A RESTRUCTURING APPROACH TO TWO STRUCTURES
FOR CHINESE PURPOSIVES

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1. Introduction

This paper investigates the syntax of two types of purposives in Chinese. Chinese has a serial verb construction, the canonical form of which is as in (1).

(1) Zhangsan mai-le   yi-ge   hanbao chi.
     Zhangsan buy-PERF.PAST one-CL burger eat
     'Zhangsan bought a burger to eat (and ate it).'

In the literature this construction is referred to as *purposive* (e.g., Lin & Liao 2009; Tang 1990; Tsai 1995), as semantically the phrase headed by the second verb (verbP$_2$ hereafter) is analyzed as a purpose of the matrix predicate.

Chinese also has applicative constructions (Liu 2012; Sun 2009). Liu (2012) claims that Chinese has both high and low applicatives, and moreover that low applicatives in Chinese consist of two subtypes: goal applicatives (2a), and source applicatives (2b).

(2) a.   Zhangsan song-le   Lisi yi-ben   shu.
          Zhangsan send-PERF.PAST Lisi one-CL book
          'Zhangsan sent Lisi a book.'

     b.   ta tou-le   Lisi liang-tai diannao.
          he steal-PERF.PAST Lisi two-CL computer
          'He stole two computers from Lisi.'

In this study I analyze the combination of purposives with goal and source applicatives. Purposives in Chinese can combine with these two subtypes of low applicatives, as demonstrated in (3) and (4). I call these two constructions 'goal purposive' and 'source purposive' respectively.

(3) wo song-le   John yi-ben   shu kan.
     I   send-PERF.PAST John one-CL wine drink
     'I sent John a book to read.'

(4) wo tou-le   John yi-ping jiu   he.
     I   steal-PERF.PAST John one-CL wine drink
     'I stole a bottle of wine from John to drink and drank it.'

These two constructions, while being superficially identical, demonstrate substantially distinct properties. First, while both goal and source purposives involve obligatory control over the logical subject of the second verb, in goal purposives the applied object is interpreted as the subject of the second verb, whereas in source

purposives the matrix subject is interpreted as the subject of the second verb. Secondly, the second verb in goal purposives cannot, but the second verb in source purposives can, be modified by agent-oriented adverbs. Thirdly, while the PERF.PAST marker *le* can never occur at the end of goal purposives, it can occur at the end of certain source purposives.

This study adopts Wurmbrand's (2001) analysis and explores a restructuring approach to goal vs. source purposives and their asymmetrical properties. I argue that goal purposives in Chinese can be analyzed as lexical restructuring infinitives and source purposives as reduced non-restructuring infinitives. Specifically, the infinitive is represented by VP in goal purposives and by *v*P in source purposives. The asymmetrical properties between goal and source purposives follow from the different syntactic structures of the projection associated with the second verb in these two constructions.

This paper is organized as follows. Section 2 reviews Wurmbrand's analysis of lexical restructuring and infinitive classification. Section 3 presents my analysis of Chinese goal vs. source purposives. Section 4 concludes.

2.   Wurmbrand (2001): restructuring and graded classes of infinitives

Wurmbrand (2001) suggests that infinitives fall into four classes: lexical restructuring infinitives, functional restructuring infinitives, reduced non-restructuring infinitives, and full clausal non-restructuring infinitives. Wurmbrand argues that restructuring infinitives project VPs, reduced non-restructuring infinitives project *v*Ps or TPs, and full clausal non-restructuring infinitives project CPs. In this section, I introduce the two types of infinitives that are relevant to this study: lexical restructuring infinitives and reduced non-restructuring infinitives.

2.1   Properties of lexical restructuring infinitives

Lexical restructuring infinitives, in Wurmbrand's analysis, demonstrate the following properties: first, they are represented by VPs; and second, they lack PRO subject, and show obligatory control in interpreting the infinitival subject.

Wurmbrand claims lexical restructuring infinitives lack *v*P, and her major evidence is the long passive effect in German. In German, the passive of a restructuring predicate ('try', for example) affects the argument structure of the embedded infinitival predicate: the embedded object becomes the subject of the higher clause. The contrast between (5a-b) demonstrates this.

