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**A Small Clause Analysis of Inalienable Possession
in Mandarin and French***

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1. Introduction

Inalienable possession has long been a topic of interest to linguists. It depends on an intrinsic relationship between the possessed and the possessor such as a part-whole or body part relationship. This contrasts with the normal case of alienable possession involving a relation between two separate entities. While this distinction is not relevant to many structures, it is a fundamental factor in any account of certain others. Consider the examples in (1).

- (1) a. John's book (alienable)
b. John's arm (inalienable)
c. I gave a book to John. (alienable)
d. *I gave a headache to John. (inalienable)

The distinction between the classes of possession is not pertinent to the structure in (1a and b). However, any account of the contrast in (1c and d) must address the alienable, inalienable distinction.

In this paper we shall show that a small clause analysis of Mandarin and French permits a unified and restrictive account of one

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class of inalienable possession constructions. Examples of the construction we are investigating are given in (2).

- (2) a. Je lui ai cassé le bras.
 I him have broken the arm
 'I broke his arm'
- b. Ta ba juzi bo-le pi.
 he BA orange peel-ASP skin
 'He peeled the skin from the orange.'

The French facts have been discussed by a number of linguists including Kayne (1975) and Gueron (1984). The Mandarin facts have been discussed by Thompson (1973), and Huang (1982) among others. While this construction is attested in both of these languages, it is not universally available. It has been noted, for example, that a comparable construction is not available in English, as shown in (3)¹:

- (3) a. *I broke him the arm.
 b. *I peeled the orange the skin.

In the next section, we describe the properties of the construction illustrated in (2). In section 3, we present our analysis, first explaining the Mandarin data and then extending it to French.

2. The Data

The class of constructions illustrated in (2) is characterized by the following properties: First, the verb's internal argument is an "affected" theme, i.e. the verb effects some change in its direct object by breaking it, peeling it, etc. Additional examples of this construction with other verbs that select an affected theme are given in (4).

- (4) a. Je lui ai arraché la dent.
 I him have pulled the tooth
 'I pulled his tooth.'
- b. Je lui ai coupé les cheveux.
 I him have cut the hair
 'I cut his hair.'

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- c. Ta ba zhi-men ti-le yi-ge dong.
 he BA paper-door kick-ASP one-cl hole
 'He kicked a hole in the paper-door.'
- d. Ta ba Lisi da-shang-le shou.
 he BA hit-wounded-ASP hand
 'He hit Lisi and wounded Lisi's hand.'

Note that this construction is ungrammatical with verbs which do not select an affected theme, such as *admire*, *see*, *smell* or *want* as shown in (5).

- (5) a. *Je lui ai admiré le bras.
 I him have admired the arm
 'I admired his arm.'
- b. *Je lui ai vu le bras.
 I him have seen the arm
 'I saw his arm.;
- c. *Wo ba juzi wen-le pi.
 I BA orange smell-ASP skin
 'I smell the skin of the orange.'
- d. *Wo ba juzi yao-le pi.
 I BA orange want-ASP skin
 'I wanted the skin of the orange.'

The second property that characterizes this construction is a relationship of inalienable possession between the direct object and some other noun phrase in the sentence. In both French and Mandarin, body parts and part whole relations constitute inalienable possession, but ownership and kinship do not². For example, in (2a) *le bras* 'the arm' is construed as part of the dative clitic *lui* 'him' and similarly, in (2b), *pi* 'skin' is construed as part of the noun phrase *juzi* 'orange'. The ungrammaticality of the examples in (6) is due to the fact that the possessor does not bear a part-whole relation to the possessed.

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- (6) a. *Je lui ai lavé le fils.
 I him have washed the son
 'I washed his son.'
- b. *Wo ba ta bo-le juzi.
 I BA he peel-ASP orange
 'I peeled his orange.'

It appears that the possessor in these constructions is not a subcategorized argument of the verb. It is clearly not an obligatory argument because it may be omitted, as shown in (7).

- (7) a. J'ai cassé le bras.
 I have broken the arm
 'I have broken the arm.'
- b. Wo bo-le pi le.
 I peel-ASP skin ASP
 'I peeled skin.'
- c. J'ai cassé la fenêtre.
 I have broken the window
 'I broke the window.'
- d. Wo bo-le xiang-jiao le.
 I peel-ASP banana ASP
 'I peeled the banana.'

