Ditransitives in Mandarin

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This paper attempts to provide a syntactic account for the derivation of ditransitives in Mandarin, which has a four-way realization—(a) [V DO *gei* IO], (b) [V IO DO], (c) [V *gei* IO DO] and (d) [*gei* IO V DO], where DO denotes the direct object, IO the indirect object and *gei* is treated as the equivalent of the preposition *to*. Particularly, this study sets out to determine whether any of the four alternations share underlying syntactic structures. Syntactic tests were employed to elicit different syntactic behaviours, which serve as an indicator of non-identical underlying structures. An examination of implication of location and idioms reveals that (a), (c) and (d) are comparable. This study concludes that (b) has its own underlying syntactic structure, while (a), (c) and (d) are derivationally related.
Keywords: ditransitives; Mandarin; syntax

1   Introduction

This paper examines ditransitives in Mandarin. Similar to their English counterparts, Mandarin ditransitives involve a direct object, an indirect object and three participants—an Agent, a Theme and a Goal. The direct object corresponds to the thematic role Theme while the indirect object corresponds to Goal. However, unlike English, Mandarin ditransitives have four surface forms, two of which seem syntactically parallel to the two alternations found in English. This paper aims to provide a syntactic account for the derivation of the four patterns in Mandarin ditransitives. To determine if the alternations are derivationally related, relevant syntactic behaviours are examined through employing various syntactic tests.

This paper is organized as follows—this section has given a brief overview of the current study. The next section introduces the key data and relevant research questions. Previous work on ditransitive construction is reviewed in section three. Section four gives syntactic analyses of the data, the results and implications of which are given in section five. The final section concludes the paper.

2   Key data and questions

The ditransitive construction involves three participants and has a two-way realization in English, as exemplified in (1a-b) below.

(1) a. John sent a letter to Mary.   [V DO *to* IO]
      b. John sent Mary a letter.   [V IO DO]

In (1), the VP structure is given after each sentence, where DO denotes the direct object and IO denotes the indirect object. In each case, *John* is the Agent, *a letter* is the Theme and *Mary* is the Goal.

In the case of Mandarin ditransitives, four alternations are possible, as exemplified in (2a-d) below.

(2) a. Zhangsan   song   yi-bu che   gei   Lisi   [V DO *gei* IO]
         Zhangsan   gift   one-CL car   to   Lisi
         'Zhangsan gifts Lisi with a car'
     b. Zhangsan song Lisi yi-bu che   [V IO DO]
     c. Zhangsan song gei Lisi yi-bu che   [V *gei* IO DO]
     d. Zhangsan gei Lisi song yi-bu che   [*gei* IO V DO]

For the ease of description in this paper, I shall refer to the (a) structure *double complement construction*, (b) *double object construction*, (c) *V gei construction* and (d) *pre-verbal construction.*

Similar to the English examples, the Mandarin ditransitives in (2a-d) involve three participants—*Zhangsan* is the Agent, *yi-bu che* 'a car' is the Theme and *Lisi* is the Goal. *Gei* is treated as the equivalent of the preposition *to*. Note that (1a-b) and (2a-b) appear to be syntactically parallel given their VP structures.

This study is motivated by a gap in current literature, which seems unable to answer the two research questions this paper aims to address, as stated below.
1. Which surface forms are derivationally related?
2. Which surface forms have different underlying syntactic structures?

3   Previous work on ditransitive construction

Asymmetries are observed within the VP structures of (1a) and (1b) (Barss & Lasnik, 1986). In both (1a) and (1b), DO asymmetrically c-commands IO. Larson (1988) and Harley (2002) have both attempted to account for the two alternations in English through a hierarchical structure. Larson (1988) postulates identical double VP shells for both types, where (1b) is syntactically derived from (1a). (3a) and (3b) give his proposed syntactic structures for (1a) and (1b) respectively.

