

Fake attributives in Chinese

A prosodic grammar perspective

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Fake attributives in Chinese are the result of the interaction between syntax and prosody. For syntactic reasons, certain objects of complex verbal constructions and verbal quantifiers cannot be realized in situ; but they can be spelled out in some roundabout ways, one of which is to form fake attributives through de-insertion. In the forming process of fake attributives, the clitic *de* plays an important role, and de-insertion is frequently resorted to in facilitating the correspondence between the phonological structure and the syntactic structure, with the aim of ensuring meaning conveyance. It is concluded that fake attributives are initiated, to some extent, by mismatches between syntactic and phonological structure and derived when *de* is inserted to enhance their correspondence.

Keywords: fake attributive, prosodic grammar, interface, mapping, *de*

1. Introduction

The study of syntax-semantics mismatches is one of the main concerns of recent linguistic research in Chinese grammar. Fake attributives, particularly, have been the subject of much heated discussion for the last twenty years (J. Huang 1994, 1997, 2008; Huang et al. 2009:96–98; Liu 2009; Shen 2007; Tang 2008, 2009, 2010; Wu 2008; among others). Scholars have attempted to provide explanations for fake attributives; however, until now, no satisfactory model has yet been proposed (See also the discussion in Liu & Zhuang 2011).

Let us start with the discussion of the notion ‘fake attributive.’ As pointed out by Lü (1965), *ta de laoshi* in (1) and (2) are quite different in meaning:

- (1) Ta de laoshi jiao de hao.
 he *de* teacher teach *DE*¹ good
 'His teacher works well.'
- (2) Ta de laoshi dang de hao.
 he *de* teacher act *DE* good
 Literal reading: 'His teacher works well.'
 'He works well as a teacher.'

As the English translation suggests, *ta de laoshi* in (1) is an ordinary possessive structure. However, the one in (2) is not a possessive structure. Instead, it refers to the event that he works as a teacher. Below are more examples of incongruity between syntax and semantics:

- (3) a. Ta de lanqiu da de hao.
 he *de* basketball hit *DE* good
 Literal reading: 'His basketball plays well.'
 'He is a good basketball player.'
- b. Ni de xiangqi xia de guo ta?
 you *de* chess play *DE* pass he
 Literal reading: 'Can your chess win him?'
 'Can you beat him in chess?'
- c. Ta de meiren mei dangcheng.
 he *de* matchmaker not act-success
 Literal reading: 'His matchmaker was not successful.'
 'His matchmaking was not successful.'

Since none of the attributives in (2) and (3) is a true modifier of its head, G. Huang (1982) names them 'fake attributives.' Any scholars believe that in these structures syntax and semantics diverge, and regard this phenomenon as a kind of 'syntax-semantics mismatch' (J. Huang 1991, 1994, 1997, 2008; Shen 2007; Tang 2008, 2009, 2010; Wu 2008).

Generally speaking, there are two kinds of fake attributives, namely, fake possessives and fake nominal quantifiers. The first kind is illustrated in (2)–(3), and the second in (4) (ASP stands for aspectual marker).

- (4) a. Ta dang le san nian de bing.
 he act ASP three year *de* soldier
 Literal reading: 'He acted a three-year soldier.'
 'He spent three years in the military.'

1. In glosses of the present study, the small *de* stands for the NP modification marker 的, while the capitalized *DE* stands for the postverbal complement marker 得.

- b. Li laoshi jiao le women san nian de zhongwen.
 Li teacher teach ASP we/us three year *de* Chinese
 Literal reading: 'Mr. Li taught us three-year Chinese.'
 'Mr. Li has taught us Chinese for three years.'

The present study attempts to establish a new model to account for fake attributives in Chinese, aiming to find out what causes fake attributives and offer a reasonable explanation as to why the aforementioned types occur. The purpose of this study is, therefore, twofold: (1) to analyze the structures of fake attributives across various levels of Grammar, i.e. their syntactic operations and realization in prosodic and semantic components; and (2) to identify the specific properties that trigger the derivation of fake attributives. We have been led to the following questions: (a) What causes fake possessives and how are they derived? (b) What causes fake nominal quantifiers and how are they derived? And, lastly, (c) What is the nature of *de*?

The remainder of this paper is structured as follows. Section 2 gives a brief review of previous studies. Section 3 deals with the theoretical framework of the present study. Section 4 focuses on the nature of *de*, and the formation of fake attributives. The last section is a conclusion.

2. Previous studies on fake attributives

Fake attributives are interesting and warrant further research. A thorough study of them can help us not only understand their syntactic structures, but also discern the objective laws governing language processing in the human brain and reveal the principles of Universal Grammar. However, the approaches proposed in previous studies, despite achieving much in accounting for the derivation of fake attributives, are still not satisfactory in several aspects. Let us have a brief review of them.

2.1 Huang's account

Huang is regarded as the first scholar to provide a syntactic explanation for the derivation of fake attributives in Chinese (e.g. J. Huang 1991, 1994, 1997, 2008). The model put forward by Huang consists of nominalization and head-movement. For example, the derivation of (2) can be shown as follows:

- | | | |
|--------|--|----------------------------|
| (5) a. | ta DO [ta de dang laoshi] (de hao) | (D-structure) |
| b. | ta dang _i [ta de t _i laoshi] (de hao) | (V ⁰ -movement) |
| c. | [e] dang _i [ta de t _i laoshi] (de hao) | (Subject deleting) |

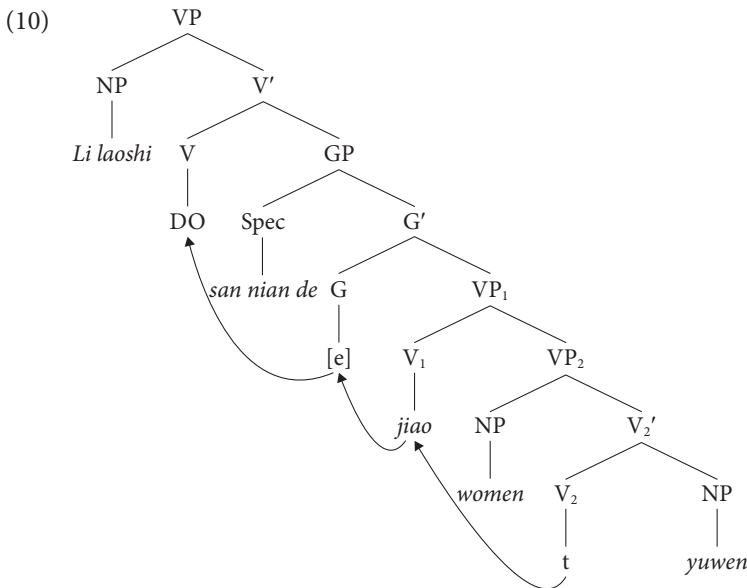
- d. [ta de t laoshi]_j dang t_j (de hao) (Object preposing)
 e. ta de laoshi dang de hao (S-structure)

This model assumes a lexical decomposition approach and proposes a head-move-ment explanation of the mismatches. According to this model, the verb *dang* ‘act’ moves out of the gerundive construction into a higher position of the performative light verb.

It is undeniable that this account is successful to a certain extent. First, it provides a unified account, with which many fake attributives can be handled. Additionally, Huang is correct in seeking a syntactic solution in explaining which type the verb belongs to, whether or not the light verb requires phonological realization, and whether or not the related verb and noun involve a verb-object relationship. However, Huang’s model is not without problems. First and foremost, Huang provides a delicate account for the derivation of *de*, but he neglects the necessity of the complex verbal constructions (such as the V-DE construction), which are the crucial factor responsible for the derivation of fake attributives. If we apply Huang’s model directly, taking no complex verbal constructions into consideration, we may get illegitimate sentences. For example, (6) and (7) can be derived by Huang’s models, and their derivations are shown in (8) and (9) respectively.

- (6) *Ta de laoshi dang le.
 he *de* teacher act SFP
 Intended reading: ‘He became a teacher.’
- (7) *Ta de meiren mei dang.
 he *de* matchmaker not act
 Intended reading: ‘He did not match a couple.’
- (8) a. ta DO [ta de dang laoshi] (le) (D-structure)
 b. ta dang_i [ta de t_i laoshi] (le) (V⁰-movement)
 c. [e] dang_i [ta de t_i laoshi] (le) (Subject deleting)
 d. [ta de t laoshi]_j dang t_j (le) (Object preposing)
 e. *ta de laoshi dang le (S-structure)
- (9) a. ta mei DO [ta de dang meiren] (D-structure)
 b. ta mei dang_i [ta de t_i meiren] (V⁰-movement)
 c. [e] mei dang_i [ta de t_i meiren] (Subject deleting)
 d. [ta de t meiren]_j mei dang t_j (Object preposing)
 e. *ta de meiren mei dang (S-structure)

Second, Huang’s model fails to take account of the generation of some fake attributives. For instance, (4b) cannot be derived in Huang’s Model. According to Huang’s analysis, its structure should be like (10):



That is, the predicate *jiao women yuwen* ‘teach us Chinese,’ when nominalized, will be positioned under GP, while the verbal classifier *san nian* ‘three-year’ occupies the position of its attributive. However, as illustrated in (10), while *jiao* ‘teach,’ as a verbal root, can move to V, which is phonologically empty, marked with DO, *women* ‘us’ cannot be raised to any position higher than *san nian* ‘three-year.’