Note, however, that the absence of the inalienable possessor affects the interpretation of the body part. For example, *le bras* 'the arm' in (7a) can only be interpreted as a dismembered arm. For example, it may be the arm from some statue lying on a table. *Pi* 'skin' in (7b) requires a similar interpretation. The unnaturalness of the examples in (7a) and (7b) disappears if we substitute an affected theme which does not entail an inalienable possessor, as in (7c) and (7d).

A third property that characterizes this construction is that the possessed noun phrases cannot be modified by a descriptive adjective as shown in (8).

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- (8) a. *Je lui ai cassé le beau bras.
 I him have broken the pretty arm
 'I cut his pretty arm.'
- b. *Wo ba juzi bo-le hou pi.
 I BA orange peel-ASP thick skin
 'I peeled the thick skin of the orange.'

There is one observable difference between the French and Mandarin inalienable possession constructions: In French, the possessed nominal is obligatorily preceded by a determiner, usually the definite article, whereas in Mandarin, the possessed nominal can stand alone. This contrast reflects a basic difference between the two languages: French never permits bare nouns in argument positions, not even bare plurals or mass nouns, whereas Mandarin has no articles, although demonstratives can function as markers of definiteness in this language. Note, however that neither French nor Mandarin permits demonstratives with the possessed nominal as in (9)³.

- (9) a. *Je lui ai cassé ce nez.
 I him have broken this nose
 'I have broken this nose of his.'
- b. *Wo ba zhi-men ti-le na-ge dong.
 I BA paper-door kick-ASP that cl hole
 'I kicked that hole in the paper-door.'

We propose to account for these properties of this inalienable possession construction by attributing a small clause structure to the complement of the verb. We claim that this option is available only to verbs taking an affected theme.

3. Analysis

We now present the details of our analysis by focussing first on Mandarin. We will then extend this analysis to account for the French facts.

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3.1. Mandarin

All the Mandarin examples of inalienable possession we have considered contain *ba*. Cheng (1986) analyzes *ba* as a preposition which always assigns the theta-role of affected theme to its complement. In addition to the inalienable possession structures we have presented, *ba*-phrases may also occur in structures where no overt noun phrase follows the verb as illustrated in (10).

- (10) Wo ba Lisi da-shang-le.
 I BA hit-wounded ASP
 'I hit Lisi and he is wounded'

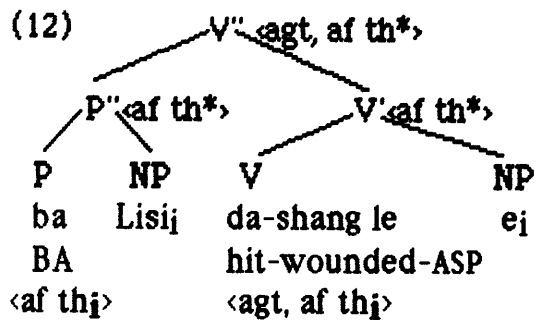
Following Cheng, we assume that there is no movement involved in the *ba*-construction. However, we depart from Cheng's analysis in positing an empty category as the complement of the verb in sentences like (10). On our analysis, the complement of *ba* receives a theta-role directly from *ba* and the empty category is assigned a theta-role by the verb. This empty category is a base-generated anaphor. Following Hornstein and Lightfoot (1987), we assume that a base-generated anaphor is governed but not Case marked. It is bound but has an independent theta-role.

It was observed in Cheng (1986) that prepositional phrases headed by *ba* only co-occur with verbs that assign the theta-role of affected theme to their internal arguments. Moreover, the complement of *ba* must be the semantic object of the verb. In other words, the *ba*-construction must be licensed by a verb that assigns the theta-role of affected theme. We formalize this licensing condition as the BA-linking filter in (11). The BA-linking filter applies at LF. It states that a structure containing *ba* will be ungrammatical unless the affected theme argument of *ba* is co-indexed with the affected theme argument of the verb.

- (11) BA-linking Filter
- | | |
|--------------------------------|---|
| Ba | Verb |
| ⟨affected theme _i ⟩ | ⟨X _j ⟨affected theme _k ⟩⟩ |
| *unless i=k | |

The structure we attribute to (10) is given in (12).

