Thai Classifiers and the Structure of Complex Thai Nominals

Pornsiri Singhapreecha
Language Institute, Thammasat University
Prachan Road, Bangkok 10200
Thailand
pornsiri@alpha.tu.ac.th

Abstract

This paper aims to posit a functional category for Thai classifiers and demonstrate the analysis of Thai complex nominals adopting the antisymmetry framework (Kayne 1994). It proposes that Thai classifiers have an independently functional status and project the Classifier Phrase (ClassP) basically because they work in the same way as agreement. Evidence supporting their functional status includes properties of classifiers in forming their own word class distinct from the category of nouns, their non-modificational property by adjectives, and multiple occurrences. The underlying structure of Thai nominals is constructed in terms of the DP analysis. To derive a Thai nominal word order, it is argued that classifiers features are strong and there exist a combination of raising operations regulated by asymmetrical c-command relation (Kayne 1994) as well as feature checking (Chomsky 1995). The analysis suggests that Thai nominals possess a commonly underlying head-initial structure in which movement plays a key role in deriving the surface word order.

1. Introduction

A comparison of the word orders of Thai and English simple and complex nominals reveals that Thai is a mirror image of English as shown in 1).

1) nók tua lék săam tua nán
   bird clf little three clf that/those
   "those three little birds"

In 1) above, abstracting away classifiers (clf), the Thai word order noun-adjective-numeral-demonstrative is the reverse order of the English demonstrative-numeral-adjective-noun. The Thai linear order of complex nominals, which would otherwise be viewed as completely different from that of English, strongly resembles English with respect to relative adjacency of elements. The linear word order of Thai nominals will be analyzed in a way that classifiers are consequential to the course of the derivation.

Working towards this direction, I will organize the remaining part of this paper as follows. In section 2, I will show distributional facts about Thai classifiers ranging from simple to complex nominals. In section 3, I will propose a functional status of classifiers by giving conceptual and syntactic accounts. In section 4, I will briefly discuss Tang's (1990) analysis on Chinese DP in which classifiers are treated as one of the dual heads cooccuring with number in the Klassifier Phrase. I will point out that an analysis without giving an independent status for classifiers as such is incomplete, and cannot account for multiple occurrences of classifiers. Then, I will show my analysis of Thai

complex nominals. In my analysis, the structure of complex Thai nominals is constructed in terms of the DP analysis in which classifiers are argued to project ClassP. I incorporate the antisymmetry framework (Kayne 1994) and feature checking (Chomsky 1995) to account for the derivation of the surface word order. Finally in section 5, I provide a conclusion of this study.

2. Distribution of Classifiers in Thai

I will briefly describe the positions which classifiers appear in simple and complex Thai nominals. It is noteworthy that the nominals being investigated here are restricted to non-abstract nouns (animate and inanimate alike). Nominals of this type were selected since they are commonly extended with numerals, adjectives, and demonstratives.[1]

2.1 Simple Nominals

The use of classifiers is obligatory when a noun is accompanied by a numeral as shown in 2a) and its ungrammatical counterpart in 2b). [2]

2a) nók săam tua
    bird three clf
    "three birds"
2b) *nók săam
    bird three

The use of classifiers is optional when a noun is accompanied by an adjective or a demonstrative. However, if the noun refers to a specific object, a classifier must be present. By specificity, I refer to singularity and contrast in the presence of adjectives and emphasis in the presence of demonstratives.[3] Thus when 'bird' is extended by 'little', [tua] is obligatory if specificity is involved as in 3b), and omissible if it is not involved, as in 3a).

3a) nók lék
    bird little
    "little birds"
3b) nók tua lék
    bird clf little
    "a little bird"

3a) refers to unspecified little birds while 3b) implies singularity and conveys a contrastive value of the adjective 'little', meaning a 'typical little bird' (distinct from a 'typical big bird').[4]

---

[1] Classifiers do occur with abstract nouns (termed "immaterial concepts" by Hundius and Kölver 1983), e.g. [kʰam] for words and [kʰraŋ] for events. Although I do not discuss the structure of abstract nouns, I assume that the analysis ensued for non-abstract nouns will carry over to them as well.

