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Mandarin Ditransitive Constructions and the Category of *gei*

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In this article, we show that the parallelism between Mandarin *gei* ditransitive constructions and their English counterparts is misleading. The *gei* that occurs next to a verb will be argued to be part of a complex predicate and the *gei* phrase that occurs after the DO (direct object) will be shown to be part of a SVC (Serial Verb Construction). The theoretical implications of this account of *gei* and some diachronic ramifications will also be given.

The Mandarin ditransitive constructions involving *gei* look suspiciously like their English counterparts with 'to' (1). Hence *gei* is usually treated as a preposition and the constructions accounted for with variations of dative movements (e.g. Teng 1975, T. Tang 1979, and Li and Thompson 1981). This prepositional account is also extended to a case with no corresponding English construction, where *gei*+IO(indirect object) occurs immediately after the main predicate (2).

- (1) a. verb DO *gei*(cf. to) IO [post-DO *gei*]  
       b. verb IO DO
- (2) verb *gei* IO DO [postverbal *gei*]

This transformation-based approach has the advantage of offering a uniform source for the two positions of indirect object and thus derivationally relates the two structures (1a) and (2). Such an account also has several theoretical consequences. For instance, this PP analysis poses a challenge to any ID/LP account of phrase structure rules fashioned after the theory of GPSG (Gazdar et al. 1985). The proposed *gei*-IO-DO sequence would be an exception to the generalization that NPs precede PPs in a local tree. And the DO-*gei*-IO sequence would prevent the formation of any precedence rules in terms of the function of the two objects. From another theoretical perspective, as observed in Li (1990), the postulation of *gei* as a preposition poses problematic cases with the adjacency condition on Case assignment in the GB theory.

We will show that the prepositional accounts are incorrect and that neither of the postverbal and post-DO *gei*'s are prepositions. We will argue for the long-overlooked analyses of Chao (1968) that the V-*gei* sequences are compounds and that the discontinuous structure of (1a) involves a verb series. This position will not only account for the data more felicitously but also resolve the above two theoretical dilemmas.

#### I. Postverbal *gei* as a verbal affix

First, facts show that the *gei* occurring immediately after a verb (as in 2) is not a preposition.

- (3)a. Zhangsan ti-gei-(le) Lisi yi-ge qiu  
 Zhangsan kick-GEI-PERF Lisi one-CLASS ball  
 'Zhangsan kicked a ball to Lisi.'
- b. \*Zhangsan ti-(le) Lisi yi-ge qiu  
 Zhangsan kick-PERF Lisi one-CLASS ball

The postverbal *gei* allows the attachment of aspect markers, as in (3a). The attachment of aspect markers is the most reliable test of verb-hood in Mandarin Chinese (Huang and Mangione 1985, C. Tang 1990, etc.), and Mandarin prepositions do not allow attachment of aspect markers (Chao 1968).

- (4)a. ta fang na-ben shu zai zhuoshang  
 s/he put that-CLASS book ZAI desk-top  
 'S/He put the book on the desk,'
- b. ta dui Zhangsan shuo ta bu dong  
 s/he DUI Zhangsan say s/he NEG understand  
 'S/He told Zhangsan that s/he did not understand.'

Furthermore, there is neither independent theoretical motivation nor empirical evidence in Mandarin Chinese for a PP position between a verb and an OBJ. Attested PPs in Chinese either occur after an OBJ in the VP-final position, as the locative PP in (4a), or pre-verbally after the SUBJ, as the GOAL PP in (4b). But neither of the attested PPs can appear between a verb and its direct object, as in (5).

- (5)a. \*ta fang zai zhuoshang yi-ben shu  
 s/he put ZAI desk-top one-CLASS book
- b. \*ta shuo dui Zhangsan ta bu dong  
 s/he say DUI Zhangsan s/he NEG understand

The above data suggest a structural constraint on the co-occurrence between arguments and their governing predicates. Specifically, the generalization is that a non-oblique PATIENT-like role must appear right-adjacent to the governing predicate in Mandarin. This constraint can be formulated in terms of an adjacency constraint similar to that of the Case Theory of GB or the argument obliqueness hierarchy of HPSG (following a long tradition of argument combination principles in Montague Grammar). Analyzing the postverbal *gei* as a preposition would either counterexemplify the above generalizations or call for otherwise unmotivated abstract accounts.

