

SZE-WING TANG

**SOME SPECULATIONS ABOUT THE SYNTAX OF NOUN PHRASES\***

**1. Introduction**

In this paper, I will discuss the syntax of noun phrases in natural languages, particularly the word order of noun phrases. Under the Linear Correspondence Axiom (Kayne 1994, Chomsky 1995), I propose a parametric theory to account for the variation of word order of noun phrases and argue that the word order of noun phrases largely depends on the parameters that determine at which level features are assigned.

In the following sections, I will highlight some major syntactic characteristics of noun phrases in two Indo-European languages, namely English and French, and three East Asian languages, namely Chinese, Vietnamese, and Thai.

**2. Data**

2.1 English

In English, adjectives and numerals always occur between the determiner/demonstrative and the noun. Relative clauses are following the noun. These examples are given in (1) and (2).

- (1) a. the pretty angel
- b. those four hippos
  
- (2) a. the article that I received yesterday
- b. the man who is a professor

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### 2.2. French

A significant difference between English and French is the distribution of adjectives in noun phrases. French adjectives may follow the noun, as in (3). Such a word order is not allowed in English.

- (3) a. une voiture rouge  
a car red  
b. un pays civilisé  
a country civilized

Similar to English, relative clauses are following the head noun in French, as shown in (4).

- (4) l'homme qui est professeur  
'the man who is a professor'

### 2.3 Chinese

The major characteristic of noun phrases in Chinese is that the head noun is always head final. Adjectives, demonstratives, possessives, and relative clauses are preceding the noun.<sup>1</sup>

#### *Chinese*

- (5) hexie-de guanxi (adjective)  
harmonious relationship  
'the harmonious relationship'
- (6) zhe jian daxue (demonstrative)  
this CI university  
'this university'
- (7) wo-de wenzhang (possessive)  
I-Mod article  
'my article'
- (8) jiao jufa-de laoshi (relative clause)  
teach syntax-Mod teacher  
'the teacher who teaches syntax'

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<sup>1</sup> The characteristics are also shared by Japanese and Korean.

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### 2.4 Vietnamese

Similar to Chinese, Vietnamese also has classifiers. The noun is following the numeral and the classifier (Clark 1978), as shown in (9).<sup>2</sup> Unlike Chinese, other elements, such as adjectives, demonstratives, possessives, and relative clauses, are always following the noun in Vietnamese (Agbayani 1995, Nguyen 1997), as shown in (10).<sup>3</sup>

(9) ba-cuon sach  
three-Cl book  
'three books'

(10) ba-cuon sach nho nay cua no ma me no mua homqua  
three-Cl book small this of her Rel mother her buy yesterday  
'these three small books of hers which her mother bought  
yesterday'

The numeral and the classifier should be in the initial position and the noun should be adjacent to the classifier in Vietnamese. If we treat the numeral and the classifier as one unit, Vietnamese nouns are always in the 'second position', which I call the 'N2' property, similar to the V2 property in some Germanic languages.

Notice that only the numeral-classifier phrase may occupy the initial position of the noun phrase. Other elements, such as adjectives, cannot precede the noun, as shown in (11).

(11) \*nho sach  
small book  
'small book'

### 2.5 Thai

In Thai, the noun is always preceding the numeral and the classifier (Stein 1981, Deephuengton 1992), as shown in (12). Adjectives, possessives, and relative clauses must follow the noun, as shown in (13), (14), and (15), respectively.

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<sup>2</sup> Diacritics are omitted in the Vietnamese examples, for typographical reasons.

<sup>3</sup> The data collected by Agbayani (1995) indicate that relative clauses should follow demonstratives, contrary to Clark (1978) and Nguyen (1997). In this paper I do not have any explanation of such a discrepancy.

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- (12) kəæw saam-bai  
 glass three-Cl  
 ‘three glasses’
- (13) maa dam (adjective)  
 horse black  
 ‘black horse’
- (14) baan khoong Somchai (possessive)  
 house of Somchai  
 ‘Somchai’s house’
- (15) phuuying thii chan choop (relative clause)  
 woman Rel I like  
 ‘the woman that I like’

### 2.6 Summary

Let me summarize what I have shown in the previous subsections regarding the word order in noun phrases in English, French, Chinese, Vietnamese, and Thai. My focus in this paper is mainly on the relative order between the noun and the adjectives in English and French and the relative order among the noun, the adjective, and the classifier in the classifier languages. The information listed in table (16) has been simplified and irrelevant details are omitted. As far as I can see, the numeral is always adjacent to the classifier in those four ‘classifier languages’. In table (16), the term ‘classifier’ covers both the numeral and the classifier.

