

# A Survey of Ellipsis in Chinese

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## Abstract

Much work on ellipsis has been conducted using data from English, and many widely acknowledged types of ellipsis exist in English. The extent to which the named ellipsis mechanisms exist in other languages is, though, often not clear. This manuscript surveys ellipsis in Mandarin Chinese using a dependency-based approach to syntax. It probes to see which ellipsis mechanisms exist in Mandarin. The survey demonstrates that gapping, stripping, pseudogapping, sluicing, and comparative deletion do not exist in Mandarin (or are highly restricted) and that VP-ellipsis, answer ellipsis, and N-ellipsis are all arguably present. Furthermore, zero anaphora is frequent in Mandarin, whereas it is absent from English (or highly restricted). The *catena* unit is pillar of the account, since the elided material of ellipsis is a *catena*.

## 1 An inventory of ellipsis mechanisms

The study of ellipsis recognizes numerous distinct types. The following mechanisms are among the most commonly acknowledged:

1. Gapping
2. Stripping
3. Pseudogapping
4. Sluicing
5. Comparative deletion
6. VP-ellipsis
7. Answer ellipsis
8. N-ellipsis
9. Null complement anaphora
10. Zero anaphora

Excepting zero anaphora, these mechanisms occur in English, and most of them are present in languages related to English. The extent to which they exist in languages more distant from English is often not clear, however. This contribution surveys ellipsis in Mandarin Chinese, probing to

see which ellipsis mechanisms are and are not present.

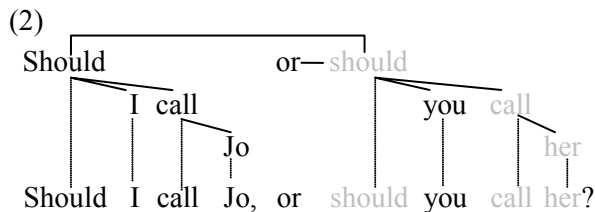
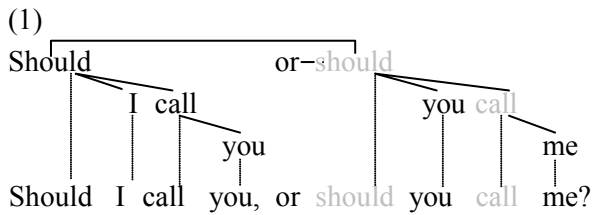
The analysis of ellipsis pursued below is dependency-based, and the *catena* unit plays a central role in the account. A *catena* is *a word or combination of words that are linked together by dependencies* (Osborne et al. 2012). Ellipsis mechanisms in English have been shown to elide *catenae*. The survey seeks to determine the extent to which the *catena* is also the central unit for a theory of ellipsis in Mandarin.

This contribution thus pursues three goals: 1) provide an initial exploration of ellipsis in Mandarin, 2) determine the extent to which the *catena* unit can serve as the basis for a theory of Mandarin ellipsis, and 3) consider what can be learned about ellipsis in general from a comparison of ellipsis mechanisms across English and Mandarin.

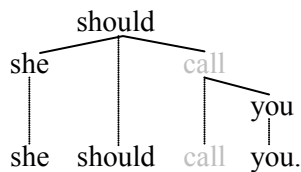
A word of caution is appropriate concerning the dependency hierarchies assumed for Mandarin below. To our knowledge, many basic aspects of Mandarin sentence structure have not yet been worked out in theoretical detail from a DG perspective. Basic questions about the dependency status of sentence-final particles, coverbs, *de*-constructions, classifiers, etc. have not been debated from a DG perspective. Thus the validity of many of the structures posited below is taken for granted. Future explorations into the dependency structures of Mandarin may motivate corrections to the dependency hierarchies for Mandarin posited below.

## 2 Gapping, stripping, pseudogapping

Gapping, stripping, and pseudogapping have been thoroughly explored (e.g. Jackendoff 1971, Kuno 1976, Stump 1977, Levin 1986, McCawley 1998). The following three sentences illustrate gapping, stripping, and pseudogapping in English:



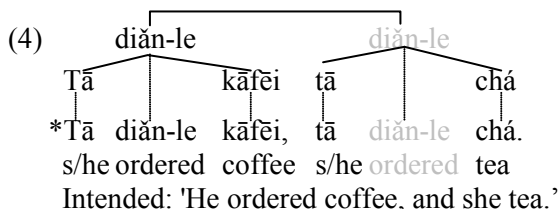
(3) She should call me more than



Example (1) illustrates gapping, example (2) stripping, and example (3) pseudogapping. Gapping and stripping occur in coordinate structures. Pseudogapping can appear in subordinate clauses in the absence of coordination, but the pseudogap must find an antecedent – it cannot take a postcedent.