[2] Obligatory presence of classifiers in quantified nominals is common across Southeast Asian and South Chinese languages. According to Jones (1970), these languages fall into two large groups with respect to surface word order of quantified nominals: numeral-classifier-noun and noun-numeral-classifier. The former, which has the widest geographical distribution, includes Chinese and Vietnamese, and the latter Thai and Burmese.

[3] Specificity here may be considered along the same line with "preciseness of Speech" in Haas (1942), "emphasis" in Hundius and Kölver (1983), and "particularized speech" in Hudak (1990).

[4] It is important to note that Thai has no lexical determiners to express definite/ indefiniteness. Presumably Thai has at least two strategies to convey definiteness: by using a restrictive relative clause or a demonstrative. Without extending the noun by such strategies, I prefer 3b) as having the indefinite reading.

When only the demonstrative is present as in 4a) and 4b), the reading with the classifier differs slightly from the one without the classifier, the difference being in the degree of specificity.

4a) nók níi
    bird this
    "this bird"
4b) nók tua níi
    bird clf this
    "this very bird"

In 4b) the presence of the classifier creates a higher degree of emphasis by singling out a bird from among the group.

From 2) to 4), the position of a classifier in relation to a numeral differs from the position of a classifier in relation to an adjective and a demonstrative, i.e. it follows the numeral but precedes the adjective and the demonstrative.

2.2 Complex Nominals

A number of complex nominal constructions can be made in which numerals, adjectives, and demonstratives are combined as in 5) to 7) below. Notice that the demonstrative is always in the final position.[5]

5) nók tua lék tua nán (noun-clf-adj-clf-dem)
   bird clf   little clf that
   "that little bird"
6) nók tua lék sǎam tua (noun-clf-adj-num-clf)
   bird clf little three clf
   "three little birds"
7) nók tua lék sǎam tua nán (noun-clf-adj-num-clf-dem)
   bird clf little three clf that
   "those three little birds"

In 5) and 7), the classifier [tua] occurs twice; it precedes the adjective and the demonstrative. In 6) where no demonstrative occurs, it precedes the adjective and follows the numeral. This pattern illustrates a unique characteristic of Thai classifiers, i.e. multiple occurences. This phenomenon seems to be peculiar to Thai, compared to other classifier languages in Southeast Asia and South China.[6]

---

[5] According to Hundius and Kölver (1983), a demonstrative necessarily marks the end of an NP so that no further modification can follow to interfere with the numerical interpretation of the classifier.

[6] In Amoy Chinese (Hokkean) multiple occurrences of classifiers (as observed in Jones 1970) appear only when nouns are extended by two adjectives--'big' and 'little', e.g. [hìt sa nuî tuǎ nuî pě? huê], literally "those-three-clf-big-clf-white-flower". Jones suggests that the multiple classifier pattern of Amoy Chinese, which is restricted to only two adjectives, was adopted and generalized in Thai.

3. Functional Status of Classifiers

In this section, I will propose a functional status of classifiers using conceptual and syntactic accounts.

3.1 Conceptual Accounts

Conceptually, Thai classifiers have been argued to constitute a separate word class (Haas 1942, Hundius and Kölver 1983), distinct from the category of nouns, and have a lexical relationship with count nouns. I show four shape-based examples of classifiers from Hundius and Kölver (1983) below. (Classifiers are contained in brackets and the nouns corresponding to each classifier follow the colon.)

long-straight shape:
1) [tôn]: any kind of plant; stems, pillars, logs
2) [lêm]: long, pointed objects or objects with a sharp edge, i.e., "knife", "needle", "scissors", and "sword". "Books" also takes [lêm], because traditionally they had a shape entirely different from today's books.
3) [k^{h}an]: long, handled objects, e.g., "spoon", "fishing rod", "umbrella" and "plough".