(3) a. double complement construction
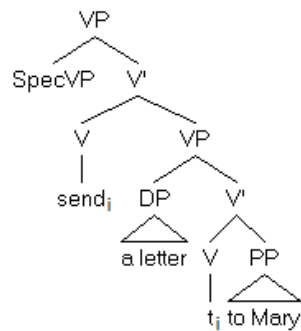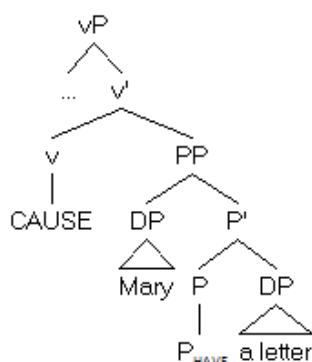

  b. double object construction
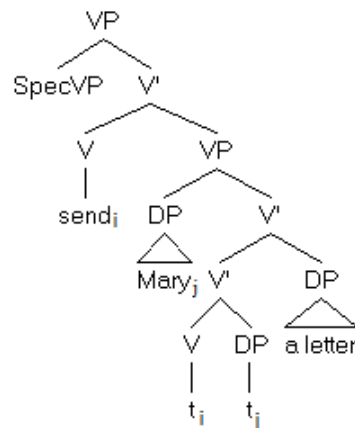
Larson (1988) posits that (3b) is derived from (3a) through a passivization-like operation at the VP level, which he calls dative shift. To derive (3b) from (3a), first the case assigner *to* is absorbed, causing the theta-role assigned to *a letter* (subject of the lower VP in (3a)) to undergo demotion and the lower [spec, VP] to be a nonthematic position. This theta-role is instead assigned to a V' adjunct. *A letter* is thus realized as a V' adjunct in (3b). The indirect object *Mary* then undergoes NP movement to the lower empty [spec, VP].

(3a) and (3b) thus predict that the double complement construction and the double object construction should exhibit identical syntactic behaviours, which is not supported by empirical data (Harley, 2002). In her analysis of ditransitives, Harley (2002) preserves Larson's hierarchical structure to capture syntactic asymmetries, but she contends that the two alterations have underlyingly different structures, her proposal of which is given in (4a) and (4b) below.

(4) a. double complement construction
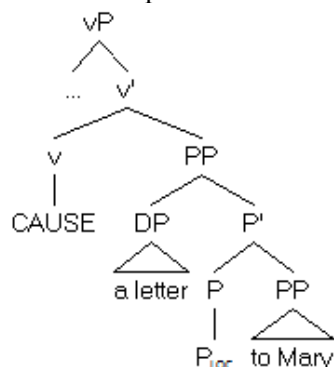
  b. double object construction

Harley (2002) contends that the syntactic structures of English ditransitives should reflect the semantic differences between the two alterations. The P heads in (4a) and (4b) make different semantic contributions. The double object construction has an implication of possessor due to P_{HAVE} while the double complement construction has an implication of location due to P_{LOC}. The P heads raise to v_{CAUSE} to spell out the main verb. Since the two structures also have different composition in constituency, they exhibit different grammaticality for idioms.

        Larson's and Harley's approaches seem unable to account for the Mandarin data as they predict only two alternations for ditransitive construction. Hung and Mo (1992) have looked at Mandarin ditransitives exemplified by (2a) and (2c) and they argue that (2a) is an instance of serial verb construction while [V *gei*] in (2c) forms a complex predicate. Her (1999) establishes [V *gei*] in (2c) as a compound. Despite the report of the existence of four patterns in Chinese ditransitives in previous works (Zhu, 1979; Chin, 2010, among others), work on the syntactic derivations of all four alternations is limited in the literature.

4   Syntactic behaviours of the four alternations

To determine whether the four alternations are derivationally related, a good starting point is to find out if they exhibit identical or different syntactic

behaviours. To achieve this end, syntactic tests were employed, as described in this section.

4.1 Implication of location

The four alternations exhibit different grammaticality when the indirect object is referred to as a location, as exemplified in (5) below.

(5) a. Zhangsan tui   yi-ben shu   gei   shudian
         Zhangsan return one-CL book to   bookstore
         'Zhangsan returns a book to the bookstore'
     b. *Zhangsan tui shudian yi-ben shu
     c. Zhangsan tui gei shudian yi-ben shu
     d. ??Zhangsan gei shudian tui yi-ben shu

In (5a-d), the indirect object *shudian* 'bookstore' is a location. The ungrammaticality of (5b) suggests that the double object construction requires an animate Goal. On the other hand, the ungrammaticality of (6a, c) below seems to indicate that the IO must be an inanimate location for the double complement and V *gei* constructions.

(6) a. *Zhangsan jiao   Yingwen   gei   Lisi
         Zhangsan teach   English   to   Lisi
         'Zhangsan teaches Lisi English'
     b. Zhangsan jiao Lisi Yingwen
     c. *Zhangsan jiao gei Lisi Yingwen
     d. ?Zhangsan gei Lisi jiao Yingwen[1]

(6a, c) are ungrammatical since the IO *Lisi* is not an inanimate location.