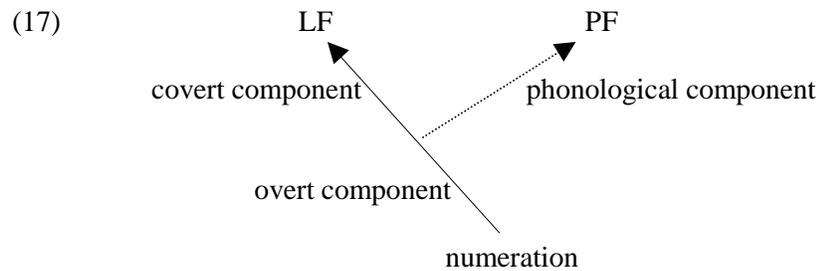
(16) *Word order in noun phrases*

	Word order	classifier
English	determiner-adjective- <b>noun</b>	*
French	determiner- <b>noun</b> -adjective	*
Chinese	classifier-adjective- <b>noun</b>	✓
Vietnamese	classifier- <b>noun</b> -adjective	✓
Thai	<b>noun</b> -adjective-classifier	✓

In what follows, I will account for the variations of word order in these languages. Due to limited space, I leave open the question of the relative order among adjectives, possessives, demonstratives, and relative clauses.

### 3. Overt Parametrization Hypothesis

Let us take the model of the language faculty proposed by Chomsky (1995), as represented by (17), to be our working hypothesis.



Let us assume that there are four types of features in the grammar: semantic features, phonetic features, categorial features, and affix features.<sup>4</sup> Semantic features receive an interpretation only at the LF interface. Phonetic features receive an interpretation only at the PF interface. Categorial features and affix features are accessible in the course of computation, both of which may play a role in the phonological component. Parametrization of these features follows a restrictive theory of parameters of Universal Grammar, which is dubbed the ‘Overt Parametrization Hypothesis’ (OPH) (Tang 1998).

(18) *Overt Parametrization Hypothesis*

Features that play a role only in the covert component are invariant across languages; features that may play a role in the derivation from the numeration to the PF interface are subject to cross-linguistic variation.

According to the OPH, semantic features are universal and their existence has to be assured in the lexicon of every language. Phonetic features, categorial features, and affix features are the only source that determines language-specific variation.

Given that phonetic features, categorial features, and affix features are the features that can be parametrized, it is suggested that the following parameters are permitted by Universal Grammar (Tang 1998).

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<sup>4</sup> ‘Affix features’ are similarly-spirited counterparts of the ‘uninterpretable categorial features’ in Chomsky 1995.

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- (19) *Possible parameters permitted by Universal Grammar*
- a. where features are assigned (affix features)
  - b. the presence or absence of features (phonetic features and affix features)
  - c. the combination of features (categorical features)

According to (19a), where affix features are associated with a word is subject to parametric variation. There are two possibilities: affix features could be associated with a word when it enters the numeration *N* or in the derivation. If affix features are associated with a word in the derivation, there could be two choices: in the overt component or in the phonological component. Consequences of (19a) will be discussed in the following sections by using the data from noun phrases.

### 4. Structure of noun phrases

Abney (1987) argues that the maximal projection of noun phrases is DP. Based on his DP analysis, I propose that there is an additional functional projection between DP and NP. For the ease of presentation, this functional category is dubbed as ‘Num’ (number) in this paper. The syntactic representation of a noun phrase can be schematized in (20). The reader should bear in mind that these labels are meaningless in the theory of bare phrase structure (Chomsky 1995).

- (20) [<sub>DP</sub> D [<sub>NumP</sub> Num NP]]

The postulate of Num in the nominal structure is far from new (C.-C. J. Tang 1990, Ritter 1991, Li 1999, among many others). Regarding the semantic role of Num, it is associated with countability, i.e. the count-mass distinction. The functional projection Num may bear the number feature and other semantic features that have to be checked off by a nominal element in the course of derivation. Unless it is shown to be wrong, the phrase structure of noun phrases in (20) will be adopted in our later discussion.