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In (12), the verb *da-shang* 'hit-wounded' assigns the theta-role of affected theme to the empty category that follows it. *Ba* assigns the theta-role of affected theme to its complement, the overt NP *Lisij*. The BA-linking filter ensures that the complement of the verb is co-indexed with the complement of *ba*.

Because they are co-indexed, the two arguments must be coreferential. Observe that insertion of a distinct noun phrase after the verb renders the structure ungrammatical, as in (13).

- (13) * *Wo ba Lisij da-shang-le penyouj.*
 I BA hit-wounded-ASP friend
 'I hit a friend and he is wounded, affecting Lisi.'

However, insertion of a pronoun or an R-expression which is coreferential with *Lisij* is also impossible as shown in (14).

- (14) a. **Wo ba Lisij da-shang-le taj.*
 I BA hit-wounded-ASP him
 'I hit Lisi and he is wounded.'
- b. **Wo ba Lisij da-shang-le renj.*
 I BA hit-wounded-ASP person
 'I hit Lisi and he is wounded.'

We attribute the ungrammaticality of the examples in (14) to binding theory violations because the *ba*-phrase c-commands the complement of the verb. Adopting Huang's notion of weak c-command given in (15), we claim that *Lisij* the complement of *ba* weakly-c-commands the pronoun *ta* 'him' in (14a) and the R-expression *ren* 'person' in (14b). Note also that *Lisij* weakly c-

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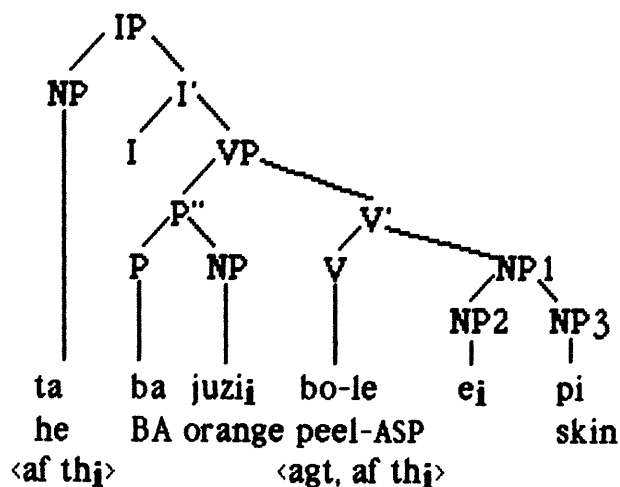
commands the empty anaphor in (10) as required by principle A of the binding theory⁴.

(15) Weak c-command

α weakly c-commands β if and only if the node immediately dominating α c-commands β . (Huang 1982)

As in the simple cases just discussed, we assume that the complement of *ba* must be linked to an empty category governed by the verb in the inalienable possession construction. However, in this construction, the empty category is internal to the complement of the verb. The structure we attribute to the inalienable possession construction in Mandarin is given in (16).

(16)



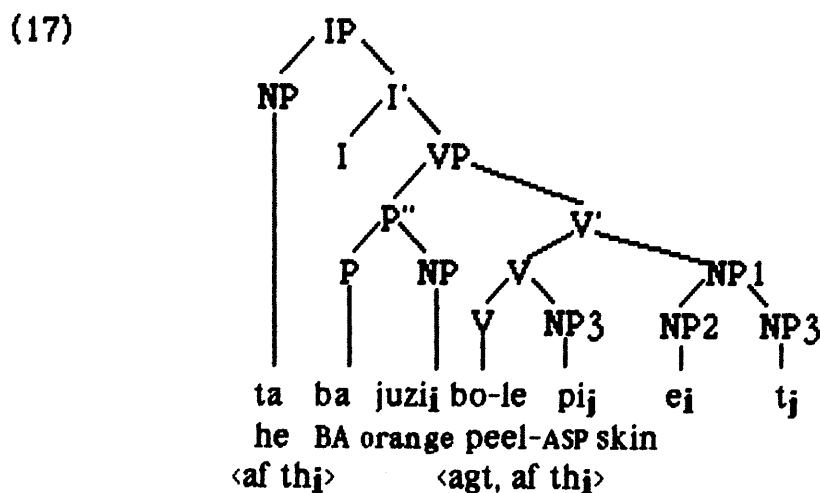
In (16), the complement of the verb is a nominal small clause which we have labelled NP1. NP1 is semantically-selected (s-selected) by the verb and is therefore in a theta-position, rendering it visible for purposes of Case-marking by the governing verb. The subject of this small clause is an empty category which we have labelled NP2. The overt possessed nominal is the predicate, NP3.