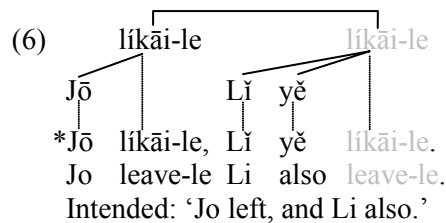
The elided material *should...call* in (1) and (2) is a catena, and the word *call* in (3) is also a catena, a one-word catena. The fact that *should* immediately dominates *call* is what makes the combination *should...call* a catena. The examples therefore deliver a sense of the importance of the catena unit for the theory of ellipsis. There are, however, many details of the dependency hierarchies shown in (1–3) that can be overlooked here, since they are not important for surveying ellipsis in Mandarin.

Turning to Mandarin, we see that these ellipsis mechanisms are generally not possible. The following attempts at gapping fail:



(5) \*Jō xǐhuān dàngāo, Lǐ xǐhuān qiǎokèlì.  
Jo likes cake. Li likes chocolate  
Intended: 'Jo likes cake, and Li chocolate.'

The following attempts at stripping in Mandarin also fail:

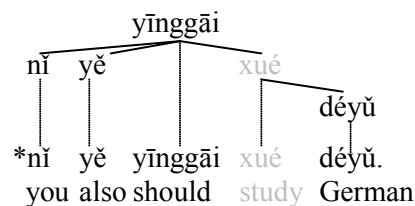


(7) \*Jō bìxū gōngzuò, Lǐ yě bìxū gōngzuò.  
Jo has.to work Li also has.to work.  
Intended: 'Jo has to work, and Li too.'

Noteworthy about these failed attempts at gapping and stripping is the fact that Mandarin lacks a direct equivalent to *and* for coordinating clauses. Perhaps the absence of such an element is a factor limiting the distribution of gapping and stripping, since these mechanisms are widely acknowledged as occurring only in the non-initial conjuncts of coordinated clauses.

The following attempt at pseudogapping in Mandarin also fails:

(8) Nǐ yīngāi xué fǎyǔ,  
you should study French



Intended: 'You should study French, and you should study German, too.'

The data just produced demonstrate that gapping, stripping, and pseudogapping are types of ellipsis that are either absent from Mandarin, or are much more restricted than in English. The fact that examples involving both gapping and stripping are bad is not surprising since the two are widely viewed as involving the same one-ellipsis mechanism.

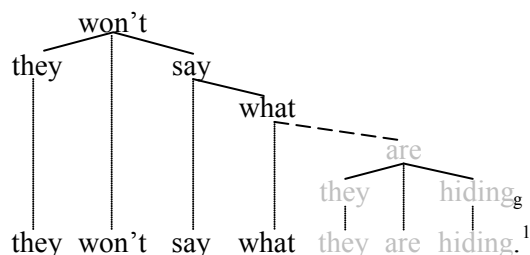
Concerning the absence of pseudogapping from Mandarin, however, the fact that it is not possible is more revealing. Pseudogapping behaves like VP-ellipsis in certain ways, and like gapping in other ways. It behaves like VP-ellipsis mainly insofar as it is licensed by an auxiliary verb just like VP-ellipsis, and it is like gapping insofar as it involves a true "gap" with a remnant, whereby the remnant must stand in contrast to the parallel constituent in the antecedent clause. Thus the absence of pseudogapping verifies to an extent the insight that pseudogapping is at least somewhat related to gapping,

enough so that if a language disallows gapping and stripping, then it will also disallow pseudo-gapping.

## 2 Sluicing

Sluicing (Ross 1969, Merchant 2001) typically elides everything from a clause except an interrogative expression (wh-element), e.g.

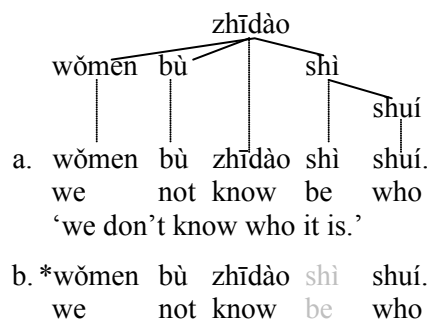
(9) They are hiding something, but



The clause introduced by *what* is sluiced, that is, the string *they are hiding* is elided. Sluicing is a frequently occurring type of ellipsis mechanism, and it exists in most if not all Indo-European languages.

