

Argument Interpretations in the Ditransitive Construction

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An indirect object can be interpreted as a Provider or as a Recipient. The evidence considered in this article suggests that the two interpretations can be morphologically analytic in Chinese and typologically parametrized for certain natural classes of verbs in English and Chinese. Two VP projections are proposed for the ditransitive construction. The head of the lower VP can be phonologically realized or null. The content of the null verb is parametrized across languages. The contrasts in indirect object interpretations in these languages are explained in terms of the lexical meanings of the null verb. The contrasts in verb occurrence restrictions in these languages are accounted for by the interpretable feature compatibilities in head adjunction from the lower to the higher VP.

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1. INTRODUCTION

In comparing English with Chinese, one can find some contrasts in argument interpretations and in restrictions on what verbs may occur in the ditransitive construction. This research analyzes the contrasts and investigates the syntactic mechanisms responsible for these contrasts.

A ditransitive construction contains three arguments. One is the causer of the eventuality.¹ It is the subject of the clause. The other two arguments are internal ones. The first internal argument, the indirect object (IO), is either a Recipient or a Provider, and the second one, the direct object (DO), is always a Theme. The notion of Recipient refers to either a recipient of an entity or a recipient of a benefit given by someone else, as *him* in (1a). The notion of Provider refers to either a provider of an entity or a provider of a benefit to something or someone else, as *me* in (1b). In this article the contrast between these two interpretations of the IO is crucial.²

- (1) a. I bought him a book.
b. He charged me seven dollars.

The contrast between Recipient and Provider interpretations of the IO, as shown above, seems to be related to the lexical meaning of the verb. However, I will show in this article that the contrast can be morphologically represented in Chinese and typologically parametrized for certain

natural classes of verbs in English and Chinese. Based on the data of these languages, I will argue that there are two VP projections in the ditransitive construction, and the lower head can contain a phonologically null verb, whose content is parametrized across languages. I will explain the contrasts in IO interpretation in these languages in terms of the lexical meanings of the null verb. I will also account for verb occurrence restrictions in these languages by the feature compatibilities between the head of the lower VP and the verb of the higher VP to which it adjoins.

The data in section 2 show the contrast in IO interpretations in English and Chinese. Section 3 introduces the occurrence restrictions of verbs in the ditransitive construction in these two languages. Section 4 presents my proposal, evidence supporting it, and its explanations for the observed contrasts. Section 5 discusses transference verbs. Section 6 argues against four alternative approaches. Finally, a summary in section 7 concludes the article.

2. INTERPRETATIONS OF THE IO

I will show in this section that the interpretations of the IO can be either morphologically or typologically determined.

2.1. *Morphological Representations*

English *give* or *send* and Chinese *gei* 'give' are transference verbs whose directions are specified. Both require the IO to be a Recipient. This is shown in (2).

- (2) a. John gave Mary a book.
 b. Lao Zhang *gei-le* Lao Li *yi ben shu*.
 Lao Zhang give-ASP Lao Li one CL book
 'Lao Zhang gave Lao Li a book.'

Many Chinese transference verbs can be compounded with *-gei* 'give', and their IO is always a Recipient, as shown in (3).³

- (3) a. Lao Zhang *mai4-gei* wo *yi jian fangzi*.⁴
 Lao Zhang sell-give me one CL house.
 'Lao Zhang sold a house to me.'
 b. Lao Zhang *zu-gei* wo *yi jian fangzi*.
 Lao Zhang rent-give me one CL house.
 'Lao Zhang rented a house to me.'
 c. Lao Zhang *jie-gei* wo *yi jian fangzi*.
 Lao Zhang borrow-give me one CL house.
 'Lao Zhang lent a house to me.'

Other *-gei* compound verbs, such as *song-gei* 'send as a gift', *di-gei* 'pass to', *xie-gei* 'write to', *tui-gei* 'push to', *da-gei* 'make (phone call) to', *ti-gei* 'kick to', *jiao-gei* 'hand to', *reng-gei* 'throw to', also specify the Recipient meaning of the IO. In such cases, the first part of the compound verb specifies the manner of the transference.

If a Chinese verb of transference is compounded with *-zou* 'go', the IO is always interpreted as a Provider. Thus the contrast between *V-gei* and *V-zou* is that the IO of the former is a Recipient while that of the latter is a Provider. Transference verbs such as *ban* 'move', *ji* 'mail', *na* 'take', *dai* 'bring', and *fen* 'divide', can occur with either *-gei* or *-zou*, as in (4) and (5):⁵

- (4) a. ta ban-gei-le wo yi ba yizi.
 he move-give-ASP me one CL chair
 'He brought a chair to me.'
- b. ta ban-zou-le wo yi ba yizi.
 he move-go-ASP me one CL chair
 'He took a chair from me.'
- (5) a. ta ji-gei-le wo yi ben shu.
 he mail-give-ASP me one CL book
 'He mailed a book to me.'
- b. ta ji-zou-le wo yi ben shu.
 he mail-go-ASP me one CL book
 'He mailed a book from me (to himself or someone else).'

2.2. Typological Differences

In this subsection, I will show that an IO is interpreted as a Provider in Chinese and as a Recipient in English, if the verb in Chinese is a single root transference verb or a verb of change of state. (For more discussion of transference verbs see section 5.)

2.2.1. Verbs of Transference

In English, the direction of transference is always towards the referent of the IO, as shown in (6). In other words, the IO is a Recipient.

- (6) He bought/stole/brought me a book.

By contrast, the IO of most Chinese single root transference verbs is a Provider, as in (7).⁶

- (7) a. Lao Li mai³-le Xiao Wu yi zhi bi.
 Lao Li buy-ASP Xiao Wu one CL pen

- 'Lao Li bought a pen from Xiao Wu.'
- b. Lao Li tou-le wo yi ben shu.
Lao Li steal-ASP me one CL book
'Lao Li stole a book from me.'
- c. ta na-le wo yi ben shu.
he take-ASP me one CL book
'He took a book from me.'
- d. ta ban-le wo yi ba yizi.
he move-ASP me one CL chair
'He took a chair from me.'

These data show that when this type of transference verb occurs in a ditransitive sentence, the IO is interpreted as a Recipient in English, and a Provider in Chinese.

2.2.2. Verbs of Change of State

Verbs of change of state can occur in the ditransitive construction in both English and Chinese. Levin & Rapoport (1988: 287) claim that ditransitive sentences are possible mainly with verbs of creation and obtaining, and verbs of change of state do not enter into this construction, since *break me a glass* is ungrammatical. In fact, this expression is ill-formed only pragmatically. It is unusual that breaking a glass can make a person receive the glass or receive any benefit, if the English IO is expected to be Recipient. Given the right context, however, such cases can occur, as in (8a). Other verbs of change of state can also occur in the ditransitive construction, as in (8b). In such cases, the IO is consistently a Recipient in English.

- (8) a. Can you break me up some toothpicks? (so I can build a model)
b. He baked me a potato.

The Chinese ditransitive sentences in (9) contain verbs of change of state. However, the IO is a Provider rather than a Recipient.

- (9) a. ta da-sui-le wo yi ge boli-bei.
he hit-broken-ASP me one CL glass-vessel
'He broke a glass of mine.'
- b. ta zheng-le wo yi zhi ji.
he steam-ASP me one CL chicken
'He steamed one of my chickens.'
- c. wo yan-le Xiao Wang yi bao luobo.
I pickle-ASP Xiao Wang one package radish
'I pickled a package of Xiao Wang's radishes.'