Third, the GP in Huang’s model seems to be something ad hoc. According to recent literature, a gerundive phrase like *ta de dang laoshi* ‘his working as a teacher’ should be treated as a DP with *de* as the head (see, among many others, Cheng 1999:188–189; He & Wang 2007; Lu 2003; Si 2004; Xiong 2005). If the DP analysis is on the right track, then Huang’s derivation cannot be accepted without doubt.

2.2 Tang’s account

Tang (2008, 2009, 2010) revises Huang’s model on fake possessives and takes parametric theory into consideration in order to explain the differences between southern Chinese dialects and Mandarin.² He proposes that nominalization is the result of a movement associated with the process deriving gerunds, and that the verbs, from which gerunds are derived, are phonologically empty (*e*), while the fake attributives are adjoined to the NomP (nominalization phrase), as shown below:

2. Note that in Tang (2008, 2009, 2010), as well as Liu (2009), only fake possessives are discussed.

- (11) [_{NomP} fake attributive [_{NomP} Nom [_{VP} *e* Object]]] (Tang 2009:243)

Tang suggests that although the verbs, from which gerunds are derived, are phonologically empty, semantically they are not (Tang 2009:243).

Tang's account is significant in at least two aspects. For one thing, it extends syntactic explanation to Chinese dialects other than Mandarin, taking parameters into consideration. For another, Tang has noticed the differences between phonological representation and semantic meaning. That is to say, they do not always correspond to one another. Nonetheless, Tang's account fails to remedy the deficiencies in Huang's model, such as neglecting the requirement of a complex verbal construction, the problems of overgeneration and undergeneration, and the ad hoc GP. Worse still, Tang's account is confronted with another serious problem: violation of the θ -Criterion. In (5a), for instance, *dang* 'act', as a two-place predicate, requires two arguments, with each one assigned a θ -role, namely, Agent and Patient (G. Huang 1982:122). However, within Tang's model, only one argument, namely, *laoshi* 'teacher', is possible to be assigned a θ -role. As for *ta* 'he', it is impossible for it to be assigned one, because according to Tang (2009:243), *ta de* 'his' adjoins to NomP later. This means, in the D-structure, one of the two θ -roles cannot be assigned to an argument — clearly violating the θ -Criterion.

2.3 Liu's account

Liu (2009) adopts the Promotion Theory of Relativization formulated in de Vries (2002) to explain the phenomenon of fake possessives. It is elaborated in (12):

- (12) a. [_{DP-rel} Op [_{NP} *laoshi*]] →
 b. [_{DP-rel} [_{NP} *laoshi*] Op *t_n*] →
 c. [_{IP} *ta dang* [_{DP-rel} *laoshi_n* Op *t_n*]] →
 d. [_{CP} [_{DP-rel} *laoshi_n* Op *t_n*]_i [_{IP} *ta dang t_i*]] →
 e. [_{DP} [_D ϕ]] [_{CP} [_{DP-rel} *laoshi_n* Op *t_n*]_i [_{IP} *ta dang t_i*]] →
 f. [_{DP} *D'*] [_{CP} [_C [_{IP} *ta dang t_i*] *de*] [_{DP} [_D ϕ] [_{CP} [_{DP-rel} *laoshi_n* Op *t_n*]_i C *t_{ip}*]]] →
 g. [_{DP} *D'*] [_{CP} [_C [_{IP} *ta dang t_i*] *de*] [_{DP} [_D ϕ] [_{CP} [_{DP-rel} *laoshi_n* Op *t_n*]_i C *t_{ip}*]]] (dang de hao).

Liu's model provides a new perspective on fake attributives — a DP hypothesis, although this model is still faced with the problem of both undergeneration and overgeneration.

Regarding undergeneration, this model can be employed to explain only a portion of fake possessives. For example, it has no way to account for the nominal quantifiers shown in (4). In addition, this model also leads to overgeneralization.

For example, the illegitimate sentences in (6)–(8) can be derived along the lines of Liu's approach. Fake nominal quantifiers illustrated by (9) are not touched on in Liu (2009). For example, the derivations of (6) and (8) are shown in (13) and (14) respectively.

- (13) a. $[_{DP-rel} Op [_{NP} laoshi]] \rightarrow$
 b. $[_{DP-rel} [_{NP} laoshi] Op t_n] \rightarrow$
 c. $[_{IP} ta\ dang [_{DP-rel} laoshi_n Op t_n]] \rightarrow$
 d. $[_{CP} [_{DP-rel} laoshi_n Op t_n]_i [_{IP} ta\ dang t_i]] \rightarrow$
 e. $[_{DP} [_D \phi] [_{CP} [_{DP-rel} laoshi_n Op t_n]_i [_{IP} ta\ dang t_i]]] \rightarrow$
 f. $[_{DP} D' [_{CP} [C [_{IP} ta\ dang t_i] de] [_{DP} [_D \phi] [_{CP} [_{DP-rel} laoshi_n Op t_n]_i C t_{ip}]]]] \rightarrow$
 g. * $[_{DP} D' [_{CP} [C [_{IP} ta\ dang t_i] de] [_{DP} [_D \phi] [_{CP} [_{DP-rel} laoshi_n Op t_n]_i C t_{ip}]]]] (dang\ le).$
- (14) a. $[_{DP-rel} Op [_{NP} Lisi]] \rightarrow$
 b. $[_{DP-rel} [_{NP} Lisi] Op t_n] \rightarrow$
 c. $[_{IP} ta\ da [_{DP-rel} Lisi_n Op t_n]] \rightarrow$
 d. $[_{CP} [_{DP-rel} Lisi_n Op t_n]_i [_{IP} ta\ da t_i]] \rightarrow$
 e. $[_{DP} [_D \phi] [_{CP} [_{DP-rel} Lisi_n Op t_n]_i [_{IP} ta\ da t_i]]] \rightarrow$
 f. $[_{DP} D' [_{CP} [C [_{IP} ta\ da t_i] de] [_{DP} [_D \phi] [_{CP} [_{DP-rel} Lisi_n Op t_n]_i C t_{ip}]]]] \rightarrow$
 g. * $[_{DP} D' [_{CP} [C [_{IP} ta\ da t_i] de] [_{DP} [_D \phi] [_{CP} [_{DP-rel} Lisi_n Op t_n]_i C t_{ip}]]]] (da\ de\ hao).$

2.4 Cheng et al.'s account

Combining Distributed Morphology and Minimalism, Cheng et al. (2015) propose that mismatches are introduced by post-syntactic operations such as feature copying and feature introduction. This account consists of seven steps:

- Step I. Necessary roots and abstract features are drawn from the terminal list to form a lexical array $LA = \{ta, laoshi, dang, DE, hao, v, T, C\}$.
 Step II. Necessary constituents to derive the first phase vP are drawn from LA to form a subset of LA: $LA_1 = \{ta, laoshi, dang, DE, hao, v\}$.
 Step III. A VP can be generated in accordance with the conceptual system³, roughly shown as (15):

- (15) $[_{VP} [_{DP} laoshi] [_{V'} [_{V} dang] [_{RP} de\ hao]]]$

3. The concept of conceptual system can be found in Cheng (1999:240–241).

Step IV. The first phase νP is generated, as shown in (16):

- (16) [_{νP} [_{Pron} ta] [_{ν} [_{ν} [_{νP} [_{DP} laoshi] [_{ν} [_{ν} dang] [_{RP} de hao]]]]]]]

Step V. (16) is mapped to LF and PF respectively. In the mapping process to PF, however, more operations may still occur.