Checking to see if sluicing exists in Mandarin, the data are not entirely clear. Consider the following examples:

(10) Tā xǐhuān mǒu gè rén, dàn  
s/he likes certain CL person, but  
'S/he likes a certain person, but'



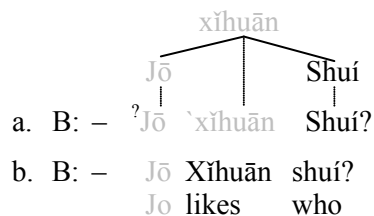
Example (10a), in which the verb *shì* 'be' appears, cannot, strictly speaking, be interpreted as sluicing because sluicing typically elides the dominant verb in a clause. When the dominant verb is indeed elided (here *shì*), the result is bad, as illustrated with example (10b). This fact suggests that sluicing is not present in Mandarin.

Example (10b) is an attempt at sluicing in a subordinate clause. When sluicing occurs across

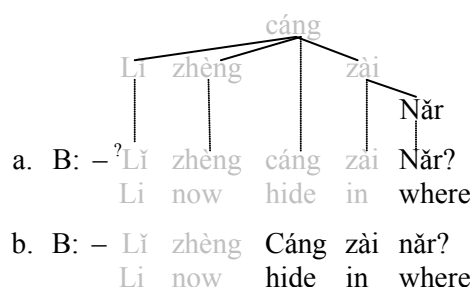
<sup>1</sup> The hierarchical status of *what* as the root of the object clause, the dashed dependency edge, and the g subscript follow the approach to discontinuities presented by Osborne (2014). The particularities of this analysis are not relevant to the account of ellipsis.

speakers in a main clause, the acceptability judgments are less robust:

(11) A: Jō xǐhuān mǒu gè rén.  
Jo likes certain CL person  
'Jo likes a certain person.'



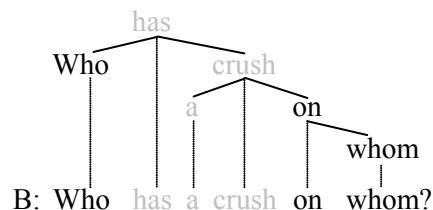
(12) A: Lǐ zhèng cáng zài mǒu gè dìfang.  
Li now hide in certain CL place  
'Li is now hiding in a certain place.'



While there is a preference for the b-questions, in which the verb is repeated, the a-questions are not clearly bad. This situation clouds the picture, since the marginal a-questions look like the sluicing in direct questions that is frequent in those languages that have sluicing. One might, however, assume that what has actually been elided from the a-questions is the auxiliary *shì* 'be'. On such an account, such examples would, strictly speaking, not count as instances of sluicing as it is commonly understood.

Further data speak more clearly against the presence of sluicing in Mandarin. Cases of so-called *multiple sluicing* are bad in Mandarin. Multiple sluicing occurs when the sluiced clause contains two or more wh-remnants. The following example illustrates multiple sluicing in English:

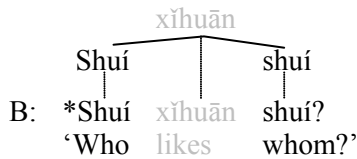
(13) A: Somebody has a crush on somebody?



The sluiced clause contains the two wh-remnants, *who* and *on whom*, identifying it as an instance of multiple sluicing.

Multiple sluicing is impossible in Mandarin:

- (14) A: Yǒu rén xǐhuān mǒu gè rén.  
 exist person likes certain ge person  
 ‘Somebody likes somebody.’



This attempt at multiple sluicing is quite bad. The example cannot be rendered in terms of the verb *shì*, unlike examples (11a) and (12a). This confirms that sluicing as it is commonly understood in English and related languages does not exist in Mandarin.

A number of accounts of sluicing-like data in Mandarin have acknowledged that what at times looks like sluicing is in fact a different mechanism, this mechanism being called *pseudosluicing* (see for instance Wei 2004, and Adams and Tamioka 2014). Pseudosluicing involves the auxiliary *shì* – but at times *shì* can be omitted. The analysis of pseudosluicing put forth in the literature (Adams and Tamioka 2014) is that it involves zero anaphora; a subject pronoun has been dropped, e.g. ...*wǒmen bù zhīdào (tā) shì shuí*, lit. ‘we not know it be who’ – more about zero anaphora below in Section 8.

The absence of sluicing in Mandarin is consistent with the absence of sluicing in *wh*-in-situ languages in general (Merchant 2001: 84f.).