The above data show that when a verb of change of state occurs in the ditransitive construction, a factual or intended transference meaning is implied in the sentence, and the direction of the transference is towards the IO referent in English, but away from the IO referent in Chinese. This patterns with the transference verbs presented in the previous subsection.

3. OCCURRENCE RESTRICTIONS OF VERBS

3.1. *Creation Verbs*

Verbs of creation can be used in the English ditransitive construction, and the IO is always a Recipient. However, such verbs cannot be used in the Chinese ditransitive construction. This contrast is shown in (10):

- (10) a. Chris baked Mary a cake.
 b. *Lao Li zhi-le wo yi shuang shoutao.
 Lao Li knit-ASP me one pair mitten
 c. *Lao Li hua-le wo yi zhang hua.
 Lao Li draw-ASP me one CL picture

3.2. *Consumption Verbs*

Verbs of losing and consumption can be used in a Chinese ditransitive sentence, and the IO is always a Provider. Such verbs are *chi* 'eat', *he* 'drink', *chou* (yan) 'smoke' (cigarette), *yong* 'use', *shao* 'burn', *diu* 'lose', etc. The English counterparts of these ditransitive sentences are unacceptable. This is shown in (11) through (13):

- (11) a. *Bill ate me an apple.
 b. Laoli chi-le wo yi ge pingguo.
 Laoli eat-ASP me one CL apple
 'Laoli ate an apple of mine.' (lit: Laoli ate me an apple.)
- (12) a. *John burned me a document.
 b. ta shao-le wo yi fen wenjian.
 ta burn-ASP me one CL document
 'He burned one of my documents.' (lit: he burned me a document.)
- (13) a. *John wore Bill a shirt.
 b. Lao Zhang chuan-le Lao Li yi jian chenshan.
 Lao Zhang wear-ASP Lao Li one CL shirt
 'Laoli Zhang wore Lao Li's shirt.' (lit: Lao Zhang wore Lao Li a shirt.)

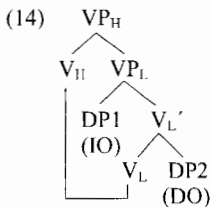
These two subsections show that creation verbs are allowed in the English ditransitive construction, but not consumption verbs. In Chinese, however, it is just the other way around.

Thus far, we have seen the contrasts between the Chinese and the English ditransitive constructions in the interpretation of the IO with respect to transference verbs and verbs of change of state, and in the occurrence restrictions on creation and consumption verbs.

4. EMPTY CATEGORIES IN THE DITRANSITIVE CONSTRUCTION

4.1. *A Proposal*

It has been proposed in the literature that there are two VPs in the ditransitive construction (Larson 1988, among others). I also assume a double VP structure, shown in (14):



In this structure, the lower head, V_L contains a verbal element whose interpretable features are related to the interpretation of the element in its Spec position, i.e., the IO. An element in V_L adjoins to V_H .

The morphological evidence for this proposal comes from Chinese compound transference verbs. In section 2.1, we saw that the interpretation of the IO is related to the choice between the two forms of the second lexical morpheme of a transference verb, *-gei* 'give' and *-zou* 'go'. If the concepts of Provider and Recipient can be taken as theta roles, we can claim that the theta role of the IO is independently assigned by *-gei* 'give' or by *-zou* 'go'. *-Gei* assigns the Recipient role, while *-zou* assigns the Provider role to the IO. The interpretation of the IO is irrelevant to the other verbal morpheme of a transference verb. In (5), repeated here as (15), the verb *ji* 'mail' alone does not help to decide whether the IO is Recipient or Provider.

- (15) a. ta ji-gei-le wo yi ben shu.
 he mail-give-ASP me one CL book

- 'He mailed a book to me.'
- b. ta ji-zou-le wo yi ben shu.
 he mail-go-ASP me one CL book
 'He mailed a book from me (to himself or someone else).'

In addition, the relationship between the IO and *-gei/-zou* is like that between a subject and a verb. *-Gei* functions like the English verb *get*, and *-zou* functions like the English verb *lose*. They can both take IOs as their subjects. In (15a) above, the sentence meaning is that the referent of the subject mailed a book and, by doing so, he or she made the referent of the IO get the book. In (15b), the sentence meaning is that the referent of the subject mailed a book and, by doing so, he or she made the referent of the IO lose the book.

It has often been pointed out that the relationship between the IO and the DO is like that between a subject and an object. In English and Danish, where anaphors have a subject orientation, the IO behaves like a subject in that it can bind an anaphor DO, as in (16). (English examples are from Barss & Lasnik 1986. Danish examples can be found in Her-slund 1986:135.)

- (16) a. I showed John/him himself (in the mirror).
 b. I showed the professors each other's students.

In addition, the relation between the IO and the DO has the Superiority Effect, just as the relation between a subject and a DO does. (This was pointed out by Barss & Lasnik 1986.) In (17) and (18), only the subject and the IO can move, because they are closer to the target than the DO, and thus are superior to it:

- (17) a. I wonder who bought what.
 b. *I wonder what who bought.
- (18) a. Who did you give which book?
 b. *Which book did you give who? (grammatical only in the echoic reading)

If the IO and the DO are in the subject-object relation, what is missing is the predicate verb. Chinese *-gei* and *-zou* in the ditransitive construction can be the overt forms of such predicate verbs.

The subject - predicate verb relation between the IO and the Chinese verb *-gei/-zou* needs to be represented at the syntactic structure. The proposed structure (14) reflects this relationship: *-gei* and *-zou* are base-generated at the lower V, V_L, and the IO is base-generated at its Spec

position. Thus IOs can be the subject of the verbs *-gei* and *-zou*. The other root of a compound transference verb is base-generated at the higher head, V_H . Subjects of ditransitive sentences are subjects of the verb at V_H . Semantically, they are causers of eventualities. The two VPs correspond to two eventualities. The VP_H encodes a process, and the VP_L encodes the resultant state of the process. The PF order of the ditransitive sentences can be derived by a head adjunction of the lower head to the higher one.

Li (1990: 105) discusses two ways of analyzing the order [V-*gei* IO DO].⁷ The first one is to relate the order to [V NP1 *gei* NP2], which according to her is a serial verb construction.⁸ For instance, (19a) is related to (19b).

- (19) a. ta na-gei women shu le.
 he take-give we book ASP
 ‘He has brought the book to us.’
 b. ta na shu gei women le.
 he take book give we ASP
 ‘He has brought the book to us.’

It might be possible that (19a) is a result of focus NP shift of NP1, *shu* ‘book’ of (19b), to the right. The reanalysis of *gei* and V takes place after the shift of focus NP1. However, there are at least three problems with this analysis. The first one is pointed out by Li: the shifted NP1 does not always have to be a focus element:

- (20) a. ni yao song-gei shei shu?
 you want send-give who book
 ‘Who do you want to give the book to?’
 b. ni yao song shu gei shei?
 you want send book give who
 ‘Who do you want to give the book to?’