Step VI. This step occurs at the PF level. Due to conventions of Chinese, a conjunctive component or a pause is required in-between two adjacent nominal constituents. As a consequence, several options are available. One of them is to insert *de* between *ta* ‘he’ and *laoshi* ‘teacher,’ and a fake attributive thus comes into being, as shown in (17):

- (17) [_{νP} [_{Pron} ta] *de* [_{ν} [_{ν} [_{νP} [_{DP} laoshi] [_{ν} [_{ν} dang] [_{RP} de hao]]]]]]]

Step VII. In order to derive the second phase CP, another subset of LA is drawn from the LA: $LA_2 = \{T, C\}$. CP then is mapped to PF and LF, and interpreted via Encyclopedia. The whole derivation stops here and the representation of fake attributive (if the option is it) can be shown as (18):

- (18) [_{CP} C [_{TP} [_{Pron} ta] *de* [_T T [_{νP} [_{Pron} t_{ta}] [_{ν} [_{ν} [_{νP} [_{DP} laoshi] [_{ν} [_{ν} dang] [_{RP} de hao]]]]]]]]]]]

One of Cheng et al.’s (2015) main achievements lies in their insight that *de* is not from the lexical array, but inserted at PF through a feature introducing operation. They state, ‘The *de* in fake attributives is not an obliged element in syntactic derivation. Instead, it is added at the PF branch by the requirement of Chinese legitimacy’ (Cheng et al. 2015:233).

Insightful as it is, Cheng et al.’s (2015) account is not satisfactory. They only mention that the appearance of *de* is in line with Chinese conventions, and offer no further explanation. Also, Cheng et al. are inconsistent as to where *de* should be inserted. For example, in (17), *de* is inserted in νP , while in (18), it appears in TP. As a constituent inserted at PF, this could not be derived by movement.

2.5 Some inspirations drawn from previous studies

The above discussion shows that the previous studies are not satisfactory in several aspects, of which the following two deserve to be mentioned.

The first is undergeneration. The previous studies provide an explanation for only a portion of fake attributives, leaving the unexplained remainder as exceptions.

The second is overgeneration. The previous studies have not taken all the relevant conditions into consideration; hence, the models they formulate are so powerful that they may produce not only legitimate sentences, but also illegitimate ones.

The previous studies, despite those problems discussed above, shed much light on further research. Some points are demonstrated as follows.

First, the formation of fake possessives occurs only in sentences with complex verbal constructions. That is to say, their formation crucially rests upon sentences with complex verbal constructions, which include V-*DE* constructions, as shown in (1), (3a), and (3b), or V-V compounds, as shown in (3c). This needs to be taken into account in our new model.

Second, the derivation of fake attributives, partially at least, is related to the existence of *de*. The previous analyses, however, while endeavoring to provide an explanation for *de*'s appearance from syntactic perspectives, pay little attention to the nature, function and features of *de*. It is necessary, therefore, to examine the nature, function and features of *de* and put forward an account accordingly.

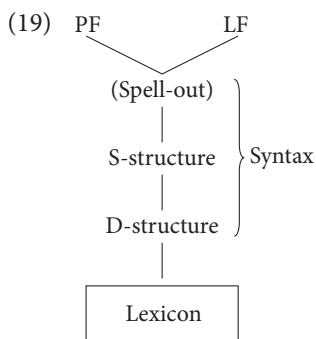
Third, the previous analyses focus mainly on a syntactic solution. Though a unary solution certainly addresses some problems, it fails to give a satisfactory explanation to many other problems owing to its limitations. As a matter of fact, while most linguists tend to specialize in research on a particular module — syntax, morphology, semantics, or phonology, a number of scholars have already begun to explore the interactions and interfaces between syntax and other modules, for example, Selkirk (1984), Elordieta (1997) on the syntax-phonology interface, Baker (1988), Ackema (1999), and Li (2005) on the morphology-syntax interface, Inkelas & Zec (1990, 1995) on the phonology-morphology interface, Van Valin (2005) on the syntax-semantics interface, Y. Huang (1994) on syntax-pragmatics interface, Avrutin (1999), Erteschik-Shir (2007) on the syntax-discourse interface, Casielles-Suárez (2004) on syntax-information structure interface, and so on. Until now, the most influential one is Noam Chomsky's T-model in which PF and LF are interpreted as the interface of the grammar module(s) with the auditory-perceptual system and the interface of the grammar with the conceptual-intentional system respectively (Chomsky 1995:168). Inspired by them, the present paper attempts to explore fake attributives from an interface theory between the phonology and the (morpho)syntactic component.

3. Theoretical framework of the present study

This study is conducted under the theoretical framework of an interface theory between phonology and the (morpho)syntactic component. That is to say, it involves not only Chomskyan syntax, but also phonology, specifically Prosodic Phonology (Feng 1997, 2000; Hayes 1989; Nespor 1993; Nespor & Vogel 1983, 2007; Selkirk 1984, 1986). This interface is also referred to as Prosodic Grammar.

A fairly large body of literature has been devoted to the syntax-phonology interface including Chomsky & Halle (1968), Selkirk (1984, 1986, 2001), Hayes (1989), Inkelas & Zec (1990, 1995), Pullum & Zwicky (1988), Nespor & Vogel (2007), and Truckenbrodt (2007). Among these scholars, some (e.g. Chomsky & Halle 1968; Pullum & Zwicky 1988) argue that the interface is unidirectional, that is, constituency in one component (syntax) is relevant to the processes in another (phonology), others (e.g. Inkelas & Zec 1990) believe that the interface is bidirectional, and still others (e.g. Selkirk 2001) suggest that it remains to be seen.

In this study, syntactic structures are assumed to be mapped onto a hierarchy of prosodic levels which serve as the domains of phonological rules. The syntactic structure which constitutes the input for prosodic translation is, in Nespor & Vogel's (1983) terms, the 'surface structure' (i.e. the Spell-Out structure). This relationship has actually already been put forward by Chomsky in his well-known T-model, as illustrated by (19).



As shown above, syntactic structures are projected from the lexicon, and are interpreted on the two interpretive levels, PF and LF, which constitute interfaces with the articulatory-perceptual and the conceptual-intentional systems (Chomsky 1995:168).

In the Chomskyan T-model, phonological operations are directly sensitive to syntactic information, in terms of relations of c-command holding between the constituents participating in phonological processes. However, according to Selkirk (1984, 1986, 2001), Nespor & Vogel (1983, 2007), and Hayes (1989), the syntax-phonology interface is not a simple input-output relation — Syntactic and phonological representations are not isomorphic. There is a distinct level of representation called Prosodic Structure which contains a hierarchically organized set of prosodic constituents. These constituents are built from the syntactic structure by a finite set of parameterized algorithms, and phonological processes refer to these prosodic constituents rather than to syntactic constituents.

As for the prosodic hierarchy, we adopt the one put forward in Hayes (1989), as shown in (20). According to Selkirk (1984) and Hayes (1989), there are layers (prosodic hierarchy) in a phonological structure, namely, Utterance (U), Intonational Phrase (I), Prosodic Phrase (Φ), Clitic Group (C) and Prosodic Word (ω), and the one above strictly contains the one below.