### 3 Comparative deletion

Comparative deletion (Bresnan 1975) elides a string of words that corresponds to focused material in an antecedent clause, e.g.

- (15) More men ordered beer than  
 a. men ordered wine.  
 b. \*men ordered wine.
- (16) We drank more beer than  
 a. they drank beer.  
 b. \*they drank beer.

These examples illustrate the manner in which *men* and *beer* must be elided. They must be elided each time because their counterparts are focused by the comparative element *more* in the preceding clause. Thus comparative deletion occurs obligatorily; it is unlike most other ellipsis mechanisms in this regard, which occur optionally.

Checking to see whether comparative deletion is present in Mandarin is difficult to do. The construction used to express comparison in Mandarin is of a much different nature than in English. The elements being compared in Mandarin must be subjects, and the dimension along which they are compared must appear as the main predicate, e.g.

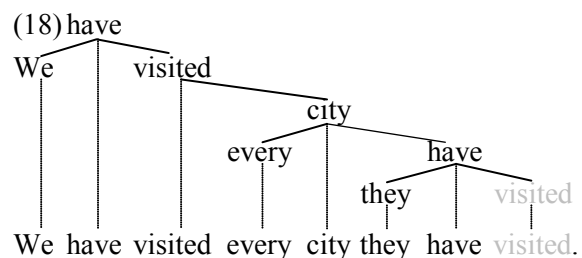
- (17) Diǎn-le pǐjiǔ de rén bǐ  
 order-le beer de people than  
 diǎn-le pútáojiǔ de (rén) gèng duō.  
 order-le wine de people more many  
 ‘More people ordered beer than ordered wine.’

The English translation employs a type of adjunct clause (*than ordered wine*) to express the comparison, whereas its Mandarin counterpart needs relative clauses (*diǎn-le pǐjiǔ de* ‘who ordered beer’ and *diǎn-le pútáojiǔ de* ‘who ordered wine’) to express the comparison.

Due to the quite different syntactic means for expressing comparative meaning across the languages, it is difficult to acknowledge the presence of comparative deletion in Mandarin. Given the lack of solid evidence in favor of the existence of comparative deletion, we conclude here that it does not exist in Mandarin.

### 4 VP-ellipsis

VP ellipsis (Johnson 2001) occurs frequently in English. A non-finite verb phrase is elided, its content being retrieved from context, e.g.

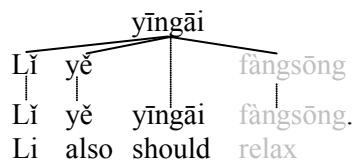


Non-finite verb phrases consist of a non-finite verb and all of its dependents. In this case here, just the nonfinite verb *visited* alone is elided because it has no dependents.

VP-ellipsis occurs frequently in Mandarin as well. As in English, it is typically introduced by a (modal) auxiliary verb. Li and Thompson (1981:182f.) classify the following verbs as auxiliaries: *yīngāi* ‘should’, *yīngdāng* ‘should’, *gāi* ‘should’, *néng* ‘be able to’, *nénggòu* ‘be able to’, *huì* ‘be able to’, *kěyǐ* ‘be able to’, *néng* ‘be allowed to’, *gǎn* ‘dare’, *kěn* ‘be willing to’, *děi*

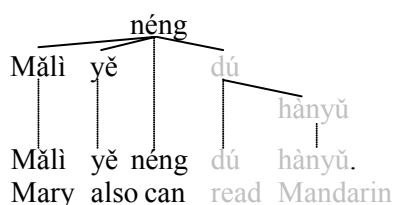
‘must’, *bìxū* ‘must’, *bìyào* ‘must’, *huì* ‘will, know how to’. The next examples illustrate VP-ellipsis in Mandarin:

- (19) Wáng yīngāi fàngsōng,  
Wang should relax,



‘Wang should relax, and  
Li should relax, too.’

- (20) Zhāngsān néng dú hànyǔ,  
John can read Chinese



‘John can read Chinese, and  
Mary can read Chinese, too.’

These instances of ellipsis are closely similar to their English counterparts, as indicated with the translations. VP-ellipsis therefore appears to be quite similar across the two languages.

But while English and Mandarin both have VP-ellipsis, the two languages differ in the frequency of the mechanism. VP-ellipsis occurs frequently in English, but is licensed by a relatively limited set of verbs, i.e. by auxiliary verbs and the particle *to*. In Mandarin in contrast, VP-ellipsis occurs with auxiliary verbs as well as with (what are designated in English as) control verbs. Thus VP-ellipsis is more widely available in Mandarin than in English, e.g.