In (20) it is surely the question word *shei* ‘who’, rather than *shu* ‘book’, that bears the focus. Nonetheless, the ordering [V-*gei* IO DO] is still possible. My additional argument against this shift analysis is that nowhere else can we find rightward XP shift in Chinese, whether or not the XP is focused. On the contrary, Chinese has leftward focus XP raising, as in (21).⁹

- (21) a. yi jian honghong de dayi
 one CL red MOD coat
 ‘a red coat’

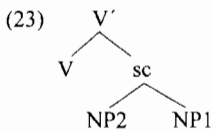
- b. honghong de yi jian dayi
 red MOD one CL coat
 'a RED coat'

Furthermore, there is no [V NP1 *zou* NP2] construction for [V-*zou* IO DO] to derive from. This is shown in (22).

- (22) a. ta na-zou women shu le.
 he take-go we book ASP
 'He has taken the book from us.'
 b. *ta na shu zou women le.
 he take book go we ASP

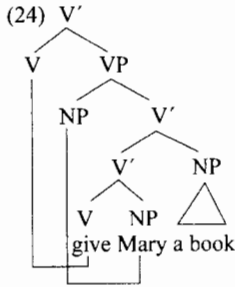
The other analysis, which is considered by Li (1990: 105), is that the lexicon contains a word formation rule attaching *gei* to the set of verbs that involve transference of objects. In other words, V-*gei* is base-generated at one V head, and there is no head adjunction movement in the computation. However, this analysis has not only the contrasts between the presence and absence of *-gei* in Chinese, but also the contrasts between Chinese and English, carried by lexical semantics. I will argue against such an approach in section 6.1.

In fact, Green (1974), among many others, notices the special relation between the IO and the DO and claims that the relation is a kind of possession. Kayne (1984) encodes the relation as a subject-predicate relation and proposes the following small clause structure to capture the relation:

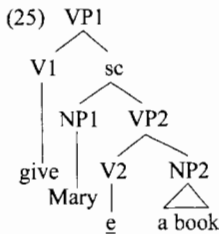


In this structure the verb selects a small clause; the indirect object NP2 is the subject and the direct object NP1 is the predicate.

Aoun & Li (1989:160) point out that Kayne's structure cannot capture the asymmetric C-commanding relationships between the two objects, which are observed by Barss & Lasnik (1986), since the two objects c-command each other in (23) above.¹⁰ Barss & Lasnik's (1986) work shows that the first complement (IO) must c-command the second one (DO), not vice versa. Larson (1988,1990:601) assumes the following structure for a ditransitive sentence such as *John gave Mary a book* to capture the asymmetrical relationship:



However, Aoun & Li (1989) argue against this structure as it misses the semantic possession relation between the IO and the DO.¹¹ Thus neither Kayne's nor Larson's structure is satisfactory to them. They point out that "it seems necessary to elaborate an analysis of double object constructions that incorporates the semantic (possession) relation as well as the structural (asymmetric c-commanding) relation between the two complements" (P.163). They propose the following structure (25) for sentences like *John gave Mary a book*. This structure is similar to my structure in (14).



They claim that in (25) the possession relation between the IO *Mary* and the DO *a book* is expressed by the postulation of a null verb, *e*, denoting possession, taking *Mary* as the subject and *a book* as the object of a small clause. In this structure the indirect object *Mary* asymmetrically c-commands the direct object *a book*, capturing the generalization stated by Barss & Lasnik (1986).

Comparing (25) with my structure in (14), one can find two differences. One is that the node immediately governing NP1 or IO is *sc* 'small clause' in (25) but VP_L in (14). This difference is not essential, however, if we consider that in the current literature a small clause can be a maximal projection whose head can be either *e* (empty) or spelled out by a word such as *as* in English (Haegeman 1994: 126):

(26) I consider him (as) my best friend.

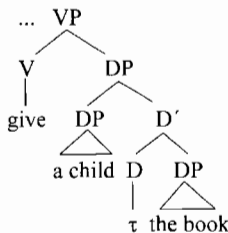
In other words, the sc of (25) is not an independent maximal projection of VP2. The other difference is that in (25) V2 is always empty while in my account V_L can contain a verb such as Chinese *-gei* and *-zou*.

4.2. Accounting for the Interpretation Contrast

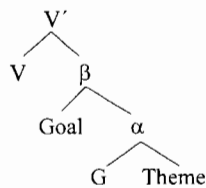
The interpretation contrast between an English IO and a Chinese IO with respect to verbs of change of state and a certain type of transference verb shown in section 2.2.1 and 2.2.2 is exactly the contrast between (15a) and (15b) above. In other words, the IO is a Recipient in English and a Provider in Chinese. This contrast can be accounted for if we assume that in such cases the V_L of (14) in English contains an element which is a counterpart of Chinese *-gei* and has a PF null form. I call this null form E_{get} . In contrast, V_L of (14) in Chinese contains a PF null form which is a counterpart of overt *-zou*. I call this null form E_{lose} . Thus in default cases, the parameters are that Chinese tends to make the Provider of a transference explicit, while English tends to make the Recipient of a transference explicit.

A null element in the structure of the ditransitive construction has long been proposed, although without any overt counterpart. In Aoun & Li (1989, see (25) above) a null verb e is assumed. In Johnson (1991:618) a null element τ in D, which seems to correspond to V in other theories, is proposed, as in (27a), and in Pesetsky (1995:155) a null prepositional affix G is proposed to fill the same structural position, as in (27b):

(27)a. Johnson (1991:618)



(27)b. Pesetsky(1995:155)



All of these studies have proposed a null form for the ditransitive construction. The present research not only correlates the null forms to their overt counterparts, but also explains the cross-linguistic variations by the interpretable features of the null forms. I will develop this further in the following subsection.

4.3. Accounting for the Acceptability Contrasts and Similarities

Like the null nominal form PRO, which receives a theta role from a

nonfinite verb and thus has interpretable features, the null verbal forms assumed above, E_{get} and E_{lose} , also have interpretable features. The interpretable features of the null forms are exhibited not only in their ability to assign theta roles to the IO (see 4.1 and 4.5), but also in their semantic compatibility with the verb in V_H , to which the null forms adjoin.

The basic meaning of a ditransitive sentence, as described in section 4.1, is that, by performing a certain task, the referent of the subject causes the referent of the IO to get or lose the entity of or some benefit from the referent of the DO. The nature of the task performed should be compatible with the concepts of getting and losing. Specifically, the task of creation of an entity can never cause another person to lose the entity. Thus, if the null verb in V_L means 'losing' in Chinese, V_H cannot contain a creation verb. That is why the Chinese ditransitive construction does not allow this class of verbs. In contrast, the task of consumption of an entity cannot cause another person to get the entity. Thus, if the null verb in V_L means 'getting' in English, the V_H position cannot contain a consumption verb. That is why the English ditransitive construction does not allow consumption verbs. The classifications of creation and consumption verbs are semantic in nature. The occurrence restriction variations across these classes in the languages are also related to semantics. The semantic features of the null verbs in English and Chinese explain the acceptability patterns of the ditransitive construction with respect to these two classes of verbs.

My null verb hypothesis not only can explain the acceptability contrast between the English and Chinese ditransitive constructions, but also can account for the cross linguistic restrictions on verb classes occurring in the construction. Verbs like *love*, *worry*, *dream*, and *know* do not occur in the ditransitive construction in either English and Chinese, because these verbs are not semantically licensed by the verbs in V_L , i.e., E_{get} , E_{lose} , and their Chinese overt forms *-gei* and *-zou*. The verbs in V_H must have a causative relation with those in V_L . If the selection of verbs in V_L is restricted to E_{get} , E_{lose} and their overt forms in the language, the selections of V_H must also be restricted to those verbs that can cause the eventualities of getting and losing to occur. Psych verbs cannot cause such an eventuality to occur, and thus they are ruled out in the ditransitive construction.