   [k^{h}an] is also used for nouns denoting vehicles, e.g. "bicycle", "three-wheeled pedicab" and "automobile". This use is apparently due to "handling" cars by means of handles and pedals.

flat and flexible shape:
4) [baj]: leaves and leaf-like objects, e.g., "bank note", "ticket". Containers such as bowls, plates, and plastic containers also take [baj]. Presumably containers were once made up of leaves and stalks.

Presumably the four classifiers [tôn], [lêm], [k^{h}an], and [baj] have relationships with count nouns on the basis of shape. From a historical perspective, classifiers broke up nouns into categories by certain criteria, e.g. shape, function, and the making of objects. Presently, however, with incessantly innovated objects, classifiers seem to be chosen arbitrarily rather than to classify nouns into categories as originally presumed.

In addition to the early classifying status, they belong to a closed-class category in which the number is fixed. Thai classifiers total approximately eighty (McFarland 1942; Haas 1964), and around forty of them are in everyday use (Carpenter 1991). Thus, when new nouns are created, no new classifiers can be created for them. The alternatives are either to extend the use of available classifiers to which the new objects can be assigned or to use repeaters which are nouns that function as their own classifiers.

3.2 Syntactic Accounts

I will now discuss two main characteristics which qualify classifiers as functional distinct from nouns, i.e. non-modificational property with adjectives, and multiple occurrences.

3.2.1 Non-modificational Property with Adjectives

To distinguish classifiers from nouns, I will assume Hundius and Kölver's (1983) diagnostic test in which measure words and classifiers are differentiated According to them, the difference between classifiers and measure words (assumed as nouns due to their independent occurences) is that the former cannot be modified by adjectives while the latter can as shown in 3b) repeated as 8a), and 8b) below.

8a) nók tua   lék
    bird clf   little
    "a little bird"
8b) nók fǔuŋ   lék
    bird swarm little
    "a little swarm of birds"

In 8a) the adjective [lék] modifies [nók], the head noun, not the classifier [tua] while in 8b) it modifies [fǔuŋ], the measure word. The status of classifiers here is most likely functional.

3.2.2 Multiple Occurrences

As previously pointed out in 2.2, Thai classifiers can occur repeatedly with different attributes. This type of relationship may be viewed as parallel to the use of morphological genders in Romance languages. Compare 9), 10), and 11) representing Thai with and a Spanish example such as 12) below.

9) nók **tua** lék sǎam **tua** nán
    bird clf little three clf that/those
    "those three little birds"
10) nǎŋsɨɨ **lêm** nǎa sìi **lêm** nán
     book   clf thick four clf that/those
     "those four thick books"
11) caan **baj** lék hâa **baj** nán
     plate clf little five clf that/those
     "those five little plates"

12) las tres niñas listas[7]
    the three girls smart
    "the three smart girls"
The suffix -as stands for feminine plural.

The Thai and Spanish examples above illustrate a series of agreement elements of the same phonetic form ocurring with certain elements. 9), 10), and 11) show agreement in the form of lexicalized items on the nouns (extended with adjectives) and the numerals. 12) shows a series of agreements in the form of inflectional suffixes on the determiner, noun, and adjective.
Furthermore in the Thai examples, the three classifiers [tua], [lêm], and [baj], are selected by the nouns [nók], [nǎŋsɨɨ], and [caan], respectively. This type of selectional restriction indicates that nouns and classifiers are required to agree with each other in some categorical sense. Therefore, the

---

[7] This example was suggested by Carme Picallo, p.c.

Thai facts regarding multiple occurrences of classifiers and restrictions on the use of them suggest that they regulate agreement relationships on a par with gender in Romance nominals.

So far I have discussed the functional category status of Thai classifiers from two perspectives. Conceptually, they form a separate word class, have a lexical relationship with count nouns by classifying nouns into categories, and are closed-class items. Syntactically, the facts that they are not modified by adjectives and have multiple occurrences strongly suggest that they must have a status different from nouns, i.e. that of functional category.

