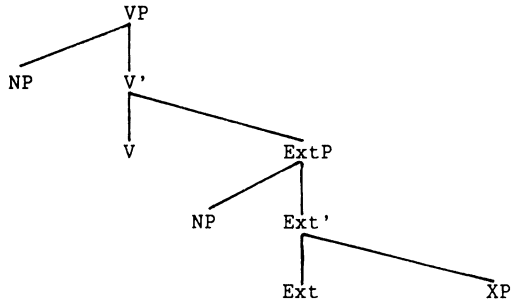
slightly differently, it closes off the temporal 'open range' of the event denoted by the matrix predicate. Secondly, the ExtP is not only used in result-denoting structures, but also in degree-denoting structures. Here, it specifies the extent to which the open range in degreeability denoted by the, often adjectival, matrix predicate extends (for more discussion on resultatives in general, see Hoekstra 1988, 1990; more on ExtP in Chinese may be found in Sybesma 1991).[5]

(4)



The status of the XP in (4) will be investigated in section 4.3.

2. Analysis

Let us concentrate on (1b) and (2b) for the moment. What we observe is that, with the element *de* present (as in (2b)), the order of the result denoting predicate is [*shoujuan shi le*] ('handkerchief wet LE'), that is [subject predicate], while in (1b), the variant without *de*, the order has been reversed, resulting in [*shi le shoujuan*] ('wet LE handkerchief') or [predicate subject]. We may consider this a situation where either inversion or insertion applies. In any case, it is reminiscent of phenomena like English *do*-support as dealt with in Chomsky (1989) and Pollock (1989). There is a position which (for whatever reason) must eventually get a phonological matrix. There are two ways in which this position can be provided with the necessary phonological content: either some element already present in the structure moves into it, or (presumably if movement is barred; we turn to this below) some dummy-element is inserted. In other words, if we can make it plausible that we are indeed dealing with an inversion or insertion situation, we in fact show that there is some position, which is responsible for this.

More particularly, if, with reference to the structure in (4), we postulate the following basic D-structure for (1b) and (2b), where *H* stands for the head of ExtP, we see that in (1b) the embedded head, *shi* 'wet', has moved into *H*, whereas in (2b) *de* has been inserted into it. Note that *shoujuan* 'handkerchief' is theta-marked by *shi* 'wet'.

(5)

Zhang San	ku	[*H*	[shoujuan		shi	le]]
Z.	cry		handkerchief		wet	LE

In the remainder of this paper we will gather support for this analysis of these Chinese result structures.

3. Support

The idea of 'supportive' *de* appears to be corroborated by a number of facts. First, we see that there is either movement or insertion, but never neither (see (6a)) and never both at the same time, as in (6b).

(6) a. * Zhang San ku shoujuan shi le
Z. cry handkerchief wet LE
b. * Zhang San ku de shi/ku shi de le shoujuan
Z. cry DE wet/cry wet DE LE handkerchief

A second piece of evidence for 'supportive' *de* may be found in the ungrammaticality of (7a) below, in contrast to the grammaticality of (1b), repeated here as (7b).

(7) a. * Zhang San ku de le shoujuan shi
Z. cry DE LE handkerchief wet
b. Zhang San ku shi le shoujuan
Z. cry wet LE handkerchief

The contrast between (7a) and (7b) can be interpreted such that the aspect marker *le* may only be adjacent to the head of ExtP in the movement cases and not when insertion has taken place. This follows if we assume that the moved embedded head has taken the aspect marker along when moving to the head of ExtP, presumably passing through ASP on the way. In the case of *de*-insertion, the aspect marker cannot be taken along by anything, because no raising is involved.

The third argument centres around the principles of economy as outlined in Chomsky (1989). As I remarked above, although there appears to be a choice between movement of the embedded head and insertion of the dummy *de* in (1) and (2), this is not generally the case. The sentence in (3) constitutes an example of obligatory *de*. In fact, in most cases where *de* is present, it can be argued that movement of the embedded head is barred. As a whole, the picture is pretty much in line with Chomsky (1989): movement first, and if that possibility is barred, we make use of less economic, language specific, mechanisms like insertion.