The preceding two subsections show that the interpretations of the IO and the occurrence restrictions of verbs in the ditransitive construction are both related to the verbs in V_L . The existence of V_L and the semantic features of the verbs contained in V_L account for both the cross-linguistic variations and the cross linguistic similarities in the ditransitive construction.

4.4. A Serial Verb Construction?

The occurrence of two verbs in the Chinese ditransitive construction makes the construction look like the serial verb construction, as pointed out by one reviewer. If, as I have assumed above, there are two transitive verbs in the ditransitive construction, the ditransitive construction does look like one type of the serial verb construction, namely the Theme sharing construction (Baker 1989), in that both verbs share the same Theme internal argument semantically. For example, in the English sentence *John mailed me a book*, one could assume that the verb *mail* and the null verb E_{get} both take *a book* as their Theme. In this respect, it would be similar to the following serial verb sentence (Tang 1990: 296):¹²

- (28) ta zhu tang he.
 he cook soup drink
 'He cooked soup to drink.'

However, if I assume that the external argument of the second verb of the ditransitive construction is the IO rather than the subject, the two verbs do not share their external arguments. This is different from the Theme sharing type of the serial verb construction. So far, I have not seen any type of serial verb construction where two verbs semantically have separate external arguments but share one internal argument.

In some recent analyses of the serial verb construction, such as Law & Veenstra (1992) and Collins (1997), a structure in which each verb heads an independent VP is proposed. My analysis of the ditransitive construction and these analyses of the serial verb construction thus have one common point: we assume that each verb heads an independent VP.

4.5. Theta Role Assignment

Every transitive verb assigns theta roles to its external and internal arguments.¹³ In (14), a verb in V_H , like a causative verb, assigns a theta role to its external argument, the subject, while a verb in V_L , whether overt or null, like a regular transitive verb, assigns theta roles to its external argument IO and its internal argument DO.

In my approach, a verb in V_H does not assign a theta role to the IO. The IO is not part of the argument structure of the verb. In the ditransitive construction literature, the question why verbs such as English *bake*, whose argument structures contain only two structural arguments, can occur in the ditransitive construction has been dealt with in various ways. Jackendoff (1990:448) proposes that a new beneficiary argument is optionally added to the argument structure of an English verb, and

Larson (1990:615) proposes an optional Argument Augmentation hypothesis. Both theories need a mechanism to expand the theta marking range of a transitive verb to cover the unselected elements in the ditransitive construction. In fact, nearly all creation verbs and nearly all consumption verbs can occur in the ditransitive construction in English and Chinese, respectively. Verbs in both groups select only two arguments. In contrast, some three-arguments verbs, such as English *donate* and *contribute* cannot occur in the ditransitive construction. One might adopt Ritter & Rosen's (1996) hypothesis that there are cases in which the lexical semantics of a verb underdetermines the number of arguments. Following Grimshaw (1990) and Tenny (1994), Ritter & Rosen propose that there is a level of event structure between the lexicon and syntax, and that argument mapping is not a relation between the lexicon and syntax, but rather a relation between event structure and syntax. In their approach, the number of arguments of a sentence is determined by an event rather than by a verb, and the event structure can license a monotransitive verb to occur with two internal arguments. In my analysis, the extra argument in the ditransitive construction, i.e. the IO, is licensed by a (null or non-null) verb in V_L , rather than a verb in V_H or by other factors.

4.6. *Abstract Accusative Case Checking*

In the ditransitive construction, the DO is not adjacent to V. The Case relation between DO and V has been dealt with in five representative ways. First, DO gets 'inherent' Case, which differs from 'structural' Case in that the assignee does not need to be adjacent to V (Chomsky 1981). As criticized by Bowers (1993:644), this approach is "in a purely ad hoc fashion". The empirical problems of this approach have been discussed in Li (1990), among others. Second, V and IO undergo NP incorporation and then assign Case to DO (Stowell 1981). Bowers' (1993:644) comment on this approach is that it misses the Barss-Lasnik observation that IO must C-command DO, not vice versa. Third, IO gets Case from a null preposition and DO, as the head of a small clause, gets Case from V (Kayne 1984). This approach has the same problems as the second approach. Fourth, IO and DO have a Case relation with two V nodes separately, and the V which has a Case relation with DO contains the trace of the verb which has a Case relation with IO (Bowers 1993:641,644). Finally, a null element has a Case relation with DO (Aoun & Li 1989:163; Johnson 1991:618; Pesetsky 1995:125).

In the Minimalist Program, each object has an uninterpretable [Accusative Case] feature, which must be checked against the [Assigning Accusative Case] feature of a verb, either overtly or covertly. In addition, Case checking is a one-to-one relation between a head and an argu-

ment.¹⁴ Unchecked Case features, which are uninterpretable, cause a derivation to crash. If there were only one verb in the ditransitive construction, only one object should be able to get its abstract Case feature checked and the unchecked Case feature of the other object should make the derivation crash, contrary to fact. Our proposed null verbs in the ditransitive construction, like regular transitive verbs, not only have interpretable semantic features, but also have the [Assigning Accusative Case] feature, and thus are able to stand in a Case checking relation with objects. Thus in the ditransitive construction, two objects are Case-checked by two transitive verbs. IO and DO have Case relations with verbs at V_H and V_L , respectively. The present analysis is compatible with the Case checking theory of the Minimalist Program, as is the last approach listed above.

Note that Accusative Case checking is a syntactic operation, which is not necessarily related to the semantic relations between the checked verb and the checked nominal. For instance, in the ECM construction, the matrix verb is in an Accusative Case checking relation with a subject of an embedded nonfinite verb, although the matrix verb does not assign a theta role to the subject. Similarly, it is not impossible for IO to stand in a Case checking relation with a verb at V_H , although they do not have theta role assignment relations.

5. SELECTIONS OF E

There are only two choices for the interpretation of the IO: Provider and Recipient. How is the choice between these two determined? We have seen that the interpretation of a verb at V_H is typologically determined. The default null verb at V_L in a specific language assigns either the Provider or the Recipient role to IO. Specifically, E_{get} is compatible with creation verbs and allows Recipient IOs only, while E_{lose} is compatible with consumption verbs and allows a Provider IO only. In addition, the typological determination of IO interpretations is also seen in verbs of change of state. In this section, I will show that lexical determination of theta roles by a verb in V_H also plays a role.

Verbs of transference can be divided into three classes: payment verbs, which encode transferees of money, communication verbs, which encode transferees of information, and transference verbs which encode other kinds of transference such as transference of a book or an apple. I call the last class G-transference verbs (Generalized transference verbs).

Monosyllabic Chinese transference verbs usually can cooccur with *-gei* or *-zou*, which determines the interpretation of the IO.¹⁵ If no equivalent of *-gei* or *-zou* appears in a ditransitive sentence, as in the case of English, the interpretation of the IO can be either typologically or

lexically determined. In other words, the selection of E_{get} and E_{lose} is either typologically or lexically determined. However, a determination cannot be made in a random way. It generally correlates with the natural class of a verb.