- (20) Prosodic Hierarchy⁴
- ```

Utterance (U)
 |
Intonation (I)
 |
Prosodic Phrase (Φ)
 |
Clitic Group (C)
 |
Prosodic Word (ω)

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In the present study two main operations are applied: (i) the Mapping Rule which could occur at the pre-P-structure; and (ii) Boundary-Marker *de* Insertion which happens at the post-P-structure. In this section, we shall discuss the first one, leaving the second to be discussed in the next section.

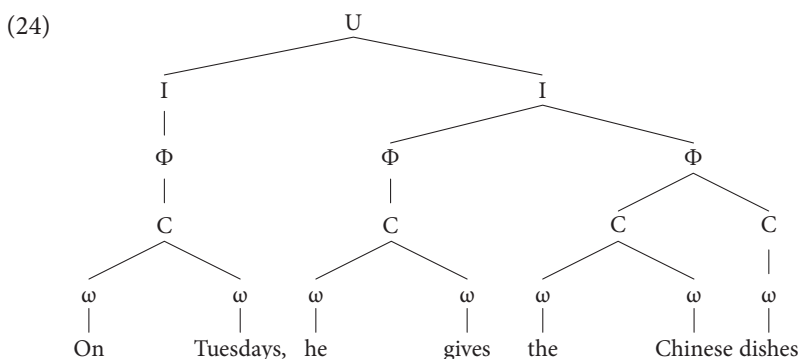
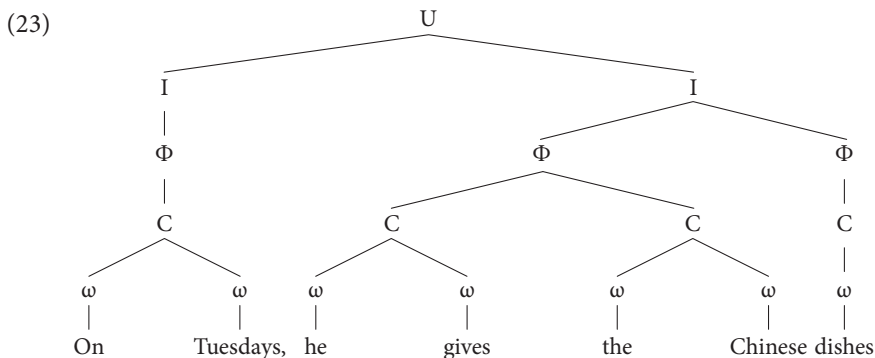
According to the Mapping Rule proposed by Tokizaki (1999, 2005, 2007), syntactic structures are assumed to be mapped onto a hierarchy of prosodic levels. A maximal projection will be interpreted as a boundary, as follows:

- (21) Interpret boundaries of syntactic constituents [ ... ] as prosodic boundaries  
/... /.

With prosodic hierarchy (20) and the Strict Layer Hypothesis from Selkirk (1984) and Hayes (1989) taken into consideration, the two readings of (22) should have phonological structures as shown in (23) and (24) respectively (cited from Hayes (1989)):

- (22) On Tuesdays, he gives the Chinese dishes.  
 Reading A: On Tuesdays, he gives the dishes to the Chinese.  
 Reading B: On Tuesdays, he gives the Chinese dishes to someone.

4. The current study accepts Hayes's (1989) claim that the phonological word (In the present study it is believed to be equal to prosodic word, as least in Chinese) is the lowest level on the Prosodic Hierarchy.



It is important to note that the Mapping Rule does not ensure that the mapping is always successful. Actually, Jackendoff (2009:105) has already pointed out:

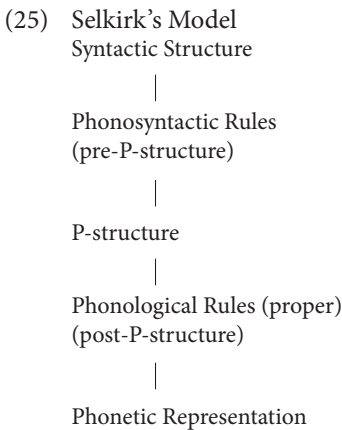
Phonology was demonstrated to have highly articulated structure that cannot be derived directly from syntax: structured units such as syllables and prosodic constituents do not correspond one-to-one with syntactic units ... phonological structures cannot be derived from syntactic structures, the connection between syntax and phonology must also be mediated not by derivations, but by a component of interface rules.<sup>5</sup>

Inkelas & Zec (1995:538) also suggest that ‘The constituency at P-structure is distinct from that at S-structure; though the two constituencies are related to each other, they are not isomorphic.’<sup>6</sup> Therefore, syntax-phonology mismatches may happen when the P-structure does not correspond the S-structure. A further inference is, it should be allowed to have a certain phonological adjustment between

5. It is necessary to point out that exceptions do exist, for example, nuclear stress must be realized structurally, never by interface rules. — Shengli Feng, personal correspondence to the author, July 6, 2015.

6. Thanks go to one of the anonymous reviewers for pointing out this important literature.

the application of the mapping rule and the final phonetic representation. This is exactly what Selkirk's (1986) Model postulates, as shown in (25):



#### 4. The formation of fake attributives

In this section, I attempt to work out the syntactic structure of fake attributives and to explain the derivation of *de* within the framework of Prosodic Grammar.

##### 4.1. Syntactic motivation for the formation of fake attributives

In §2, it has been concluded that the formation of fake possessives crucially rests upon sentences with complex verbal constructions, such as *V-DE* constructions. This can be explained in accordance with Zhuang et al. (2013): the *DE* in *V-DE* constructions is a joining marker, whose function is to join one category (a word, a phrase or a clause) to another (usually a verb), with the purpose of further describing or interpreting the property, action or effect of the latter. The formation of the *V-DE* construction, however, causes a phenomenon referred to as the *V-DE* Constraint on Object; that is, if the verb before *DE* requires an NP object semantically, the NP cannot appear after the verb (whether before or after *DE*). It seems that the appearance of *DE* will affect the argument structure of a transitive verb in such a way as to suppress its internal argument object. The rule involved in the derivation of *V-DE* construction can be represented as (26).<sup>7</sup>

$$(26) \quad V \langle \text{Agent, Theme} \rangle \rightarrow V\text{-}DE \langle \text{Agent, } \emptyset \rangle$$

7. This reminds us of the fact that, in English, the passive morpheme ‘-en’ absorbs Case (See Radford 1997:252).

Item (26) shows that the derived *V-DE* construction differs from the base verb in that its thematic structure lacks an internal argument object. It seems that the *DE* takes up the position of the internal argument, and as a result, the internal argument cannot be realized in situ. This explains why the semantically required NP object is constrained in a *V-DE* construction. However, the suppressed objects, albeit failing to be realized in situ, can be spelled out at certain other positions appropriately when necessary, four of which are shown as follows:<sup>8</sup>

- (27) a. Ta dang laoshi dang de hao.  
           he act teacher act *DE* good  
           Literal reading: 'He works as a teacher and works well.'  
           'He, working as a teacher, works well.'
- b. Laoshi ta dang de hao.  
           teacher he act *DE* good  
           Literal reading: 'Teacher, he works well.'  
           'As a teacher, he works well.'
- c. Ta laoshi dang de hao.  
           he teacher act *DE* good  
           Literal reading: 'He, teacher, works well.'  
           'He, as a teacher, works well.'
- d. Ta de laoshi dang de hao.  
           he *de* teacher act *DE* good  
           Literal reading: 'His teacher works well.'  
           'He works well as a teacher.'

(27) illustrates the four options:

- a. to be realized via a verb-copying construction, as shown in (27a), the structure of which is discussed in detail in J. Huang (1982), Cheng (2007), etc.;

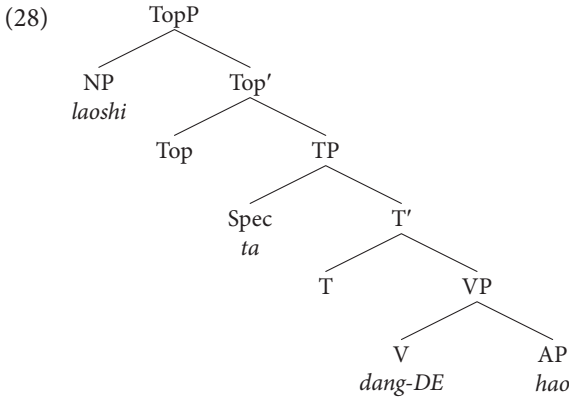
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8. Some people may think that there are the fifth and sixth ways for the object to be realized, shown as follows:

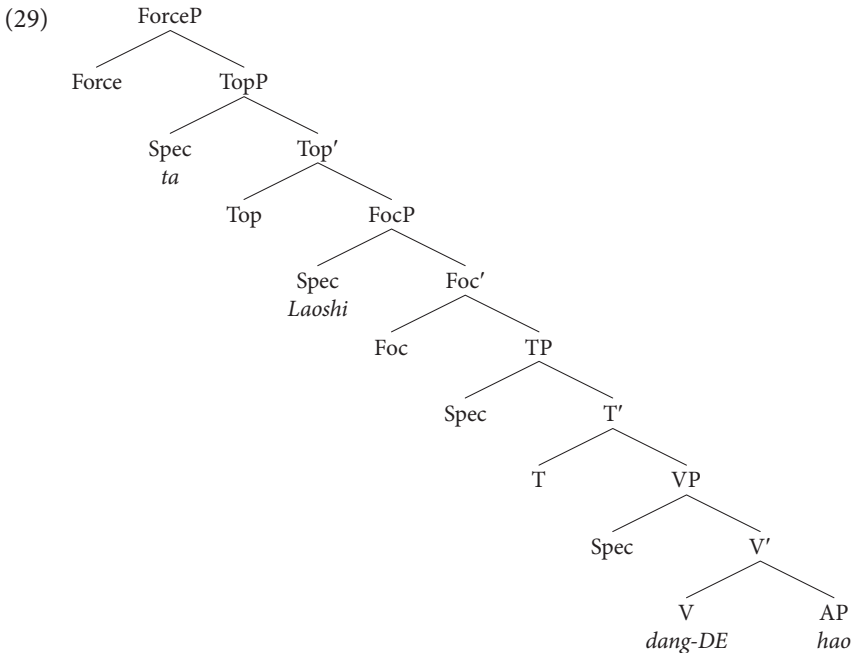
- i. ?Ta ba laoshi dang de hao.  
    he BA teacher act *DE* good
- ii. ?Ta dang *de* hao laoshi  
     he act *DE* good teacher

However, the acceptability of (i) is very low (Of the 14 native Chinese speakers who were asked to make a judgment, only 5 accepted it.), and the meaning of (ii) is actually not the same as those in (27), because *DE* here is a potential marker, and the meaning of this sentence should be 'He is able to work well as a teacher'.

b. to become a topic<sup>9</sup>, shown in (27b), whose structure is shown in (28):



c. to become a focus, as in (27c), whose structure is shown in (29):<sup>10</sup>