Finally, a preposition cannot be stranded in ellipsis in Mandarin Chinese. While non-oblique arguments can be freely left out in context (the so-called pro-drop phenomena), ellipsis can also involve a whole PP but not a prepositional object alone. (6) and (7) demonstrates this contrast. Ellipsis involving an object following the postverbal *gei*, however, can involve the indirect object only, as in (8).

- (6)a. ta fang-le  
s/he put-PERF  
'S/He put (something) down.'
- b. shuo-le  
say-PERF  
'(s/he) talked.'
- (7)a. \*ta fang na-ben shu zai  
s/he put that-CLASS book ZAI
- b. \*ta dui shuo ta bu dong  
s/he DUI say s/he NEG understand
- (8) shunshou jiu di gei yi-er qian yuan de xiaofei  
off-hand then hand-out GEI one-two thousand dollar DE tips  
'(S/he/they) hand out tips of a couple of thousand dollars  
offhand.'

So far, we have shown that the postverbal *gei* is unlike a preposition in distribution and ellipsis, and that it has the unpreposition-like property of allowing attachment of verbal affixes. We will next discuss four sets of its properties that show it is like a verbal affix, including some earlier observations made in Huang (1990a).

The first affix-like property of postverbal *gei* is that it selects a subclass of verbs. Since *gei* can only be attached to a verb, it has the definitive affix property of selecting the grammatical category of its host. Furthermore, data suggest that *gei* can only be attached to transitive verbs.

- (9)a. Zhangsan pao-gei Lisi yi-shu hua  
Zhangsan toss-GEI Lisi one-CLASS flower  
'Zhangsan tossed a bouquet to Lisi.'
- b. \*Zhangsan shuo-gei Lisi yi-ju hua  
Zhangsan say-GEI Lisi one-CLASS words
- c. \*Zhangsan shui-gei (Lisi) (yi-gei xiaowu)  
Zhangsan sleep-GEI Lisi one-CLASS afternoon

It is shown in (9) that the combination of *gei* with its host is restricted. (9c) shows that *gei* cannot be attached to an intransitive verb: There are no exceptions to this fact. (9b), however, shows that not all transitive verbs allow the attachment of *gei*. We will argue that *gei* lexically selects a subclass of verbs that is not independently defined.

- (10)a. [yiyuan] .. geng bu-hui meishi guangei shenzhuxi  
assemblymen further NEG-will no-fact cap-GEI province-chair  
zheme zhong de xingrongci  
such severe DE adjective  
'Furthermore, [these assemblymen] will not apply such harsh  
expressions on the governor with no reason.'
- b. \*[yiyuan] .. geng bu-hui meishi guan shenzhuxi  
assemblymen further NEG-will no-fact cap province-chair  
zheme zhong de xingrongci  
such severe DE adjective

To further support the generalization that *gei* can only be attached to a transitive verb, (10) also shows that *gei* can be attached to stative as well as active transitive verbs. In other words, the active/stative bifurcation is not relevant in the restriction on the attachment of *gei*. The generalization seems to be that *gei* selects transitive verbs whose meaning allows a secondary movement of a THEME towards a GOAL. But note that the verb *shuo* 'to say, talk' could satisfy this generalization and yet *gei* cannot be attached to it(9b). The idiosyncratic gaps can be accounted for as a typical property of the morpholexical rule of affixation.

Secondly, no constituent can intervene between *gei* and the verb, suggesting lexical integrity. Although this fact could possibly be accounted for in terms of some adjacency conditions, the fact that aspect affixation takes verb-*gei* as a whole unit, as in (11), supports the lexical integrity rather than the adjacency account. And the fact that aspect marker *-le* cannot intervene between the verb and *-gei* also follows from the fact that it is an affix, regardless of whether the aspect markers are treated as an inflectional affix (Dai 1991), or a clitic (Huang 1987).

- (11)a. ta guan fu-xin  
she cap husband-family+name  
'She adopts her husband's family name (on top of her maiden name).'
- b. ta guangei Zhangsan yi-ge hunning  
s/he cap-GEI Zhangsan one-CLASS nickname  
'S/he imposed a nickname on Zhangsan.'
- (12)a. Zhangsan diu-gei-le Lisi yi-ge qiu  
Zhangsan throw-GEI-PERF Lisi one-CLASS ball  
'Zhangsan threw a ball to Lisi.'
- b. \*Zhangsan diu-le-gei Lisi yi-ge qiu  
Zhangsan throw-PERF-GEI Lisi one-CLASS ball

Thirdly, the V-*gei* combination shows such lexical properties as semantic shift and idiosyncratic gaps. The semantic shift fact can be exemplified by (12). While the bare verb *guan* has the very restrictive meaning of 'to adopt (a family name)', *guan-gei* has a different meaning of 'to use/apply (certain expressions/names on someone)'. The lexical idiosyncrasy fact can be best exemplified by a synonymous pair *pan* and *panchu*, both mean 'to judge, to sentence' and share identical subcategorization frames, as shown by the following two sentences from our corpus.