5.1. Typological Determination

English G-transference verbs only have Recipient IOs, regardless of the argument structures of these verbs. The verbs *sell* and *lend* have Provider external arguments and Theme internal arguments in both monotransitive and ditransitive constructions. The added argument in the ditransitive construction is a Recipient. In contrast, verbs like *buy* and *steal* have Recipient external arguments and Theme internal arguments in the monotransitive construction. When they occur in the ditransitive construction, their external argument is no longer a Recipient. Instead, the added argument in the ditransitive construction is a Recipient. Thus, an IO Recipient is always ensured. In other words, English G-transference verbs select E_{get} in V_L . This is shown in (29).

(29) He mailed/borrowed/threw me a book.

Chinese G-transference verbs only have Provider IOs, regardless of the argument structures of these verbs. For instance, verbs like *mai4* 'sell' and *ji* 'mail' have Provider external arguments and Theme internal arguments in the monotransitive construction. When they occur in the ditransitive construction, their external argument is no longer a Provider. Instead, the added argument in the ditransitive construction is a Provider, as is shown in (30). The verbs *mai3* 'buy', *fen* 'divide', *dai* 'bring', *na* 'take', *qiang* 'grab', and *tou* 'steal' have Recipient external arguments and Theme internal arguments in both the monotransitive and the ditransitive construction. The added argument in the ditransitive construction is a Provider, as in (31) - (32). Thus, a Provider IO is ensured. In other words, Chinese G-transference verbs select E_{lose} in V_L .

- (30) a. Lao Li mai4-le yi zhi bi.
 Lao Li sell-ASP one CL pen
 'Lao Li sold a pen.'
 b. Lao Li mai4-le Xiao Wu yi zhi bi.
 Lao Li sell-ASP Xiao Wu one CL pen
 'Lao Li sold a pen from Xiao Wu (to someone else).'

- (31) a. Lao Li mai3-le yi zhi bi.
 Lao Li buy-ASP one CL pen
 'Lao Li bought a pen.'

- b. Lao Li mai³-le Xiao Wu yi zhi bi.
Lao Li buy-ASP Xiao Wu one CL pen
'Lao Li bought a pen from Xiao Wu.'

- (32) a. houzi qiang-le yi ge taozi.
monkey grab-ASP one CL peach
'The monkey grabbed a peach.'
b. houzi qiang-le tuzi yi ge taozi.
monkey grab-ASP rabbit one CL peach
'The monkey grabbed a peach from the rabbit.'

5.2. Lexical Determination

English communication verbs have only Recipient IOs and payment verbs have either Recipient or Provider IOs. These choices are not determined typologically. Communication verbs and the verb *pay* have Provider external arguments and Theme internal arguments in both the monotransitive and the ditransitive construction. The added argument in the ditransitive construction is a Recipient. On the other hand, the verbs *charge*, *bill* and *fine* have Recipient external arguments and Theme internal arguments in both the monotransitive and the ditransitive construction. The added argument in the ditransitive construction is a Provider. Thus there is no argument shift between Recipient and Provider when these verbs occur in the two constructions, as shown in (33). The selection of E is determined by the argument structure of the verb in V_H: either Recipient or Provider, whichever is the missing argument, is added in the ditransitive construction.

- (33) a. He told me a story.
b. He paid me seven dollars.
c. He charged me seven dollars.

The verb *cost* does not have a Provider or a Recipient when it occurs in the monotransitive construction. The Provider interpretation of its IO in the ditransitive construction is lexically determined.

Chinese communication verbs have only Recipient IOs and payment verbs have either Recipient or Provider IOs. These choices are not typologically determined, either. Verbs such as *fu* 'pay' and *gaosu* 'tell' have Provider external arguments and Theme internal arguments in both monotransitive and ditransitive constructions. The added argument in the ditransitive construction is a Recipient. This is shown in (34):¹⁶

- (34) a. ta gaosu-le wo neige xiaoxi.
he tell-ASP me that news

- 'He told me that news.'
 b. ta fu-le wo wu kuai qian.
 he pay-ASP me five CL money
 'He paid five yuan to me.'

The selection of E is determined by the argument structure of the verb in V_H : the missing argument, either Recipient or Provider, is added in the ditransitive construction.

5.3. Unspecified E

There are two G-transference verbs in Chinese which can occur with either *-gei* or *-zou*, but their IO can be either a Provider or a Recipient if neither *-gei* nor *-zou* appears. These verbs are *jie* 'borrow, lend' and *zu* 'rent, lease'. For example, (35) can have two meanings:

- (35) Lao Wang neng jie Xiao Li yi ben shu ma?
 Lao Wang can borrow Xiao Li a CL book Q
 'Could Lao Wang lend a book to Xiao Li?'
 'Could Lao Wang borrow a book from Xiao Li?'

I assume that the element selected in V_L is unspecified for transference directions. The assumption that an element in V_L can be unspecified for direction and that thus ambiguity arises is supported by Spanish data.

The ditransitive construction in Spanish does not pattern with either Chinese or English. In Spanish, the IO of transference verbs such as *buy* can be either a Recipient or a Provider. The direction of the transference is determined by the context. This is shown in (36):

- (36) Le compré un auto.
 him bought a car
 'I bought a car for him / from him.'

In addition, like Chinese and unlike English, Spanish allows a consumption verb to occur in the ditransitive construction. This is shown in (37).

- (37) a. Le perdí cinco dolares.
 him lost.1s five dollars
 'I lost five dollars of his.'
 b. Le comí un pastel.
 him ate.1s a cake
 'I ate a cake of his.'

Furthermore, like English and unlike Chinese, Spanish allows a creation verb to occur in the ditransitive construction:

- (38) Le hice un pastel.
 him baked.1s a cake
 'I baked a cake for him.'

The interpretation of IO with creation and consumption verbs is semantically determined (see section 4.3). If V_L contains a null verb which is unspecified for transference direction, nothing is in conflict with the interpretable features of a verb in V_H . Thus, unlike English and Chinese, Spanish allows both classes of verbs in the ditransitive construction. I call this null verb $E_{\alpha_{get}, -\alpha_{lose}}$.

Similarly, the ambiguity of Chinese *zu* and *jie* is accounted for if we assume that V_L is filled with such an unspecified element.

Thus far, I have proposed three types of elements to be base-generated at V_L . Their external argument is an IO and their internal argument is a DO.

overt in Chinese	-gei	-zou	
null in PF	E_{get}	E_{lose}	$E_{\alpha_{get}, -\alpha_{lose}}$

To summarize, I have shown that the selection of E at V_L can be either typologically or lexically determined. Lexical determination is found in payment and in communication verbs in both Chinese and English, and in the Chinese verbs *zu* 'rent, lease' and *jie* 'lend, borrow'. Typological determination is found in G-transference, creation, and consumption verbs in English, Chinese, and Spanish. English selects E_{get} , Chinese E_{lose} , and Spanish $E_{\alpha_{get}, -\alpha_{lose}}$ in default cases. The absence of consumption verbs in the English ditransitive construction is explained by the semantic incompatibility between these verbs and the selected E_{get} , and the absence of creation verbs in the Chinese ditransitive construction is explained by the semantic incompatibility between these verbs and the selected E_{lose} . The interpretable features of E are limited to those of *get* and *lose*, and no other features, such as those of *hug* or *lock*, are possible.

6. ALTERNATIVE APPROACHES

In this section, I argue against four alternative approaches to account for the contrasts between the English and Chinese ditransitive constructions.