9. The NP in this position does not require a Case, because it is a dangling topic (See Pan & Han 2005; Pan & Hu 2008; D. Yang 2008).

10. This structure is based on several premises: (a) Split CP hypothesis (Rizzi 1997, 2001, 2004). (b) Chinese is a topic-prominent language (Chao 1968; Li & Thompson 1976; Shen 2012; Shi 2001). Accordingly, *ta* 'he' should be treated as a topic. (c) The suppressed object *laoshi* 'teacher' can be realized in several places, and Spec,FocP is one of them.

- d. to be incorporated with the subject to form an ‘NP *de* NP’ construction, namely, a fake attributive, as shown in (27d), whose structure should be the same as (29) (while *de* is inserted at the syntax-phonology interface (to be discussed below)).

Along the same lines, the fake nominal quantifiers involving duration phrases and frequency phrases are also the result of syntactic operations — the demand for Case. According to Zhuang (2014a), duration phrases and frequency phrases need to be assigned Case in order to be visible to the  $\theta$ -assigner. The strategies for them to obtain Case vary cross-linguistically. In Chinese, generally speaking, it is through seizing the accusative Case verbs assigned to their objects (and forcing the true object to retreat), or to be realized as the attributives of their objects, as shown in (30):

- (30) a. Zhangsan pao le liang ge xiaoshi.  
Zhangsan run ASP two CL hour  
‘Zhangsan has run for two hours.’  
b. \*Zhangsan qi le fangzi liang ge xiaoshi.  
Zhangsan paint ASP house two CL hour  
Intended reading: ‘Zhangsan has painted the house for two hours.’  
c. ?Zhangsan qi le fangzi san ci.<sup>11</sup>  
Zhangsan paint ASP house three times  
Intended reading: ‘Zhangsan has painted the house three times.’  
d. Zhangsan (ba fangzi) qi le san ci.  
Zhangsan BA house paint ASP three times  
‘Zhangsan has painted the house three times.’  
e. Zhangsan (qi fangzi) qi le liang ge xiaoshi.  
Zhangsan paint house paint ASP two CL hour  
‘Zhangsan has painted the house for two hours.’  
f. Zhangsan (qi fangzi) qi le san ci.  
Zhangsan paint house paint ASP three times  
‘Zhangsan has painted the house three times.’  
g. Zhangsan qi le liang ge xiaoshi (de) fangzi.  
Zhangsan paint ASP two CL hour *de* house  
‘Zhangsan has painted the house for two hours.’  
h. Zhangsan qi le san ci fangzi.  
Zhangsan paint ASP three time house  
‘Zhangsan has painted the house three times.’

11. This sentence is marked with a ‘?’ because, although it seems to be grammatical, to many Chinese native speakers it sounds odd. Besides, it is interesting that when the noun *fangzi* ‘house’ is replaced by the pronoun *ta* ‘it’, the sentence will become natural. Due to the limitation of space, we shall leave this question as an open issue.



Now that the syntactic structures of (30) are established, the function of *de* and the mechanism of its insertion become even more interesting. In the following two sections, the nature and function of *de* and the derivation of fake attributives will be discussed from the perspective of prosodic grammar.

## 4.2 The nature of *de*

With respect to the derivation of fake attributives in Chinese, the occurrence of *de* is the most important issue. Unfortunately, the exact status and function of *de* has not yet been pinned down. In this section, the behavior of *de* will be discussed within the framework of Prosodic Grammar.

The study of *de* has a long tradition. Starting in the late 1950s, a series of papers by Zhu Dexi (in particular, Zhu (1961)) has given *de* a very detailed description. In the 1980s, scholars started to explore the nature of *de* in the framework of Transformational Generative Grammar. Among them, the most influential ones are: a) *de* is a  $C^0$  (or complementizer) (J. Huang 1982); b) *de* is the head of an independent functional projection (*deP*) (Ning 1996); and c) *de* is the head of DP (Simpson 2002). These proposals caused much controversy in this field. Many scholars supported the idea that *de* should be treated as a head (He & Wang 2007; Lu 2003; Si 2002, 2004; Wu 2000; Xiong 2005; Zhang 2006), while many others disapproved of it (Y. Yang 2008; Zhou 2005, 2006). These proposals caused a series of reflections on endocentric structure (Chen 2009; Li 2008; Ren 2008; Shi 2009; Si 2006; Wu 2006).

In the literature, various names have been given to *de*, for instance, ‘preposition’ (Li 1924:20), ‘marker of explicit modification’ (Chao 1968:285; Chen 1955), ‘conjunction’ (Zhang 1980:111), ‘auxiliary’ (Zhu 1982:40), ‘associative marker’ (Li & Thompson 1981:111; Y. Yang 2008), ‘Case-marker’ (J. Huang 1982; Tang 1990; Tsai 1994), ‘the head of DP’ or ‘*deP*’ (as mentioned above), and very recently, an ‘underspecified classifier’ (Cheng & Sybesma 2009). However, none of the hypotheses above can explain the occurrence of *de* in fake attributives, as shown below:

- (31) Ta (de) laoshi dang de hao.  
       he *de* teacher act *DE* good  
       Literal reading: ‘His teacher works well.’  
       ‘He works well as a teacher.’
- (32) Ta kan le san tian (de) shu.  
       he read ASP three day *de* book  
       Literal reading: ‘He read a three-day book.’  
       ‘He read the book for three days.’

According to Zhuang (2014b), *de* should be reclassified into four types: a) the complementizer; b) *de* with possessive function; c) *de* in independent *de* construction; and d) *de* with prosodic function. The *de* in (31) and (32) is one with pure prosodic function. This section will discuss the occurrence of prosodic *de* from the perspective of prosodic grammar, hoping to figure out its nature and explain the phenomenon illustrated in (31)–(32) as well as those in (1)–(3).

#### 4.2.1 *De as a boundary marker*

In Chinese, *de* plays an important role in constructing phrases and its occurrence is sensitive to rhythm or prosody. For instance in a ‘modifier + noun’ construction, if both the noun and the modifier consist of one syllable, *de*’s occurrence is not obligatory. This is shown in (33a). This is also true that, when the noun consists of two syllables and the modifier one or two syllables, *de* does not have to appear, as shown in (33b)–(33c).

- (33) a. qing (de) cao  
           green *de* grass  
           ‘green grass’  
       b. piaoliang (de) nühai  
           beautiful *de* girl  
           ‘a beautiful girl’  
       c. hao (de) nühai  
           good *de* girl  
           ‘a good girl’

However, under other conditions *de* must appear.

- (34) a. hen qing \*(de) cao  
           very green *de* grass  
           ‘very green grass’  
       b. piaoliang \*(de) hua  
           beautiful *de* flower  
           ‘a beautiful flower’  
       c. piaoliang ke’ai \*(de) nühai  
           beautiful lovely *de* girl  
           ‘a beautiful and lovely girl’  
       d. hen piaoliang \*(de) nühai  