- (21) Wǒ xiǎng hē jiǔ,  
I intend drink wine,

tā yě xiǎng hē jiǔ.  
s/he also intend drink wine

‘I intend to drink some wine;  
\*s/he also intends to drink some wine.’

- (22) Tā yào chī fàn,  
s/he wants eat meal

wǒ yě yào chī fàn.  
I also want eat meal

‘S/he wants to eat a meal;  
\*I also want to eat a meal.’

Note that the English translations are unacceptable (because *intend* and *want* do not license VP-ellipsis in English).

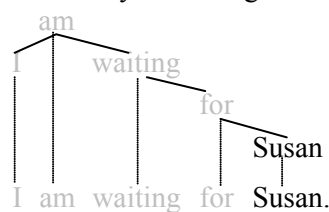
Therefore what examples (21-22) illustrate is that the elision of verb phrases is much less restricted in Mandarin than in English. Apparently, most any verb in Mandarin that takes a VP complement can license VP-ellipsis, not just auxiliary verbs. Observe also that the elided material indicated in each of the examples is a catena.

## 5 Answer ellipsis

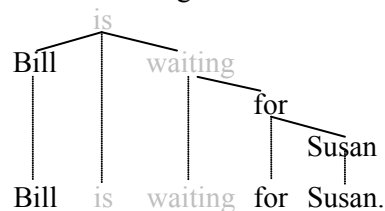
The ellipsis mechanism associated with answer fragments has been studied and debated in detail (e.g. Morgan 1973, Merchant 2004). Answer ellipsis exists in Mandarin just as it does in English, although the questions that elicit answer fragments vary significantly from the questions in English insofar as all interrogative elements remain in situ, i.e. they do not appear in clause-initial position. Mandarin is a *wh-in-situ language* in this regard. Despite this significant difference across English and Mandarin, Mandarin has answer fragments that are similar to their counterparts in English. As in English, the answer fragments in Mandarin are constituents (i.e. complete subtrees), which means that the elided material has the status of a catena.

The following examples illustrate the extent to which the elided words of answer ellipsis in English are catenae:

- (23) Who are you waiting for?



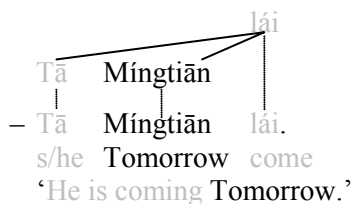
- (24) Who is waiting for whom?



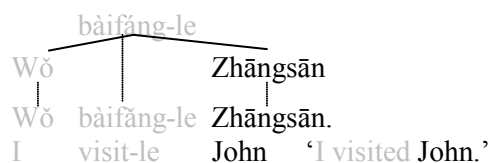
The elided material in each of these two cases has catena status, i.e. *I am waiting for* is a catena in (23), and *is waiting* is a catena in (24).

Switching to Mandarin, question-answer pairs in Mandarin also easily submit to analyses in terms of catenae:

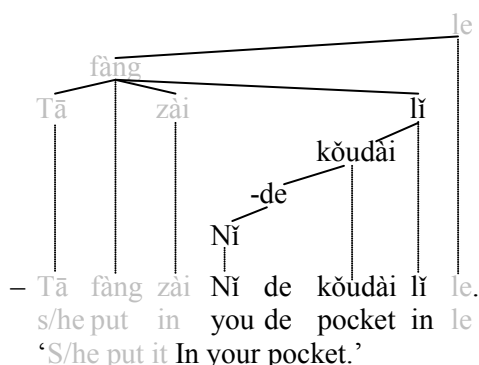
- (25) Tā shénme shíhou lái?  
s/he what time come  
'When is s/he coming?'



- (26) Nǐ bàifāng-le shuí?  
you visit-le who  
'Who did you visit?'



- (27) Tā bǎ wǒ de hùzhào fàng zài nǎr?  
s/he ba I de passport put in where  
'Where did s/he put my passport?'



Examples like these illustrate best the potential of the catena concept for serving as the basis for theories of ellipsis. In each of these Mandarin examples, the elided material is discontinuous in the linear dimension, yet despite this fact, it qualifies as a catena each time. When the fragment answer is a complete subtree, the elided material is necessarily a catena. Despite the drastic differences in syntactic structures across the English and Mandarin examples, the elided material is a catena in both languages.

## 6 N-ellipsis

Noun ellipsis (N-ellipsis, also called NP-ellipsis or NPE) elides a noun and often additional material that is adjacent to the noun, e.g.