I claim that classifiers are a type of agreement working inside the structure of Thai nominals equivalent to the Gender Phrase (Picallo 1991) or the Word Marker Phrase (Bernstein 1993) proposed for Romance nominals. I propose that a Classifier Phrase (ClassP) projects in the structure of Thai nominals. Next, I will show the underlying structure of complex Thai nominals and offer my analysis.
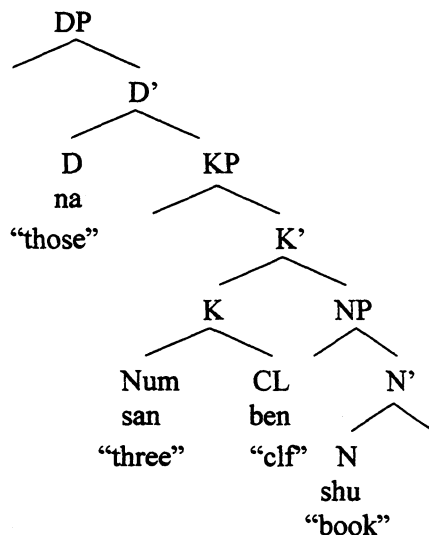
4. Analysis

This section begins with a previous analysis of Chinese DP proposed by Tang (1990), in which classifiers and numerals are claimed to coexist as dual heads in the same phrasal category, Klassifier Phrase. Then I propose my own analysis which consists of two subparts: an underlying structure of Thai nominals, and movement operations to derive the surface word order.

4.1 Tang's Analysis on the Chinese DP

Tang (1990) proposes Klassifier Phrase, KP, as a functional category to account for the occurrence of classifiers in Chinese noun phrases. According to Tang, the Chinese noun phrase consists of two functional projections dominating one lexical projection, namely, DP, KP, and NP. Tang's proposed underlying structure is shown in 13) with a Chinese example.

13)

```
            DP
           /  \
              D'
             /  \
           D     KP
           na    / \
        "those"    K'
                  /  \
                 K     NP
                / \    / \
             Num   CL  N'
             san   ben  / \
           "three" "clf" N
                        shu
                       "book"
```

The head of KP in 13) contains numeral and classifier features. Tang claims that these two features are entered into the head parallel to the way Tense and Agr are contained in the head INFL, according to Chomsky (1986). Further, under K, both Num and CL must be lexically realized. The word order [na san-ben shu] meaning "those three books" and the underlying representation correspond to each other. She points out that the head noun must agree with the classifier in a manner analogous to the agreement relationship between the Infl and the V in sentences.

Apparently, the linear order of Thai nominals containing a numeral may be derived if it is to be worked out with the structure in 13), assuming that there is some motivation for the raising of the NP to the specifier of KP (and perhaps subsequent movement of KP to the specifier of DP). However, such an analysis is immediately problematic in two respects. Firstly, considering the characteristics of quantifiers and classifiers, they are by no means related to each other. Classifiers are dependent on the lexical content of nouns because certain classifiers are used consistently with certain categories of nouns while quantifiers are not; they occur freely with any nouns. Putting them together in the same head implies that quantifiers and classifiers are dependent features, which is contrary to the facts.

Secondly, Tang's schematic tree provides only one position for classifiers, a consequence of dual headedness. The possibility of classifiers occurring more than once as found in Thai cannot be accommodated under this structure. Therefore, Tang's analysis cannot be extended to the Thai case. In my analysis I will propose an underlying structure which allows for multiple occurrences of classifiers by separating classifiers and numerals into two independent functional categories, namely ClassP and QP. I will also attempt to extend my analysis to account for the word order of simple Chinese nominals such as 13) above with the underlying structure proposed for Thai nominals.

4.2 The Underlying Structure of Thai Nominals

The underlying structure of nominal phrases is constructed in terms of the DP analysis. The Thai DP structure consists of three functional categories and one lexical category, namely, Determiner, Classifier, Quantifier, and Noun Phrases. This structure is represented schematically as [DP[ClassP3[QP[ClassP2[ClassP1[NP]]]]]].