Compare (5d) to (6d). Although both sentences are marginally acceptable, (6d) is better than (5d). It seems like the pre-verbal construction prefers an animate location to an inanimate location.

In (5) and (6), the alternations in Mandarin ditransitive exhibit different syntactic behaviours. The double complement, V *gei* and pre-verbal constructions require an IO that can be interpreted as a location, while the double-object construction does not have such a requirement. However, it seems puzzling as to why (2a, c) are grammatical, since their IO *Lisi* is animate, as pointed out by an anonymous reviewer. The choice of verb may play a role here. In (2a, c), the verb *song* 'gift' is ambiguous in selecting its goal—the goal can be a (animate) recipient or a location, much like the English sentences 'John sent a letter to Mary' versus 'John sent a letter to Philadelphia'. This ambiguity of the verb may explain why (2a, c) are grammatical—the IO *Lisi* can be interpreted as a 'destination'. Although the verb *jiao* 'teach' in (6) is ambiguous similarly, its preference for an animate recipient rather than a location seems stronger, hence the pre-verbal construction is better in (2d) than in (6d).

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[1] An alternate translation for (6d) is 'Zhangsan teaches English to Lisi'. This translation is more appropriate for (6d), and thus provides support that (6d) is more acceptable with an animate goal, as discussed below.

So far, the data have shown a contrast in location semantics between the double object construction on the one hand and the double complement and the V *gei* constructions on the other. The pre-verbal construction patterns partially with either group—similar to the double complement and the V *gei* constructions, the pre-verbal construction allows its IO to be a location; similar to the double object construction, it prefers animacy. The next section sheds more light on the syntactic behaviours of the pre-verbal construction. For now, consider the syntactic trees for (5a, b), given in (7a, b) respectively. The presence or absence of the abstract locative preposition P_{LOC} (Harley, 2002) accounts for the contrast in location semantics between the two constructions.

(7)   a.
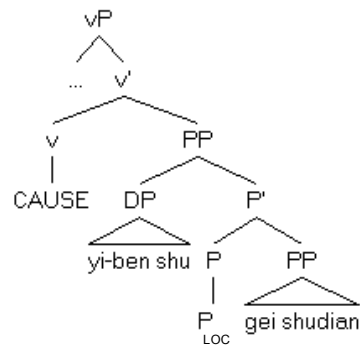
b.
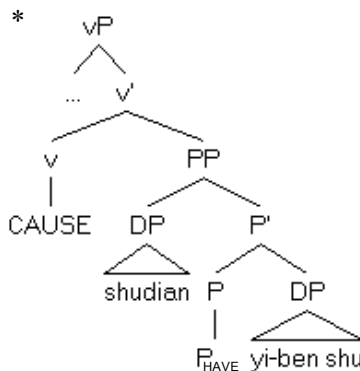
4.2   Idioms

For idioms that are composed of the verb and direct object, an idiomatic reading is only possible for the double object construction, as exemplified in (8) below.

(8)   a.   *Zhangsan   song   yi cheng   gei   Lisi
            Zhangsan   gift   one ride   to   Lisi
            Literal: *'Zhangsan gives Lisi a ride'
            Idiomatic: *'Zhangsan kills Lisi'
      b.   Zhangsan song Lisi yi cheng   Literal; idiomatic

c. *Zhangsan song gei Lisi yi cheng   *Literal; *idiomatic
d.   Zhangsan gei Lisi song yi cheng   Literal; *idiomatic

In (8), *song yi cheng* has a literal interpretation 'give (someone) a ride' and an idiomatic interpretation 'kill (someone)'. Recall in section 4.1, the indirect object of the double complement construction, the V *gei* construction and the pre-verbal construction has an implication of location. Additionally, the pre-verbal construction allows an animate location. This correctly predicts the ungrammaticality of the literal reading for (8a) and (8c) and the grammaticality of the literal reading for (8d). From the ungrammaticality of (8a, c, d) for the idiomatic reading and under the assumption of idioms as constituents, we can posit that (8b) has a different underlying syntactic structure from the other sentences in (8). (9a, b) give the syntactic structure for (8a, b), respectively.