- (13)a. fayuan panchu Li Feng-Zhou si-xing  
court sentence Li Feng-Zhou death-penalty  
'The court sentences Li Feng-Zhou to death penalty.'
- b. zhong-gong pan ta si-xing  
Chinese-communist sentence him/her death-penalty  
'The Chinese communists sentenced him/her to death penalty.'

However, only *pan-gei* is an allowed compound, as in (14).

- (14) buoying-quan yi pan-gei huashi  
 broadcast-right already judge-GEI CTS  
 'The broadcast right has already been verdicted to CTS.'

Last but not least, we can show that the affixation of -gei is accompanied by the lexical operation of inserting an additional GOAL role to the argument structure. This is demonstrated below.

- (15)a. Zhangsan ti-gei-(le) Lisi yi-ge qiu  
 Zhangsan kick-GEI-PERF Lisi one-CLASS ball  
 'Zhangsan kicked a ball to Lisi.'  
 b. Zhangsan ti-(le) yi-ge qiu  
 Zhangsan kick-PERF one-CLASS ball  
 'Zhangsan kicked a ball.'  
 c. \*Zhangsan ti-(le) Lisi yi-ge qiu  
 Zhangsan kick-PERF Lisi one-CLASS ball

In (15) ti 'to kick' is a typical transitive verb that allows -gei affixation. It is strictly mono-transitive as shown in (15b) and (15c). However, the verb becomes ditransitive when affixed with -gei, as in (15a). Other typical mono-transitive verbs that allow the affixation of -gei to add on a GOAL role include reng 'to toss', tui 'to push', na 'to take', yao 'to scoop', jua 'to grasp' etc. A more dramatic example of the productivity of this morpho-lexical rule is the possibility of attaching -gei to a non-Chinese loan word in informal speech.

- (16) Meiguo telex-gei women yibi dingdan  
 USA telex-gei we one-CLASS order  
 'The US (company) telexed us a batch of orders.'  
 (comp. \* Meiguo telex women yibi dingdan)

The fact that native speakers apply the affixation of -gei to mark the addition of a GOAL role offers one of the strongest supports to the position that -gei is a derivational affix (Huang 1990a). This also confirms the view that Mandarin does have a rather rich verbal morphology in terms of argument-changing (Huang 1991) and that argument-changing rules should be encoded on the affixes.

We have clearly demonstrated in this section that the postverbal gei is an affix and the V-gei sequence a compound. This resolves the linear precedence dilemma posed by the prepositional account. Since the NP after postverbal gei is an object of the compound verb instead of the alleged preposition, the LP generalization that NP's precede PP's in a local tree is preserved. Similarly, many complications in a GB account of Mandarin caused by a purported (non-Case-receiving) PP in a Case assignment position will prove to be superfluous.

## II. Post-DO gei and the Serial Verb Construction

On the other hand, the post-DO gei does not have any affix-like property. It does not concatenate with any verb (17a), nor allow attachment of aspectual markers (17b).

- (17)a. Zhangsan ti yi-ge qiu gei Lisi  
 Zhangsan kick one-CLASS ball GEI Lisi  
 'Zhangsan kicked a ball to Lisi.'
- b. \*Zhangsan ti yi-ge qiu gei-le Lisi  
 Zhangsan kick one-CLASS ball GEI-PERF Lisi
- c. \*Zhangsan ti-le yi-ge qiu gei-le Lisi  
 Zhangsan kick-PERF one-CLASS ball GEI-PERF Lisi

In addition, it cannot be stranded either, as in (18).

- (18) \*Zhangsan ti yi-ge qiu gei  
 Zhangsan kick one-CLASS ball GEI

Hence, the post-DO *gei* does show certain preposition-like properties and its sentence final position is also compatible with that of a typical preposition in Mandarin. In fact, C. Tang (1990) does include *gei* as an instance in her argument for a post-verbal PP position in Mandarin Chinese. However, we will show not only that all the above facts can be attributed to characteristics of a serial verb construction (SVC), but also that there are some facts incompatible with a prepositional account.