(5)   a.   weil Hans [den Traktor   zu reparieren] versuchte
              since John the tractor-ACC to repair   tried
              'since John tried to repair the tractor'

                                                                    (Wurmbrand 2001: 17)

        b.   dass [der Traktor]$_i$ [t$_i$ zu reparieren] versuchet wurde
              that the tractor-NOM   to repair   tried   was
              'that they tried to repair the tractor'

                                                                    (Wurmbrand 2001: 19)

In (5a), the embedded object DP 'the tractor' is marked with accusative case. In (5b), notably, 'the tractor' moves to the clausal subject position, bears the nominative case, and is in agreement with the higher auxiliary *wurde* 'was'. According to Wurmbrand, this indicates that there is no accusative case-assigning position in the infinitive; that is, lexical restructuring infinitives are VPs, not *v*Ps.

Lexical restructuring verbs in German are inherently incompatible with a tensed infinitive or embedded negation. Moreover, complementizers and *wh*-specifiers are not allowed in lexical restructuring. Based on these observations, Wurmbrand argues that lexical restructuring infinitives in German do not project TP, NegP, or CP.

Wurmbrand argues that a PRO is present in non-restructuring infinitives, but absent in lexical restructuring infinitives. In German, in non-restructuring constructions, embedded anaphors can occur even when there is no potential binder in the higher predicate (6a); in lexical restructuring infinitives, however, when there is no potential binder in the higher predicate, an embedded anaphor is impossible (6b).

(6)　　a.　　wurde beschlossen [PRO$_i$ sich$_i$ den Fisch mit Streifen　　vorzustellen]
　　　　　　　it was　decided　　PRO$_i$SELF$_i$ the fish　with stripes-ACC to-imagine
　　　　　　　'They decided to imagine what the fish would look like with stripes.'

　　　　b.　　*weil {sich}　der Fisch　　　{sich}　vorzustellen versucht/begonnen wurde
　　　　　　　since{SELF}the fish-NOM {SELF} to-imagine tried/　　begun　　was
　　　　　　　'since they tried/begun to recall the image of the fish'
　　　　　　　　　　　　　　　　　　　　　　　　　　　　(Wurmbrand 2001: 232)

According to Wurmbrand, the contrast between (6a-b) indicates that PRO is absent in restructuring but present in non-restructuring infinitives.

Wurmbrand notes that all predicates that take a lexical restructuring infinitive complement are "obligatory control predicates and prohibit any form of non-obligatory control" (2001: 245). She argues that lexical restructuring infinitives have to be obligatory control infinitives as they are represented with VP and no PRO subject is projected—the interpretation of the infinitival subject, therefore, must be decided by the semantic content of the selecting verb.

2.2　Properties of reduced non-restructuring infinitives

I now introduce the three properties of reduced non-restructuring infinitives. First, non-restructuring infinitives project PRO. (6a) is an impersonal passive based on non-restructuring infinitive (as long passive does not occur). Notably, in this construction, an embedded anaphor can occur. Wurmbrand claims that PRO binds this embedded anaphor. Given the general assumption that external argument is licensed by *v*, the availability of PRO in (6a) provides evidence that non-restructuring infinitives project (minimally) a *v*P.

Second, reduced non-restructuring infinitives show non-obligatory control, as demonstrated by (7).

(7)　weil sie　　　der Hans**h** PRO**h+x** gemeinsam zu uberraschen beschloss
　　　since her-ACC the John**h** PRO**h+x** together　　to surprise　　decided
　　　'since John decided that he and somebody else would surprise hertogether'
<div align="right">(Wurmbrand 2001: 277)</div>

The third property of reduced non-restructuring infinitives is that they can have independent tense specification and negation, as illustrated in (8a) and (8b) respectively. This indicates that reduced non-restructuring infinitives can project TP and/or NegP.

(8)　a.　Dass ihn　　　　der Hans　　[(morgen) zu reparieren] beschlossen hatte
　　　　　that him/it-ACC the John-NOM [(tomorrow) to repair]　decided　　had
　　　　　'that John had decided to repair it tomorrow'

　　　b.　weil ihn　　　der Hans　　[nicht mehr zu bevorzugen] beschlossen hatte
　　　　　since him-ACC the John-NOM not anymore to privilege　decided　　had
　　　　　'since John decided not to privilege him anymore'
<div align="right">(Wurmbrand 2001: 276)</div>

3.　Analysis of goal vs. source purposives

In this section I argue that Chinese goal and source purposives are restructuring infinitives and reduced non-restructuring infinitives respectively. In 3.1, through the availability of agent-oriented adverbs in verbP$_2$, I demonstrate that vP is not projected in verbP$_2$ of goal purposives, but is projected in verbP$_2$ of source purposives. In 3.2 I discuss the control properties of goal vs. source purposives. Section 3.3 discusses embedded TP/AspP. In 3.4 I demonstrate that no NegP or CP is projected in verbP$_2$ in both goal and source purposives.