I follow Szabolcsi (1983), Hellan (1986) and Abney (1987) in positing DP as a functional category required in nominal phrase structures. Although Case is not phonetically realized in Thai, I follow the standard assumption that nominal arguments universally have Case. Therefore, D in Thai nominal structures contains abstract case. For referentiality in DP, I follow Longobardi (1994) in positing D as having referential interpretation. [8] I assume that demonstratives in Thai, by virtue of containing a referential feature, are located in D. For QP, I adopt Lobël's (1989) analysis for QP being inside DP and follow the standard assumption that quantifiers extend the set denoted by nouns. ClassP is claimed to project due to the functional status of classifiers as previously argued. For AP, I locate adjectives in the specifier of ClassP2 above NP (see 15b below). I adopt Cinque's (1994) proposal that APs are base-generated in specifier positions of a number of functional projections due to a restricted hierarchical structure of adjectives, to which Thai corresponds.

4.3 Derivation of the Thai Surface Word Order

As an overall theoretical background of the analysis, in 4.3.1 I will briefly explain Kayne's restrictive theory of word order, the theoretical framework I am adopting. Additionally, in 4.3.2, I will provide motivation from minimalist perspectives which I incorporate in the analysis to derive the desired word order. In 4.3.3, I will show an underlying structure of complex Thai nominals. It accounts for nominals containing one attributive adjective, one quantifier and one demonstrative. This underlying structure is posited to derive the order where classifiers occur in certain positions of a DP. Then I will present the derivation from the underlying structure to the linear order.

4.3.1 Kayne's (1994) Hypothesis

In Kayne's restrictive theory of word order, asymmetrical c-command relations play a key role in the

---

[8] Case and referentiality have different statuses under the Minimalist framework (Chomsky 1995). Case is a formal, noninterpretable feature whereas referentiality is an interpretable feature. As an interpretable feature, it does not trigger movement.

sequence of linear word order. A terminal element a precedes a terminal element b iff a asymmetrically c-commands b. Kayne raises a time-slot metaphor to illustrate how asymmetric c-command relations derive the linear word order. He associates a string of terminals with a string of time slots and claims that what is paired with each time slot is not simply the corresponding terminal but the substring of terminals. Thus, a string of terminals "abcdz" is mapped to a set of substrings "a, ab, abc, abcd, abcdz." In this way, a precedes every terminal in every substring since a figures in every substring. Like a, b follows a since b follows a in every substring and b precedes c in every substring that c shows up. The remaining elements proceed in the same pattern.

To work out this hypothesis, take a string of a simple English declarative in 14) as an example.

14) I saw John.

Let's assume that 'I' occupies the specifier of IP; therefore, the string of terminals in 14) corresponds to the substrings, [I], [I saw], and [I saw John]. Thus, 'I' precedes every terminal in every substring. 'Saw' follows 'I' since it follows 'I' in every substring, and 'saw' precedes 'John' in the substring that 'John' shows up. In this regard, the linear word order in 14) derives from a hierarchical structure of a number of substrings which are regulated by asymmetrical c-command relation. This concept plays a crucial role in the derivation of the Thai surface word order.

Another technical requirement utilized in my analysis is Kayne's idea to restrict c-command to categories, and not segments. In this framework, a category XP can be extended to a two segment XP. Thus when a category raises past a segment (assumed as a bar level in X' theory) into the specifier of a higher segment (of the same category), the raising is licensed. The resulting trace is antecedent governed by the moved element; the intervening segment is not a category, hence not a barrier for the c-commanding relation.

4.3.2 Feature Checking

I adopt Chomsky's (1995) hypotheses of feature checking and overt movement. According to these hypotheses, strong features must be checked overtly at PF and weak features are preferably checked at LF. All features of functional categories are typically uninterpretable. Uninterpretable features can be strong or weak. Strong features attract overt movement whereas weak features attract covert movement. I propose that classifier features are strong in Thai. It is crucial that they are strong so that they can attract movement of lexical items which contain corresponding features to be checked off overtly. Strictly speaking, classifier features attract NP and massive pied-piping of elements from below to check features against them. The raising operations take place before phonological Spell-Out and account for the word order.