           very beautiful *de* girl  
           ‘a very beautiful girl’

The phenomenon illustrated by (33) and (34) can be explained only if *de* is assumed to be a rhythmic boundary marker. According to Feng (1996, 1997, 1998,

2000, 2001, 2004), in Modern Chinese a natural foot is disyllabic and the footing direction is leftward in phrases (right footing) and rightward in words (left footing). Thus, the phenomena illustrated in (33)–(34) are explained. i) In (33a), the two syllables form a foot. They do not require a rhythmic boundary marker in between (if *de* must appear, it is syntactically required). ii) In (33b), both the noun and modifier consist of two syllables, forming a foot respectively. Since there is already a natural pause (or rhythmic break) between the two feet, a boundary marker is not necessary. iii) In (33c), where the noun comprises two syllables (a foot) and the modifier is monosyllabic, it is not necessary to insert a boundary marker, either. The reasoning is as follows: because the footing direction in phrases is leftward (Feng 1996, 1997, 1998, 2000, 2001, 2004), if the two syllables on the right can form a foot, a natural pause can be initiated thereafter if necessary.

On other occasions, however, *de* must appear, as in (34). For example, if in (34a)–(34b) *de* does not appear, the footing will group the last two syllables into one foot and a pause may be sensed between the first syllable and the second one, as in (35).

- (35) a. \*hen qing cao  
           \*       (\*   \*)  
       b. \*piao liang hua  
           \*       (\*   \*)

If (35a) is read as [*hen* # *qingcao*], it seems to indicate that inside this phrase *hen* ‘very’ directly modifies *qingcao* ‘green grass’, that is, an adverb modifying a noun phrase. This is not grammatical in Chinese.<sup>12</sup> The grouping in (35b) will affect its semantic processing. This is why *de* must be inserted to break the grouping.

Both (34c) and (34d) include three feet (six syllables) and two boundaries. However, without the insertion of *de*, it is hard to judge which one is dominant, as shown below:

- (36) a. \*piaoliang ke'ai nühai  
           \*   \*       (\* \*)   (\* \*)  
       b. \*hen piaoliang nühai  
           \*       (\* \*)   (\* \*)

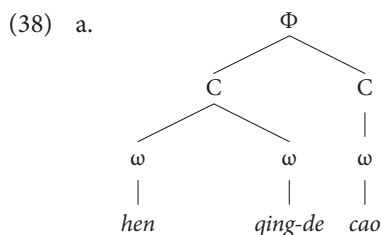
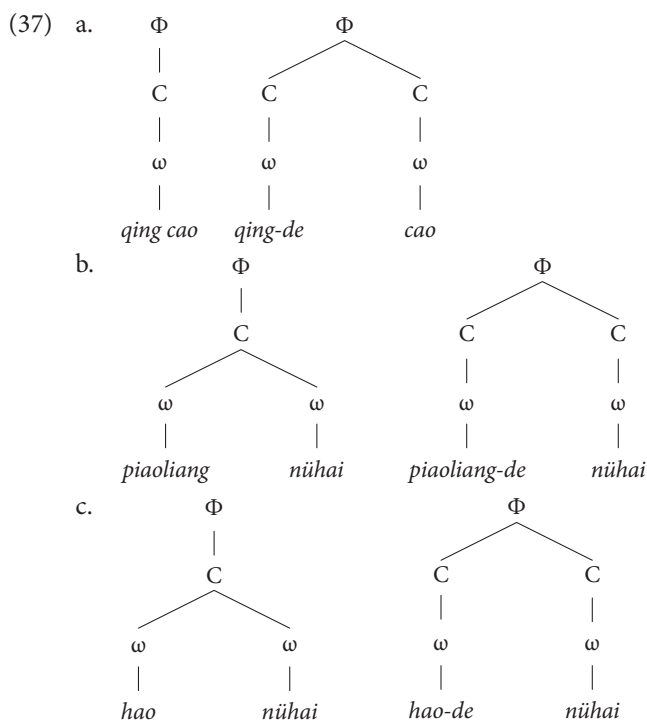
Therefore, *de* should be treated as a boundary marker which is more salient than the natural breaks. A natural question arises now as to why *de* can play a role as a

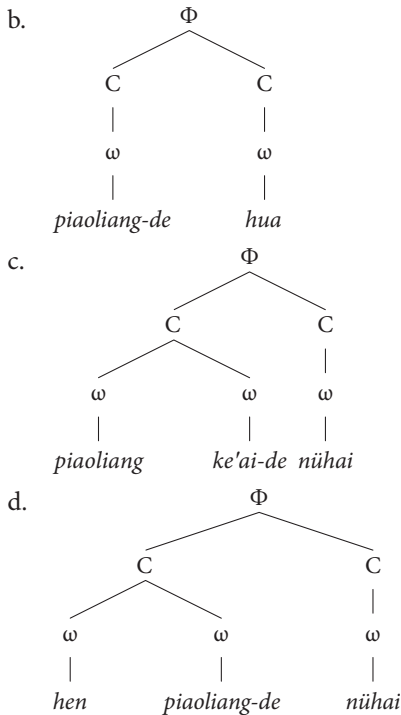
12. Recently, there is a trend that *hen* ‘very’ is used to modify nouns, for example, *hen meiguo* ‘very American’, *hen nanren* ‘very manly’, etc. However, these phenomena are still not widely accepted. Besides, whether the nouns here are nouns is still a question — They might be (re) analyzed as adjectives — word classification in Chinese is always under heated debate.

boundary marker. The answer to this question lies in the role that *de* plays in constructing phonological structures.

#### 4.2.2 *De as a clitic*

The phonological structures of (33) and (34) are shown in (37) and (38) respectively (for (33) both structures with *de* and without *de* are given).





Two points are worthy of further explanation. The first one is that *de* is treated as part of the prosodic word. This is mainly based on what Feng (1996:164) has pointed out, ‘... foot is based on lexical word. If functional words, such as *DE*, *zai...shang*, aspect marker *le*, interjection *ba*, are taken into consideration, then feet of more than three syllables may exist, and a more-than-three-syllable prosodic word might be found’ (See also Feng 1997:23). The second is that *de* is inserted in the mapping process from syntactic structure to phonetic representation. Phonological insertion of *de* has been proposed in Zhuang & Liu (2012) and Li (2013).<sup>13</sup>

The above two points become obvious if *de* is assumed to be a clitic-like element, which is supported by the following evidence. For one thing, *de* cannot stand alone, and its appearance crucially depends on a phonological host (appearing only in the *X-de* construction). For another thing, it shares certain properties of full-fledged words. (39) shows that the attachment of *de* onto a host affects the meaning of its host.

13. Note that although phonological insertion of *de* is proposed by both of them, they do not see eye to eye. Their difference is that Zhuang & Liu (2012) believe that the insertion of *de* is helpful in constructing a Clitic Group, while Li (2013) argues from syntactic evidence that a subset of *de* in noun phrases should be phonologically inserted and in other cases should be base-generated.

- (39) wo ≠ wo-de  
I my/mine

These properties are in conformity with the definition in Spencer (1991:350), ‘Clitics are elements which share certain properties of fully fledged words, but which lack the independence usually associated with words. In particular, they can’t stand alone and have to be attached to a phonological host.’

Assuming that the above analysis is on the right track, we can move on to consider the second question by asking how a Clitic Group in Chinese is formed. In the literature, the Clitic Group has been defined by scholars in different ways (e.g. Hayes 1989; Nespor & Vogel 2007; Vogel 2009), but none of them is suitable for the Clitic Group in Chinese. For instance, the one from Hayes (1989:208) is shown in (40):

- (40) Clitic Group Formation
- a. Every content word (lexical category) belongs to a separate Clitic Group.
  - b. Definition: The HOST of a Clitic Group is the content word it contains;
  - c. Definition: X and Y SHARE CATEGORY MEMBERSHIP if C dominates both X and Y.
  - d. Rule: Clitic words are incorporated leftward or rightward into an adjacent Clitic Group. The group selected is the one in which the clitic shares more category memberships with the host.

This definition crucially relies on the concept ‘content word.’ As a consequence, however, it is suitable for many languages but not Chinese.<sup>14</sup> According to Feng (1996, 1997), in Chinese, a prosodic word contains at least one foot, two syllables. This means, a monosyllabic content word, such as *qing* ‘green’ and *cao* ‘grass’, cannot form a prosodic word.<sup>15</sup> Then how can it belong to a separate Clitic Group? For the adaptation of that concept in Chinese, the definition of Clitic Group can be revised as follows:

- (41) Clitic Group Formation (revised)
- a. In a language with dimoraic feet, such as English, every content word (lexical category) belongs to a separate Clitic Group. In a language with disyllabic feet, such as Chinese, a content word α belongs to a separate Clitic Group if

14. Hayes himself has already admitted that the definition in (40) “although adequate for many languages, cannot be universal” (Hayes 1989:211).