## 5. Analysis: typology of N-movement

### 5.1 Some theoretical assumptions

First of all, following the theory of bare phrase structure (Chomsky 1995), I assume that linear order is eliminated from the core computation. Particularly, I assume with Kayne (1994) and Chomsky (1995) that the Linear Correspondence Axiom (LCA) applies as a principle of the phonological component determining the linear ordering of elements with the ‘specifier-head-complement’ universal word order. In addition, right-adjunction is prohibited under the LCA.

The second assumption is related to the theory of licensing. Tang (1998) proposes that adverbs cannot be licensed by a trace at the LF interface level. In this paper, I further extend this condition to all modifiers including adjectives, as explicitly stated in (21).

(21) *Modifier Licensing*

Modifiers cannot be licensed by a trace at the LF interface level.

‘Modifiers’ are semantically ‘defective’, such as adverbs and adjectives. The rationale behind this condition is that the semantically defective elements have to be licensed at LF (cf. Travis 1988), and traces do not have enough ‘content’ to license modifiers.

Thirdly, following Grimshaw (1993), Speas (1994), and Koopman (1996), I assume that there is a PF rule that bans phonologically empty functional projections. For PF convergence, some overt element must be in the checking domain of the empty functional category at PF.

### 5.2 When to go and where to go

Let us first consider English and French. Notice that English allows the existence of bare nouns, i.e. that nouns do not have any inflectional elements, as in (22). However, if there is a gender suffix, it must be attached to French nouns. For example, the noun *équipage* ‘crew’ without the masculine affix *-age* cannot be used independently in French,

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as shown in (23). The fact from gender affixes suggests that French nouns do not allow the bare form.<sup>5</sup>

(22) hippo, lobster, angel

(23) équipage/\*équip 'crew'

Lasnik (1995) argues that French verbs are fully inflected in the lexicon by virtue of the fact that there are no bare forms in French verbs. Let us extend Lasnik's analysis of verbs to nouns. The intuition is that French nouns are fully inflected in the lexicon, on a par with verbs.

To capture such an intuition, I assume that the affix feature is assigned to the noun when it enters the numeration in French whereas the affix feature is combined with the noun in the derivation by syntactic operations in English.

Suppose that the affix feature [-N] is assigned to Num in English.<sup>6</sup> English nouns must move to Num to check off the affix feature before Spell-Out for LF convergence. As the affix feature is assigned to French nouns when they are selected for the numeration, there is no motivation for moving nouns to Num before Spell-Out in French. If there is N-to-Num movement in French, it should be triggered by affix features that are introduced in the phonological component.<sup>7</sup> Given that phonologically empty functional categories are prohibited, I propose that N-to-Num movement in French takes place in the phonological component for PF convergence. The generalization of the discussion is stated in (24).<sup>8</sup>

(24) N-to-Num movement is in the overt component in English whereas N-to-Num movement is in the phonological component in French.

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<sup>5</sup> Although it is not the case that *all* French verbs have the gender suffix, a child should know how to set the parameter as long as he or she knows that there is a *tendency* to have a fixed gender ending in a proportion of French nouns.

<sup>6</sup> In this paper, '[- $\alpha$ ]' and '< $\alpha$ >' are used to stand for affix features and (interpretable) categorial features, respectively.

<sup>7</sup> See Bernstein 1991, Cinque 1993, and references cited therein for N-movement in Romance languages.

<sup>8</sup> Regardless of in which component the movement takes place, N-movement seems to be necessary in English for deriving the right word order. See Kayne 1994, Chomsky 1995, Hoshi 1997, and Takano and Fukui 1999 for discussion based on different considerations.

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Suppose that an adjective is adjoined to NP in both English and French. N moves to Num before Spell-Out in English, according to (24). Consequently, the adjective is licensed by the trace of the noun at LF in English. On the contrary, the noun does not move out of NP before Spell-Out in French. N-to-Num movement takes place in the phonological component. The contrast is shown in (25) and (26), in which irrelevant details are omitted.