Partly basing myself on a listing of instances of obligatory *de* in Sun (1987:46-7), I present in (8) the three most prominent environments where insertion of *de* is obligatory.

(8) a. the embedded head is preceded by a modifier
b. the embedded predicate is complex
c. the result denoting part is a sentence

In the following section we will look at these environments one by one and see that it can be maintained that in these cases *de*-insertion is obligatory *because* raising of the embedded head is impossible.

4. Economy

4.1. Modifiers

As for (8a), consider the relatively simple example in (9). The D-structure in (9a) only differs from (5) in that the modifier *hen* 'very' has been added to the embedded head.

(9) a. Zhang San ku [*H* [shoujuan hen shi]]
Z. cry handkerchief very wet
b. * Zhang San ku shi shoujuan hen
Z. cry wet handkerchief very
c. * Zhang San ku hen shi shoujuan
Z. cry very wet handkerchief
d. Zhang San ku de shoujuan hen shi
Z. cry DE handkerchief very wet
Zhang San cried the handkerchief very wet

As (9b,c) show, the D-structure in (9a) can only be rendered as a grammatical sentence by insertion of the dummy *de* (cf. (9d)), while movement of the embedded head is impossible, see (9b). Note that movement of the head *with* its modifier is excluded as well, cf. (9c).

It seems that we are dealing with the constraint on head movement which Hoekstra (class lectures, 1988) described as a constraint on stranded modifiers and which he argued is also at work in the following incorporation cases.

(10) He deepened the argument very *(much)

(11) a. He called him right up
b. * He called him up right

(12) a. dat hij gaat koffie zetten
that he goes coffee put
that he is going to make some coffee
b. dat hij sterke koffie gaat zetten
that he strong coffee goes put
c. * dat hij sterke gaat koffie zetten
that he strong goes coffee put

In all the ungrammatical sentences in (10)-(12), we see a modifier left behind after the element it modified has been incorporated. In (10), the adjective *deep* has been incorporated, stranding the typical adjective modifier *very*. In (11b), the particle *up* strands *right*, while in (12c), the incorporated noun *koffie* 'coffee' leaves behind its adjectival modifier *sterke* 'strong'.[6]

4.2. Complex predicates

Consider the contrast in (13) and (14) (where *ba* is a kind of 'object preposer'; in these examples it preposes the subject of the embedded result-denoting phrase; see, for instance, Goodall 1989 and for a different view, Huang 1990).

(13) a. Ta ba zhuozi ca ganjing le
he BA table wipe clean LE
He wiped the table clean
b. Ta ba zhuozi ca *(de) ganganjingjing le
he BA table wipe DE very-clean LE
He wiped the table very clean

(14) a. Ta ba chuangdan die zhengqi le
he BA sheet fold neat LE
He folded the sheets such that they were neat
b. Ta ba chuangdan die *(de) zhengzhengqiqi le
he BA sheet fold DE very-neat LE
He folded the sheets so that they were very neat

In the a-sentences in (13) and (14) the lower predicates *ganjing* 'clean' and *zhengqi* 'neat' are bi-syllabic adjectives, compounded of two different elements with more or less the same meaning. In (14a), for instance, both *zheng* and *qi* mean 'tidy, neat'. This compounding is a lexical matter, so the compound behaves in many ways like a non-compound head: in (13a) and (14a), the head has moved to the head of the intervening ExtP, like *lei* 'tired' in (1a).

In Chinese, apart from adding lexical items like *hen* 'very' and *feichang* 'extremely', one can also intensify the meaning of an adjective by reduplication. In the case of bi-syllabic adjectives, each compounding element is reduplicated separately. So, *zhengqi* 'neat' comes out as *zhengzhengqiqi* 'very neat'. Although it is unclear to me how this reduplication process should be represented syntactically, it seems reasonable to suppose that we are dealing with some kind of modification. In this light, the obligatoriness of *de*-insertion, as in (13b) and (13b) does not come as a surprise: movement of the embedded head is barred, insertion of *de* is the only remaining option.