4.3.3 Derivation of the Word Order

In the derivation of the surface word order of Thai nominals such as 7) repeated as 15a), I assume 15b) as the underlying structure. For ease of exposition, the bar levels in X' notations are used instead of XPs as segments of categories in Kayne's (1994) system. I propose the layered projections of ClassP (ClassP1 and ClassP2) above NP to regulate movement operations and to accommodate adjunction to specifiers of adjectives.

15a) nók tua lék săam tua nán
    bird clf little three clf that/those
    "those three little birds"
15b)
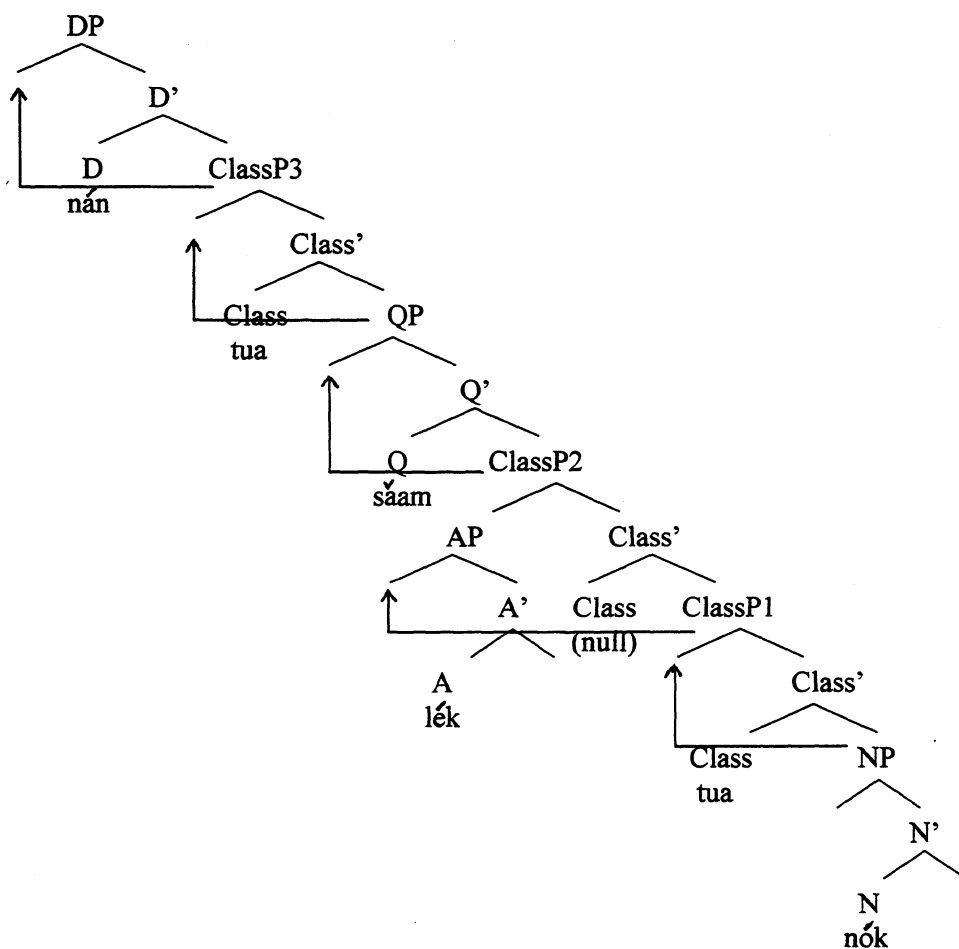
The following steps will derive the surface word order.