- (25) a. \* $[_{DP} D [_{NumP} N-Num [_{NP} Adj [_{NP} t_N ]]]]$  (English LF)  
 b. \* $[_{DP} D [_{NumP} N-Num [_{NP} Adj [_{NP} t_N ]]]]$  (English PF)
- (26) a.  $[_{DP} D [_{NumP} Num [_{NP} Adj [_{NP} N ]]]]$  (French LF)  
 b.  $[_{DP} D [_{NumP} N-Num [_{NP} Adj [_{NP} t_N ]]]]$  (French PF)

Given that modifiers cannot be licensed by a trace at LF, my analysis predicts that the ‘noun-adjective’ order is grammatical in French but not in English. To avoid violating the condition on modifier licensing, English adjectives should be adjoined to NumP and thus they are always preceding the noun in English.<sup>9</sup>

Let us now consider the languages that manipulate the classifier system. I propose that in those classifier languages, the affix feature is associated with the noun in the derivation and is assigned to Num, on a par with English. However, the only difference is that the affix feature will be checked off by the numeral-classifier phrase instead of the noun in the classifier languages.

The numeral-classifier phrase is treated as one syntactic constituent (Huang 1982, Takano and Fukui 1999), which is labeled as ‘QP’ in (27). The functional category Num in the classifier languages is a phonologically empty category, which bears the affix feature [-N]. Suppose that the categorial feature of QP is <N>. QP is merged with Num to check off the affix feature [-N] of Num. In other words, QP is a ‘checker’ of the affix feature [-N] of Num. The derivation converges.

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<sup>9</sup> Some adjectives may precede the noun in French, as in (i). I assume that *belle* ‘beautiful’ is adjoined to NumP instead of NP. Thanks to Francesca Del Gobbo (personal communication) for drawing my attention to (i).

(i) la belle fille  
 the beautiful girl

Adjectives that are adjoined to NumP and those that are adjoined to NP should not be the same semantically. For example, *grand* in *un grand homme* means ‘great’ whereas *grand* in *un homme grand* means ‘tall’. Thanks to Bernard Tranel (personal communication) for pointing out these examples.

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(27) [DP D [NumP QP [Num' Num NP ]]]

Along these lines, there is no motivation for moving the noun to Num in the overt component since the affix feature of Num has already been checked off by the numeral-classifier phrase before Spell-Out. The conclusion is stated in (28).

(28) There is no N-to-Num movement in the overt component in Chinese, Thai, and Vietnamese.

Notice that (28) does not preclude the possibility of N-movement in the phonological component. As classifier languages lack determiners, D will be phonologically empty. For PF convergence, I propose that N moves to D in the phonological component in those classifier languages.

Let us consider Chinese. I have shown that the noun is always ‘head final’ in Chinese. To derive the right word order, I assume that D bears two affix features in the phonological component, which I call [-N] and [-NumP]. In the phonological component, [-N] of D triggers N-to-D movement and then [-NumP] of D triggers movement of NumP to the specifier of DP, as illustrated in (29).<sup>10</sup> By virtue of the movement of NumP to the specifier of DP, the noun always follows every element dominated by NumP. The ‘head-final’ word order of Chinese is thus derived.<sup>11</sup>

(29) *Chinese*

DP		DP
2		3
N-D	⇒	NumP
5		5
... t <sub>N</sub> ...		... t <sub>N</sub> ...
		D'
		2
		N-D
		t <sub>NumP</sub>

To derive the so-called ‘N2’ property of Vietnamese, I assume that D bears two affix features in the phonological component: [-N] and [-QP].<sup>12</sup> The former triggers N-to-D movement whereas the latter

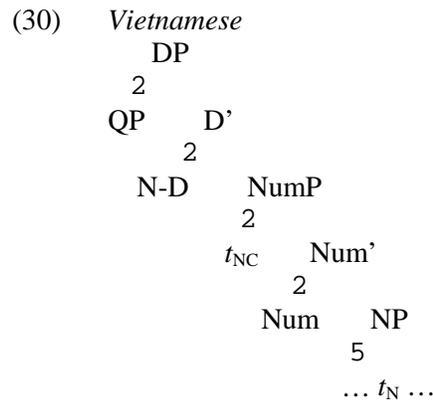
<sup>10</sup> Whether Num moves along with the N-to-D movement is irrelevant in the present discussion.

<sup>11</sup> Zhang (1999) has made a similar proposal that NP moves to the specifier of DP in Chinese. She proposes that predicate nominals are DPs and NP-to-DP movement is involved, contrary to Tang’s (1998) analysis of bare predicate nominals in Chinese.