3.1　Presence/absence of embedded vP

My argument that vP is not projected in verbP$_2$ of goal purposives but is projected in verbP$_2$ of source purposives invokes the property of agent-oriented adverbs that they are vP modifiers—I assume that the availability of agent-oriented adverbs reflects whether vP is projected.

3.1.1　Goal purposives: agent-oriented adverbs are impossible in verbP$_2$

One property of Chinese goal purposives is that agent-oriented adverbs can never occur in verbP$_2$ (9).

(9)　ta gei-le　　　　　John yi-ge　　pingguo (*mianqiangde/*zhendingde) chi.
　　　he give-PERF.PAST John one-CL apple　　reluctantly/　calmly　　eat
　　　Intended meaning: 'He gave John an apple to eat reluctantly/calmly.'

The morpheme *ziji* is the reflexive pronoun in Chinese can also be used as an agent-oriented adverb, and it is clear that while *ziji* can occur in the matrix predicate (verbP$_1$) (10a), it is not allowed in verbP$_2$, as in (10b).

(10) a. wo ziji gei-le   John yi-ben   shu   kan.
          I   self give-PERF.PAST John one-CL book read
          'Only I (but nobody else) gave John a book to read.'

      b. wo gei-le   John yi-ben   shu (*ziji) kan.
           I   give-PERF.PAST John one-CL book self read
           Intended: 'I gave John a book to read himself (not with anyone else).'

Based on the impossibility of agent-oriented adverbs and adverbial *ziji*, I argue that no vP is projected in verbP$_2$ of goal purposives.

3.1.2   Source purposives: agent-oriented adverbs are possible in verbP$_2$

Agent-oriented adverbs and adverbial *ziji* can occur in verbP$_2$ of source purposives (11).

(11) a. wo xiang zhu John yixie mian   zhendingde chi.
          I   want cook John some noodle calmly   eat
          'I want to cook some of John's noodles to eat calmly first.'

      b. zhiyu wanfan, wo xiang zhu John yixie mian ziji chi.
          as for dinner I want cook John some noodle self eat
          'As for dinner, I want to cook some of John's noodles to eat myself.'

Given this possibility of agent-oriented adverbs and adverbial *ziji*, I assume that vP is projected in verbP$_2$ of source purposives.

The above analysis indicates that verbP$_2$ in goal purposives is represented with VP and verbP$_2$ in source purposives is represented with (minimally) vP. This property, on the one hand, provides evidence that goal vs. source purposives are lexical restructuring and reduced non-restructuring infinitives respectively; on the other hand, the different sizes of verbP$_2$ in goal and source purposives in turn nicely captures asymmetrical properties.

3.2   Control properties of goal and source purposives

Goal and source purposives demonstrate both similarities and differences with regard to the interpretation of the subject of V$_2$. On the one hand, they both involve obligatory control. In goal purposives, the applied object is interpreted as the subject of V$_2$ (12a); in source purposives, the controller is the external argument (12b).

(12) a. wo gei-le   John yi-ben   shu kan.
          I   give-PERF.PAST John one-CL book read
          'I$_i$ gave John$_j$ a book for PRO$_{*i/j/*k}$ to read.'

      b. wo$_i$ tou-le   John$_j$ yi-ping jiu [PRO$_{i/*j/*k}$ he   (-le)].
          I steal-PERF.PAST John one-CL wine   drink (-PERF.PAST)
          'I stole a bottle of wine from John to drink and (I) drank it.'

Note that while both involve obligatory control, goal and source purposives differ in that the matrix DP that functions as the controller of the infinitival subject is different (as indicated in (12) above).

From the above introduction, we can see that goal purposives in Chinese demonstrate the same obligatory control property as lexical restructuring infinitives in German, thus providing support to my claim that goal purposives are restructuring infinitives.

Source purposives, however, need some further explanation before they can be fitted into this restructuring framework. Source purposives in Chinese demonstrate different control property from reduced non-restructuring infinitives in German in that the latter involve non-obligatory control. This discrepancy raises the question of whether we can argue that source purposives are reduced non-restructuring infinitives. I argue that this does not constitute counterevidence to my claim. Wurmbrand claims that in obligatory control of PRO, the controller of the infinitival subject is determined semantically/lexically by the control predicate, and also claims that in the absence of PRO, the interpretation of the infinitival subject is necessarily determined by the semantics of the selecting predicate—obligatory control, therefore, is a defining property of restructuring infinitives.