First, it is accepted in the literature that a verb series in a SVC can have only one tense/aspect (e.g. Sebba 1987, Mo et al. 1991). Thus, the SVC account of post-DO *gei* predicts the ungrammaticality of (17c). As for the ungrammatical (17b), the observation is that only the first verb can be marked with aspect when the SVC has the subordinating structure described in Mo et al. (1991).

- (19) Lisi zhong jiang mai-le yi-dong xin fangzi  
 Lisi win prize buy-PERF one-CLASS new house  
 'Lisi won lottery and bought a new house.'

- (20)a. [ [ ]np=subj [V [ ]np=obj [V... ]vp=adjunct ]vp ]  
 b. [ [ ]np [ [ ]v' [ ]np [ ]cp ]vp ]

(19) shows that while Mandarin SVC does allow aspect to be attached to either verb, attachment to the second verb is limited to the 'concatenating' type described in Mo et al. (1991). In the SVC with post-DO *gei*, the *gei* phrase is an adjunct and an aspect marker can only be attached to the superordinating verb. C. Tang's (1990) CP adjunct account of Mandarin SVC also makes the same prediction. The structures proposed in Mo. et al. (1991) and C. Tang (1990) are given in (20)a and b respectively.

On the other hand, the fact that post-DO *gei* cannot be stranded may have something to do with the fact that Mandarin does not allow indirect object gaps in general (Huang 1992).

- (21)a. \*Lisi, ta gei-le yi-ben shu  
 Lisi s/he give-PERF one-CLASS book
- b. \*[ta gei-le yi-ben shu de ren]np  
 s/he give-PERF one-CLASS book DE(rel. clause marker) person

- c. nei-ben shu, ta gei-le Lisi  
that-CLASS book s/he give-PERF Lisi  
'That book, s/he gave to Lisi.'
- (22)a. \*Lisi, ta gei-le yi-ben shu  
Lisi s/he give-PERF one-CLASS book  
b. \*[ta gei-le yi-ben shu de ren]np  
s/he give-PERF one-CLASS book DE(rel. clause marker) person  
c. nei-ben shu, ta gei-le Lisi  
that-CLASS book s/he give-PERF Lisi  
'That book, s/he gave Lisi.'

Thus, we have shown that the preposition-like properties of post-DO *gei* are compatible with a SVC account. We will next show that *gei* is also involved in data that crucially depends on a SVC account.

- (23)a. Lisi song-le yi ben shu gei Zhangsan (kan)  
Lisi give-PERF one CLASS book GEI Zhangsan read  
(Lit.) Lisi sent a book to give Zhangsan the book to read.'  
b. \*Lisi song-le Zhangsan yi ben shu kan

(23a) shows that the object of post-DO *gei* controls the subject of a following verb. This is unexpected if the post-DO *gei* were a preposition.

- (24) ta fang-le [yi-ge wan] [zai zhuo-shang], hen youni  
s/he put-PERF one-CLASS bowl at table-top very greasy  
a. 'S/he put a greasy bowl on the table.'  
b. \*'S/he put a bowl on the greasy table.'

Even though the predicate *youni* 'greasy' selects both *zhuo-shang* and *wan*, (24a) is the only possible reading. That is, prepositional objects are not eligible controllers in Mandarin Chinese, albeit they may occur immediately preceding the controllee. This may be readily accounted for with a theory of universal controller hierarchy based on grammatical functions. For instance, adopting Bresnan's (1982) theory, Mandarin data show that only the two highest grammatical functions, SUBJ and OBJ, can be controllers in Mandarin. If post-DO *gei* were a preposition, it would mean that a certain OBL object can be a controller in Mandarin, while a OBJ2 (second object) cannot. This is contrary to both the observed generalization in Mandarin and the universal hierarchy of controllers argued by Bresnan (1982).

Before presenting further arguments for the SVC account, it should be helpful to review the structures involving *gei* and possible generalizations among these structures.