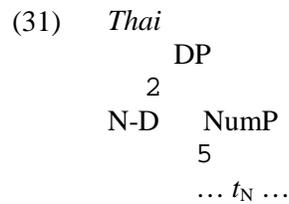
<sup>12</sup> I have been assuming that the categorial feature for the numeral-classifier phrase is <N>. Given that affix features are sensitive to the word vs. phrase

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triggers movement of the numeral-classifier phrase to the specifier of DP in the phonological component. (30) is the representation of a noun phrase in Vietnamese.



Recall that the noun occurs in the initial position in noun phrases in Thai. To derive such a ‘head-initial’ property, I assume that D in Thai bears only one affix feature in the phonological component, namely [-N]. The representation of a noun phrase in Thai is illustrated in (31).



The findings of my analysis in those classifier languages can be summarized as follows.<sup>13</sup>

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distinction (Tang 1998), I assume that the affix feature that triggers the numeral-classifier phrase movement is [-QP] for the sake of presentation.

<sup>13</sup> I notice that the picture will be more complicated if we consider the word order of adjectives, demonstratives, and relative clauses in noun phrases, particularly in Thai and Vietnamese. I suspect that in those languages there is some (remnant) movement within NumP.

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- (32) N-to-D movement and NumP-to-DP movement take place in the phonological component in Chinese. N-to-D movement and QP-to-DP movement take place in the phonological component in Vietnamese. N-to-D movement takes place in the phonological component in Thai.

### 5.3 Summary

To account for the differences between English and French, I have argued that the affix feature is combined with the noun in the derivation in English whereas the affix feature is combined with the noun when it enters the numeration in French. Where affix features are assigned is a legitimate parameter permitted by Universal Grammar under the Overt Parametrization Hypothesis.

A major difference between the classifier languages and the ‘non-classifier languages’ is that the numeral-classifier phrase in the classifier languages is used to be a checker to check off the affix feature assigned to Num. Whether the numeral-classifier phrase exists is subject to the parametric variation.

Under the present analysis, the variations among the classifier languages lie in the (non)existence of the affix features in the phonological component, namely [-NumP] of D and [-QP] of D. The former is missing in Vietnamese and Thai whereas the latter is missing in Chinese and Thai.

The observations in this section are summarized in table (33). The first row indicates the component in which N-movement takes place. ‘Overt’ and ‘phon’ stand for the overt component and the phonological component, respectively. The second row indicates the destination of N-movement at the PF interface level.

(33) *Typology of N-movement*

	English	French	Chinese	Viet	Thai
when to move N	overt	phon	phon	phon	phon
destination of N	Num	Num	D	D	D

Interestingly, it appears that N-to-D movement is obligatory in the classifier languages in my analysis. The rationale for the present analysis seems to be motivated by some economy principles. D is overtly realized as determiners in English and French. Nevertheless, determiners are missing in the classifier languages. Given that phonologically empty functional projections are banned universally, D in the classifier

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languages needs to be ‘supported’ at PF. The operation of moving the head noun to D is used as a last resort to satisfy such a requirement for PF convergence. In other words, N-to-D movement is driven by some PF conditions. The manipulation of N-to-D movement in the classifier languages is not accidental, which is correlated with the lack of determiners in these languages.

**6. Some evidence for movement in Chinese noun phrases**

Given that ‘specifier-head-complement’ is the universal word order, N must undergo movement followed by moving NumP to the specifier of DP under the present analysis in order to derive the ‘head final’ property of Chinese, contrary to what linguists have believed in the literature (Huang 1982, C.-C. J. Tang 1990, among many others). The analysis proposed in this paper appears to be *ad hoc* at the first sight. The reader might have doubts as to whether movement really takes place in noun phrases in Chinese. In this section, I will show that some evidence supports the claim that there is movement in noun phrases in Chinese.

6.1 Theory-internal consideration

According to the theory of bare phrase structure (Chomsky 1995), the representation of *the book* can be analyzed as a set in (34). The operation Merge puts *the* and *book* together and then projects *the*. An informal tree representation of (34) is schematized in (35).

(34) {the, {the, book}}

(35)     the  
          2  
          the   book

In Kayne’s (1994) theory, linear order is in fact derived from hierarchical structure. Kayne’s (1994) LCA crucially relies on the standard X-bar theory, according to which (35) should not be an admissible configuration. As neither *the* nor *book* asymmetrically c-commands the other, these elements cannot be ordered.