15. Of course, a monosyllabic word in Chinese, being a degenerated foot, can form a monosyllabic word in an independent Intonational Group, where it can satisfy the requirement of a foot through measures such as pausing, prolonging. (See Feng 1996 for more discussion.)

- (i)  $\alpha$  is a disyllabic (or trisyllabic) prosodic word
- OR
- (ii)  $\alpha$  is monosyllabic if attached by a clitic or left alone (as a degenerated prosodic word).<sup>16</sup>
- b. Definition: The HOST of a Clitic Group is the content word it contains;
- c. Clitic words are incorporated leftward or rightward into an adjacent Clitic Group.

According to this definition as well as the previous studies by Tang (1990) and Xiong (2008), we can conclude that the Clitic Group formation in Chinese has a very close relation to clitic words. Once a content word, no matter how many syllables it has, has a clitic attached to it, a separate Clitic Group is formed. This explains why the clitic word *de* plays a role as a boundary marker.

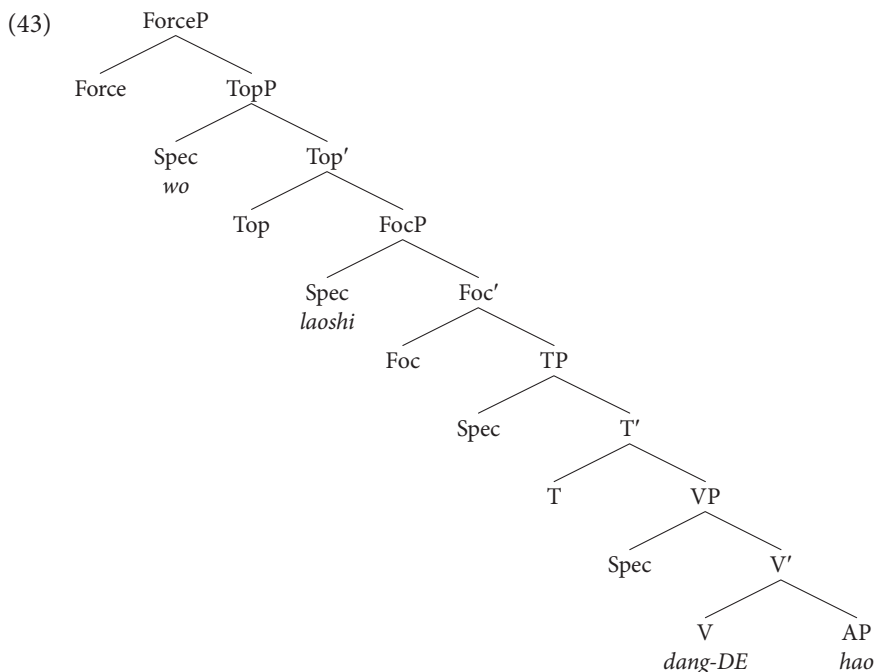
### 4.3 Derivation of fake attributives

Now let us go back to explain the occurrence of *de* in (31) and (32). (31) is reproduced as (42), where, for the convenience of discussion, some words are replaced. (The status of *de* is not in consideration at this stage).

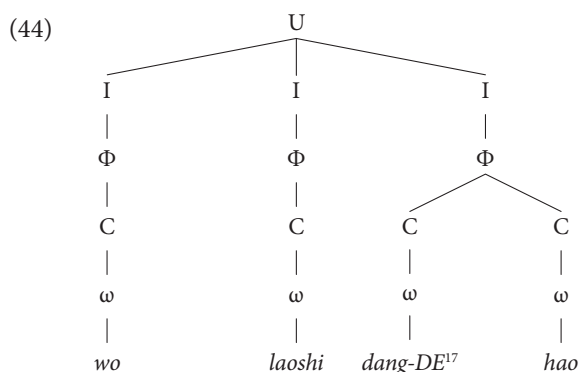
- (42) Wo laoshi dang de hao.  
 I teacher act DE good  
 'I work well as a teacher.'

The first question we are faced with is what the phonological structure of (42) is. Generally speaking, in order to figure out the phonological structure of a sentence, one usually makes direct reference to its syntactic structure. This is exactly the idea of Mapping Rule, which is formulated as in (21) by Tokizaki (1999, 2005, 2007). The syntactic structure of (42) could be shown as (43) (cf. the structure of (29)):

16. According to Xiong (2008), some "functional words," such as number, classifier, measure word, may attach rightward to an adjacent Clitic Group. This attachment will form a Clitic Group, too.



Now that *wo* 'I' and *laoshi* 'teacher' in (43) occupy Spec,TopP and Spec,FocP respectively, in accordance with Mapping Rule, *wo* and *laoshi* should be interpreted as independent Prosodic Phrases ( $\Phi$ ). The phonological structure of (42) can be as (44):



17. Since *DE* is a clitic, it should combine with the Clitic Group before it so as to form a new Clitic Group. This assumption is based on two views: a) According to Hayes (1989), clitic words are incorporated leftward or rightward into an adjacent Clitic Group. b) Through investigation, Wang (2005) has found that in prosodic chunking, auxiliaries and interjections in Chinese always attach to the previous words (*DE* is treated as an auxiliary in traditional Chinese grammar).



The phonological structure in (44) of course precisely interprets its syntactic structure and effectively conveys the meaning. However, it is only an ideal assumption, the real situation is not that simple. If people read (42) at a fast speed, they will find *wo* changes from Tone 3 into Tone 2. As Hong (1999) has pointed out, ‘Tone–3 Sandhi happens only in a certain domain where the second syllable triggers the tone sandhi of the first syllable and the final (either the second or third, etc., depending on the number of syllables in the domain) syllable in the domain remains unchanged.’ This indicates that *wo* and *laoshi* are in one domain.

Actually, previous studies of languages other than Chinese have already noticed similar facts and hypotheses have been proposed. For example, Kenesei and Vogel put forward the Generalized Focus Restructuring Rule (Kenesei & Vogel 1995:58–59):<sup>18</sup>

(45) Generalized Focus Restructuring Rule

- a. If some word in a sentence bears focus, it forms a single  $\Phi$  with the adjacent prosodic constituent on the nonrecursive side with respect to a lexical head. Any items remaining in a  $\Phi$  after the item bearing focus is regrouped retain their status.
- b. If the prosodic phrase remaining after focus restructuring is nonbranching, it may be joined into a single  $\Phi$  with a  $\Phi$  on the (syntactic) recursive side.

This rule was confirmed by Kanerva’s (1990) phonological study on Chichewa and Frascarelli’s (2000:62) examination of Italian data. Frascarelli, in particular, revises the rule, as shown in (46).

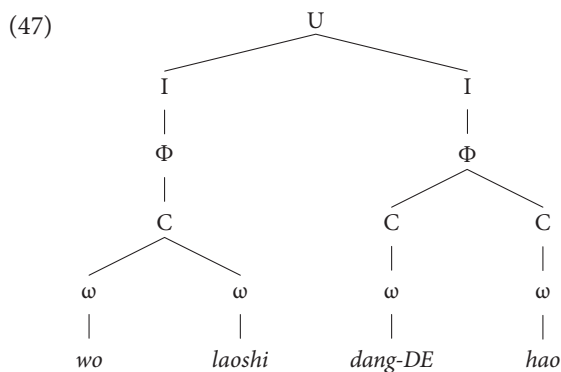
(46) Focus Restructuring

- a. A [+F] constituent is mapped into a  $\Phi$  and, when non-branching, it restructures into the constituent on its nonrecursive side;
- b. The recursive boundary of the  $\Phi$  containing the [+F] constituent maintains the location derived from the Mapping Rules;
- c. Linguistic material not included in the Focus is extraposed, forming independent Is.

$$[[Y]_{\Phi} [X_{[+F]}, (X_0)]_{\Phi} [Z_1, Z_2]_{\Phi}]_I \rightarrow [[Y, X_{[+F]}, (X_0)]_{\Phi}]_I [[Z_1, Z_2]_{\Phi}]_I$$

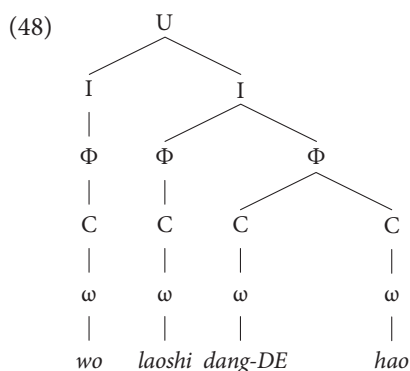
Accordingly, (42) may have a phonological structure as shown in (47):

18. In Kenesei & Vogel’s (1995) framework, the Clitic Group level does not exist.

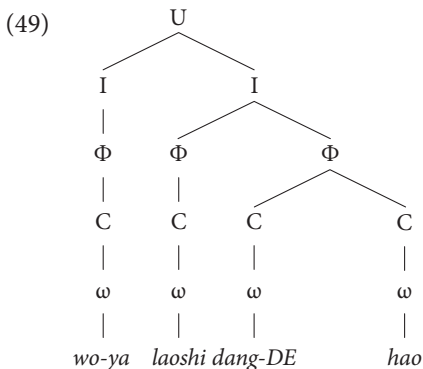


However, in view of the fact that *wo* and *laoshi* belong to different components syntactically and that they are not of one semantic category (they should not combine to mean *wo laoshi* ‘my teacher’), they must be grouped in different Clitic Groups. Generally speaking, this can be satisfied in the following way:

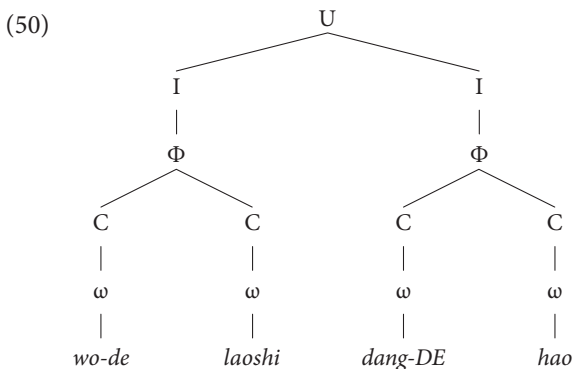
- a. Pausing. Pause after uttering *wo*, and then continue *laoshi dang de hao*. This will result in the phonological structure represented in (48):



- b. Inserting interjections such as *ya*, *ba*, etc. Then we may have a sentence whose phonological structure is shown as (49):



- c. Inserting boundary marker *de*. Thus a fake possessive will be derived. Its phonological structure may be (50).



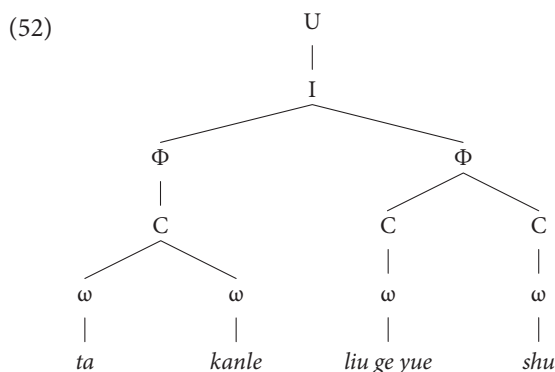
Once the question arising from (31) is answered, (32) is not a problem anymore — *de* is inserted to prevent *liu ge yue shu* to be in one Clitic Group. Below for the convenience of discussion, (32) is reproduced as (51), with some words replaced.

- (51) Ta kan le liu ge yue shu.  
he cut ASP six CL month tree  
'He spent six months cutting trees.'

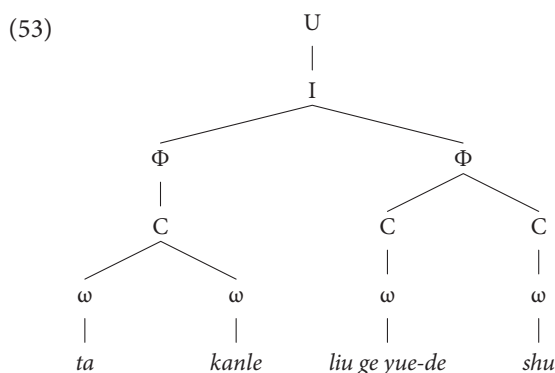
If (51) is read at a fast speed, the Tone-4 Sandhi will occur: *yue* changes from falling into half falling. This, to some extent, indicates that *liu ge yue shu* is in one domain where *shu* triggers the tone sandhi of *yue*. This reading obviously goes against its syntactic structure which requires *liu ge yue* and *shu* to be in different domains. There are two ways to achieve this:<sup>19</sup>