- (25) a. NP *gei* NP V NP  
b. NP V NP NP  
c. NP V-*gei* NP NP  
d. NP V NP *gei* NP
- (26) a. NP *gei* NP V NP  
b. NP V *gei* NP VP  
c. NP V *gei* NP

- (27) a. NP gei NP V NP  
 b. NP V NP gei NP VP  
 c. \*NP V NP gei NP

We have argued in the last section that the post-verbal *gei* should be accounted for as a verbal suffix marking the addition of a GOAL role. Thus the four-way structural contrast of Mandarin ditransitive constructions in (25) is reduced to three, with (25c) treated as a special case of (25b). The clear advantage of a prepositional account of (25d) is to derivationally relate it to (25a) and possibly (25b). However, we have just observed that there is another set of structural parallelism involving post-DO *gei*. The so-called purposive clause in (26b) and (27b) led by *gei* clearly favors a SVC account where *gei* is treated as a verb. Hence the c sentences in (25) through (27) could be accounted for as the same SVC with an optional third VP.

- (28)a. baba gei Lisi yi-baiwan mai fangzi  
 father give Lisi one-million buy house  
 'Father gave Lisi a million to buy a house.'  
 b. baba song yi-baiwan gei Lisi mai fangzi  
 father give one-Million GEI Lisi buy house  
 'Father gave Lisi one million to buy a house.'  
 c. baba song yi-baiwan gei Lisi  
 father give one-Million GEI Lisi  
 'Father gave Lisi one million.'
- (29)a. Zhangsan fang-le yi-bu dianying gei dajia kan  
 Zhangsan play-PERF one-CLASS movie GEI everyone watch  
 'Zhangsan played a movie for everyone to watch.'  
 b. \*Zhangsan fang-le yi-bu dianying gei dajia  
 Zhangsan play-PERF one-CLASS movie GEI everyone
- (30) Zhangsan fang-le yi-bu dianying qing/rang dajia xinshang  
 Zhangsan play-PERF one-CLASS movie invite/let everyone enjoy  
 'Zhangsan played a movie for everyone to enjoy.'

On the other hand, there are matrix verbs that do not allow the last VP to be elided, as exemplified in (30). Thus, one could postulate that the *gei* NP sequence without ensuing VP is actually a PP and the structure is derivationally related to sentences with a pre-verbal *gei*. Such a position is adopted in C. Tang (1990). She gives (28a) as an instance of SVC and accounts for *gei* as a verb head of a PredP, and treats *gei* in (28c) as a preposition, like *zai* in (24). This account would readily explain the contrast between (28c) and (29b). The ditransitive verb *song* subcategorizes for a GOAL PP and therefore (28c) is grammatical. The verb *fang* 'to play (a movie, a tape, etc.)' does not, and therefore (29b) is ungrammatical.

The prepositional account of *gei* in (28c), however, remains to be problematic. The ungrammatical (29b) clearly shows that the post-DO *gei* in (29a) cannot be a preposition. Verbs like *fang* 'to put on' do not subcategorize for a GOAL complement and do not allow a postverbal *gei* phrase, but they do occur as the leading verb in a SVC, as in (30). Thus, we can safely conclude that the post-DO *gei* in (29a), like *qing* 'to invite' *rang* 'to allow' in (30), is one of the verbs in a serial verb construction. There is no reason to analyze the *gei* in (28b) differently. In other words, a post-DO *gei* is clearly a verb in a SVC when there is another verb following the object of *gei*.

- (31)a. *gankuai dao bei shui gei puopuo* (he)  
 hurry pour cup water GEI gramma drink  
 'Hurry, pour a cup of water for gramma (to drink).'
- b. *fuyin-le 'shoubiao-xin hujiaoqi' de xinzhuang gei jiankou*  
 Xerox-PERF wrist-watch-type beeper DE shape GEI monitor-test  
*renyuan (cankao)*  
 staff reference

'[They] xeroxed pictures of 'watch-shaped beepers' and gave [the copies] to test proctors (to refer to).'

The above two sentences extracted from corpus show that the leading verb preceding a post-DO *gei* phrase need not be a ditransitive verb. Neither *dao* 'to pour' in (31a), nor *fuyin* 'to xerox' in (31b), subcategorizes for a second object, thus the post-DO *gei* phrase cannot be a PP argument. Furthermore, the optional sentence-final verb indicates that these sentences involve serial verb constructions. Hence the prepositional account of post-DO *gei* does not offer any explanation for the contrast in the optionality of the sentence-final verb. It would correctly predict the grammaticality of all the sentences in (28) and (29), but would wrongly rule out both sentences in (31). Thus the prepositional account not only does not offer a unified account of the structural similarity between the b and c sentences in (26) and (27), it also fails to account for the contrast between (26c) and (27c).