6.1. *Against a Lexical Semantics Approach*

Why are creation verbs allowed in the English but not in the Chinese ditransitive construction, and why are consumption verbs allowed in the Chinese but not in the English ditransitive construction? Although there has, to the best of my knowledge, not been any contrastive research in the area of the ditransitive construction, there are some theories which have tried to explain why verb *x* cannot behave like verb *y*. One such theory is Ritter & Rosen's (1996) Strong and Weak Predicate hypothesis, which can be traced back to Cowper's (1989) Thematic Underspecification assumption. In the Strong and Weak Predicate hypothesis, strong verbs are those with specified semantic selection, specified action/state denoted, specified aspectual classification, specified number of arguments they select, and specified syntactic frames. Weak verbs, on the contrary, are variable in all of these respects. For example, the verb *walk* is strong compared to *run*, thus *walk* occurs in fewer contexts than *run* does. This is shown in (39) and (40).

- (39) a. Martha ran to the store. 'dash'
 b. Tears ran down the child's face. 'flow'
 c. Martha ran Fred to the station. 'take'
 d. Martha ran a successful campaign. 'manage'
 e. Fred knows how to run the fax machine. 'operate'
- (40) a. Martha walked to the store. 'go on foot'
 b. *Tears walked down the child's face.
 c. Martha walked Fred to the station. 'accompany on foot'
 d. *Martha walked a successful campaign.
 e. *Fred knows how to walk the fax machine.

Some verbs have more semantic content in the lexicon than others, and thus the relative strength of a verb is a purely lexical matter. As pointed out by Ritter & Rosen (1996: 45), because languages differ most in their lexicons, we expect that a given verb may differ in its relative strength across languages. For example, French *courir* 'run' is stronger than *marcher* 'walk'. Thus, in French, one uses *marcher* in many of the contexts where one uses *run* in English.

Similarly, one might suggest that creation verbs are weaker than consumption verbs in English, but vice versa in Chinese, and that is why there are restrictions on their distribution in the ditransitive construction. However, if this rationale were true, we would not be able to explain the generality across a natural class. If the occurrence restrictions were a purely lexical matter, how could we account for the neat boundary

between creation and consumption verbs, considering their opposite meanings? Thus the distinction between Chinese and English with respect to the occurrence of a natural class of verbs in the ditransitive construction cannot be a distinction between lexically strong and weak items.

6.2. *Against a Telicity Approach*

A telicity approach has been suggested by a reviewer of Zhang (1998a) to explain the contrasts in the ditransitive construction between English and Chinese. In the telicity approach, it is claimed that the interpretation of an IO patterns with the default telicity properties of the verbs of a language. It is assumed that a Provider reading of an IO is related to atelic aspect, and a Recipient reading of an IO is related to telic aspect. If verbs are usually atelic in Chinese (Sybesma 1997), the Provider reading of the IO in Chinese is expected.

Two pieces of evidence, however, show that this explanation is not convincing. First, the Provider reading of an IO can occur with telic as well as with atelic aspects. (41a) is a telic sentence, containing a definite object and a resultative compound verb *tou-zhao-le* 'steal-succeede-ASP'. (41b) is an atelic sentence. The IO is a Provider in both sentences. Thus the interpretation of an IO in Chinese does not vary with changes in telicity.

- (41) a. wo tou-zhao-le ta nei ben shu.
 I steal-succeede-ASP he that CL book
 'I have succeeded in stealing that book from him.'
- b. wo kai-guo ta yi liang qiche.
 I drive-ASP he one CL car
 'I drove a car of his.'

Second, aspect and IO interpretation can interact in a way that is not predicted by the telicity approach. Like Spanish, German can have both Recipient and Provider readings of the IO for transference verbs. In addition, like English, German allows only creation verbs but not consumption verbs to occur in the ditransitive construction. This is shown in (42).

- (42) a. Ich stahl ihm ein Buch.
 I stole him a book
 'I stole a book from/for him.'
- b. Ich backte ihm einen Kuchen.
 I baked him a cake
 'I baked a cake for him.'

- c. *Ich aß ihm einen Kuchen.
 I ate him a cake

Yet the IO of German verbs does not always have both readings. If only one reading is allowed, it must be the Recipient reading, as shown in (43) below. The interpretation of (43b) is in contrast with (41b) above. This is expected, as German looks more like English than Chinese and Spanish in terms of grammaticality patterns of creation and consumption verbs in the ditransitive construction, and the Recipient reading is the default reading of the IO in German. In other words, E_{get} rather than E_{lose} is selected in the ditransitive construction in default cases.

- (43) a. Sie schob ihm den Wagen.
 she pushed him the car
 'She pushed the car for him.'
 b. Sie fuhr ihm den Wagen.
 she drove him the car
 'She drove the car for him.'

The verb *stehlen* 'steal' is a telic verb, while the verbs *schieben* 'push' and *fahren* 'drive' are atelic verbs. When the former but not the latter occurs in the ditransitive construction, an ambiguity between a Provider and a Recipient IO arises. It seems that a Provider reading of the IO is triggered by telic rather than by atelic aspect in this case. This is unexpected from the viewpoint of the telicity approach, which claims that a Provider reading of the IO is relevant to the atelic aspect of Chinese verbs. My conclusion is that although aspect may interact with the interpretation of the ditransitive construction in some languages, it cannot explain the contrasts between the ditransitive constructions in Chinese and English.

6.3. *Against a Constructional Approach*

In Zhang (1998a), the same data as are presented in this article are explained using a constructional approach. Based on the occurrence of non-transference verbs in the ditransitive construction, it is claimed in that article that there is a general transference meaning in the ditransitive construction, and that this meaning licenses the extra argument for the verbs. In addition, the different acceptability patterns of creation and consumption verbs in different languages are claimed to show the interactions between lexical meanings and the language specific meaning of the ditransitive construction. In English, the construction meaning is transference toward the referent of the IO. This meaning is compatible with the lexical meaning of creation verbs, but not of consumption

verbs. In Chinese, the meaning of the ditransitive construction is transference from the referent of the IO. This meaning is compatible with the lexical meaning of consumption verbs, but not of creation verbs. It is also claimed in that article that in languages such as Spanish, the construction meaning is not specified for the transference direction. Thus there is no occurrence restriction on creation and consumption verbs in the ditransitive construction. The differences in interpretation of ditransitive sentences containing verbs of change of state and unmarked transference verbs reveal the default meaning of the construction in languages that follow either the English, Chinese and Spanish pattern. Furthermore, it is assumed in that article that transference verbs with a specified transference direction meaning, such as payment and communication verbs, can override the direction meaning of the construction, which is language-specific. The conclusion of Zhang (1998a) is that the mappings between lexical semantics and syntactic structures are not direct, and that the meaning of a construction can not only license the occurrence of certain types of verbs in the construction, but can also control the interpretation of arguments.

A problem with this constructionalist approach is that it ignores the morphological structures of Chinese verbs. Crucially, the Recipient and Provider readings of the IO are related to *-gei* and *-zou* in compound verbs, respectively. Thus it is not construction meaning that is responsible for the interpretation of the IO. Instead, it is these two verbs or the null forms of these two verbs that play a role. In addition, even if the ditransitive construction does have a construction meaning, it is still not clear whether there are parallel contrasts across languages in other constructions. These questions have led me to pursue an alternative approach to this problem. In the present approach, the contrasts between English and Chinese are ascribed to the different verb selections between the null E_{get} and E_{lose} , whose overt forms can be found in Chinese compound transference verbs, *-gei* and *-zou* respectively.