- (28)
- his old cat and hers old cat
  - the first talk and the third talk
  - their photos of me and ours photos of me

Interestingly, however, N-ellipsis is limited in English. It occurs mainly just with possessive determiners/pronouns (*mine, yours, his, hers, its, ours, theirs*) and cardinal and ordinal numbers (*one, two, three, first, second, third, etc.*). It does not occur with most adjectives, e.g. *\*his big cat and her small cat*.

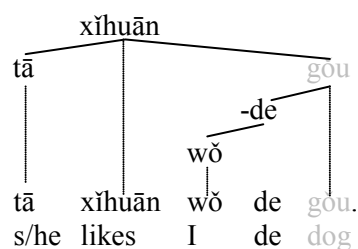
In many languages closely related to English, however, N-ellipsis is much more productive. For instance, most adjectives can introduce N-ellipsis in German:

- (29)
- seine große Katze und ihre kleine Katze  
his big cat and her small cat
  - billiges Bier und teures Bier  
cheap beer and expensive beer
  - alte Lieder und neue Lieder  
old songs and new songs

English has to reach to *one* in such cases. That is, when the adjective at hand cannot introduce N-ellipsis in English, the pronominal count noun *one* is employed instead to reduce redundancy, e.g. *old songs and new ones*.

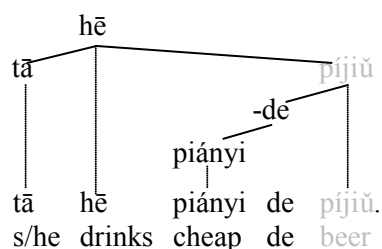
Mandarin is more like those languages that more freely employ N-ellipsis (such as German). Pre-modifiers of nouns are typically immediately followed by the clitic *de* in Mandarin, this clitic serving as a marker of a pre-modifier:

- (30) Wǒ xǐhuān tā de gǒu,  
I like s/he de dog,



'I like her/his dog, s/he likes mine dog.'

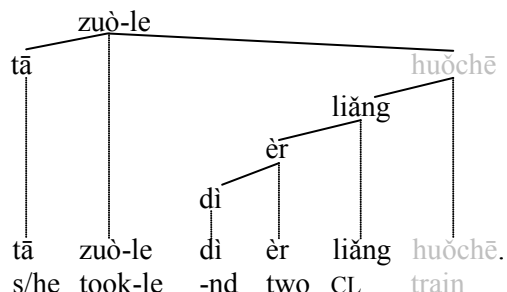
- (31) Tā hē guì de píjiǔ, dànshì  
s/he drinks expensive de beer, but



'S/he drinks expensive beer, but s/he drinks cheap beer.'

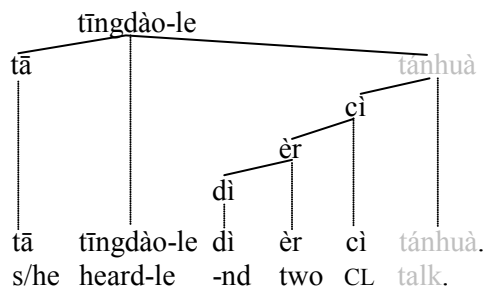
When the noun phrase contains a classifier, the *de* clitic is usually not employed, but rather the classifier alone introduces N-ellipsis:

- (32) Tā zuò-le dì yī liàng huǒchē,  
s/he took-le -st one CL train



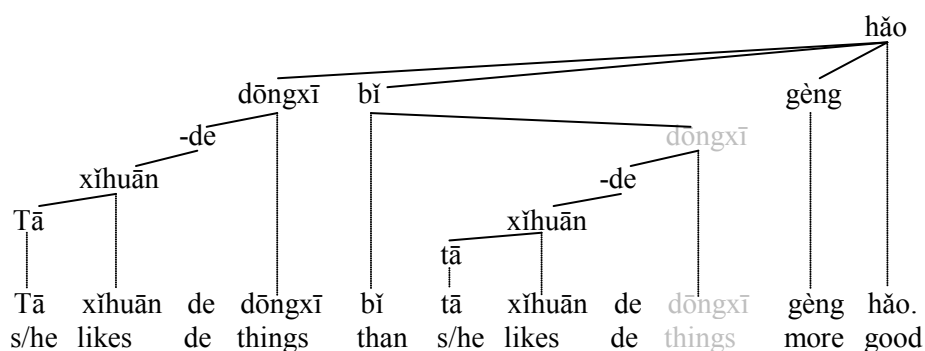
‘S/he took the first train, and s/he took the second train.’