As noted above, the possessed noun phrases in inalienable possession constructions cannot be modified by a descriptive adjective. According to Gueron (1984) this is due to the fact that the NP is not referential. If descriptive adjectives can only modify referential noun phrases, the impossibility of such modification on the possessed nominal follows directly on our analysis. In (16), for example, the possessed nominal *pi* 'skin' is the predicate of a nominal

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small clause, and therefore does not refer to any particular skin. However, the small clause NP1 does have a referent - it is the skin of a particular orange.

The inalienable possession construction in (16) has the interpretation "I skin-peeled the orange", so the orange is affected by being skin-peeled. We suggest that this interpretation follows from an LF operation whereby the small clause predicate *pi* 'skin' raises onto the verb *bo* 'peel', forming a complex predicate⁵. The LF representation of (16) is given in (17).



Chomsky (1986) suggests that in sentences involving small clauses, the verb and the predicate of the small clause may jointly s-select the subject of the small clause. The LF representation in (17) expresses this s-selection. The verb *ba* 'peel' and the small clause predicate *pi* 'skin' form a complex verb which s-selects the subject of the small clause. Consequently, the affected theme theta-role of the verb is assigned to its s-selected argument at LF. Recall that *ba* assigns the theta-role of affected theme to its complement. The complex verb assigns the same affected theme to the subject of the small clause. Thus, at LF the representation of the inalienable possession construction mirrors the simple cases involving the *ba*-constructions such as (10).

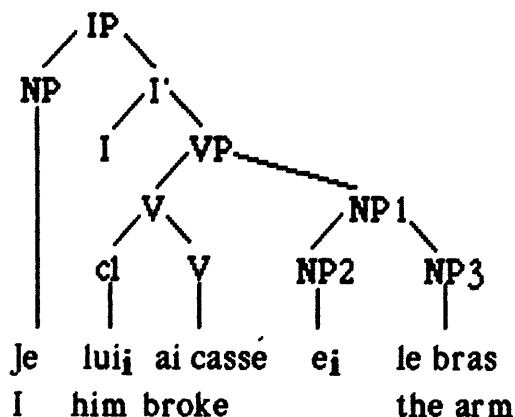
3.2. French

Consider now the French inalienable possession construction. We claim that in French, as in Mandarin, the complement of the verb has a

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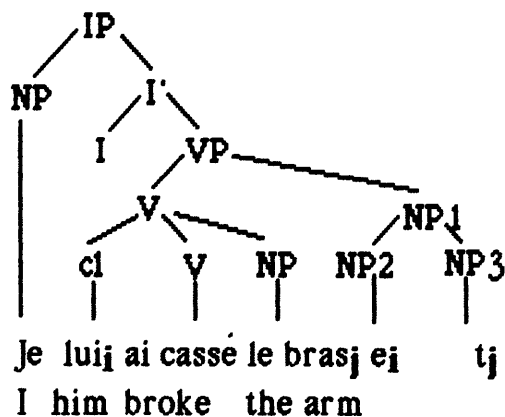
small clause structure with a base-generated empty anaphor in subject position. The French counterpart of the *ba*-phrase is the dative marked element. The s-structure we attribute to (2a) is given in (18).

(18)



We propose that in French, as in Mandarin, the small clause predicate and the verb form a complex verb at LF and that this complex verb assigns a theta-role to the subject of the small clause. The LF representation of (18) is given in (19).

(19)



Note that the complements of the verbs in Mandarin and French are very similar both at S-structure and at LF on our analysis. The major difference lies in the antecedent of the small clause subject. First, we observe a structural difference: The *ba*-phrase is in SPEC of VP whereas the French clitic is attached to the verb itself. Following Kayne (1987), we assume that the clitic is base-generated as an adjunct to the verb (although it may be realized on INFL in tensed clauses when the verb raises). It should be pointed out, however, that

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the dative element may also be realized as a full NP in which case it appears post-verbally and is preceded by the dative marker *à*, as illustrated in (20)⁶.