In contrast, the SVC account straightforwardly explains the parallel structures of the above mentioned b and c sentences. The reason why a third verb is sometimes obligatory and sometimes optional in a SVC with *gei* as the second verb calls for additional explanation. Paul (1987) observes that a SVC cannot end with a *gei* phrase when the object of *gei* is abstract and cannot be transferred. However, this generalization allows many exceptions, such as (32).

- (32)a. *Zhangsan zhu tang gei ta he*  
 Zhangsan cook soup GEI s/he drink  
 'Zhangsan cooked soup for him/her to drink.'
- b. \**Zhangsan zhu tang gei ta*  
 Zhangsan cook soup GEI s/he

In (32), a third verb is obligatory after *gei* even though the object of *gei* is non-abstract and clearly transferrable. With the contrast of (31a) and (32a), we also show that the obligatoriness

is not dependent on the third verb. What we observe in the sentences requiring a third verb is that the objects have the role of an incremental theme. This is true for both dianying 'movie' in (29) and tang 'soup' in (32). On the other hand, the shape of a beeper (31b), water (31a), or a million dollars (28) are not created by the predicates and are not incremental themes. This observation holds for all the cases we studied. The nature of the lexico-semantic constraint that governs this distribution, however, is still unclear to us at this moment.

Last but not least, as observed Li (1990) and Chao-fen Sun (p. c.), the prepositional proverbial *gei* marks both the GOAL and BENEFICIARY arguments and no longer has the full predicative meaning. The post-DO *gei*, on the other hand, has the full predicative meaning involving the act of giving. In other words, the post-DO *gei* is yet to be reduced to an argument marking device and still has the lexical predicative meaning. This is another strong argument against analyzing the post-DO *gei* as a preposition.

To sum up, even though distribution and other syntactic tests do not yield decisive evidence for the categorical status of post-DO *gei*, there are arguments clearly in favor of a verbal account. First, the control facts suggest that a SVC account is supported by a universal hierarchy of controllers. Second, the fact that certain transitive verbs allow a verb series lead by *gei* to follow them though they do not subcategorize for a GOAL shows that a serial verb account is necessary. Last, the SVC analysis allows a more elegant account of the typology of structures involving *gei*. A PP account limited to a *gei* phrase without an ensuing verb is superfluous because the optionality of this verb following the post-DO *gei* phrase cannot be predicted by the transitivity of the leading verb alone. Thus, we have shown with internal motivation that the post-DO *gei* is best accounted for by a verb in a serial verb construction.

### III. Historical Ramifications

The last argument supporting our account comes from studies of the historical changes of the ditransitive constructions of Mandarin Chinese. The result reported here is based on Peyraube (1986), C. F. Sun (p.c.), and our studies of the historical corpus at Academia Sinica.

- (33)a. V IO DO
- b. V DO *yu*<sup>2</sup> IO
- c. V1 DO V2 IO
- d. V1-V2 IO DO

According to Peyraube (1986), the critical period of structural changes for Chinese ditransitive constructions occurred between the first and tenth century A. D. Of the three structures discussed in this paper, (33a) and (33b) are attested during Warring States (roughly 4th to 2nd century B. C.) documents. The third and fourth, i.e. (33c) and (33d), are innovations studied by Peyraube. Between the tenth century and modern Chinese, the most crucial change is the lexical replacement of the ancient form *yu*<sup>3</sup> with the modern form *gei*<sup>3</sup> in spoken Chinese. This occurred during

the fifteenth century. This position is supported by Sun's recent study of the history of Chinese prepositions and our corpus.

The reason for listing (33b) and (33c) separately is because the first historical change that took place between the first and tenth century is that a group of verbs replaces the preposition *yu2*. These were ditransitive verbs which have the neutral meaning of the action of the source giving a theme to the goal, without specifying other attributes of the action. The meaning of *V2* will later be bleached and *yu3* will become the only verb allowed in this position. A later innovation, starting from roughly the third century A.D., is the emergence of the structure (33c). Similarly, the original group occurring in the *V2* position will gradually be substituted by *yu3* until it becomes the only lexical item allowed in this position. Both structures are preserved in Modern Mandarin with the lexical replacement of *yu3* by *gei*, which by all accounts, occurred in the fifteenth century.