4.3. The status of XP

So far we have not concerned ourselves with the question as to what the status is of XP in (4). Except (3), all examples we have reviewed so far suggest that it is a SC, since the embedded head can be raised unproblematically.

However, the following sentences indicate that the result-denoting phrase may be more than a SC.

(15) a. Ta ku *(de) xiang si le
he cry DE want die LE
He cried such that he wanted to die
b. Ta xia *(de) fa bai le
he frightened DE get white LE
He was frightened such that he turned white
c. Ta ku *(de) wo ye bu gaoxing le
he cry de I also not happy LE
He cried such that I also got unhappy
d. Ta ku *(de) lian ta muqin dou meiyou banfa le
he cry DE even his mother all not-have way LE
He cried such that even his mother could not do
anything about it anymore (=(3))

In (15a) the head of the embedded XP is a modal, in (15b) it is an item meaning something like 'become'. In (15c) the XP contains negation, and finally, in (15d) the XP is a fullfledged sentence, with a subject, negation and an object.

In all the sentences in (15), *de* is obligatory. If we have been right so far, this means that raising of the embedded head into the ExtP head position is banned. The question is why it is banned.

One of the obvious differences between the sentences we have reviewed so far and those in (15) is that in (15) the embedded predicate is headed by a verbal element, whereas so far the embedded head has been an adjective. This does not lead us anywhere, though, because it is fairly easy to establish that in principle there is no ban on raising into the head of ExtP of an embedded verbal head, as is testified by the following sentences.

(16) a. Ta ku zou le ta suoyoude pengyou
he cry leave LE his all friends
He cried such that all his friends left

b. Ta da si le ta gege
he beat die LE his brother
He killed his brother

c. Ta qi ku le
he be-angry cry LE
He was angry such that he [started to] cry

In (16), we have three cases of embedded verbal heads raising into the ExtP head position. The impossiblity of movement of the embedded head in the examples in (15) cannot be attributed to the fact that the head of the predicate is verbal.

One may hypothesize that a barrier intervenes between ExtP and the result-denoting XP, barring the embedded head to raise. Basically, the XP could be a barrier for two reasons: either it is not L-marked or it is a CP. As to L-marking, there are no relevant differences with the XPs in (1) and (2) where extraction of the embedded head was unproblematic. On the other hand, even if XP were a CP, nothing in principle would prevent movement through C.

In addition, there is independent evidence that XP cannot be CP. For one thing, if a barrier were involved here, we would expect NP-movement to be barred as well. However, as is shown in (17), NP-movement causes no problems.

(17) a. Ta ku de lian ta muqin dou meiyou banfa le
he cry DE even his mother all not-have way LE
He cried such that even his mother could not do
anything about it anymore (=(3), (15))

b. Ta ba ta muqin ku de dou meiyou banfa le
he BA his mother cry DE all not-have way LE
=(17a)

c. Ta muqin bei ta ku de dou meiyou banfa le
his mother by/PASS him cry DE all not-have way LE
His mother was cried by him such that she could
not do anything about it anymore

If XP were CP, NP-movement in (17) would be barred. However, in (17b,c) we find two cases where, presumably, NP-movement has taken place: an instance of the object preposing *ba*-construction in (17b) (see comments on examples (13), (14) above, and references cited there) and an instance of the *bei*-construction, or passivization, in (17c). Both sentences are grammatical. The impossibility of head-movement in (15) cannot be due to the presence of a barrier.

Closer examination of the examples in (15) suggests that we are dealing with an XP with its own tense-domain. Several aspects of these sentences point into this direction. First, the presence of negation in (15b). If

the by now fairly standard assumption that negation heads its own projection and that this projection is selected by IP (or TP) are correct, the presence of negation presupposes the presence of an IP (or TP).

Secondly, the presence of modal verbs, as in (15a), also suggests that we are dealing with an independent tense domain in these sentences. Not only is there the generally acknowledged special relationship between I (AUX) and modals in general, but for Chinese it has been proposed at several places that the modal verbs can be seen as instances of I or T (see for discussion, Huang 1982, Li 1990).