6.4. *Against a Passivization Approach*

There is another difference between Chinese and English ditransitive constructions, namely the possibility for different objects to passivize. A Theme undergoes passivization more easily than a Recipient in Chinese, while the reverse relationship holds in English. This is shown in (44) through (47):

- (44) a. The little children were given candies (by him) (Recipient is raised)
 b. %Candies were given the little children (by him).

- (45) a. %I was baked a cake by John. (Recipient is raised)
 b. *A cake was baked me (by John).
- (46) a. *Xiao Wang bei Lao Li gei-le hua. (Recipient is raised)
 Xiao Wang BEI Lao Li give-ASP flower
 b. hua bei Lao Li gei-le Xiao Wang.
 flower BEI Lao Li give-ASP Xiao Wang
 'The flowers were given to Xiao Wang by Lao Li.'
- (47) a. *wo bei ta ban-gei-le na ge yizi. (Recipient is raised)
 I BEI he move-give-ASP that CL chair
 b. na ge yizi bei ta ban-gei-le wo.
 that CL chair BEI he move-give-ASP I
 'The chair was moved to me by him.'

One reviewer of this article wonders whether the differences between English and Chinese ditransitive constructions presented in sections 2 and 3 are related to the passivization differences and follow from more general syntactic differences between the languages. In this subsection, I will show that the differences in argument passivization are not syntactic ones and are not related to the contrasts shown in sections 2 and 3.

First, variations between Recipient and Theme in terms of passivization have been observed in other languages. For instance, in Kiswahili, Chimwi:ni, and Chichewa applicative constructions, Recipient objects can become the passive subject, while Theme objects cannot (Alsina 1996, Wunderlich 1998). This is similar to the case in English. In German, however, a Theme rather than a Recipient can be a nominative subject of a regular passive verb. This is similar to the case in Chinese. Furthermore, in Kinyarwanda, Kihaya, Kimeru, Mashi, and Luyia applicative constructions, both Recipient and Theme objects can become passive subjects (Alsina 1996, Wunderlich 1998). Similarly, in Norwegian, both objects of the ditransitive construction can be passivized (Áfarli 1992). This is different from the cases in Chinese and standard English. These language specific patterns of passivization do not correlate with an IO interpretation contrast and a verb occurrence contrast as do those found between Chinese and English.

Second, in both English and Chinese, a Provider undergoes passivization more easily than a Theme, as shown in (48) through (51).

- (48) a. I was charged three dollars (by him). (Provider is raised)
 b. *Three dollars were charged me (by him).
- (49) a. wo bei ta he-le san ping jiu. (Provider is raised)

- I BEI he drink-ASP three bottle wine
 'I was drunk three bottles of wine by him'
- b. *na ping jiu bei ta he-le wo.
 that bottle wine BEI he drink-ASP I
- (50) c. wo bei ta fa-le wu kuai qian. (Provider is raised)
 I BEI he fine-ASP five CL money
 'I was fined five yuan by him.'
- d. *(na) wu kuai qian bei ta fa-le wo.
 that five CL money BEI he fine-ASP I
- (51) e. wo bei ta ban-zou-le yizi. (Provider is raised)
 I BEI he move-go-ASP chair
 'I was moved away the chair by him'
- f. *yizi bei ta ban-zou-le wo.
 chair BEI he move-go-ASP I

From the above comparison between English and Chinese, we can see that the contrast is in the relative raising abilities between Theme and Recipient, not between Theme and Provider. In addition, since Chinese Provider IOs can be raised, it is not true that Chinese IOs cannot be raised. Thus it is thematic roles rather than grammatical relations that determine the grammaticality patterns of internal argument passivization of the ditransitive construction. When Chinese and English provider IOs behave the same in passivization, it is impossible to ascribe the contrasts between these languages to IO passivization.

Third, in Chinese, syntactic operations targeting a Recipient are consistently more restricted than operations targeting a Theme. In the following, I present data of two more syntactic operations in addition to those of the passivization discussed above: BA-phrase formation, which preposes an object to a preverbal position, and relativization. As in the case of passivization, a Theme undergoes these two operations more easily than a Recipient. Relativization data are shown in (52), and BA-phrase formation data are shown in (53):

- (52) a. Lao Li ji-gei-le Xiao Wang yi ben shu.
 Lao Li mail-give-ASP Xiao Wang one CL book
 'Lao Li mailed a book to Xiao Wang.'
- b. *na ge [Lao Li ji-gei-le shu] de ren (Recipient)
 that CL Lao Li mail-give-ASP book DE person
 'the person whom Lao Li mailed a book to'
- c. na ben [Lao Li ji-gei-le Xiao Wang] de shu (Theme)
 that CL Lao Li mail-give-ASP Xiao Wang DE book
 'the book which Lao Li mailed to Xiao Wang'

- (53) a. Lao Li ji-gei-le Xiao Wang yi ben shu.
 Lao Li mail-give-ASP Xiao Wang one CL book
 'Lao Li mailed a book to Xiao Wang.'
- b. *Lao Li ba Xiao Wang ji-gei-le na/yi ben shu. (Recipient)
 Lao Li BA Xiao Wang mail-give-ASP that/one CL book
- c. Lao Li ba yi ben shu ji-gei-le Xiao Wang. (Theme)
 Lao Li BA one CL book mail-give-ASP Xiao Wang
 'Lao Li has mailed a book to Xiao Wang.'

If elements can be ranked with regard to their accessibility for a syntactic operation, the ranking of the internal arguments in the ditransitive construction exhibited by the data presented in this section should be the following:¹⁷

- (54) A. Provider >> Theme B. Theme >> Recipient C. Recipient >> Theme

Ranking A is true in both English and Chinese, while rankings B and C are true in Chinese and English, respectively.¹⁸ There is no evidence to correlate these rankings to the contrasts in IO interpretations and verb occurrence restrictions shown in this article.

7. SUMMARY

The evidence considered in this article suggests that the two interpretations of IOs, Provider and Recipient, can be morphologically analytic in Chinese and typologically parametrized for certain natural classes of verbs in English and Chinese. I have proposed two VP projections in the ditransitive construction. The head of the lower VP can contain a phonologically null verb, whose content is parametrized across languages. The contrasts in IO interpretations in these languages are explained in terms of the lexical meanings of the null verb. The contrasts in verb occurrence restrictions in these languages are accounted for by the interpretable feature compatibilities in head adjunction from the lower to the higher VP.

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NOTES

1 A causer is not necessarily an agent of an eventuality, as shown in (i). Only volitional causers are agents (Jackendoff 1990).

(i) Her behavior gave him an idea.

2 I will discuss neither the distinctions between a possessor and a source, nor between a recipient, a beneficiary, and a goal. None of the terms possessor, beneficiary, and goal is general enough to cover the semantic properties of an IO. Neither before nor after the relevant eventuality can the referent of the IO be a possessor in (i), a beneficiary in (ii), or a goal in (iii):

(i) John lent me his car.

(ii) ta tou-le wo yi ben shu. (Chinese)
he steal-ASP me a CL book
'He stole a book from me.'

(iii) Sie schob ihm den Wagen. (German)
she pushed him the car
'She pushed the car for him.'

The terms Recipient and Provider have abstract meanings, which are independent of a certain aspect. The sentences in (iv) indicate that the transference of an entity or benefit expressed by a double object sentence may not be realized, and that a Recipient or a Provider may not really receive or provide anything:

(iv) a. She baked me a cake, but I did not get it.
b. He will charge me five dollars, but I will not pay it.