However, Wurmbrand claims that while restructuring infinitives entail obligatory control, this is a one-way correlation and obligatory control does not entail a PRO-less infinitive. In other words, there exist infinitives that contain PRO and nonetheless demonstrate obligatory control. Given that Wurmbrand's classification of infinitives is mainly according to the size of infinitives, not their control properties, I assume that this control property of source purposives does not constitute counterevidence for the analysis of source purposives as reduced non-restructuring infinitives, but just a cross-linguistic variation.

3.3   Goal and source purposives: no TP/AspP is projected in verbP$_2$

In this section I pursue two tasks: first, I demonstrate that no TP/AspP is projected in verbP$_2$ of both goal and source purposives; second, I demonstrate that an InnerAspP is projected in source purposives.

3.3.1   Goal purposives: no TP/AspP in verbP$_2$

A property of goal purposives is that no tense/aspect marker can occur in verbP$_2$, as demonstrated in (13). I assume that TP/AspP is not projected in verbP$_2$ of goal purposives.

(13)   a.   wo gei-le   John yi-ben shu (*zuotian) kan (*-le).
               I   give-PERF.PAST John one-CL book yesterday read -PERF.PAST
               * (i) 'I gave John a book so that he read it yesterday.'
               * (ii) 'I gave John a book and he read it yesterday.'

        b.   wo gei-le   John yi-ben shu   kan (*-guo).
               I   give-PERF.PAST John one-CL book read -EXP
               *(i) 'I gave John a book so that he has already read it.'
               *(ii) 'I gave John a book and he has already read it.'

c.   wo gei-le   John yi-ben shu *zai-   kan.
       I give-PERF.PAST John one-CL book PROG- read
       *(i) 'I gave John a book so that he is reading it now.'

3.3.2   Source purposives: no TP/AspP in verbP$_2$

Source purposives, like goal purposives, do not allow clausal tense/aspect markers in verbP$_2$, as shown in (14), in which the appearance of tense/aspect marker in verbP$_2$ results in ungrammaticality.

(14)   a.   wo tou -guo   John yi-ping jiu   he (*-guo).
              I   steal-EXP John one-CL wine drink-EXP
              *'I stole a bottle of wine from John, which I have already drunk.'

       b.   wo zai-   tou   John yi-ping jiu (*zai-)   he.
              I   PROG- steal John one-CL wine PROG- drink
               *'I am stealing a bottle of wine from John and I am drinking it.'

From the impossibility of tense/aspect markers, I assume that no TP/AspP is projected in verbP$_2$ of source purposives.

3.3.3   Source purposives: InnerAspP in verbP$_2$

One property of source purposives, which constitutes another major contrast against goal purposives, is that when the matrix predicate bears the past tense and has a PERF.PAST marker *le* immediately following it, a second *le* can optionally appear at the end of source purposives, but never goal purposives. Below I provide examples of both a goal purposive (15) and a source purposive (16) to demonstrate this contrast.

(15)   wo zuotian   gei-le   John yi-ping jiu   he   (*-le).
       I   yesterday give-PERF.PAST John one-CL wine drink-PERF.PAST
       Intended: 'Yesterday I gave John$_i$ a bottle of wine to drink and he$_i$ drank it.'

 (16)   a.   wo zuotian   tou-le   John yi-ping jiu   he.
               I   yesterday steal-PERF.PAST John one-CL wine drink
               'Yesterday I stole a bottle of wine from John to drink and drank it.'

       b.   wo zuotian   tou-le   John yi-ping jiu   he   -le.
               I   yesterday steal-PERF.PAST John one-CL wine drink-PERF.PAST
               'Yesterday I stole a bottle of wine from John to drink and drank it.'

Chinese has two *le*'s: the verbal *le* and the sentential *le*. Now a question to ask is: is the clause-final *le* in (16b) licensed within verbP$_2$, or is it a sentential *le* that takes scope over the whole clause? In what follows, I argue that the *le* appearing at the end of source purposives as in (16b) is licensed within verbP$_2$, and this *le* heads an InnerAspP projected within verbP$_2$.