To maintain the LCA in the theory of bare phrase structure, Chomsky (1995) claims that *book* moves overtly in (35), leaving a trace

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in the complement position. To rule in the structure, traces may be exempted from the LCA or deleted by the LCA.

Notice that *book* in (35) is a single-terminal element. As noted by Chomsky (1995), a single-terminal XP in the complement position must raise overtly lest the LCA is violated under the bare phrase structure theory.

Consequently, if the LCA and the bare phrase structure theory hold in Chinese, the N head of NP which is a single-terminal element in the complement must raise in Chinese noun phrases. N-movement in Chinese seems to be driven by some phonological requirement.

### 6.2 Derived nominals

Let us consider (36), which is regarded as an example of the derived nominal in Chinese.

- (36) tamen dui zhe ge wenti-de taolun  
they to this CI problem-Mod discussion  
'their discussion of this problem'

Fu (1994) observes that there is parallelism between derived nominals and clauses in Chinese with respect to word order. She argues that Chinese derived nominals are VPs underlying. The VP is the complement of a nominal head N. In nominalization, the verbal head eventually raises out of VP to N. The derivation is shown in (37), in which XP and YP are the arguments or modifiers of the verbal head.<sup>14</sup>

- (37) ... [<sub>NP</sub> V-N [<sub>VP</sub> XP *t<sub>V</sub>* YP]]

The significance of Fu's analysis of is that movement is involved in nominalization in Chinese. The derived nominal in Chinese is formed by moving the verb out of VP that is regarded as the complement of N. Given that 'S-H-C' is the underlying word order, movement must be involved to derive the right word order from (37). Derived nominals in Chinese may provide a piece of independent evidence to support the movement analysis of Chinese noun phrases.

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<sup>14</sup> In her original analysis, Fu (1994) assumes that N in (37) is head final. However, as the derived nominal asymmetrically c-commands the VP, the derived nominal should precede the VP in linear order under the LCA if N-to-D movement and NumP-to-DP movement do not take place.

## 6.3 Diachronic evidence

Diachronic evidence seems to suggest that the noun had moved to a position higher than the numeral-classifier phrase in Chinese historically. In archaic Chinese, the head noun may precede the number or numeral-classifier phrase, if any. (38) and (39) are examples from oracle bone inscriptions (Shen 1992, Peyraube 1998 and references cited therein).

(38) lang sishi  
wolf forty  
'forty wolves'

(39) che er-bing  
car two-Cl  
'two cars'

I suspect that in archaic Chinese the noun moved to D without moving NumP to the specifier of DP in (38) and (39) and thus the number *sishi* 'forty' and *er-bing* 'two-Cl' were following the head noun.

### 7. How affix features of Num are checked: plurality in Cantonese

Though nouns in Chinese languages do not have a plural suffix equivalent to English *-s*, there are some ways to represent plurality in Chinese. One strategy is to use a plural classifier. Let us consider the data from Cantonese. For example, *di* in (40) is regarded as the plural classifier in Cantonese, which is considered to be the counterpart of *xie* in Mandarin. (Matthews and Yip 1994, Au Yeung 1997).

(40) di hoksaang  
Cl(pl) student  
'the students'

Another strategy to indicate plurality in Cantonese is to use *dei*, which is considered to be the counterpart of *men* in Mandarin. Notice that *dei* is a plural suffix which is always attached to pronouns, as shown in (41), in which *ngo* 'I', *nei* 'you', and *keoi* 'he' are pronouns. The ungrammatical examples in (42) show that *dei* is neither attached to common nouns nor attached to proper names.

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- (41) a. ngo-dei 'we'  
 b. nei-dei 'you (plural)'  
 c. keoi-dei 'they'
- (42) a. \*hoksaang-dei 'students'  
 b. \*John-dei 'Johns'

I propose that in Cantonese *di* is a checker of the (plural) affix feature of Num whereas *dei* is an overt realization of the (plural) affix feature of Num.<sup>15</sup> The occurrence of *di* and *dei* in Cantonese is in complementary distribution. If Num is overtly realized as *dei*, it only attracts pronouns. For example, (43) is a partial representation of a noun phrase in Cantonese. When the affix feature of Num is overtly realized as *dei*, it triggers N-to-Num movement. Notice that only pronouns can check the affix feature *dei*. 'N' in (43) refers to pronouns. To capture the pronominal requirement of *dei*, I assume that *dei* only subcategorizes for a pronoun in the complement position.