- (20) a. Je lui ai coupé les cheveux.
 I him have cut the hair
 'I cut his hair.'
- b. J'ai coupé les cheveux à Jean.
 I have cut the hair DAT
 'I cut Jean's hair.'

In both cases, we assume that the dative element weakly c-commands the subject of the small clause. In both languages, this condition is required to ensure interpretation of the empty anaphor.

There has been some debate in the literature regarding the theta-properties of the dative element in Romance inalienable possession constructions. Gueron claims that the dative clitic in examples like (18) receives a secondary theta-role of goal from the verb. Borer and Grodzinsky (1986) suggest that Romance datives may be assigned a possessor theta-role by an optional position in the verb's theta grid. Since the dative clitic is base-generated, for the purposes of our analysis it is immaterial which of these theta-roles is assigned to the dative clitic as long as it bears some theta-role which is distinct from the theta-role assigned to the complement of the verb.

4. Eskimo

Stowell (1987) points out that there may be parametric variation in the level at which complex predicates are formed. Thus, one might predict that the LF representation we posit for Mandarin and French is available at different levels of the grammar in other languages. Consider the Eskimo examples in (21).

- (21) a. niaqqu-qp-taa
 head-hurt-3sg/3sg
 'He hurt (hit) him on the head.' (Lowe 1983)

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- b. *iru-ir-taa*
 leg-break-3sg/3sg
 'He broke her leg.' (Jacobson 1984)

In (21a), the body part *niaggu* 'head' is incorporated onto the transitive verb *qp* 'hurt'. The resulting interpretation is 'I head-hurt him'. Similarly, in (21b), *iru* 'leg' is incorporated onto the transitive verb *ir* 'break' deriving *iru-ir* 'leg-break'.

Thus, the LF representation we posit for Mandarin and French is explicitly represented at S-structure in these Eskimo examples. The manifestation of this phenomenon in Eskimo lends support to an analysis of inalienable possession in terms of complex predicates.

5. Conclusion

To summarize, the complement of the French verb closely resembles the complement of the Mandarin verb. Both contain a base-generated empty category in subject position and a body part functioning as a predicate. In both languages, this predicate raises onto the verb at LF forming a complex verb which s-selects and theta-marks the subject of the small clause. We attribute the availability of these nominal small clauses to a lexical property of the verbs. However, each language deals in its own way with the binding requirements of the empty anaphor. French makes use of the dative clitic, which is always available with transitive verbs, while Mandarin uses the *ba*-construction which normally takes an affected theme.

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¹The unavailability of an English counterpart to this Mandarin and French construction may be due to the lack of a VP internal position which can receive Case and no (obligatory) theta-role.

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²There is variation among Mandarin speakers with respect to the class of relations considered inalienable. Thus, for some speakers, kinship belongs to the class of inalienable relations. In some languages, e.g. Korean, kinship relations pattern generally with body part and part whole relationships, cf. Choe (1987).

³French permits demonstratives in a contrastive context. For example, (9a) might be acceptable if the patient had two noses and the speaker is indicating which of them he/she had broken.

⁴Note that an overt anaphor which is the complement of the verb cannot be bound by the complement of *ba* in this construction. It has been observed that overt anaphors in Mandarin are always subject-oriented and hence cannot be bound by the complement of *ba*. However, the subject cannot serve as the antecedent of the complement of the verb in the *ba*-construction as a consequence of the BA-linking filter. Recall that this filter co-indexes the complement of *ba* and the complement of the verb. Further co-indexation of the subject and the complement of the verb would result in a binding violation.

(i) Zhangsan_i da-shang-le ziji_i.
 hit-wounded-ASP self
 'Zhangsan hit himself and he is wounded.'

(ii)*Zhangsan_i ba Lisi_j da-shang-le ziji_i.
 BA hit-wounded-ASP self
 'Zhangsan hit himself and he is wounded, affecting Lisi.'

⁵This proposal is similar to Stowell's (1987) analysis of adjectival small clauses in English.

⁶See Kayne (1975) for arguments against an analysis of the dative marker *à* as a preposition in French.

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