19. Note that if the readjustment does not affect meaning-conveying, these measures are usually not required to be taken. This also explains a phenomenon illustrated by the following examples:

- A. Pausing. Pause after uttering *liu ge yue*, and then read *shu*. In this way it may have a phonological structure as (52).



- B. Inserting boundary marker *de*. Thus, a fake nominal quantifier is formed. Its phonological structure can be (53).



It is interesting to note that there are three ways for (42) to ensure that *wo* and *laoshi* are in different Clitic Groups, while for (51), there are only two ways. The explanation is very simple: *wo* in (42) is a topic. One feature of the topic is that it can be followed by interjections such as *a*, *ba*, *ma*, *ne*, etc. (Shi 2001). In (51), however, *liu ge yue* is not a topic; hence, interjections are not allowed to appear between *liu ge yue* and *shu*.

- i. This is the cat that caught the rat that stole the cheese
- ii. This is [the cat that caught [the rat that stole [the cheese]]]
- iii. This is the cat # that caught the rat # that stole the cheese (Chomsky & Halle 1968:382)

According to Chomsky & Halle (1968), (iii), the phonological structure of (i), is readjusted (or rebracketed). However, the bracketing in (iii) does not affect the conveyance of (i)'s meaning; therefore, no extra measures are required to be taken.

Another interesting point is that in certain cases *de*-insertion is more coercive than pausing. There are even cases when only *de*-insertion is acceptable. For example, (54a) is acceptable while (54b), is not even acceptable with a pause between *san nian duo* and *bing*.

- (54) a. Ta dang le san nian duo de bing.  
           he act ASP three year more *de* soldier  
           ‘He spent more than three years in the military.’  
       b. ?Ta dang le san nian duo bing.  
           he act ASP three year more soldier  
           Intended reading: ‘He spent more than three years in the military.’

As discussed earlier, the Mapping Rule cannot ensure that the mapping is always successful: units in a phonological structure do not correspond in a one-to-one fashion with units of the syntactic structure. This explains why speakers resort to *de*-insertion (as well as other measures) to facilitate the correspondence between the phonological structure and the syntactic structure for the successful conveyance of meaning.

#### 4.4 Occurrence of *de*: further discussion

The above discussion offers some clues as to the reason why the phonological structure needs to correspond to the syntactic structure as much as it possibly can. This claim seems to contradict the practice in the literature that once Mapping Rules are applied, syntactic structures can no longer be used to condition phonological rules. This subsection will provide one example to argue that that is not the case.

Let us first consider (55) and think why it is not possible to insert *de* between *ta* and *Lisi* even though its structure is similar to that of (42).

- (55) \*Ta de Lisi da de hao.  
       he *de* Lisi beat *DE* good  
       Intended reading: ‘It’s great that he has beaten Lisi (Suppose that Lisi is a bad guy).’

*Lisi* here is different from *laoshi* ‘teacher’ in (42) in that *Lisi*, being a proper noun, is specific and definite while *laoshi* is not. This reminds us of the DP hypothesis. If we assume that *Lisi* has a syntactic status of DP and *laoshi* an NP, the phenomenon illustrated in (55) can naturally be accounted for: Being a (specific and definite) proper noun, *Lisi* enjoys the status of a DP already, therefore it refuses the insertion of *de*, which is argued to be a D, the head of DP syntactically (see Lu 2003; Xiong 2005, 2008, etc.) (Recall that ‘his John Smith’ in most occasions is not acceptable to most native English speakers).

The above analysis indicates that even at the stage of post-P-structure, the syntactic structure still plays a role. The insertion of *de* must respect the syntactic structure. This is consistent with Cheng et al. (2015:230), 'Since operations at the PF level take place after Spell-Out, they are not involved with LF. Therefore the features or morphemes added at PF do not affect semantic interpretation ... They are merely ornamental adjustment of the structures derived via syntactic derivation.'

## 5. Conclusion

In this study, fake attributives have been studied from the perspective of prosodic grammar. It has been found that fake attributives in Chinese are the result of the interaction between syntax and prosody, derived via at least three steps:

First, syntactic operations. When complex verbal constructions are derived, certain objects are suppressed, but they could be realized in some places other than their base-generated locations.

Second, prosodic operations. The phonological structure of a sentence, although mapped from its syntactic structure, may not correspond with it, as a result of prosodic reconstructing, such as generalized focus reconstructing.

Third, *de*-insertion. In order to facilitate the correspondence between the phonological structure and the syntactic structure, certain measures will be taken, one of which is *de*-insertion. The study has proposed that in prosody, *de*, as a clitic, cannot stand alone phonologically, but has to be attached to an adjacent Clitic Group. By virtue of this nature, *de*-insertion is often applied in constructing Clitic Groups, with the purpose of facilitating the correspondence between the phonological structure and the syntactic structure for the successful conveyance of meaning.

It is concluded that the syntax-semantics mismatches represented by fake attributives, are initiated by mismatches between syntactic and phonological structures and derived when *de* is inserted to increase their correspondence. A prosodic operation should respect syntactic structure and/or enhance the correspondence between phonological structure and syntactic structure, thus helping the meaning to be conveyed.

## Acknowledgements

I wish to thank Shengli Feng, Yafei Li, Zhenqian Liu, and Joseph Salmons for their guidance in writing this paper. I would like to express my sincere gratitude to the two anonymous *Language and Linguistics* reviewers for their valuable suggestions and constructive comments. I also wish

to thank Margeret Chen, George Coley, Maggie Shuo Feng, Juan Gao, Jiyan Li, Baopeng Ma, Baoyu Nie, Shaoshuai Shen, Kevin Sprag, Rachel S. Wang, and Mengjie Zhang, for helping me to polish drafts of the current paper. As always, the remaining errors in this paper are mine. The study is jointly supported by the National Social Science Foundation of China (14FYY025) and Humanities and Social Sciences research sponsored by the Chinese Ministry of Education (14YJC740115).

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### **Publication history**

Date received: 28 January 2015

Date accepted: 4 January 2016