Note the (surface) structural parallelism between (33)a, b, d and the structures studied here, (1)a, b, and (2). It is not surprising that our affixation account of the post-verbal *gei* and the SVC account of the post-DO *gei* are supported by their historical counterparts. Recall that *yu3* is the lexical item replaced by *gei*.

(34) *jiacai*                    *fenzuo*                    *yu2 san-ting*,  
 family-fortune divide-become to three-part  
*er-fen*                    *liu-yu3*                    *yu2 ci*                    *mu*  
 two-share                    leave-YU                    to loving mother

'[He] divided his fortune into three equal parts and left two parts to [his] mother.'

(Dunhuang bianwen [vernaculars], ca. 10th century A.D.)

In (34), the *V-yu3* sequence is followed by the archaic Chinese preposition *yu2*. Peyraube, assuming the previous accounts that all *gei*'s following a verb are prepositions in Modern Mandarin, takes this as crucial evidence to show that the *yu3* attached to a verb has not grammaticalized to a preposition in tenth century A.D. However, closer examination of the sentence (actually a couplet, though the bianwen rhymes and meters are usually quite free), suggests that 'liu-yu' is actually a compound verb. There is no doubt that *fenzuo*, the corresponding part of the liu-yu in the first half of the couplet is a compound verb, since it is still used as such in Modern Mandarin, and the alternative analysis of *zuo* as a preposition is not available. Thus liu-yu is most likely also a compound. Peyraube's position that *yu3* is still a full fledged verb in this case is also debatable since even though the mixed structure of 'V (DO) *yu2*' is common in this period, we do not find *yu3* 'to give' as a verb in this construction. Plausible explanation of the non-cocurrence of *yu3* before *yu2* lies in the fact that *yu3* lexically substitutes *yu2* in double object constructions. Any cooccurrences of *yu3* and *yu2* maybe viewed as incompleated substitutions and are avoided. liu-yu, as a compound, however, will not be subject to this rule. In other words, (34) not only shows that *yu3* is not a preposition, it also supports the account that *V1* and *V2* form a compound verb. This mirrors our account of the modern *V-gei* sequence in (2).

On the other hand, there are also occurrences of post-DO *yu3* which suggest a SVC analysis.

(35) *bixia* *shouming* *buguo* *bai-nian*,  
 majesty life no+more+than hundred-year  
*yu* *zhong* *ci* *tao* *yu3* *sheiren* *shi* *zhi*  
 want plant this peach give who-person eat 3rd pers  
 'The life of your majesty is no more than one hundred years, and  
 which is the person that you want to plant this peach for [so as  
 to bear fruit] to give him/her to eat?'  
 (Dunhuang bianwen [vernaculars], ca. 10th century A.D.)

In (35), we see clearly that *yu3*, the historical predecessor of *gei*, occurs as the second verb of a verb series. Unlike the preverbal preposition which is ambiguous between a beneficiary and a goal marker, the *yu3* here has the clear meaning of 'to give' and the object of it controls the subject of the following verb *shi* 'to eat'. In addition, the verb *zhong* 'to plant' also does not subcategorize for a GOAL argument. So it likely that (35) is an instance of SVC with *yu3* as the second verb.

IV. Conclusion

We have shown that the postverbal *gei* that is concatenated to a verb is actually an affix. This account also finds historical correspondences. On the other hand, two alternative accounts of the post-DO *gei* have shown to be largely compatible, though languageinternal argument shows that the SVC account is superior. Historical precedents are also found for this account, even though we are definitely making no claim that the historical constructions and the *gei* constructions studied in this paper share identical structures. We think a synchronic account can certainly be strengthened if it is found to be compatible with its historical developments.

Moreover, this account entails that, except for locative PPs, all PPs in Chinese are pre-verbal. It also suggests that the SVO/SOV word order change debate can be reduced to a shift of the post-verbal PP position to a predominant pre-verbal position. Last but not least, the ad hoc typology of double object construction based on whether post-verbal *gei* is not allowed, optional, or obligatory can now be grammatically motivated. A verb that is inherently ditransitive, like *song* 'to give' can have optional -*gei* affix. The verbs that are lexically mono-transitive but allow a secondary motion interpretation can form a ditransitive compound with the affixation of -*gei*, hence -*gei* is obligatory in this class of ditransitive verbs, such as *yao* 'to scoop'. And since the affixation of -*gei* marks the addition of a GOAL, ditransitive verbs that require a second SOURCE object rather than a GOAL object do not allow -*gei* affixation. This is exemplified by the disambiguation of *jiegei* 'to lend to'. Where *jie* is lexically ambiguous and has the bidirectional meaning of both 'to lend' and to 'borrow'. Thus we show that re-examining language-internal evidence can help clarify a complicated account suggested by comparative studies.