The observation that we might be dealing with two different tense domains in one sentence is relevant for the following reason. Hoekstra (class lectures, 1988) has shown that restructuring in Italian is not possible when the complement of the matrix verb has an independent tense-domain. In view of the idea that negation presupposes IP (or TP) alluded to above, Hoekstra is able to explain the following clitic climbing facts:

(18) a. Gianni li vuole vedere
G. him want see
b. Gianni non li vuole vedere
c. Gianni vuole non vederli
d. * Gianni li vuole non vedere

In (18a,b) clitic climbing is possible, but as soon as the complement of *volere* contains a negation, and thus an independent tense-domain, clitic climbing leads to ungrammaticality. The presence of a tense domain blocks the process of restructuring, and restructuring is necessary for clitic climbing. This line of reasoning also explains the following facts (from Rizzi 1982):

(19) a. Mario avrebbe dovuto averlo finito
M. would-have must have-it finished
b. * Mario lo avrebbe dovuto aver finito
c. Mario lo avrebbe dovuto finire

As Hoekstra notes, in (19b), clitic climbing is barred despite the fact that all requirements are met, that is, *dovere* is a restructuring verb, as (19c) testifies. Furthermore, (19a) shows that (19b) is not out for reasons of semantic incompatibility of a matrix temporal auxiliary with an embedded one. It appears that the fact that the embedded predicate has its own temporal auxiliary, and thus its own tense-domain, blocks restructuring and, as a consequence, preempts the possibility for the clitic to climb.

What we see in the Chinese examples in (15) can be compared to the Italian restructuring facts in (18) and (19). Because, as we have argued, the embedded clause contains its own tense domain, 'restructuring' of the embedded verb with the head of ExtP is blocked. As a consequence, to return to the main argument of this paper, by the principles of economy, *de*-insertion is obligatory.

5. Concluding remarks

In this paper I have presented syntactic evidence for the presence of ExtP, the projection postulated between the matrix predicate and the result-denoting XP in Chinese resultatives. The reasoning was based on the idea that if it can be shown that in a certain structure either inversion

takes place or some dummy element is inserted, this indicates that the structure contains a position which triggers this.

The argument gained strength when it was established that, in accordance with the economy principles laid out in Chomsky (1989), for all cases where *de* was obligatory, it was present because movement of the embedded head into the head of ExtP was barred for one reason or another.

If we take the economy approach seriously, the optionality of movement or insertion displayed in the data in (1) and (2) is problematic. The only thing I can say is that although a number of native speakers consulted agree that of these examples the a- and b-sentences are equally acceptable and do not differ substantially in meaning (see for instance Huang 1988 for a partial claim to this effect), other native speakers highly favour the sentences in (1) above their respective counterparts in (2), even to the point of rejecting the sentences in (2) altogether. The way in which for example (2b) can be saved, these native speakers say, is by adding an intensifier like *hen* 'very' or *dou* 'even, all' to the embedded head, resulting in (20).

(20) Zhang San ku de shoujuan dou shi le
Z. cry DE handkerchief all wet LE
Zhang san cried the handkerchief all wet

The intuitions of these speakers confirm the economy approach adopted above.

Two further conclusions we reached were that *de* in Chinese resultatives is a dummy, and that the XP in the structure tree in (4) is either SC or IP.

Notes

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1. The term Chinese is used as a shorthand for the variety of Chinese spoken in most of north and northeast China, which is often referred to as Mandarin.

2. *Le* is a perfective aspect marker. It is generally assumed that there are two different *le*s. As nothing hinges on the difference between these in this paper, I will simply gloss all occurrences of *le* as LE.

3. There is some disagreement on the etymology of *de*. According to some it is derived from the verb *de* 'get, obtain, receive' (see Huang 1988:275), while others maintain that it goes back to the verb *dao* 'reach, get to' (see Li 1990:54, and references cited there).

4. For arguments that the matrix clause is really the matrix clause, see Y.H.A.Li (1990), Huang (1988).

5. Below, references to 'result' should be read as references to result and/or degree.

6. For some discussion on an number of these cases, see Voskuil (1990) and Den Dikken (1991).

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