3 There are two homophonous forms of *gei* in Chinese. One is a verb, the equivalent of English *give*. We have seen it already in (2b). The other is a preposition, meaning 'for' or 'to', which occurs in a preverbal position, as in (i) and (ii).

(i) wo gei ta ca-le yi ge chuangu.
I for him clean-ASP one CL window
'I cleaned a window for him.'

(ii) wo gei ta xie-le yi feng xin.
I to him write-ASP one CL letter
'I wrote a letter to him.'

Following Li (1990: 103), I assume that the *-gei* in *V-gei* is a verb.

4 In Chinese *mai* 'sell' has the 4th tone and *mai* 'buy' has the 3rd tone. I use *mai*₄ and *mai*₃ to represent these two verbs respectively.

5 The compounding of *-gei* with non-transference verbs is restricted, as shown below:

(i) *ta zhi-gei-le wo yi shuang shoutao.

- he knit-give-ASP I one pair mitten
 (ii) ta xie-gei-le wo yi feng xin.
 he write-give-ASP I one CL letter
 'He wrote me a letter.'

Unlike *-gei*, *-zou* can neither occur independently nor compound with a non-transference verb in the ditransitive construction. This is shown in (iii) and (iv) below.

- (iii) *ta zou-le wo yi ben shu.
 he go-ASP I one CL book
 (iv) *ta he-zou-le wo yi ping jiu.
 he drink-go-ASP I one bottle wine

6 It has been suggested to me that a possessive marker *de* between the two postverbal nominals might be deleted at PF in sentences like (7b), and thus these sentences might have only one object. Notice that *de* can encode various relations and, if it expresses alienable possession, it usually cannot be deleted, as shown in (i):

- (i) ta kanjian-le Lao Wang *(de) zidian.
 he see-ASP Lao Wang DE dictionary
 'He has seen Lao Wang's dictionary.'

In preverbal positions, the presence and the absence of *de* between nominals are in contrast. This is shown in the contrast between (ii) and (iii):

- (ii) Lao Wang zidian shi le.
 Lao Wang dictionary wet ASP
 'As for Lao Wang, his dictionary is wet.'
 (iii) Lao Wang de zidian shi le.
 Lao Wang DE dictionary wet ASP
 'Lao Wang's dictionary is wet.'

In addition, between two postverbal nominals, the first one can be passivized in the ditransitive construction, while in the monotransitive construction it cannot. (iv) is the passivized form of (7b), and (v) is the passivized form of (i):

- (iv) wo bei Lao Li tou-le yi ben shu.
 I by Lao Li steal-ASP one CL book
 (v) *Lao Wang de bei ta kanjian-le (yi ben) zidian.
 Lao Wang DE by he see-ASP (one CL) dictionary

I thank Helge Lødrup for pointing out this passivization contrast to me.

7 Although Li (1990:70,88) discusses the Provider IO type of the ditransitive construction (Source Double Object Structure in her terminology), she neither presents nor discusses V-zou data. Law (1996) argues for a head adjunction derivation for V-zou verbs in a monotransitive construction, as shown in (i).

- (i) ta [_{VP} na-zou_i-le [_{NP}nei ben shu] [_{VP}t_i]]
 he take-go-ASP that CL book
 'He took away that book.'

8 S. Zhang (1990) argues against Li's serial verb construction approach to [V NP1 gei NP2].

9 Zhang (1998b) argues that in sentences like (ii), leftward N movement rather than rightward Num-Cl movement occurs:

- (i) ta mai3-le san ben shu.

he buy-ASP three CL book

'He has bought three books.'

(ii) ta mai3-le shu san ben.

he buy-ASP book three CL

'He has bought three BOOKS.'

- 10 As pointed out by Li (1990:116), Kayne's structure might express the asymmetrical C-commanding relation if the notion of precedence is invoked for C-commanding.
- 11 Pesetsky (1995) also argues against Larson's (1988) approach to the ditransitive construction.
- 12 For a recent analysis of Chinese serial verb constructions see Law (1996). For a discussion on the Chinese Theme sharing type of the serial verb constructions see Tang (1990: 296).
- 13 An alternative analysis assumes that the external argument of a verb does not receive its theta-role from the verb (Hale & Keyser 1993:81). I do not adopt this assumption here.
- 14 However, see Koizumi (1995) for a discussion of multiple case checking between one head and several nominals in Japanese.
- 15 Not every monosyllabic transference verb can cooccur with both *-gei* and *-zou*. The verbs *ji* 'mail', *na* 'take', *dai* 'bring', *fen* 'divide', *ban* 'carry', *zu* 'rent, lease', and *jie* 'borrow, lend' can occur with either. The verbs *mai4* 'sell', *fu* 'pay', *pei* 'compensate', *shang* 'award', *huan* 'return', and communication verbs can cooccur with *-gei* only. The verbs *fa* 'fine', *hua* 'spend', *mai3* 'buy', *tou* 'steal', and *qiang* 'grab' can only cooccur with *-zou*. The verb *qian* 'owe' can cooccur with neither. I have no explanation for the classification.

The verb *gei* 'give' has a Recipient IO only. However, it does not cooccur with *-gei*. Zhu (1979,1981) suggests that the impossibility of *gei-gei* is due to an unacceptable morphological form in Mandarin Chinese. According to his investigation, two *geis* in a row, a form like the following, do occur in some Chinese dialects.

(i) #Lao Wang *gei-gei-le* Lao Li yi ben shu.

Lao Wang give-give-ASP Lao Li one CL book

'Lao Wang gave Lao Li a book.'

- 16 The payment verb *hua* 'spend' is an exception. It has a Provider external argument and a Theme internal argument in the monotransitive construction. When it occurs in the ditransitive construction, the added argument in the ditransitive construction is a Provider. E_{lose} is selected. It seems that the selection of E is typologically determined.
- 17 Notice that if the two internal arguments of a verb are Provider and Theme, neither can participate in Relativization and BA-construction formation. This is shown in (i) and (ii) below. The ranking in (54A) is based on the passivization fact shown in (45) through (47).
- (i) a. Lao Li *he-le* Xiao Wang san ping jiu.
Lao Li drink-ASP Xiao Wang three bottle wine
'Lao Li drank three bottles of wine from Xiao Wang.'
- b. *na *ge* [Lao Li *he-le* san ping jiu] *de ren* (Provider)
that CL Lao Li drink-ASP three bottle wine de person
intended: 'the person whose three bottles of wine were drunk by Lao Li'
- c. *na san ping [(bei) Lao Li *he-le* Xiao Wang] *de jiu* (Theme)
that three bottle (BEI) Lao Li drink-ASP Xiao Wang de wine
'the three bottles of wine which were drunk by Lao Li from Xiao Wang'
- (ii) a. Lao Li *he-le* Xiao Wang san ping jiu.
Lao Li drink-ASP Xiao Wang three bottle wine
'Lao Li drank three bottles of wine from Xiao Wang.'
- b. *Lao Li ba Xiao Wang *he-le* na ping jiu. (Provider)
Lao Li BA Xiao Wang drink-ASP that bottle wine
- c. *Lao Li ba na ping jiu *he-le* Xiao Wang. (Theme)

18 There are two contrasts involved with respect to operations such as passivization. One is between Recipient and Provider in Chinese, with respect to Theme, and the other is between Chinese Recipient and English Recipient. The only literature discussing these two contrasts I can find is Li (1990). For an argument against Li's analysis, see Zhang (1998c).

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