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### Bibliography

- Bresnan, Joan. 1982. Control and Complementation. In Bresnan ed. *The Mental Representation of Grammatical Relations*. Cambridge: MIT Press.
- Chao, Yuen-Ren. 1968. *A Grammar of Spoken Chinese*. Berkeley: University of California Press.
- Cheng, Ya-hsia, and Chu-Ren Huang. 1988. Guoyu zhong de Shuangbin Dongci. [Double Objects Verbs in Mandarin]. *The World of Chinese Language*. 48.34-48.
- Dai, John X.-L. 1991. Inflectional Morphology in Chinese. Presented at the Third North American Conference on Chinese Linguistics. May 3-5. Cornell University.
- Huang, Chu-Ren. 1987. Mandarin Chinese NP de: A Comparative Study of Current Grammatical Theories. Cornell University Ph. D. Thesis. Published as Institute of History and Philology Special Publications No. 93. 1989.
- \_\_\_\_\_. 1990a. Mandarin Double Object Construction and Morphological Rules. Paper presented at the 23rd International Conference on Sino-Tibetan Languages and Linguistics. Arlington, Texas.
- \_\_\_\_\_. 1990b. A Unification-based Theory of Lexical Discontinuity. *Linguistics*. 28.2.263-307.
- \_\_\_\_\_. 1991. Mandarin Chinese and the Lexical Mapping Theory--a study of the interaction of morphology and argument changing. *Bulletin of the Institute of History and Philology*. 61.2. Taipei: Academia Sinica.
- \_\_\_\_\_. 1992. Certainty in Functional Uncertainty. To appear in *Journal of Chinese Linguistics*. 1992. no. 2.
- Huang, Chu-Ren, and Louis Mangione 1985. A Reanalysis of de: Adjuncts and Subordinate Clauses. M. Cobler, J. Goldberg, S. Mackaye, and M. Wescoat. Eds. *Proceedings of the Fourth West Coast Conference on Formal Linguistics*. 80-91. Stanford: Stanford Linguistics Association.
- Li, Charles N. and Sandra A. Thompson. 1981. *Mandarin Chinese. A Functional Reference Grammar*. Berkeley: University of California Press.
- Li, Yen-Hui Audrey. 1990. *Order and Constituency in Mandarin Chinese*. Dordrecht: Kluwer.
- Mo, Rou-Ping Jean, Chu-Ren Huang, and Keh-jiann Chen. 1991.

- Serial Verb Constructions In Mandarin Chinese. Paper presented at the Third International Conference on Teaching Chinese as a Second Language. December 28-31. 1991. Taipei, Taiwan.
- Paul, Watrauld. 1987. The Purposive Gei-Phrase in Chinese. Cahiers de Linguistique Asie Orientale. vol 16. no. 2.
- Peyraube, Alain. 1986. Shuangbingyu jiegou cong handai zhi tangdai de lishi fazhan [The Historical Development of Double Object Constructions between Han and Tang Dynasties]. Zhongguoyuwen 1986 no.3. 204-216.
- Shebba, M. 1987. The Syntax of Serial Verbs. Amsterdam: John Benjamins.
- Tang, Chih-chen Jane. 1990. Chinese Phrase Structure and the Extended X'-Theory. Unpublished Cornell University Ph. D. Thesis.
- Tang, Ting-Chi. 1979. Double Object Constructions in Mandarin. Guoyu Yufa Yanjiu Lunji [Studies in Chinese Syntax]. pp. 363-389. Taipei: Student.
- \_\_\_\_\_. 1989. Guanyu Hanyu de Cixu Leixing [On the Word Order Typology of Mandarin Chinese]. Guoyu Cifa Yufa Yanjiu Lunji [Studies on Chinese Morphology and Syntax]. pp. 449-537. Taipei: Student.
- Teng, Shou-hsin. 1975. A Semantic Study of Transitivity Relations in Chinese. University of California Publications in Linguistics. Vol. 80. Berkeley and Los Angeles: University of California Press. And Taipei: Student. 1977.