Step 1. NP raises into the specifier of ClassP1. In the spec/head relation configuration, NP checks its classifier feature with the classifier head. The trace of NP is asymmetrically c-commanded by its antecedent. ClassP1 and Class' are segments, not categories, so they are not barriers for a c-commanding relation. The order derived from this step is "nók tua".

<u>Step 2.</u> ClassP1, as a category, raises to left-adjoin to the specifier of ClassP2 where AP is base generated. Here the layered ClassP2 is needed for generating AP. The resulting order is "nók tua lék". At this step, the movement is driven by the need of a category to establish a semantically meaningful syntactic configuration (parallel to Barbiers' (1995) proposal regarding the syntactic and semantic relationship between adverbial modifiers of VP and the modified VP).[9] The trace of ClassP1 is asymmetrically c-commanded by its antecedent. Since AP is an adjunction and ClassP2 and Class' are segments of the same category, they do not create barriers for the c-commanding relation.

<u>Step 3.</u> Class P2 raises into the specifier of QP. At this step, the raising of ClassP2 including its pied-piping elements is constrained by the shortest move condition and forced by the need of the massive phrases to get finally to the specifier of DP. The order is "nók tua lék săam".

<u>Step 4.</u> QP raises into the specifier of ClassP3; here QP checks its classifier feature with the head of ClassP3 in a Spec/head configuration. The order is "nók tua lék săam tua".

<u>Step 5.</u> ClassP3 raises into the specifier of DP. At this step ClassP3 checks its Case and referential features with the determiner head. The order is "nók tua lék săam tua nán".

4.3.4 Notes on Chinese Nominals

I will attempt to extend my analysis to account for the surface word order of simple nominals in Mandarin Chinese such as 13) 'na san-ben shu', literally 'those three clf books", in Tang's (1990) example. For ease of exposition, I will utilize a relatively more simplified structure than the Thai counterpart. Setting aside ClassP2 and ClassP3 (which can be assumed not to project in the sense of Minimalist structure-building approach), the underlying structure of 13) consists of NP, ClassP, QP and DP in hierarchical order. From bottom-up, 'shu' is base-generated in N, 'ben' in Class, 'san' in Q, and 'na' in D. Given the word order fact (in which elements are readily configured in asymmetrical c-command relation), presumably classifier features in Chinese are weak. As a consequence, no overt movement occurs before Spell-Out (Chomsky 1995: chapter 3). After Spell-Out, since classifier features are morphological, they need to be checked for convergence at the interface of PF and LF. Therefore, NP raises into the specifier of ClassP to have its classifier feature checked against that in the classifier head. Subsequent movement to higher functional projections can be argued to occur (covertly) parallel to the Thai case. By holding constant a uniformed underlying structure, perhaps word order differences between Thai and Chinese nominals could be reduced to movement and non-movement due to strength and weakness of classifier features.

---

[9] Barbiers (1995) proposes that such adverbial modifiers are left-adjoined to VP, and that the lower segment of the VP raises into the specifier position of the adverbial modifier in the course of derivation. By adopting Barbiers (1995) proposal, I assume that not all movement is driven by the need to check morphosyntactic features (i.e. classifier features). In this particular case, AP is a lexical category; as a result, no feature checking can take place in its domain under minimalism.

Alternatively, there is a possibility suggested by Cinque (p.c.) to derive the order of "noun-clf-adjective". There is a non-descript category XP on top of ClassP2 (which hosts the AP in its specifier). ClassP1 raises across ClassP2 into SpecXP. The rest of the derivation takes this XP, and not ClassP2, to undergo raising to SpecQP in step 3. Under minimalism, this approach is legitimate assuming that there will be some feature in X which attracts ClassP1. However, from the perspective of the 'attract' theory of movement, this alternative raises a question as to why ClassP1 raises to SpecXP instead of the closer ClassP2.

5. Conclusion

In this paper, I claimed that Thai classifiers have a functional status and project ClassP. Conceptually, classifiers are fixed in number, form their own word class, and have a categorical relationship with count nouns. Syntactically, they are not modified by adjectives and behave like agreement constructs such as gender in Romance nominals.