- (33) Tā tīngdào-le dì yī cì tánhuà,  
s/he heard-de -st one CL talk,



‘S/he listened to the first talk, and s/he listened to the second talk.’

- (35)



‘What s/he likes is better than what s/he likes.’

The two clauses *what s/he likes* in the translation are free relative clauses. The clitic *de* serves as a nominalizer in the second case, rendering the preceding clause a nominal. The noun *dōngxī* ‘things’ can be interpreted as having been elided, as indicated in the tree.

Many aspects of N-ellipsis in Mandarin are not clear. The examples just produced suggest, however, that N-ellipsis is a frequent occurrence in Mandarin, much more frequent than in Eng-

The analysis here positions the classifier as a dependent of the noun. This analysis may be controversial, since an alternative analysis might position the classifier as head over the noun. As stated in the introduction, many aspects of Mandarin sentence structure have not yet been debated in DG circles, so the analysis assumed here is tentative.

There is, however, one consideration that supports this preliminary analysis (i.e. the classifier as a dependent of the noun). This consideration is the fact that the *de* marker can co-occur with the classifier, e.g.

- (34) ?Tā zuò-le dì yī liàng de huǒchē.  
s/he took-le -st one CL de train  
‘She took the first train.’

While the co-occurrence of *liàng* and *de* is mildly marginal, it is nevertheless good enough to support the analysis shown in (32) and (33). The *de* is serving its normal role as marker of a pre-modifier, i.e. it helps identify *dì yī liàng* as a predependent of *huǒchē*. If *huǒchē* were a post-dependent of *liàng*, we would expect (34) to be bad, because in such a case, *de* would not be marking a pre-modifier of the noun.

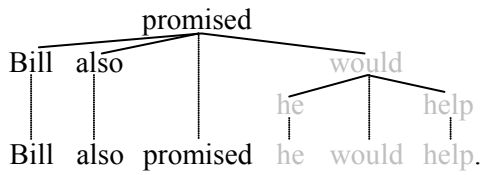
Otherwise, the clitic *de* occurs frequently and in numerous varied environments. At times it even serves to nominalize clauses. When it does so, the result can at times be rendered with free relative clauses in the English translation, e.g.

lish. The ability of *de* to serve as a nominalizer makes N-ellipsis widely available.

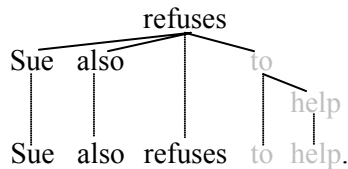
## 7 Null complement anaphora

Null complement anaphora (Hankamer and Sag 1976, Depiante 2000) is a mechanism that elides a complement clause, *to*-phrase, or prepositional phrase, e.g.

(36) Jim promised he would help, and



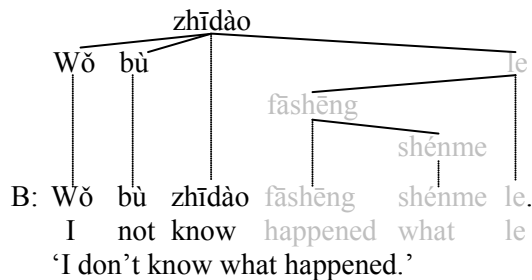
(37) Sam refuses to help, and



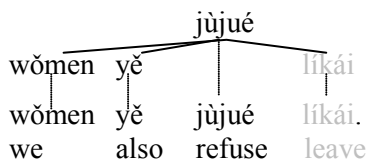
The predicates that license null complement anaphora in English (e.g. *ask*, *know*, *promise*, *refuse*, *try*) are limited. Similar predicates that one might expect to also license null complement anaphora fail to do so (e.g. *imagine*, *intend*, *pretend*, *say*, *think*, etc.).

Examples from Mandarin similar to (36-37) also allow ellipsis:

(38) A: Nǐ zhīdào fāshēng shénme le ma?  
 you know happened what le ma  
 'Do you know what happened?'



(39) Tā jùjué líkāi,  
 s/he refuses leave



'S/he refuses to leave, and we also refuse to leave.'

These two examples suggest that the similar predicates across the languages allow for the ellipsis of a complement clause or phrase.