- (43) [<sub>NumP</sub> N-*dei* [<sub>NP</sub> ... *t<sub>N</sub>* ... ]]

If the affix feature of Num is phonologically null, the plural classifier *di* may function as a checker to check off the plural feature of Num, as in (44).

- (44) [<sub>NumP</sub> *di* [<sub>Num'</sub> Num NP ]]

The ungrammaticality of (45) shows that Num that bears the phonologically empty plural feature does not subcategorize for pronouns in Cantonese.

- (45) \**di* keoi  
 Pl he  
 'they'

Furthermore, the affix feature *dei* of Num cannot be checked off by any numeral-classifiers, as shown in (46) and (47). The ungrammaticality of the following examples is not surprising. As the affix feature *dei* has already been checked off by the pronoun, introducing the classifier to the derivation becomes redundant and

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<sup>15</sup> See Li 1999 for an analysis of the plural suffix *men* in Mandarin.

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violates some economy principle. Hence, (46) and (47) are ungrammatical.<sup>16</sup>

(46) \*di keoidei  
Pl they  
'they'

(47) \*sam-go keoidei  
three-Cl they  
'Lit.: three they'

I have shown that in Cantonese when plural suffix *dei* shows up, the existence of the plural classifier *di* is not allowed and vice versa. The fact of the complementary distribution of *di* and *dei* seems to suggest that they are two sides of the same coin.

Notice that *di* and *dei* share some common phonological features, such as the alveolar stop and a front vowel. Although the plural classifier and the plural suffix are not exactly the same phonologically in Hong Kong Cantonese, they are identical in some Cantonese dialects spoken in the Pearl River delta in the Guangdong province, for instance, [ti<sup>55</sup>] in the Conghua dialect (Zhan and Cheung 1988). In some Cantonese dialects, the plural classifier and the plural suffix only differs in the suprasegmental level, for instance, classifier [ti<sup>55</sup>] and suffix [ti<sup>33</sup>] in the Zhongshan dialect and the Zhuhai dialect (Zhan and Cheung 1988). In addition to the Cantonese family, the plural classifier (*lie*) and the plural suffix (*lie*) are phonologically identical in the Wenzhou dialect, a member of the Wu family (You 1999).

The similarities of the plural classifier and the plural suffix are not coincident. It is argued that these elements in the southern dialects and the plural classifier *xie* in Mandarin are cognate (You 1999). Based on these observations, I assume that the plural classifier underwent grammaticalization diachronically and becomes an overt realization of the (plural) affix feature of Num in some modern Chinese dialects.

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<sup>16</sup> Ben Au Yeung (personal communication) points out that (i) is acceptable in Cantonese. I suspect that *houdo go* 'many' checks the indefinite feature in addition to the plural feature and thus its occurrence is not redundant.

(i) Faai moseot geng jau saam-go ngo tungmaai houdo go keoidei.  
Cl magic mirror have three-Cl I and many Cl they  
'There are three images of myself and many images of them.'

## SOME SPECULATIONS ABOUT THE SYNTAX OF NOUN PHRASES

### 8. Concluding remarks

In this paper, I have proposed that word order of noun phrases largely depends on a parameter that determines at which level features that trigger movement are assigned. The major findings of this paper are summarized as the following.

- (i) If affix features are assigned to the noun when it enters the numeration, the noun never moves out of NP in the overt component.
- (ii) If affix features are assigned to Num in the overt component, they could be checked off either by the noun triggering N-to-Num movement in the overt component or by the classifier, if any.
- (iii) If affix features of Num are checked by the classifier, the noun never moves out of NP in the overt component.
- (iv) If D is not realized as the determiner, affix features are assigned to D in the phonological component for PF convergence, triggering N-to-D movement in the phonological component.

Due to limited space, only some selected syntactic properties of noun phrases in English, French, Chinese, Vietnamese, and Thai are discussed in this paper. Although the typological differences among these languages shown in this paper may be somewhat oversimplified, I hope that the general picture given here may shed some light on the word order variation of noun phrases in natural languages.

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