My argument that the *le* in question is licensed within verbP$_2$ is as follows. First, the clause-final *le* in source purposives is licensed within verbP$_2$ is that whether it can appear

or not is sensitive to the boundedness of the event denoted by V$_2$. When V$_2$ is an accomplishment or achievement verb denoting the default boundedness, such as *cang* 'hide', the PERF.PAST marker *le* at the end of a source purposive is obligatory, as shown in (17).

(17)   wo zuotian   tou-le   John yi-ge   beizi cang *(-le).
       I   yesterday steal-PERF.PAST John one-CL cup   hide-PERF.PAST
       'Yesterday I stole a cup from John to hide/break and I hid/ broke it.'

In contrast, when V$_2$ is an activity verb denoting (the default) unboundedness, *le* cannot appear at the end of a source purposive. In Chinese, *chuan* 'wear' is an activity verb (Chen, 1988). When *chuan* is V$_2$ in a source purposive, clause-final *le* cannot occur, as shown in (18).

(18)   wo tou-le   John yi-jian waitao   chuan (*-le).
       I   steal-PERF.PAST John one-CL overcoat wear-PERF.PAST
       'I stole an overcoat from John to wear and I wore it.'

Interestingly, when we convert the unbounded event of 'wearing' by modifying it with the temporal adverbial "three days", the *PERF.PAST* marker *le* is obligatory, as in (19).

(19)   wo tou   -le   John yi-jian waitao   chuan *(-le)   san tian.
       I   steal-PERF.PAST John one-CL overcoat wear-PERF.PAST three day
       'I stole an overcoat to wear and I wore it for three days.'

These examples indicate that the appearance/absence of the clause-final *le* is determined by (the aspect value of) verbP$_2$, and has nothing to do with V$_1$ (or verbP$_1$). Based on this observation, I argue that the clause-final *le* in source purposives is licensed within verbP$_2$, and does not scope over the whole clause. Given that the above discussion indicates that clausal TP/AspP is not projected in verbP$_2$ of source purposives, I assume that *le* heads an InnerAspP rather than a clausal TP/AspP within verbP$_2$.

3.4   Goal and source purposives: no NegP or CP is projected in verbP$_2$

Wurmbrand shows that there is no NegP or CP in lexical restructuring infinitives and reduced non-restructuring infinitives in German. In this section, I demonstrate that this is also the case for Chinese goal and source purposives; that is, no NegP or CP is projected in verbP$_2$ of goal or source purposives.

3.4.1   Goal and source purposives: no NegP in verbP$_2$

One property of goal and source purposive is that verbP$_2$ cannot be negated separately, as shown in (20).

(20)   a.   wo gei-le   John yi-ben   shu (*meiyou/*bu) kan.
              I   give-PERF.PAST John one-CL book not   read
              Intended meaning: I gave John a book but he did not/ will not read.

b. wo tou-le   John yi-ping jiu (*meiyou/*bu) he.
    I   steal-PERF.PAST John one-CL wine not   drink
    Intended: I stole a bottle of wine from John but I did not drink it.

(20a-b) demonstrate that the appearance of the negation morpheme *meiyou/bu* in verbP$_2$ results in ungrammaticality. Based on these observations, I conclude that NegP is not projected in verbP$_2$ of either goal or source purposives.

3.4.2 Goal and source purposives: no CP in verbP$_2$

In both goal and source purposives, no *wh*-question can be constructed in verbP$_2$, as shown in (21a-b).

(21)   a.   ni gei-le   John yi-ben shu *zhenmo/*zainali/*shenmoshihou kan?
            you give-PERF John one-CL book how/   where/ when   read
            Intended: 'You gave John a book, when/where/how would he read it?'

       b.   ni tou-le   John yi -ben shu *zhenmo/*zainali/*shenmoshihou kan?
            you steal-PERF John one-CL book how/ where/   when   read
            Intended: 'You stole a book from John, and when/where/how would you
                      read it?'

Based on the fact that *wh*-phrases are not allowed in verbP$_2$ of either goal or source purposives, I assume that verbP$_2$ in these two constructions does not project CP.

4.   Concluding remarks

In this paper, I reported the properties of goal vs. source purposives in Chinese, and provided an analysis of these properties from a restructuring approach. I argued that goal purposives could be analyzed as lexical restructuring structures and source purposives as reduced non-restructuring structures. I assume that the restructuring approach to goal and source purposives in Chinese provides an appropriate framework to demonstrate that verbP$_2$ is of different sizes in these two structures, and the analysis proposed in the present study captures most of the asymmetrical properties of these two constructions naturally.

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