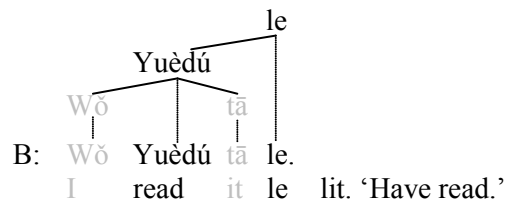
However, concluding that Mandarin has null complement anaphora in the same way that English does is difficult. The difficulty is due to the fact that Mandarin seems to freely allow the ellipsis of most all complements that can be easily recovered from context. When the elided complement is a verb phrase, one can acknowl-

edge VP-ellipsis as discussed above, and when the elided complement can be interpreted as a definite or indefinite noun phrase, an analysis in terms of zero anaphora is available (see the next section). Thus the extent to which null complement anaphora is present in Mandarin is unclear.

## 8 Zero anaphora

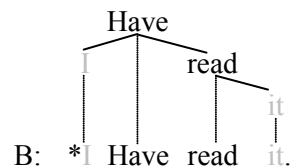
Zero anaphora (Kroeger 2005: 79ff.) typically involves a null definite or indefinite pronoun or noun phrase. English and Mandarin vary significantly concerning zero anaphora; zero anaphora occurs frequently in Mandarin, whereas its occurrence in English is, if it exists at all, highly restricted. The difference across the two languages is illustrated well using the answer to a yes-no question: both the subject and the object can be absent from the Mandarin answer:

(40) A: Nǐ yuèdú kèwén le ma?  
 you read text le ma  
 'Have you read the text?'



In contrast, the direct English translation of this example is quite bad:

(41) A: Have you read the text?



The acceptability contrast across the two languages is due to the unrestricted nature of zero anaphora in Mandarin, whereas zero anaphora may not exist in English at all.

Further examples suggesting that zero anaphora is highly restricted in, or absent from, English are given next:

(42) a. \*He saw me, and she saw me, too.  
 b. He saw me, and she saw me, too.

(43) a. \*I study Mandarin, and she studies it, too.  
 b. I study Mandarin, and she studies it, too.

In contrast, the Mandarin equivalents of these a-sentences are fine:



(44) Tā kàndào-le wǒ,  
s/he saw-le me

tā yě kàndào-le wǒ.  
s/he also saw-le me

(45) Wǒ xuéxí hànyǔ, tā yě xuéxí tā.  
I study Chinese, s/he also studies it

Furthermore, Mandarin even allows the absence of an indefinite noun phrase, i.e. what would be equivalent to *one* in English:

(46) Tā xiě-le yī gè gùshi,  
s/he wrote one CL story

tā yě xiě-le yī gè gùshi.  
s/he also wrote one CL story

‘S/he wrote a story, and s/he also wrote *one*.’

The availability of zero anaphora in Mandarin means that Mandarin can omit most any subject or object pronoun, noun, or noun phrase. In fact its existence clouds the picture concerning other ellipsis mechanism. It is, for instance, difficult to acknowledge VP-ellipsis and/or null complement anaphora in Mandarin because what looks like such ellipsis mechanisms may in fact be zero anaphora instead. Finally, whether or not zero anaphora is a form of ellipsis is debatable. It seems, rather, to be the unmarked form of anaphora in Mandarin. When *tā* ‘he/she/it’ is or some other proform is overt, it is in fact an emphatic pronoun that serves a special discourse role, namely that of emphasis.

## 9 Concluding remarks

This manuscript has surveyed ellipsis in Mandarin. Gapping, stripping, pseudogapping, sluicing, and comparative deletion are either absent from Mandarin, or highly restricted. VP-ellipsis, answer ellipsis, N-ellipsis, and zero anaphora are present in Mandarin. Whether null complement anaphora is also present in Mandarin is unclear due to the overlap of the data in the area with the data of VP-ellipsis and zero anaphora. Perhaps the most noteworthy difference in ellipsis across English and Mandarin concerns the ability of Mandarin to omit complements and subjects at will, as long as they can be easily retrieved from context. In contrast, English does not elide complements (and subjects) so freely, but rather in order to do so, the requirements of VP-ellipsis, null complement anaphora, or some other ellipsis mechanism must be met.

Concerning the material that is elided, ellipsis in Mandarin is like ellipsis in English insofar as the elided material is a catena. This aspect of ellipsis is especially evident with answer ellipsis, which often elides non-string catenae.

Finally, a comment about a possible generalization is in order. Four of the five ellipsis mechanisms that are not present in Mandarin (or are highly restricted) involve the ellipsis of the matrix predicate (gapping, stripping, pseudo-gapping, and sluicing). Mandarin hence seems in general to be less willing than English to elide the matrix predicate. On the other hand, it is much more willing to omit the arguments of predicates (in terms of VP-ellipsis or zero anaphora). The reasons why these general differences across the languages exist is unknown, however.

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