(9)   a.
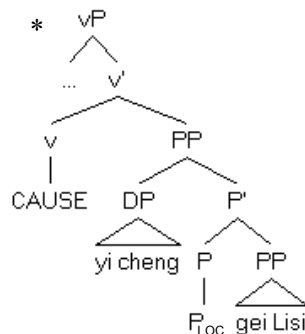
b.
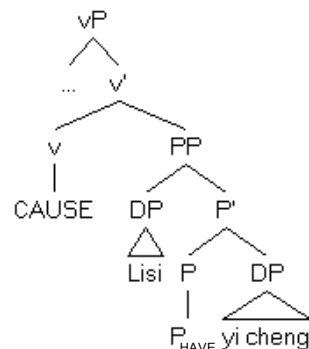
In (9b), P_{HAVE} and the direct object *yi cheng* 'a ride' form a constituent. P_{HAVE} then raises to v_{CAUSE} to spell out the main verb. In (9a), however, the P head and the direct object are never a constituent. Assuming idioms are constituents, an idiomatic reading is only possible for (9b) but not (9a).

4.3   Aspectual marker *le* and constituency

In Mandarin, the aspectual marker *le* is typically only allowed after a main verb. Compare the following examples in (10).

(10) a. Zhangsan   song   **le**   yi-bu che   gei   Lisi
           Zhangsan   gift   ASP   one-CL car   to   Lisi
           'Zhangsan gifted Lisi with a car'
     b. Zhangsan song **le** Lisi yi-bu che
     c. *Zhangsan song **le** gei Lisi yi-bu che
     d. Zhangsan gei Lisi song **le** yi-bu che

In (10a, b, d), the aspectual marker *le* is allowed after the main verb *song* 'gift'. The V *gei* construction can only be grammatical if *le* appears after *gei*, as in (10c').

(10) c.   Zhangsan song gei **le** Lisi yi-bu che

The prohibition of the insertion of *le* between *song* and *gei* seems to suggest that the V and *gei* form a unit. An examination of the constituency of V *gei* construction provides further insight into the syntactic structure of the V *gei* construction. Consider (11a-b) below.

(11) a. *Zhangsan   [xie   gei]   [ji   gei]   Lisi   yi-feng xin
           Zhangsan   write   to   send   to   Lisi   one-CL letter
           'Zhangsan writes and sends Lisi a letter'
     b. Zhangsan   [ji   gei   Lisi]   [xie   gei   Xiaoming]
           Zhangsan   send   to   Lisi   write   to   Xiaoming
           yi-feng xin
           one-CL letter
           'Zhangsan sends Lisi and writes Xiaoming a letter'

The ungrammaticality of (11a) suggests that although V and *gei* form a unit, as exemplified in (10c, c'), V and *gei* are not a constituent. Instead, V, *gei* and IO together form a constituent, as in (11b).

The data in (10) and (11) make two predictions—either the claim that (10c) is derivationally related to (10a, d) is incorrect, or (10c) is indeed derivationally related to (10a, d), but it goes through further morphological, phonological or syntactic processes.[2] Further analysis is required to resolve this peculiar issue with the V *gei* construction.

5   Summary of findings and implications

(12) summarizes the findings from the syntactic tests employed in the previous section.

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[2] A member of the audience at the 31st Northwest Linguistics Conference suggested that a phonological process might be involved—*gei* may be too phonologically light to stand alone in the V *gei* construction and so it has to attach to the main verb.

(12)

	Double complement	Double object	V *gei*	Pre-verbal
Location	+ (inanimate)	−	+ (inanimate)	+ (animate)
Idiom	*		*	*

From the table in (12), it appears that the double complement construction, the V *gei* construction and the pre-verbal construction are derivationally related while the double object structure has a distinct underlying syntactic structure. However, the fact that V, *gei* and the IO form a constituent in the V *gei* construction as exemplified in (10-11) could be counterevidence to the claim that the V *gei* construction is derivationally related to the double complement and the pre-verbal constructions. Further analysis is required before a definitive claim can be made. Harley's (2002) analysis of English ditransitives seems to capture the syntactic differences between the four alternations in Mandarin ditransitives—P_{LOC} captures the implication of location in the double complement construction, the V *gei* construction and the pre-verbal construction, while P_{HAVE} forms a constituent with the direct object, allowing the grammaticality of double object idioms.

6   Conclusion

This paper has examined the four alternations in Mandarin ditransitives. It was found that of the four surface forms, the double object structure has its own underlying syntactic structure while the double complement, the V *gei* and the pre-verbal constructions appear to be derivationally related. Future research of Mandarin ditransitives should work in the direction of addressing the following issue—how are [V DO *gei* IO], [V *gei* IO DO] and [*gei* IO V DO] derivationally related?

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