I investigated the word order of complex Thai nominals and hypothesized that the linear word order of Thai nominals is dependent on a hierarchical underlying structure following Kayne's restrictive theory of word order (1994). This phrasal underlying representation was constructed in terms of the DP analysis. It consists of a number of functional and lexical categories, namely, Determiner, Quantifier, Classifier, Adjective, and Noun Phrases.

In my analysis, I employed massive pied-piping of elements to specifiers enabled by asymmetrical c-command relation (Kayne 1994), and incorporated overt feature checking (Chomsky 1995). I also attempted to extend my analysis to account for simple Chinese nominals. I suggested that by assuming a common underlying structure, differences in word order of Thai and Chinese nominals may actually involve strength and weakness of classifier features.

I argue for a head initial structure such as 15b) and massive leftward movement inside DP as shown in the five raising operational steps instead of a head-final structure where elements are base-generated exactly as they are in the surface form. Assuming uniformity in phrase structure whereby superficial differences are attributed to movement, the DP analysis presented here is conceptually and empirically superior to the head final analysis.

Acknowledgments

References

Abney, S. (1987). *The English noun phrase in its sentential aspect.* Doctoral dissertation, MIT.

Barbiers, S. (1995). *Syntax of interpretation.* The Hague: Holland Academic Graphics. HIL dissertation, 14.

Bernstein, J. (1993). *Topics in the syntax of nominal structure across Romance.* Doctoral dissertation, City University of New York.

Carpenter, K. (1991). Later rather than sooner: extralinguistic categories in the acquisition of Thai classifiers. *Journal of Child language.* 18, 93-113.

Chomsky, N. (1986). *Barriers.* Cambridge, MA: MIT Press.

Chomsky, N. (1993). A minimalist program for linguistic theory. In K. Hale and S. J. Keyser (Eds), *The view from Building 20* (pp. 1-52). Cambridge, MA: MIT Press.

Chomsky, N. (1995). *The minimalist program.* Cambridge, MA: MIT Press.

Cinque, G. (1994). On the evidence for partial N-movement in the Romance DP. In G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi, and R. Zanuttini (Eds), *Path towards Universal Grammar* (pp. 85-110). Washington, D.C.: Georgetown University Press.

Haas, M. R. (1942). The use of numeral classifiers in Thai. *Language,* 18, 201-205.

Haas, M. R. (1964). *Thai-English student's dictionary*. Stanford: Stanford University Press.

Hellan, L. (1986). The headedness of NP's in Norwegian. In P. Muysken and H.van Riemsdijk (Eds), *Features and projections* (pp. 89-122). Dordrecht: Foris.

Hundius, H., and Kölver, U. (1983). Syntax and semantics of numeral classifiers in Thai. *Studies in language*. 7 (2), 165-214.

Jones, R. B. (1970). Classifier constructions in Southeast Asia. *Journal of American Oriental Studies*. 90, 1-12.

Kayne, R. (1994). *The antisymmetry of syntax*. Cambridge: MIT Press.

Löbel, E. (1989). Q as a functional category. In C. Bhatt, E. Löbel, and C. Schmidt (Eds), *Syntactic phrase structure phenomena* (pp. 132-157). Amsterdam: John Benjamins.

Longobardi, G. (1994). Reference and proper names: a theory of N-movement in syntax and logical form. *Linguistic Inquiry*, 25 (4), 609-665.

McFarland, G. B. (1942). *Thai-English Dictionary*, 2nd print. Stanford: Stanford University Press.

Picallo, C. (1991). Nominals and nominalization in Catalan. *Probus*, 3, 279-316.

Singhapreecha, P. (2000). Thai classifiers and the structure of non-deverbal Thai nominals. *CUNYForum*, 20, 116-157.

Szabolcsi, A. (1983). The possessor that ran away from home. *The Linguistic Review*, 3, 89-102.

Tang, C-C. J. (1990). A note on the DP analysis of the Chinese noun phrase. *Linguistics*, 28, 337-354.